Jawaharlal Nehru Architecture & Fine Arts University
School of Planning and Architecture, Hyderabad

Academic Regulations

(As Approved by Board of Studies in Architecture on 02-09-2010)

Bachelor of Architecture – Five Years Degree Course

1. **Award of the B. Architecture Degree:**
A student will be declared eligible for the award of the B. Architecture Degree **if he fulfills the following academic regulations:**

He has to pursue the course of study for not less than five academic years and not more than ten academic years.

ii. He has to register for and study all the subjects and fulfill academic requirements of all subjects.

Note: Students, who fail to fulfill all the academic requirements for the award of the degree within ten academic years from the year of their admission, shall forfeit their seat in the course and their seat shall stand cancelled.

Courses of study: The Following majors by means of elective subjects are offered.

Architecture
Building Construction Management
Landscape Architecture
Interior Design

3. Distribution and weight age of the marks:

i. The performance of the student in each semester/ shall be evaluated subject-wise with a maximum of 400 marks in Design Studio and 100 marks in other subjects. The Design thesis in the eight semester shall be evaluated for 600 marks. Practical Training in final Year (Ninth & tenth semesters) shall be evaluated for 400 marks.

ii. The distribution of marks in general for the subjects shall be: For all Theory/Practicals/Studio subjects: 50 % for Internal Evaluation and 50 % for End Evaluation, unless specified otherwise.

iii. Out of a total of 600 marks for the Design thesis, 300 marks shall be for Internal Evaluation and 300 marks for the End Evaluation which shall be by an external jury and viva-voce, The End Evaluation shall be conducted by a board of examiners consisting of the guide, Head of the Department (or his/her nominee) and an external examiner.

4. Attendance:

i. A student has to put in a minimum of 75% of the attendance in aggregate of all the subjects for becoming eligible to register for the end examinations and for acquiring credits in the each semester.

ii. Condonation of shortage of attendance in aggregate of attendance up to 10% (65% and above and below 75%) in each semester may be granted by the College Academic Committee.

iii. A student will not be promoted to the next semester unless he satisfies the attendance requirement of the present semester.

Note:

a) Shortage of Attendance below 65% in aggregate shall in no case be condoned.

b) Students whose shortage of attendance is not condoned in any semester are not eligible to take their End Examination of that class and their registration shall stand cancelled. They shall seek re- admission for that semester when offered next.

c) Condonation of shortage of attendance as stipulated in 4(ii) above shall be granted on genuine and valid grounds with supporting evidence.

d) A stipulated fee shall be payable towards condonation of shortage of attendance.

5. Minimum Academic Requirements:

The following academic requirements have to be satisfied in addition to the attendance requirements mentioned in item No.4.

a. A student shall be deemed to have satisfied the minimum academic requirements in each subject if he secures not less than 45% of marks in the End Evaluation and a minimum of 50 % of marks in the sum total of the internal evaluation and End Evaluation taken together.

b. A student shall be promoted from 3rd to 4th year only if he fulfills the Academic requirements of all the subjects of 1st year.

A student shall be promoted from 4th year to 5th year only if he fulfills the academic requirements of all the subjects of the 2nd year, however, as there is no course work in IX semester, the student shall be permitted to proceed with the work of the final year, but the results of which shall be with held & declared only after he has

c. Satisfied the academic requirements, of all the subjects of the 2nd year.

d. Re-registration:

A student shall pass in all the subjects specified in the course structure. A student who fails to fulfill the minimum academic requirements in any subject and secures less than 50% of marks in the internal evaluation, may be permitted the option of re-registering in that subject, which will enable him to redo/improve and resubmit the work for internal evaluation. In such cases of re-registration, the student's previous performance both in the internal evaluation and end evaluation for the particular subject/s shall stand cancelled and he shall be required to appear for his end evaluation again.

However, such re-registration shall be subject to a limit of only two theory subjects or one theory subject and one studio /Seminar/ Practical subject at any given time. Re-registration of any course should be done within 15 days from the date of commencement of class work.

6. Withholding of the results:

The results of a student are withheld if:
i. He has not cleared any dues to the Institution / Hostel.
ii. A case of disciplinary action against him is pending disposal.

7. Course pattern:

1. The entire course of study is of five academic years. All the years shall be on semester pattern.

A student eligible to appear for the end examination in a subject, but absent or has failed in End

2. Examination may appear for that subject at the supplementary examination

8. Award of Class:

After a student has satisfied the requirements prescribed for the completion of the program and is eligible for the award of the B. Arch. Degree he shall be placed in one of the following three classes:

First Class with Distinction	70% and above
First Class	Below 70% but not less than 60%
Second Class	Below 60% but not less than 50%

(The marks in the internal evaluation and examination shall be shown separately in the marks memorandum)

9. Minimum Instruction Days:

The minimum instruction for each semester shall be **90** days excluding the examination days.

10. General:

I. Where the words "he", "him", "his", occur in the regulations, they include "she", "her", "hers".

II. The academic regulations should be read as a whole for the purpose of any interpretation.

III. In the case of any doubt or ambiguity in the interpretation of the above rules, the decision of the Vice-Chancellor is final.

IV. The University may change or amend the academic regulations or syllabi at any time and the change or amendments made shall be applicable to all the students with effect from the dates notified by the University.

JNAFAU School of Planning and Architecture
Department of Architecture

Effective for the students admitted to 1st year from Academic year 2010-2011 onwards.

FIRST SEMESTER

S. No.	Course No.	Course Title	* S/L/Th/P (Hrs)		Credits	Marks		
						I	E	T
1	AR 1.1	Basic Design	S	9	9	200	200	400
2	AR 1.2	Architectural Drawing and Graphics-I	S	4	4	50	50	100
3	AR 1.3	Building Construction- I	S	4	4	50	50	100
4	AR 1.4	Building Materials - I	Th	2	2	50	50	100
5	AR 1.5	Structural Mechanics - I	Th	3	3	50	50	100
6	AR 1.6	Introduction to Art and Architecture	Th	2	2	50	50	100
7	AR 1.7	Computer Applications-I	L	2	2	50	0	50
8	AR 1.8	Workshop- I	L	4	4	50	0	50
Total				**30**	**30**	**550**	**450**	**1000**

SECOND SEMESTER

S. No.	Course No.	Course Title	* S/L/Th/ P (Hrs)		Credits	Marks		
						I	E	T
1	AR 2.1	Architectural Design –I	S	9	9	200	200	400
2	AR 2.2	Architectural Drawing and Graphics - II	S	4	4	50	50	100
3	AR 2.3	Building Construction - II	S	4	4	50	50	100
4	AR 2.4	Building Materials - II	Th	3	3	50	50	100
5	AR 2.5	Structural Mechanics - II	Th	3	3	50	50	100
6	AR 2.6	History of Architecture – I	Th	3	3	50	50	100
7	AR 2.7	Surveying and Leveling	Th /L	4	4	50	50	100
		Total		**30**	**30**	**500**	**500**	**1000**

THIRD SEMESTER

S. No.	Course No.	Course Title	* S/L/Th/P (Hrs)		Credits	Marks		
						I	E	T
1	AR 3.1	Architectural Design – II	S	9	9	200	200	400
2	AR 3.2	Architectural Drawing and Graphics - III	S	4	4	50	50	100
3	AR 3.3	Building Construction - III	S	4	4	50	50	100
4	AR 3.4	Structural Mechanics - III	Th	3	3	50	50	100
5	AR 3.5	History of Architecture – II	Th	3	3	50	50	100
6	AR 3.6	Building Services-I	Th	4	4	50	50	100
7	AR 3.7	Climatology	Th	3	3	50	50	100
		Total		**30**	**30**	**500**	**500**	**1000**

FOURTH SEMESTER

S. No.	Course No.	Course Title	* S/L/Th /P (Hrs)		Credits	Marks		
						I	E	T
1	AR 4.1	Architectural Design –III	S	9	9	200	200	400
2	AR 4.2	Building Construction-IV	S	4	4	50	50	100
3	AR 4.3	Design of Structures - I	Th	3	3	50	50	100
4	AR 4.4	History and Theory of Architecture-I	Th	3	3	50	50	100
5	AR 4.5	Building Services-II	Th	3	3	50	50	100
6	AR 4.6	Landscape Design and Site Planning	Th/S	4	4	50	50	100
7	AR 4.7	Computer Applications-II	L	4	4	50	50	100
		Total		**30**	**30**	**500**	**500**	**1000**

FIFTH SEMESTER

S. No.	Course No.	Course Title	* S/L/Th /P (Hrs)		Credits	Marks		
						I	E	T
1	AR 5.1	Architectural Design - IV	S	9	9	200	200	400
2	AR 5.2	Building Construction - V	S	4	4	50	50	100
3	AR 5.3	Design of Structures – II	Th	3	3	50	50	100
4	AR 5.4	History and Theory of Architecture-II	Th	3	3	50	50	100
5	AR 5.5	Building Estimating Costing and Specifications	Th	4	4	50	50	100
6	AR 5.6	Environmental Studies	Th	3	3	50	50	100
7	AR 5.7	Computer Applications-III	L	4	4	50	50	100
		Total		**30**	**30**	**500**	**500**	**1000**

SIXTH SEMESTER

S. No.	Course No.	Course Title	* S/L/Th /P (Hrs)		Credits	Marks		
						I	E	T
1	AR 6.1	Architectural Design - V	S	9	9	200	200	400
2	AR 6.2	Working Drawings and Details	S	6	6	50	50	100
3	AR 6.3	Architectural acoustics	Th	3	3	50	50	100
4	AR 6.4	Building Codes and Bye Laws	Th	3	3	50	50	100
5	AR 6.5	Building Economics and Sociology	Th	3	3	50	50	100
6	AR 6.6	Human Settlements and Town Planning	Th	4	4	50	50	100
7	AR 6.7	Barrier Free Built Environment	Th	2	2	50	50	100
		Total		**30**	**30**	**500**	**500**	**1000**

SEVENTH SEMESTER

S. No.	Course No.	Course Title	* S/L/Th /P (Hrs)		Credits	Marks		
						I	E	T
1	AR 7.1 AR 7.1.1 AR 7.1.2 AR 7.1.3 AR 7.1.4	**Advance Design Studio** Advance Architectural Design (Design Studio) Building Construction Management (Design Studio) **Landscape Architecture (Design Studio)** **Interior Design (Design** Studio)	S	12	12	200	200	400
2	AR 7.2	Advanced Construction and Materials	S	6	6	50	50	100
3	AR 7.3	Advanced Structural Systems	Th	2	2	50	50	100
4	AR 7.4	Green Buildings and Infrastructure	Th	2	2	50	50	100
5	AR 7.5	Advanced Services	Th	2	2	50	50	100
6	AR 7.6	Pre Thesis Seminar	Th	2	2	100	0	100
7	AR 7.7 AR 7.7.1	**ELECTIVE - I** Urban Design (Elective – I)	Th	4	4	50	50	100
	AR.7.7.2	Housing [Elective – I)						
	AR 7.7.3	Building Construction and Management [Elective – I)						
	AR 7.7.4	Interior Design [Elective – I)						
	AR 7.7.5	Landscape Architecture [Elective – I)						
		Total		**30**	**30**	**550**	**450**	**1000**

EIGTH SEMESTER

S. No	Course No.	Course Title	* S/L/Th/P (Hrs)		Credits	Marks		
						I	E	T
1	AR 8.1	Design Thesis	P	22	22	300	300	600
2	AR 8.2	Professional Practice	Th	4	4	50	50	100
3	AR 8.3 AR 8.3.1 AR 8.3.2 AR 8.3.3 AR 8.3.4	**ELECTIVE - II** Architectural Illumination (Elective – II) Architectural Journalism (Elective – II) Furniture and Product Design (Elective – II) Disaster Resistant Architecture (Elective – II)	Th	4	4	50	50	100
		Total		**30**	**30**	**400**	**400**	**800**

FINAL YEAR (NINTH & TENTH SEMESTER)

S. No.	Course No.	Course Title	* S/L/Th/P (Hrs)		Credits	Marks		
						I	E	T
1	AR 9.1	Practical Training			60	200	200	400
		Total				**200**	**200**	**400**
		Grand Total			**300**	**4200**	**4000**	**8200**

Note: Students needs to choose the specific subjects for majors according to the table given below

Major	Design Studio A.R 7.1	Elective – I AR. 7.7
Architecture	AR 7.1.1	Any one subject from AR 7.7.1, AR 7.7.2, AR 7.7.3, AR 7.7.4, AR 7.7.5.
Building Construction Management	AR 7.1.2	AR 7.7.3
Landscape Architecture	AR 7.1.3	AR 7.7.4
Interior Design	AR 7.1.4	AR 7.7.5

*** S - Studio Class, L- Lab, Th – Theory, P – Project, I – Internal, E – External, T - Total**

Note: Students opting for major in Building Construction Management, Landscape Architecture and Interior Design are required to choose courses offered in Design studio and Elective – I, as per their major. For subjects Design Thesis and Practical Training students may choose topics / options related to their majors. The School / College reserves the prerogative of offering any one or more of the majors.

FIRST SEMESTER

AR 1.1 BASIC DESIGN

L/s: 9/Wk	*Int: 200*	*End Exam: 200*	*Total: 400*	*End Exam: 5hrs*	*Cr: 9*

Course Overview:
Basic Design provides the framework for understanding design as a new language by sensitizing students to the conceptual, visual and perceptual issues involved in the design process.

Objectives of the Course:

To impart an understanding of principles of composition, and to appreciate design and design elements. Exercises complement the lectures and ensure that the students learn to develop a series of compositions in two and three dimensions.

Expected Skills / Knowledge Transferred:
The Course prepares ground for the students to gain an understanding into the fundamental issues in design and develop the skill to create solutions for simple elements of building.

Course Contents:

Unit – I

Introduction to design –importance of design; Study and appreciation of design examples from natural and man-made environments

Unit – II

Elements of design: point, line, shape, form, space, texture, value, colour and material; Introduction to the principles of composition: unity, balance, symmetry, proportion, scale, hierarchy, rhythm, contrast, harmony, focus, etc; Application of the principles of composition in two dimensional compositions; Transformations in two dimensions: shapes and patterns; use of grids in creating repetitive patterns; Principles of composition-using grids, symmetrical /asymmetrical, rule of thirds, center of interest etc. Explorative exercises in two dimensional compositions.

Unit - III
Developing compositions in two dimensional designs like- logos, cover page, collage, mural, floor patterns, grills, railings, gates etc.

Unit - IV

Concepts of geometry –different three dimensional forms, primitive forms and

understanding the behavior when combined- Transformations to three dimensional forms; Explorative exercises in three dimensional compositions.

Unit - V

Developing compositions in three dimensional designs like- Entrances, gateways, portal, compound walls built-in furniture etc.

Unit - VI

Colour theory, color wheel, primary, secondary, tertiary colors, color schemes, color value and intensity. Theoretical inputs to be followed by exercises to develop the ability to translate abstract principles into two and three dimensional compositions.

Unit - VII

Study of ornament in architectural design; Different types of ornamentation in buildings; Study and evaluation of artifacts and historic examples and their applicability

Exercises in related to documentation of artifacts at historical sites and to understand them with respect to the surround environment; to transform the designs to present context or usage.

Reference books:

Wucius, Wong. Principles of two Dimensional Design. Van Nostrand Reinhold 1972.

Maier Manfired Basic Principles of Design, Vol.1, 2, 3 & 4, Van Nostrand Reinhold, NY. (1977)

Ching, Francis D.K. Architecture: Form, Space, and Order, 2nd ed. Van Nostrand Reinhold, New York, 1996.

Hanks, A. David. Decorative Designs of Frank Lloyd Wright, Dover Publications, Inc. New York, 1999.

Hepler, E. Donald, Wallach, I. Paul. Architecture Drafting and Design, 3rd ed. McGraw-Hill Book Company, New York, 1977.

Itten, Johannes. Design and Form: The basic course at the Bauhaus, Thames and Hudson Ltd., London 1997.

Krier, Rob. Architectural Composition, Academy Editions, London, 1988.

Meiss, Pierre Von. Elements of Architecture: From form to place, E and FN Spon, London, 1992.

Pipes, Alan. Drawing for 3-Dimensional Design. Thames and Hudson Ltd., London 1990.

Shibikawa, Ikuyoshi and Takahashi, Yumi. Designers Guide to Colour.

Smithies, K.W. Principles of Design in Architecture. Chapman and Hall, 1983.

AR 1.2 ARCHITECTURAL DRAWING AND GRAPHICS – I

L/s: 4/Wk	*Int: 50*	*End Exam: 50*	*Total: 100*	*End Exam: 5hrs*	*Cr: 4*

Course Overview:
The course introduces the fundamental techniques of architectural drawing and develops the appropriate skills for visualization and representation**.**

Objectives of the Course:
To introduce architectural drawing techniques and to facilitate effective visual communication.

Expected Skills / Knowledge Transferred: Freehand, scale drawing, conventional architectural representations in drawings and graphics.

Course Contents:

Unit – I
Introduction: Fundamentals of drawing and its practice, introduction to drawing equipment, familiarization, use and handling.

Unit – II
Drawing: Drawing sheet sizes, layouts and composition. Simple exercises in drafting, line types, line weights; dimensioning, Typography –anatomy of Type, Styles, Roman and Gothic style lettering; Freehand lettering, title panels and legends.

Unit – III
Geometrical Construction: Constructing simple and complex geometrical shapes involving various drafting technique drawing regular shapes using T-sqaures, set-sqaures; Special methods of drawing regular polygons; Regular polygons inscribed in a Circle.

Unit – IV
Architectural Symbols: Representation of building elements, openings, materials, furniture and accessories; human postures; vegetation; vehicles; terminology and abbreviations used in architectural representation.

Unit – V
Measuring and Drawing to Scale: Scales and construction of scales, scaled drawings of simple objects, furniture, rooms, doors and windows etc., in plan, elevation and section. Reduction and enlargement of drawings.

Unit – VI

Free Hand Drawings: line stokes, light and shade techniques of simple, natural and 3D geometric forms. Study of proportions and scale; structure and axes of objects; Outdoor sketching of simple building forms.

Note: This is a studio subject and students should be made to prepare drawings as studio exercises along with the theoretical inputs. The studio work should be supplemented with appropriate site visits.

Reference books:

Moris, I.H. Geometrical Drawing for Art Students.

Thoms, E. French. Graphic Science and Design, New York: MC Graw Hill.

Nichols, T.B. and Keep, Norman. Geometry of Construction, 3rd ed. Cleaver – Hume Press Ltd., London, 1959.

Bhatt, N.D. and Panchal V.M. Engineering Drawing: Plane and Solid Geometry, 42nd ed. Charotar Pub., Anand, 2000.

Gill, P.S. T.B. of Geometrical Drawing, 3rd ed. Dewan Suhil Kumar Kataria, Ludhiana, 1986.

Shah, M.G., Kale, C.M. and Patki, S.Y. Building Drawing: with an integrated approach to built environment, 7th ed. Tata McGraw Hill Pub., Delhi, 2000.

Bies, D. John. Architectural Drafting: Structure and Environment. Bobbs – Merrill Educational Pub., Indianapolis.

Nelson, A. John. H.B. of Architectural and Civil Drafting, Van Nostrand Reinhold, New York, 1983.

AR 1.3 BUILDING CONSTRUCTION-I

L/s: 4/Wk	*Int: 50*	*End Exam: 50*	*Total: 100*	*End Exam: 5hrs*	*Cr: 4*

Course Overview:

The course introduces to the methods and techniques of construction of basic elements of a simple building.

Objectives of the Course:

To understand the elementary and simple construction methods, explaining basic principles and considerations in the construction of one roomed rectilinear building with verandah.

Expected Skills / Knowledge Transferred:

To understand the techniques of construction of a simple load bearing structure with simple material like brick, stone etc.

Course Contents:

Unit – I

Brickwork: Various types of bonds, stopped ends, junctions, piers, jambs, footings, foundations, corbelling, damp proof course, window sills, thresholds, copings, mortar joints and pointing.

Unit – II

Stone masonry: stone walls, rubble work, ashlar work, masonry joints, window sills, plinth, cornices, surface finishes.

Unit – III

Composite masonry: Brick backed ashlar, rubble backed ashlar, concrete backed masonry, ashlar faced concrete walls, marble faced masonry; tile faced concrete, hollow block masonry.

Cladding: Cladding of various materials-marble, granite, slate, tiles, metal etc.

Unit – IV

Lintels: Lintels of wood, stone, brick.

Arches: arches; terms defined; various forms of arches like segmental, semi-circular, elliptical, three-centered, flat and relieving arch, etc.

Unit – V

Ground and upper floors: solid floor, brick flooring, floor finishing and floor coverings, Basement floor

Flooring Finishes: Brick on edge, concrete, wood, Indian patent floor, granolithic, terrazzo, pitch mastic, Magnesium Oxide, Chloride, flag stone or shahbad stone flooring, etc.

Unit – VI

Flat roofs: Madras terrace, Jack arch, elementary knowledge about R.C.C roof and floor slabs.

The class work and home assignments should include appropriate site visits by the students. Student will maintain field observations / record books. At least two exercises to be done in the construction yard.

Reference books:

Barry, R. The Construction of Buildings Vol. 2, 5th ed. East-West Press. New Delhi, 1999.

Bindra,S P.and Arora, S P. Building Construction: Planning Techniques and Methods of Construction, 19th ed. Dhanpat Rai Pub. New Delhi, 2000.

Hailey and Hancork, D.W. Brick Work and Associated Studies Vol. 2. MacMillan, London, 1979.

Moxley, R. Mitchell's Elementary Building Construction, Technical Press Ltd.

Rangwala, S.C. Building Construction, 22nd ed. Charotar Pub. House, Anand, 2004.

Sushil Kumar. T.B. of Building Construction, 19th ed. Standard Pub, Delhi, 2003.

AR 1.4 BUILDING MATERIALS – I

L/s: 2/Wk Int: 50 End Exam: 50 Total: 100 End Exam: 3hrs Cr: 2

Course Overview:
The course provides information on the properties, use, installation and costs of basic building materials.

Objectives of the Course:
To impart knowledge on the various building materials,
To highlight the current trends and innovations in the usage of building materials.

Expected Skills / Knowledge Transferred:
Knowledge required for specifying appropriate materials for various spaces in buildings.

Course Contents:

Unit –I
Brick: Composition of earths, standard, market and ISI.size properties, as per ISI brick manufacturing processes, requirements and tests foe good bricks. Fire clay bricks - varieties; sand lime bricks; paving bricks; Terra-cotta-its varieties: ordinary, glazed, porous, polished and fine; sun dried brick, Special types of bricks, uses and properties Different uses of brick in construction.

Building Tiles**:** Roof, floor and wall tiles.

Unit –II
Stones: Classification of stones: granite, laterite, quartzite, marble and slates -properties and uses; stone units - khandki, rubble, black stones, stone metal, flag stones. method of quarrying of
building stones, types of stone dressings defects in stone, stones used in construction, uses in construction, aggregates. tool used, Preservation of stone work.

Unit –III
Sand : Pit, river sea sand, gravel, bulk age of sand, impurities in sand their removal, tests for silt and organic contents different grades of sand with respective to size and their application. I.S.I. standards, use in mortar and concrete.

Unit –IV

Cement: Ingredients and properties of cement, Types of cement, Grades of cement, Initial and final setting time, Test of cements, ISI Standards, Pozolana material and its properties.

Unit –V

Mortars: Types, proportioning, mixing and grinding, mortar, cement mortar, lime mortar, methods of preparing, handling and uses of mortars, Surkhi-mortar, light weight mortars i.e. cinder, sawdust and fibrous plaster, gypsum plaster, Plaster of Paris and application

Concrete: Concrete and its constituents, aggregate: coarse and fine, properties of concrete, strength, durability, etc. Effect of age on strength.

Grading: importance, fineness modulus, combined aggregate, water cement ratio. Mixing and Curing.

Unit –VI

Timber: Building timber types and its properties, sawing of timber, shrinkage and distortion, wastage, methods of sawing. Drying and seasoning, moisture contents, purpose of seasoning, natural and artificial. Defects in timber. Use and application of timber in construction.

Processed woods: Plywood and Synthetic boards properties and application. Use of alternative materials as substitute to wood.ISI standards

Unit –VII

Ferrous Metals - Pig iron, cast iron, wrought iron, steel, manufacturing processes and casting. Characteristics form and uses of cast iron, wrought iron and steel.

Alloys steel, stainless steel, steel-treatment, steel tempering, annealing, normalizing, and case hardening, their objectives and effect on alloy steels. Galvanizing, oxidation and casting of metallic products, corrosion of iron and their prevention. Metallic protective coatings.

Non ferrous Metals: Basic idea of important ores, properties and uses of Aluminum, Zinc, Copper, Tin and Lead

Reference Books:

Hailey & Hancork, D.W. Brick Work & Associated Studies Vol. 2. MacMillan, London, 1979.

Moxley, R. Mitchell's Elementary Building Construction, Technical Press Ltd.

Rangwala, S.C. Building Construction, 22nd ed. Charotar Pub. House, Anand, 2004.

Sushil Kumar. T.B. of Building Construction, 19th ed. Standard Pub, Delhi, 2003.

Note: **Students should be exposed to on site and Laboratory tests of above materials.**
Students should conduct market survey of above

AR 1.5 STRUCTURAL MECHANICS – I

L/s: 3/Wk	*Int: 50*	*End Exam: 50*	*Total: 100*	*End Exam: 3 hrs*	*Cr: 3*

Course Overview:
Gives an in-depth understanding of the concepts associated with different Elements of Structures.

Objectives of the Course:
To provide knowledge of different forces, force systems, Beams types sectional Properties behavior of different members due to applied forces.

Expected Skills / Knowledge Transferred: Basic principles of mechanics and behavior of elements of structures.

Course Contents:

Unit – I
Introduction: Forces, system of forces, resultant, equilibrant Parallelogram law, Triangle law, Lamis Theorem, polygon law, resultant of coplanar, concurrent force system, couple, characteristics of couple, moment, Equilibrium, Varignon's Theorem.

Unit – II
Analysis of trusses, types of stresses, Loads on trusses, 2-D truss analysis using method of joint (Cantilever & Simply Supported)

Unit – III
Stress, Strain, type of stresses, stress-strain cure for ductile Material, Hooke's law, Modulus of Elasticity, Bars of Varying Section, Bars of Composite Section.

Unit – IV
Shear stress, types of Strain, poissons Ratio, Shear modulus Bulk Modulus Relation between the three Elastic Constants members subjected to 3 mutually perpendicular forces

Unit – V
Types of Beams, types of loads, calculation of reactions for simply supported beam (Using Point loads & Udl's) definition shear force & Bending Moment SFD&

BMD for Cantilever beams.

Unit – VI
Shear force & Bending Moment diagrams for simply supported & over hanging beams for point loads & UDL, point contra flexure & its location, Relation between loading, SF & BM

Unit – VII
Definition of centroid, line of symmetry ,centroid for some standard shapes, calculation of centroid for shapes like L,T,C,I Sections etc., moment of inertia, Derivation of M.I formula for Rectangle, circle, Triangle, calculation of M .I for L,T,C,I Sections etc.,

Unit VIII
Types of joints, lap joint & butt joint, failure of riveted joints, strength of the joint, efficiency of joint, Unwins formula, chain riveting & Diamond Riveting

Reference Books

Khurmi. R.S. Engineering Mechanics, S. Chand and Co. Ltd., New Delhi, 1999.
Ramamrutham. S. Engineering Mechanics, 7th ed. Dhanpat Rai Pub. Co. Ltd., Delhi, 2004.
Timoshenko. S. and Young, D.H. Engineering Mechanics, McGraw-Hill International Editions

AR 1.6 INTRODUCTION TO ART AND ARCHITECTURE

L/s:2/Wk	*Int: 50*	*End Exam: 50*	*Total: 100*	*End Exam: 3 hrs*	*Cr: 2*

Course Overview:
Provides knowledge on traditional art form, innovations in and influences on architecture and thinking process in design;

Objectives of the Course:
To analyze various art forms, and understand the techniques involved in creative thinking.

Expected Skills / Knowledge Transferred: different skills for creative thinking, understanding various art forms, appreciate art and architecture.

Course Contents:

Unit – I
Purpose and relevance of art,

Unit – II

Development of art; A survey of history of art forms; pre-historic period to the present times; Changing nature of art through time in terms of content; form and material;

Unit – III

Exploration of art forms - study of traditional and contemporary art forms - painting sculpture, architecture, decorative arts, design arts, digital art. Relationship between art and architecture from earliest times.

Unit – IV

Definitions and general understanding of architecture, role of architect in a building project. The changing role of architects, his relation with other consultants, contractors and client, technical
knowledge and other skills required as inputs. Various subjects to be learnt by architecture students, their relevance to practice.

Unit – V

Various factors influencing the architecture of a region, architecture as a response to social, technological and environment forces. Evolution of shelter forms in regions of the world and examples of vernacular architecture in the world, with particular reference to India.

Reference Books:

Craven, C. Roy. Indian Art a Concise History.
Kumar, Raj (Ed.). Essays on Indian Art and Architecture. Discovery Pub., New Delhi, 2003.
Fisher, E. Robert. Buddhist Art and Architecture. Thames and Hudson, London, 1993.
Ghosh, A (Ed.). Jain Art and Architecture Vol. 1-3. Bharatiya Jnanpith, New Delhi.
James C. Snyder, Introduction to Architecture, New York: Mc Graw Hill.
Christopher Alexander, Pattern Language, New York: Oxford University Press
Thomas Mitchell, Redefining Designing: From to Experience,
James snyder and Anthony Y catanse, Introduction to Architecture, Mc Graw-Hill Book company, New York, 1979.
Rapoport, Amos, House form & Culture

AR 1.7 COMPUTER APPLICATIONS – I

L/s:2/Wk	*Int: 50*	*End Exam: NIL*	*Total: 50*	*End Exam: NIL*	*Cr: 2*

Course Overview:
The course imparts basic knowledge on computers to upgrade the general understanding and ability in computing in the realm of architecture.

Objectives of the Course:
To enable the student to make audio-visual presentations, word processing, and other basic computing.
Expected Skills / Knowledge Transferred: Knowledge on basic hardware and software required for architectural applications, Ms-Office, photo Editing techniques, use of World Wide Web.

Course Contents:

Unit – I
Introduction: Introduction and history of computer, software and hardware concepts - bits, bytes - types of languages – operating systems (windows, DOS).
Introduction to Word Processing Package, Toolbar, creating a new document, formatting text, inserting tables, pictures, page Numbers and date/time, spelling and grammar checking, taking printouts.

Unit – II
Spread Sheets: Introduction to Spread Sheets, Microsoft Excel, creating formulas, basic operations, borders and shading, creating charts.

Unit – III
Multi-media Presentations: Introduction, multi-media presentation (like MS. Power point) Creating a Presentation, different views in PowerPoint, slide manipulation, slide animation, slide transitions, view slide show, navigating while in slideshow, hyper linking to various other media/ application outputs, scanning of different media in different formats, setting of options, resolution settings, management of file size, integrating partial scans of large documents. Pack up a presentation for use on another computer.

Unit – IV
Exploring Microsoft Access:
Introduction, creating new and opening existing, creating a database using a wizard, creating a database without using a wizard, tables – and their working, creating a table from scratch, Primary Keys, Switching views, entering data, manipulating data, advanced table feature examples.

relationships - linking multiple tables together, forms – and their workings, creating a form using a wizard, reports – and their working, creating, report and mail-merge, labels using a wizard.

Unit – V

Internet concepts: Introduction to Internet, use of internet, various search engines, hyper text markup Language, e-mails.

Unit – VI

Photo Editing and Desktop Publishing (application)-I: Import and export of photo edited files, objects in photo editing, fills, outlines, basic toolbox of photo editing software (like Coral Draw), color management tools, starting your page right, introduction to Flash multimedia software.

Unit – VII

Photo Editing and Desktop Publishing (application) - II:

Introduction, software and system requirements, preferences, workspace, graphics terminology, image depth, resolution and image size, image sources, straightening and cropping of images, basic correction of images, printing, Photoshop software: selections, choosing foreground and background colors, filling with color, options and preferences, file browser, stepping back in time, use ram efficiently, sharpening images, working with layers, painting, color theory, image modes, channels, more advanced adjustment commands, file format categories.

Reference books:

Adobe Creative Team. Adobe Photoshop CS (Class Workbook).

Droblas, Adele. Fundamental Photoshop: A Complete Introduction, Greenberg.HTML Black Book

Sagman. Microsoft Office for Windows, India Addison Wesley, 1999.

Woody, Leon Hard. Microsoft Office 2000, Prentice Hall of India, New Delhi.

AR 1.8 WORKSHOP

L/s: 4/Wk	*Int: 50*	*End Exam: NIL*	*Total: 50*	*End Exam: NIL*	*Cr: 4*

Course Overview:

The course provides the foundation and capability to represent the concepts three dimensionally.

Objectives of the Course:

To introduce various fabrication skills and techniques necessary to produce scale-models and to encourage preparation of models as an essential phase in design development and evaluation.

Expected Skills / Knowledge Transferred: Dexterity; Knowledge of materials and their properties; craft skills; visualization skills;

Course Contents:

Unit – I
Introduction to model-making: Need; role of scale-models in design; general practices; Digital models.

Unit – II
Essentials of model-making: understanding of various tools and machines employed, best practices involved in operating the tools and the techniques.

Unit – III
Survey of various materials available for model making such as papers , mount boards , wood, plastics, films, plaster of paris, acrylic, Styrofoam, wax, metals, glass, FRP, etc. and exploring

Their potential in model-making. .chamfering at 45 degrees in mountboard.

Unit – IV
Techniques of Scale-modeling: Use of different scales; templates; measuring aids; conventions followed.

Unit – V
Techniques for preparation of presentation models, mock-ups, simulation of various materials and textures such as wood, glass, aluminum, steel, bricks, roofing tiles, flooring, corrugated sheets, upholsteries etc.

Unit – VI
Carpentry: Introduction to the use of different types of tools and different types of joints used in carpentry. Joinery details which are commonly used in timber construction. Application of surface finishes such as polish, varnish, lacquer on wood.

Unit—VII
Photography in built models, using lighting and natural background.

Assignments.
At least three major assignments involving the individual students to fabricate
a. Scale model of a piece of furniture
b. Presentation of models
c. mock-up of an everyday object
d. Three-dimensional forms etc.

Documentation of the important phases of fabrication is must which shall become the basis for internal evaluation.

Reference books:

Bernald, S and Copplene, Myers. History of Art.
Craven, C. Roy. Indian Art a Concise History.

Krier, Rob. Element of Architecture. Academy Editions, London, 1992.
Lang, Jon. A Concise History of Modern Architecture in India. Permanent Black, Delhi, 2002.
Magnet, Jacque. The Asesthetic Experiences: An anthropologist looks at the Visual Art.
Preble, Duame. Art Forms.
Snyder, C. James and Catanese, J. Anthony. Introduction to Architecture.
Tapert, Annette. Swid Powell: Objects by Architects. Rizzoli, New York, 1990.
Thyagarajan. Basic practical photography
Ching Francis D.K Architecture: Form, Space, and Order

SECOND SEMESTER

AR 2.1 ARCHITECTURAL DESIGN – I

L/s: 9/Wk	*Int: 200*	*End Exam: 200*	*Total: 400*	*End Exam: 5 hrs*	*Cr: 9*

Course Overview:
This course is intended to provide framework for understanding design as a process.

Objectives of the Course:
To impart knowledge related to design process and introduce various problem solving approaches.

Expected Skills / Knowledge Transferred:
To understand principles of design. To develop the ability to translate abstract principles of design into architectural solutions for small problems.

Course Contents:

Unit - I

Anthropometrics: Basic -average measurements of human body in different postures-its proportion and graphic representation, application in the design of simple household and street furniture. Use of mannequins in defining spatial parameter of design.

Unit - II

Study of functional spaces and the issues like clearances, lighting and ventilation, furniture arrangements; Minimum and optimum areas for various functions; Detailed study of spaces such as living, dining, bedrooms, kitchen, toilet, etc.

Unit - III

Study of the human considerations like, privacy, convenience, comfort, etc.; Case study of a house and a critical appraisal of the spaces.

Unit - IV

Introduction to design process. Pre- Design Studies: Preparation of design brief, the user requirement and their implications, Study of the site and the context;
Design Response: Development of concept, Graphic tools like circulation diagrams, Figure Ground studies, etc. Integration of form and function in the design of bus shelter, milk booth, watchman's cabin, traffic police kiosk, flower stall, ATM Center, etc.
At least two major exercises and two minor design/time problems should be given. The final submission shall necessarily include a model for at least one of the two main problems.

Reference books:

Chiara Joseph de and Others. Time Savers Standards of Building Types. McGraw – Hill, 1980.
Kirk, Paul Hayden and Sternberg, D. Eugene. Doctors Offices and Clinics, 2nd ed. Reinhold Pub., USA, 1960.
Neufert, Ernst. Ernst Neufert Architects Data, Granada Pub. Ltd., London, 1970.
Pevsner, Nikolaus. A History of Building Types. Thames and Hudson, London, 1976.
Shah, S. Charanjit. Architects Hand Book Ready Reckoner. Galogotia Pub. Co., New Delhi, 1996.

AR 2.2 ARCHITECTURAL DRAWING AND GRAPHICS – II

L/s: 4/Wk	*Int: 50*	*End Exam: 50*	*Total: 100*	*End Exam: 5hrs*	*Cr: 4*

Course Overview:

The course is intended to develop the techniques of architectural drawing pertaining simple and complex solid geometrical forms of Building geometry Sciography and Documentation .

Objectives of the Course:

To impart the skills of three dimensional visualization and presentation.

Course Contents:

Unit – I

Building Geometry: Study of points, lines, and planes leading to simple and complex solid geometrical forms; Orthographic Projections-Representation of 3D elements in Plan and Elevations, use of circle in mouldings- Ovolo Covetta, Ogee, Lancet,Horse shoe, Moorish, Stilted and Rampant, Tudor,three centered and drop. Exercises on Ionic volute, Entasis of column etc., working with models to facilitate visualization.

Unit –II

Sciography:

Simple and composite forms, shadows on horizontal, vertical planes and on their own surfaces. Study of shade and shadows of simple geometrical solids of various forms and groups of forms.

Shade and shadow techniques leading to advanced practical examples: shades and shadows on buildings or parts of buildings. Relative changes in building shades and shadows with sun angle, time, building height . Introduction to sciography in perspective.

Unit-III

Architectural Documentation:

Detailed measured drawing and documentation of any interesting building – preparation of maps, plans, elevations, sections, views etc.

Reference books:

Thoms, E. French. Graphic Science and Design, New York: MC Graw Hill.

Nichols, T.B. and Keep, Norman. Geometry of Construction, 3rd ed. Cleaver – Hume Press Ltd., London, 1959.

Bhatt, N.D. and Panchal V.M. Engineering Drawing: Plane and Solid Geometry, 42nd ed. Charotar Pub., Anand, 2000.

Gill, P.S. T.B. of Geometrical Drawing, 3rd ed. Dewan Suhil Kumar Kataria, Ludhiana, 1986

Shah, M.G., Kale, C.M. and Patki, S.Y. Building Drawing: with an integrated approach to built environment, 7th ed. Tata McGraw Hill Pub., Delhi, 2000.

Claude Batley -Design Development of Indian Architecture

Ernest Burden -Architectural Dilineation

AR 2.3 BUILDING CONSTRUCTION- II

L/s: 4/Wk	*Int: 50*	*End Exam: 50*	*Total: 100*	*End Exam: 5hrs*	*Cr: 4*

Course Overview:

The course introduces to the methods and techniques of construction of doors and

windows, stairs and partitions of a building using different materials.

Objectives of the Course:
To understand the elementary and simple construction methods like joinery details in wood ,fixing of hardware.

Expected Skills / Knowledge Transferred:
To understand the techniques of constructing doors and windows, staircase and partitions using different materials

Unit – I
Carpentry and joinery: Terms defined; mitring, ploughing, grooving, rebating, veneering. Various forms of joints in wood work, such as lengthening joints, bearing joints, halving, dovetailing, housing, notching, tusk and tenon etc;

Unit – II
Doors: Definition of terms, types of doors: wooden, ledged, ledged and braced, paneled, flush door. Hinged, single and double shutters, sliding, folding, revolving, pivoted.

Unit – III
Windows: Casement, top and bottom hung, pivoted and sliding sash.
Hardware: fixtures, locks, hinges, fastenings for doors and windows.

Unit – IV
Steel: windows, rolling shutters and grills. Aluminium doors and windows.

Unit – V
Wooden ground and upper floors: Terms defined, bridging joists, binding joists, binders, beams and girders, solid and herring bone strutting, floor boards, ceiling joists, trimming floors to accommodate fire place. Details of fire place.

Unit – VI
Partition Walls: Brick partition, reinforced brick partition, brick nogged partition, lath and plaster partition, pre-cast concrete partition, glass block and glass create partition, common wooden partition, trussed partition.

Unit – VII
Staircases: Terms defined, Tread, riser, stringer, nosing, flight, landing, head room, handrail, balusters, newel post etc., types of stairs i.e., straight, doglegged, open well, geometrical, circular, spiral, bifurcated, wooden stairs, stone stairs, metal stairs and elementary knowledge of R.C.C. stairs.

Reference Books

Barry, R. The Construction of Buildings Vol. 2, 5th ed. East-West Press. New Delhi, 1999.
Bindra, S P. and Arora, S P. Building Construction: Planning Techniques and Methods of Construction, 19th ed. Dhanpat Rai Pub. New Delhi, 2000.

Hailey and Hancork, D.W. Brick Work and Associated Studies Vol. 2. MacMillan, London, 1979.
Moxley, R. Mitchell's Elementary Building Construction, Technical Press Ltd.
Rangwala, S.C. Building Construction, 22nd ed. Charotar Pub. House, Anand, 2004.
Sushil Kumar. T.B. of Building Construction, 19th ed. Standard Pub, Delhi, 2003.

AR 2.4 BUILDING MATERIALS – II

L/s: 3/Wk	*Int: 50*	*End Exam: 50*	*Total: 100*	*End Exam: 3hrs*	*Cr: 3*

Course Overview:
The course is intended to provide information on the properties, uses, installation and costs of building materials. The course highlights on Mechanical and physical properties of various materials. Influence of various factors on these properties.Causes of defects, their prevention and remedies. Testing of materials.

Objectives of the Course:
To provide knowledge on the various types of building materials used while highlighting the current innovations and trends.
Expected Skills / Knowledge Transferred:

Knowledge required for specifying appropriate materials for various spaces in buildings**.**

Course Contents:

Unit – I
Laminates and Veneers: Resin bonded ply wood, types of laminates, laminated wood, insulating boards and other miscellaneous boards, veneers from different varieties of timber, their characteristics and uses MDF& HDF Boards.

Unit – II
Paints and Varnishes: Protective coating, paints, constituents of paints, their functions, water paints, distempers, and cement based paints, emulsion paints, selection of paints, and storage of paints.

Types varnishes (oil and spirit): characteristics and uses of varnishes. French polish, anti-corrosive paint, damp proofing finishes.

Unit – III

Glass and glass products: Composition and fabrication of glass, types of glass, wired glass, fiber glass, rock wool, laminated glass, glass-crete blocks, structural glass, their properties and uses in buildings.

Unit – IV

Plastics: Polymer types, thermo setting and thermo plastics, resins, common types of moldings, fabrication of plastics, polymerization and condensation, plastic coatings.

Composite materials, classification, properties and uses - linoleum, plastic coated paper, polythene sheets, reinforced plastic, plastic laminates and PVC.

Unit – V

Floorings : Introduction, essential requirements of a floor, factors affecting selection of flooring material, Various natural as well as artificial flooring materials like brick, flag stone, tiled ,cement concrete, granolithic, terrazzo, marble, shahbad stones timber flooring, timber floor supported on RSJ ,flag stone floor resting on RSJ,, vitrified tiles, ceramic tiles, , Mosaic, rubber, Linoleum, and PVC and PVA flooring

Unit – VI

Roof Coverings: Introduction, requirements of good roof technical terms, classification, types of roof coverings for pitched roof. **:** Roofing tiles and roofing with cement products like A.C. sheet roofs, G.I. Sheets roofs, slates,

Unit – VIII

Miscellaneous Materials and treatments: Properties and uses of Asbestos, cork, felt, mica, adhesive, Bakelite, china clay, fiber glass, leather, canvass, jute, rubber, Asphalt and Bitumen

Materials for Special Treatments: Fire resistant, waterproofing, thermal insulation, acoustical treatment and anti-termite treatment.

Reference books:

Chowdary, K.P. Engineering Materials are used in India, 7th ed. Oxford and IBH Pub. Ltd., New Delhi, 1990.

Moxley, R. Mitchell"s Elementary Building Construction, Technical Press Ltd.

Rangwala, S.C. Building Construction: Materials and types of Construction, 3rd ed. John Wiley and Sons, Inc., New York, 1963.

AR 2. 5 STRUCTURAL MECHANICS –II

L/s: 3/Wk	*Int: 50*	*End Exam: 50*	*Total: 100*	*End Exam: 3hrs*	*Cr: 3*

Course Overview:
Gives an in-depth understanding of the concepts associated with different Elements of Structures.

Objectives of the Course:
To provide knowledge of behavior beams, columns stress behavior due to applied forces.
Expected Skills / Knowledge Transferred: Basic principles of mechanics and behavior of elements of structures.

Unit-I
Theory of simple bending Introduction, pure bending & ordinary bending, Assumptions derivation of flexure formula section modulus Numericals on flexure equation.

Unit-II
Shear stresses in beams Introduction, derivation of shear stress formula, shear stress distribution for standard shapes like rectangle circle triangle I,T L, C Section Numericals.

Unit-III
Direct &bending Stresses Introduction, stress distribution of eccentrically loaded column, middle third rule, core or Kernal of Section, stress distribution for column with one axis eccentricity, two axis eccentricity, Numericals.

Unit IV
Deflection-I-Introduction of slope & deflection, slopes & deflections for cantilever beams with point load & udl's using double integration method & moment area methods

Unit V
Deflection-II- Introduction of Macaulay's method, slopes & deflections simply supported beams with point load & udl's double integration & Macaulay's methods

Unit-VI
Fixed beams Introduction Advantages and disadvantages of fixed beams over simply supported beams, SFD & BMD for fixed beams with combination of point loads & udl's (No formula derivations)

Unit-VII
Propped Cantilevers Introduction, Reaction of a prop, Cantilevers with Udl's, point loads, prop at end & at intermediate positions, slope & deflection

Unit-VIII
Welded joints: Introduction, Advantages and disadvantages of welded joints, types, strength of fillet weld, design of welded joint for plates and unsymmetrical sections for axial loading

Reference Books:

Khurmi. R.S. Engineering Mechanics, S. Chand and Co.Ltd., New Delhi, 1999.
Ramamrutham. S. Engineering Mechanics, 7th ed. Dhanpat Rai Pub. Co. Ltd., Delhi, 2004.
Timoshenko. S. and Young, D.H. Engineering Mechanics, McGraw-Hill International Editions

AR 2. 6 HISTORY OF ARCHITECTURE- I

L/s: 3/Wk	*Int: 50*	*End Exam: 50*	*Total: 100*	*End Exam: 3 hrs*	*Cr: 3*

Course Overview:
History of Architecture to be studied as development of building forms in response to social, religious, aesthetic and environmental factors. The study should focus on the three dimensional forms, plan forms, façade organization, structural solution, construction methods and ornamentation. The study should focus on the general trends and not on specific examples of buildings.

Objectives of the Course:

- To expose the students to a wide spectrum of architectural styles ranging from pre-historic to modern times.
- To explain the students the evolution of architecture in relation to time with special emphasis to social, religious and environmental factors.
- To make the students understand the developments in the construction technology in different periods.

Expected Skills / Knowledge Transferred:

1) Acquire knowledge to identify the common characteristics among the monuments of a particular style.

2) Acquire graphic skills to present a building, analyze its elements and explain the composition.

3) Acquire knowledge on good practices of architecture in the past.

Course Contents:

Unit – I
Architectural development in the ancient civilizations in Indus valley, Egypt and Mesopotamia, Study of Pyramids, Temples, Mastabas, Ziggurats.

Unit – II
Architecture in the Classic Greek periods, different orders, optical correction and appreciation of perfection.

Unit – III
Architecture in Roman period; Grand scale, application of Greek orders; Construction of vaults; study of different typologies of buildings; development of roads and aqueducts;

Unit – IV
Architecture in the early Christian, Byzantine, Romanesque, Gothic periods in Europe and rest of the world excluding Asia.

Unit – V

Architecture in Renaissance and Baroque: revival in architecture, study of building typologies.

Unit-VI
The other architecture styles preceding the advent of Industrial revolution in Europe - Mannerist architecture, Jacobean architecture, Elizabethan architecture, Victorian architecture and Moorish architecture.

Reference books:

Fletcher, Sir Banister. A History of Architecture, 19th ed. CBS Pub., Delhi, 1992.
Yarwood, Doreen. A Chronology of Western Architecture. B.T. Batsford Ltd., London, 1987.
Schulz, Christian Norberg. Meaning in Western Architecture, 2nd ed. Rizzoli Intl. Pub., New York, 1981.

Copplistone, Trewin and Others. World Architecture: An Illustrated History, 11th ed. Hamlyn, London, 1979.
Bindoo. D.D, History of Architecture, Milind P Lakshana, Hyderabad – 2006.
Wittkaner R Architectural Principles in the Age of Humanism, Chichester :Academy Editions 1998

AR 2.7 SURVEYING AND LEVELING

L/s: 4/Wk	*Int: 50*	*End Exam: 50*	*Total: 100*	*End Exam: 3hrs*	*Cr: 4*

Course over view
To explain the different techniques and instruments used in survey of land tracts

Objectives of the Course:
To explain the techniques and instruments used in survey of land tracts.
Expected Skills / Knowledge Transferred:

Surveying skills and related theory.

Course Contents:
Unit – I
Introduction – Definitions – Basic Principles of Surveying; Classification of Survey; Uses of Survey - Scales and Symbols-Sources of errors in Survey – Linear Measurement: accurate and approximate methods, duties of Surveyor.

Unit – II

Chain Surveying – Introduction – Types of chains and tapes. Instruments for chaining and taping – ranging-cross staffs – offsets – obstacles in chain surveying – errors and corrections (standardization, temperature and pull) composition of Areas (Trapezoidal rule – Average ordinate-Simpson rule).

Unit – III

Compass Surveying: Introduction – Prismatic Compass and Surveyors Compass – Types of Bearings-Designation of bearings – Fore bearing and back bearing – Types of Traverse – Temporary adjustments of prismatic compass, local attraction, Corrections, precautions, errors.

Unit – VI

Plane Table Survey: Introduction – Types of Plane Tables and their Accessories – Setting up the plane table – traversing – Radiation Method – Intersection Method – Resection Method (two point problem). Three point problem

Unit – V

Leveling – Introduction –Definitions of terms used in leveling – Principle of leveling – Classifications temporary adjustments of dumpy level, RL's by height of Instrument and rise and fall method, Contouring and their characteristics, uses, – errors in leveling.

Unit – VI

Theodolite – Introduction – vernier Theodolite – uses of Theodolite - Temporary adjustments – Traversing.

Unit – VII

Automated Surveying – Introduction to use of Digital Surveying – Instruments such as distomat – total station, Electronic Theodolite, G.P.S.

Unit – VIII

Site Studies – Plot, site, land and regions, size and shape of site, Analysis of accessibility, Topography, Climate, land forms, Surface Drainage, Soil, Water, Vegetation, Ecology and Visual aspects.

Reference books:

Arora, K.R. Surveying Vol. I, 6th ed. Standard Book House, Delhi, 2000.
Lynch, Kevin. Site Planning. MIT Press, Massachusetts, 1962.
Punmia, B.C. Surveying Vol. 1, 13th ed. Laxmi Publications Pvt. Ltd., New Delhi, 1996.

THIRD SEMESTER

AR 3.1 ARCHITECTURAL DESIGN – II

L/s: 9/Wk	*Int: 200*	*End Exam: 200*	*Total: 400*	*End Exam:Viva-voce*	*Cr: 9*

Course Overview:
This course is intended to provide skills for designing a single use, small span and single-storey buildings.
Objectives of the Course:
To develop abilities in design in the context of user requirements.

Expected Skills / Knowledge Transferred: Use of standards, handling of space, and application of knowledge gained from other subjects in design.

Course Contents:

The design issues to be addressed:
Various functions and their spatial implications.
Formulations of concept.
Anthropometry and furniture layout
Horizontal circulation
Interior volumes and space articulation through different materials.
Integration of form and function.

The list of suggested topics to be covered as design problems:

Balwadi, Kindergarten School, Primary Health Centre, Doctor's Clinic, small Cafeteria, Highway Restaurant, Village Post Office, Bank extension counter, Police Station, Architect's Office, Departmental Store, School Gymkhana and Youth Club etc.

Necessary theoretical inputs to be given highlighting the norms and design issues.
The topics not covered as design problems

will have to be covered by the Studio faculty members through lecture/slide show sessions and site visits.

At least two major exercises and two minor design/time problems should be given. The final submission shall necessarily include a model for at least one of the two main problems.

Note: In end exam which is a viva-voce the students have to present the entire semester work for assessment.

Reference books:

Chiara Joseph de and Others. Time Savers Standards of Building Types. McGraw – Hill, 1980.
Kirk, Paul Hayden and Sternberg, D. Eugene. Doctors Offices and Clinics, 2nd ed. Reinhold Pub., USA, 1960.
Neufert, Ernst. Ernst Neufert Architects Data, Granada Pub. Ltd., London, 1970.
Pevsner, Nikolaus. A History of Building Types. Thames and Hudson, London, 1976.
Shah, S. Charanjit. Architects Hand Book Ready Reckoner. Galogotia Pub. Co., New Delhi, 1996.

AR 3.2 ARCHITECTURAL DRAWING AND GRAPHICS – III

L/s: 4/Wk	*Int: 50*	*End Exam: 50*	*Total: 100*	*End Exam: 5hrs*	*Cr: 4*

Course Overview:
The course is intended to develop the techniques of architectural rendering, graphic skills required for effective presentations and documentation techniques.
Objectives of the Course:
To impart the skills of composition, rendering and documention
Course Contents:
Introduction to Pictorial Views:
Isometric, Dimetric and Trimetric Views, Oblique View etc.

Unit –I
Perspective:
Characteristics of perspective drawings: perspectives of simple geometric solids and spaces and complex geometries. Advanced examples in one point or parallel perspective, two point or angular perspective, introduction to three point perspective.

Unit-II
Rendering techniques:
Introduction to surfaces and media, observation, recording and basic representation techniques in different media through drawing pencil, pen, brush,

charcoal, crayons etc.
Introduction of rules of composition, color study, values, tones and general approach to rendering, Entourage, Treatment of sky, clouds, landscape elements, human figures, foreground and surroundings, shadow projections in renderings.

Unit-III
Graphic skills and Presentation Techniques:
Page layout and Composition grids; Illustration techniques; Portfolio design and formats; Digital techniques in graphics

Reference books:

David E. Carter, The Big Book of Design, David E. Carter Books
Joyce Rutter Kaye, **Design Basics**, Rockport.
Graphics Book, Rotovision
Ellen Lopton and Jennefer Cole Phillips, Graphic Design The New Basics, Princton Architectural Press
Atkin, William W, Corbelletti, Raniero and Firore, R. Vincent. Pencil Techniques in Modern Design, 4th ed. Reinhold Pub. Corporation, New York, 1962.
Bellings, Lance Bowen. Perspective-Space and design.
Burden, Ernest. Architectural Delineation: A photographic approach to presentation, 2nd ed. McGraw-Hill, Inc., New York, 1982.
Conli, Claudius. Drawings by Architects.
Hagarth, Paul. Drawing Architecture.
Pranchlay, H. Perspective

AR 3.3 BUILDING CONSTRUCTION-III

L/s: 4/Wk	*Int: 50*	*End Exam: 50*	*Total: 100*	*End Exam: 5hrs*	*Cr:4*

Course Overview:
The course focuses on understanding the potentials as well as shortcomings of RCC as a building material.

Objectives of the Course:
To introduce and expose the students to various ways in which RCC is used in building construction. The course intends to impart the theory of reinforced concrete construction (in conjunction with the Theory of Structures which is a separate course), and practical knowledge through site visits to the construction sites.

Course Contents:

Unit - I

Introduction to RCC: Understanding the properties and characteristics of RCC. Its advantages and disadvantages. Cast-in-situ and pre-cast constructional methods in RCC.

Unit - II

Understanding the structural components of a typical RCC frame structure with reference to their location, junctions, load transfer and design.

Unit III

Substructure: RCC foundations – isolated footing (rectangular and trapezoidal footings), pile foundation, combined footing, raft foundation.

Unit – IV

Superstructure: RCC columns – different shapes, different combinations and loading conditions (axial, bending, non axial), slenderness factor. RCC beams - Single and doubly reinforced beams, T and L beams, continuous beams, lintels and brackets. RCC slabs – One way and two way slabs.

Unit - V

Miscellaneous: RCC staircases and ramp – Waist slab and folded plate staircases. RCC Balconies, chajjas etc.

Unit VI

Advanced concepts: Flat slab, coffered slab, diaphragms, retaining walls and water tanks.

Note: This is a studio subject and students should be made to prepare construction drawings as studio exercises along with the theoretical inputs. The studio work should be supplemented with appropriate side visits.

References:

Bindra and Arora. Building Construction: Planning Techniques and Methods of Construction, 19th ed. Dhanpat Rai Pub., New Delhi, 2000.

Foster, J. Stroud. Mitchell Building Construction: Elementary and Advanced, 17th ed. B.T. Batsford Ltd, London, 1963.

McKay, W.B. Building Construction Metric Vol. 1 – IV, 4th ed. Orient Longman, Mumbai, 2005.

Sushil Kumar. T.B. of Building Construction, 19th ed. Standard Pub. Distributors, Delhi, 2003.

AR 3. 4 STRUCTURAL MECHANICS –III

L/s: 3/Wk	*Int: 50*	*End Exam: 50*	*Total: 100*	*End Exam: 3hrs*	*Cr: 3*

Objectives of the Course:
To impart sound knowledge of strength, behavior of various materials and techniques in the analysis of structures.

Expected Skills / Knowledge Transferred:
Ability to analyze the standard members in structures.

Course Contents:

Unit – I
Continuous beams: Shear Force and Bending Moment diagrams for continuous beams using theorem of three moments (excluding derivation and sinking of supports).

Unit – II
Moment Distribution Method: Introduction, carryover, relative stiffness, application of Moment Distribution Method to Continuous beams, single bay frame without sway (excluding sinking of supports)

Unit – III
Kani's method / Rotation Contribution Method: Introduction, rotational factors, application of Kani's method for beams and frames (single bay with out sinking of supports).

Unit – IV
Columns and Struts: Buckling and crushing failures, types of end conditions, Euler's theory of long columns for different end conditions and equivalent length derivations, Rankine's equation, Derivation and application of the basic formula.

Unit-V
wind pressure on chimneys ,Maximum & Minimum intensities of stress at bottom of chimneys Retaining walls subjected to earth pressure.

Unit – VI
Torsion of Shafts: Assumptions, Derivation of basic equation $T/J = G\theta/l = fs/R$, Power Transmitted by shafts, application of basic equation to shafts.

Unit – VII

Arches: Determination of horizontal thrust, bending moment and radial shear for three-hinged parabolic and segmental arches with supports at same level and different levels.

Reference books:

A.K.Jain and Punmia. Strength of Materials
Ramamrutham, S. Theory of Structures, 17th ed. Danpat Rai Pub. Co. Ltd., New Delhi, 2005.
Reddy, C.S. Basic Structural Analysis, 18th ed. Tata McGraw Hill Pub.Co.Ltd., New Delhi, 1991.

AR 3. 5 HISTORY OF ARCHITECTURE– II

L/s: 3/Wk	*Int: 50*	*End Exam: 50*	*Total: 100*	*End Exam: 3hrs*	*Cr: 3*

Course Overview:
History of Architecture to be studied as development of building forms in response to social, religious, aesthetic and environmental
factors. The study should focus on the three dimensional forms, plan forms, façade organization, structural solution, construction methods and ornamentation. The study should focus on the general trends and not on specific examples of buildings.

Objectives of the Course:

- To expose the students to a wide spectrum of architectural styles ranging from pre historic to pre independence period in India.
- To explain the students the evolution of architecture in relation to time with special emphasis to social, religious and environmental factors.
- To make the students understand the developments in the construction technology in different periods.

Expected Skills / Knowledge Transferred:

1) Acquire knowledge to identify the common characteristics among the monuments of a particular style.
2) Acquire graphic skills to present a building, analyze its elements and explain the composition.
3) Acquire knowledge on good practices of architecture in the past.

Course Contents:

Unit – I
Development of Vedic Architecture, Development of architecture in India and rest of Asia in Buddhist Architecture

Unit – II
Evolution of Hindu temple form, early rock cut examples; Early Chalukyans.

Unit – III
Development of Hindu Architecture: Nagara style in Orissa, Kahjuraho, Gujarat etc.

Unit – IV
Development of Hindu Architecture: Dravidian style in Pallava, Chola, Pandya periods.

Unit – V
Development of Hindu Architecture under late Chalukyans, Development of Jain Architecture.

Unit-VI
Islamic Architecture in India: Early Saracenic School in India: Imperial school at Delhi

Unit-VII
Islamic Architecture in India: Provincial styles at Gujarat, Deccan, Bengal, Moghul Architecture in India.

Reference books:

Brown, Percy. Indian Architecture: Buddhist and Hindu Periods. D.B. Taraporevala Sons and Co., Mumbai, 2003.
Grover, Satish. The Architecture of India. Vikas Pub. House Pvt. Ltd., Ghaziabad, 1980.
Rowl, Benjamin. Art and Architecture of India.
Tadgell, Christopher. The History of Architecture in India: from the Dawn of Civilization to the End of the Raj. Om Book Service, New Delhi, 1990.
Vistara. The Architecture of India

AR 3.6 BUILDING SERVICES – I

L/s: 4/Wk	*Int: 50*	*End Exam: 50*	*Total: 100*	*End Exam: 3hrs*	*Cr:4*

Course Overview:
Understanding the significance, design and functioning of water and sewerage systems as essential components in building design and site planning.

Objectives of the Course:

To introduce and expose the students to various ways to provide information on the principles and appurtenance of water supply and sanitation systems.

Expected skills and knowledge transferred: To enable students to design sanitary and water supply systems for buildings, and prepare water supply and drainage plans for building sites.

Course Contents:

Water Supply

Unit- I
Introduction to water supply and sanitation. Traditional sources of water supply and sanitation. Classification of water based on its usage.

Unit – II
Elements of public / private water supply system, Different sources of water supply such as wells, reservoirs, etc. Water and its qualities, pumping and Distribution

Unit – III
Types of fittings like taps, bathtubs, showers, jets, cocks, valves, electrical fixtures, etc. Faucets for kitchens, bathrooms and toilets. Check valves, foot valves, sump pump check valves, and pressure test gauges.

Unit – IV
Building service connections, cold and hot water distribution systems in buildings and their design, materials, joints, fittings and valves (gate, flap, ball, flush valves etc.). Direct and indirect systems, individual water supply, special installation in multistoried buildings. Special emphasis on city level distribution of water.

Sanitation
Unit – V
Conventional water treatment – sedimentation, coagulation, filtration and disinfection. Distribution system, sanitary, storm and combined sewerage system. Design of sewerage systems, Location of sewage systems, conventional wastewater treatment, activated sludge, trickling filters etc.

Unit – VI
Design of drainage and vent pipes, system for low-rise and high-rise buildings, building drains, sewers, gullies, inspection chambers, manholes, connection to public sewer, cross connections, ferrule, water meters, stopcocks, bib cocks etc.

Unit VII
Types of fixtures and materials- wash basins, water closets, urinals, bidets, sinks etc. Conditions of flow in building drainage pipes, traps, vents and their material

specifications. Over-head and under-ground reservoirs. Details study of Independent House and Apartment

Unit –VIII

Waste -water disposal systems, septic tank and its design, soil absorption system, alternatives, solid wastes collection and removal from buildings. On-site processing and disposal methods. Aerobic and Anaerobic decomposition, purifying capacity of water bodies. Biochemical Oxygen Demand

Unit – IX

Roads and Pavements – Different types, water bound macadam, tar bitumen, asphalt and Cement concrete roads, soil stabilization, types of paving-murram, brick, and stone paving. Drainage of roads, sub-drains, culverts, ditches and gutters.

References:

Husain, S.K. T.B. of Water Supply and Sanitary Engineering, 3rd ed. Oxford and IBH Pub. Ltd., New Delhi, 1994.

Kshirsagar, S.R. Water Supply Engineering, 6th ed. Roorkee Pub., Roorkee, 1980.
Rangwala, S.C. Water Supply and Sanitary Engineering: Environmental Engineering, 19th ed. Charotar Pub. House, Anand, 2004.

AR 3.7 CLIMATOLOGY

L/s: 3/Wk	*Int: 50*	*End Exam: 50*	*Total: 100*	*End Exam: 3hrs*	*Cr:3*

Course Overview:

Science (tools, data, standards, methods and principles) of building design and site planning as related to climate, particularly to tropical climates as found in India.

Objectives of the Course:

To equip the student with the basic understanding of climatic types in India, and the impact on requirements of building design and site planning; to introduce them to the basic science of building design and site planning for thermal comfort, daylighting and natural ventilation; familiarize them with the data, methods, principles, standards and tools for planning and designing for climatic comfort

Expected Skills / Knowledge Transferred:

The student should be able to 'predict' climatic conditions in a given building (simple residence) and undertake redesign for given parameters

Course Contents:

Note: The topics here to be dealt with keeping in mind Indian climatic conditions.

NBC and BIS guidelines / standards have to be introduced at all relevant contexts.

Unit – I

Introduction to Building Climatology:

Climate and built form interaction. Global Climatic factors, elements of climate, graphic representation of climatic data, Mahoneys Tables, macro and micro climate; challenge of rapid, extreme environmental change

Unit – II

Tropical Climates:

Definition, classification of tropical climates, characteristics of different climatic zones, Design considerations for warm-humid, hot-dry, composite and upland climates.

Unit – III

Thermal Comfort:

Thermal comfort factors, Physiological aspects, Body heat balance, comfort range, comfort charts.

Unit – IV

Heat flow through Buildings:

Basic principles of heat transfer through buildings, performance of different materials, Periodic heat flow.

Unit – V

Sun and the Design process:

Solar geometry, Solar charts, Sun angles and shadow angles, orientation for sun, sun control, design of shading devices, building form and heat gain, basic principles of daylighting, sunlight and glare.

Unit – VI

Natural Ventilation:

Air movement around and through buildings, Orientation for wind, stack effect, Induced ventilation.

Unit – VII

Passive Cooling:

Passive methods of Cooling, roof pond, desiccant cooling,
evaporative Cooling, and earth sheltered buildings etc.

Site Planning (including landscaping) and building planning and design considering climate factors

Detailed appraisal/analysis of climatological performance of an existing residence and or a workplace; followed by redesigning or the same to improve climatological performance.

Reference books:

Koenigsberger, O.H. and Others. Manual of Tropical Housing and Building. Orient Longman, Chennai, 2003.
Konya, Allan. Design for Hot Climates.
Kukreja, C.P. Tropical Architecture. Tata McGraw-Hill Pub. Co. Ltd., New Delhi, 1978.
Markus, T.A. and Morris. E.N. Buildings, Climate and Energy. Pitman Pub. Ltd., London, 1980.
Olgyay and Olgyay. Solar Control and Shading Devices.

FOURTH SEMESTER

AR 4.1 ARCHITECTURAL DESIGN- III

L/s: 9/Wk	*Int: 200*	*End Exam: 200*	*Total:400*	*End Exam: Viva-voce*	*Cr: 9*

Course Overview:
This course focuses on buildings for residential use.

Objectives of the Course:
To enhance the understanding of the complexities of architectural design for residential needs and develop creative design solutions for good living environments.

Course Contents:

The design issues to be addressed:

Organization of functional activities in relation to user requirements and the site.
Relating the system of horizontal and vertical circulation, open spaces, parking etc.
Responding to socio-economic factors such as income levels, privacy, territoriality, interaction etc.
Considering materials, structure and services in relation to the design proposal.
Integration of plan forms and three dimensional compositions.
Detailing for the physically handicapped and the elderly.

The list of suggested topics to be covered as design problems:

Large guest house, students hostel, small hotel, holiday resort, motel, row houses, block of flats and residential complexes at an small scale, housing for specific communities in urban and rural areas such as home for the aged,

fishermen's housing etc.

Necessary theoretical inputs to be given highlighting the norms and design issues. The topics not covered as design problems will have to be covered by the Studio faculty members through lecture/slide show sessions and site visits.

At least two major exercises and two minor design/time problems should be given. The final submission shall necessarily include a model for at least one of the two main problems.
Note: In end exam which is a viva-voce the students are to present the entire semester work for assessment.

Reference books:

Chiara Joseph de and Others. Time Savers Standards of Building Types. McGraw – Hill, 1990.
Neufert, Ernst. Ernst Neufert Architects Data, Granada Pub. Ltd., London, 2000.
Peloquin, Albert. Barrier-Free Residential Design. McGraw-Hill, Inc., New York, 1994.
Pevsner, Nikolaus. A History of Building Types. Thames and Hudson, London, 1976.
Shah, S. Charanjit. Architects Hand Book Ready Reckoner. Galogotia Pub., New Delhi, 1996.
Untermann, Richard and Snall, Robert. Site Planning for Cluster Housing.

AR 4.2 BUILDING CONSTRUCTION-IV

L/s: 4/Wk	*Int:50*	*End Exam: 50*	*Total: 100*	*End Exam: 5 hrs*	*Cr:4*

Course Overview:
The course work deals with principles, methods and construction practices of structural steel work.

Objectives of the Course:
To introduce and expose students to various aspects involving
use of steel for construction activity of buildings and structures.
Course Contents:

Unit - I
Structural Steel Work: General principles and terms defined, standard sections i.e. beams joints, angles, channels, tees, bolts, rivets and welding.

Unit – II

Steel Work Connections
Bolt Connections, Riveting and welding methods.

Unit – III
Steel Members
Columns and stanchions, stanchions or column bases, beam and girders, column and beam connections plate girders, lattice or warren girder.

Unit - IV
Steel Roof Trusses
Steel trusses, types for various spans, tubular steel roofs, monitor roof, north light roof truss, details of steel –roof trusses.

Unit – V
Lantern light, dome light, structural steel practice and drawings as per IS Code.

Unit – VI
Portal frame, Geodesic principles, cable net and tensile structures.

Note: This is a studio subject and students should be made to prepare construction drawings as studio exercises along with the theoretical inputs. The studio work should be supplemented with appropriate site visits.

Reference books:

Bindera and Arora. Building Construction: Planning Techniques and Methods of Construction, 19th ed. Dhanpat Rai Pub., New Delhi, 2000.
McKay J.K. Building Construction Metric Vol. 4, 4th ed. Orient Longman Pvt. Ltd., Mumbai, 2002.
Mitchell. Advanced Structures.
Rangwala, S.C. Engineering Materials: Material Science, 31st ed. Charotar Pub. House, Anand, 2004.

AR 4.3 DESIGN OF STRUCTURES -I

L/s: 3/Wk	*Int: 50*	*End Exam: 50*	*Total: 100*	*End Exam: 3hrs*	*Cr:3*

Course Overview:
This course focuses on structural design of different elements of building in RCC.

Objectives of the Course:
To develop the structural design skills in RCC elements

Course Contents:

Unit – I
Introduction to RCC design, Design Philosophies: Working stress and limit state method, singly reinforced beam, Analysis and Design using both working stress and limit state methods.

Unit – II
Situations where doubly reinforced beams are used, analysis and design of doubly reinforced beam using limit state method only.

Unit – III
T-beams: introduction, analysis and design of T-beam using Limit State method only. Design of shear reinforcement for all types of beams with and without cranking (Limit State method only)

Unit – IV
Slabs: Introduction, Design of One way and two way reinforced slabs (simply supported, Restrained, continuous) by limit state method only.

Unit-V
Design of axially loaded RCC columns and columns subjected to BM about one and two axis using limit state method only.

Unit-VI
Design of stair case (Dog-legged only) using working stress method.
Design of lintels and cantilever beams and slabs using limit state method only

Unit-VII
Design of RCC Isolated footings for columns (Square and Rectangle) - working stress method only.

Unit-VIII
Introduction, to prestressed concrete, Pretensiong & Post tensioning methods, Problems of beams.

Reference books:

A.K.Jain. Reinforced Concrete: Limit State Design, 5th ed. New Chand and Bros., Roorkee, 1999.
Ramamrutham. S. and Narayan, R. Design of RCC Structures, 12th ed. Dhanpat Rai Pub. Co. Pvt. Ltd., Delhi, 1998.

AR 4.4 HISTORY AND THEORY OF ARCHITECTURE-I

L/s: 3/Wk	*Int: 50*	*EndExam:50*	*Total: 100*	*End Exam: 3hrs*	*Cr:3*

Course Overview:
History of Architecture to be studied as development of building forms in response to social, religious, aesthetic and environmental factors. The study should focus on the three dimensional forms, plan forms, façade organization, structural solution, construction methods and ornamentation. The study should focus on the general trends and theories and not on specific examples of buildings.

Objectives of the Course:
To expose the students to a wide spectrum of architectural styles and theory.
To explain the students how architecture evolved in relation to time with special emphasis to social, religious and environmental factors.
To make the students understand the developments in the construction technology in different periods.

Expected Skills / Knowledge Transferred:
1. Acquire knowledge to identify the common characteristics among the monuments of a particular Style.
2.Acquire graphic skills to present a building, analyze its elements and explain the composition.
3. Acquire knowledge on good practices of architecture in the past.

Course Contents:

Unit – I
Influence of Industrial Revolution on building materials, Construction Technology,evolution of new building types andincreasing user requirements.

Unit – II
Characteristic styles of modern architecture up to First World War. Steel structures, Arts and crafts movement, Art Nouveau, Vienna School, Chicago School,
Monumentalism, Expressionism and beginning of RCC. Theories of John Ruskin, William Morris, Henry Vande velde, Otto Wagner, Peter Behrens and Louis Sullivan.

Unit – III
Contributions to Architecture and Theory made by pioneers-Le-Corbusier, Frank Lloyd Wright, Walter Gropius, Mies Van der Rohe in the periods between the Worlds Wars.

Unit – IV
Characteristics of modern architecture after the Second World War. Study of Alvar Aalto, Ero Saarinen, Richard Neutra, Louis I Kahn, Phillip Johnson, etc.

Unit – V
Design theories and contributions of Engineer- architects like Pier Luigi Nervi, Felix Candela, Buckminster Fuller, and Frei Otto.

Unit – VI
Pre-independence architecture in India: Development of secular architecture from the end of the 18th Century to the middle of the 20th Century.

Reference books:

Benevolo, Leonardo. History of Modern Architecture: the tradition of modern architecture Vol.1. Routledge and Kegan Paul**,** London, 1971.
Frampton Kenneth Modern Architecture: A Critical History
London: Thomes & Hudson,1980
Benevolo, Leonardo. History of Modern Architecture: the modern movement Vol.2. Routledge and Kegan Paul, London, 1971.
Curtis, J.R. William. Modern Architecture since 1900. Prentice-Hall, Inc., New Jersey, 2002.
Giedion, Sigfried, Space, Time and Architecture: the growth of a new tradition, 4th ed. Harvard Universtiy Press, Cambridge, 1962.
Hilberseimer, L. Contemporary Architecture: Its roots and trends. Paul theobald, Chicago, 1964.
Pevsner,Nicolaus Oersonem: Pioneers of Modern Design from William Morris to Walter Gropius-.
Sharp, Dennis. Twentieth Century Architecture: A Visual History, Facts On File. New York, 1991
Norberg schul C., Principles of Modern Architecture, London Andreas papadakes,2000.

AR 4. 5 BUILDING SERVICES-II

L/s: 3/Wk	*Int:50*	*End Exam: 50*	*Total: 100*	*EndExam:3 hrs*	*Cr: 3*

Course Overview:
Study of Building Services and Utilities generally installed in buildings and their role in enhancing utilitarian value of the buildings. The study to focus on understanding basic working, principles, terms and definitions, as well as practical aspects and solutions utilized in architecture.

Objectives of the Course:
To gain knowledge regarding layout of utilities and services in the building envelope, functioning of service and their applications in building.

Course Contents:

Unit – I

Fundamental principles of Electricity: Voltage, Amperage, wattage, generation, and transmission of power, distribution in cities, HT and LT consumers, Transformers and load calculations, Single and three phase connections, Indian Electricity rules., Types of Generators, UPS

Unit – II

Building Wiring System: Service wires, metering, light and power circuits. electrical safety devices, MCB, ELCB, distribution boards, wiring methods, ISI Codes and standard materials, Conductors, switch boards, electrical points in general building, pipe earthing, plate earthing.

Unit – III

Electric layouts: Electrical symbols, NBC, preparation of layouts for residences, offices, construction and working of at least six domestic appliances, location in buildings, Types of electric motors and pumps.

Unit – IV

Building lighting system: artificial illumination, various types of lamps, advantages and disadvantages, method of lighting, direct, semi direct, indirect, concealed lighting, spot lighting, task lighting, decorative lighting, rope lights, neon lights, flood lighting, yard lighting, under water lighting.

Unit – V

Lighting Calculation: NBC standards, nominal illumination levels in building interiors, lux, lumen, intensity, lighting schemes.

Unit – VI

Principles of air-conditioning: IAQ, comfort conditions, gas laws, refrigeration cycle, a/c equipment, compressor heat exchangers, condenser, evaporators,

Unit – VII

Types of Air-conditioning: single zone, multi zone, window air conditioners, split air conditioners, ductable air conditioners, package system and central air conditioning,
all air systems and chilled water systems.
a/c plant room, AHU's
Building ducting, diffusers and grills, FC units.

Reference books:

Electrical wiring and Contracting (Vol.1 to Vol.4), London The New era Publishing Company.

Dr. Frith Abnwos and others, Electrical Engineering hand Book
William. J. Guinnesss, Mechanical and electrical Equipment for Buildings, New York: Willey
Bovay. H.E., Handbook of Mechanical and Electrical Systems for Buildings New York: MC Graw Hill

AR 4.6 LANDSCAPE DESIGN AND SITE PLANNING

L/s: 4/Wk	*Int:50*	*EndExam:50*	*Total:100*	*End Exam: 3 hrs*	*Cr: 4*

Course Overview:
This course introduces students to landscape design and site planning and relate it to design and planning of built environments. It provides an overview of development of landscape design, site studies, plant studies and application of the knowledge at various levels of design.

Objectives of the Course:
1. To develop a conceptual understanding of landscape design and site planning principles.
2. To develop skills in integrating landscape design with built environments.

Course Contents:

Unit – I
Introduction and History of Landscape Architecture. Introduction to landscape Architecture and Role of Landscape design in built environment.
A brief review of Landscape Design and garden design in history in various regions Persian, Spanish, Italian, French, Moghul, English, Japanese Garden styles.
Changing perception of mans relationship with nature in various phases of history and its influence on environment.
Evolution of concepts in landscape design after the industrial revolution leading to new theories in integrating built spaces to open spaces. Increasing awareness of ecological variables in landscape design.

Unit - II
Site Studies and Site Planning
Principles of site Planning and land use; review of definition applied in typical landscape development situations.
Site survey and appraisal – understanding different site characteristics – topography, vegetation, Hydrology, Access, Surroundings etc. documents, site characteristics and establishing relationship with design / Architecture Programme requirements.
Philosophical and design issues related to site development – sitting of buildings,

spatial and contextual relationships of built and outdoor space and circulation, site and its relationship to surroundings. Importance of climate and social factors in development of site.
Process of design development. Identifying functional requirements of site.
Development of site by mutual exploitation of forms and use of grading principles.

Unit -III
Plants and Design
Introduction to study of plants in relation to landscape design and architecture. An overview of use of plants in history.

Study of Plant material – Botanical Nomenclature anatomy and physiology of plant growth study of trees, shrubs, ground cover, indoor plants in Indian context.

Design with plants – Basic principles of designs. The physical attribute of plants and relation to design. Appearance, functional and visual effects of plants in landscape design and built environment.
Selection and management of plant material in relation to built environment.

Unit -IV
Elements in Landscape Design
Use of landform, water and vegetation in landscape design.
Hard landscapes: design of paths, roadways streets, terraces etc and use of land form effectively.
Soft landscapes: design of lawns, shrubs, hedges, trees – in relation to buildings and other landscape elements.
Design concepts related to use of sculpture, outdoor lightings, Architectural feature, street furniture and grouping them into meaningful compositions for visual and functional effects.

Unit -V
Landscape Construction and Services
Study of landform its technical expression through grading plan, sections and earthwork computations.
Irrigation systems – sprinkler trickle irrigation, drip irrigation and laying irrigation networks.
Construction of structure in landscape circulation roads, parking, paths, level changes – walls, steps lamps, construction of screens, trellis, wall fences gales decks, pools etc.

Unit -VI
Contemporary concepts and concerns
Contemporary attitude to development and design of open spaces – Urban landscape, Parks, Rural landscape etc.
Introduction to concepts of green architecture and micro climate planning. The

role of landscape components in modifying micro climate with respect to temperature, humidity, precipitation and percolation.

Assignments
Simple exercises in using plants and landscape elements

Studio exercise emphasizing relationship between built form and outdoor areas and site planning issues.

Reference books:

Blake, Alan. Landscape Construction and Detailing. B.T. Batsford Ltd., London, 1996.
Colvin, Brenda. Land and Landscape.
Hacheat, Brian. Planting Design.
Harris, C.W. and Dines, T. Nicholas. T.S.S for Landscape Architecture. McGraw Hill, New York, 1995.
Laurie, Michael. An Introduction to Landscape, 2nd ed. Prentice Hall, New Jersey, 1986.
Lynch, Kevin. Site Planning. MIT Press, Massachusetts, 1962.
John I.Mutloch. Introduction to Landscape Design, ,2nd ed.John Wiley & Sons,Inc,New york,2001
Santapau. H. Common Trees. National Book Trust, New Delhi, 1981.
Trivedi, P. Pratibha. Beautiful Shrubs. Indian Council of Agricultural Research, New Delhi, 1990.

AR 4.7 COMPUTER APPLICATIONS-II

L/s: 4/Wk	*Int: 50*	*End Exam: 50*	*Total: 100*	*End Exam: 3 hrs Practical*	*Cr:4*

Course Overview:
To orient the student to create two and three-dimensional objects in space with special emphasis on presentation and visualization of interiors and exteriors of building using different rendering techniques using CAD.

Objectives of the Course: To explore computer modeling techniques using CAD

Expected Skills / Knowledge Transferred:
To learn basic skills of modeling, scripting (rendering) in CAD, and to exercise methods of interface within CAD.

Course Contents:

Unit - I

Starting Auto CAD: Introduction to the menu, starting drawings from scratch, Creating and using templates-starting drawings with setup wizards. Saving and closing a file.

Unit - II

Using co-ordinate system: The UCS, Working with Cartesian and polar co-ordinate systems, using displays with key shortcuts.

Unit – III

Setting up the drawing environment: Setting the paper size, Setting units, setting grid limits, drawing limits, Snap controls, Use of paper space and model space.

Unit - IV

Basic commands dealing with drawing properties: Layer control,
change properties, line weight control, etc.

Unit - V

Inquiry methods: Using database information for objects, calculating distance and angle, areas etc.

Unit - V1

Dimensioning commands and Blocks: Dimensioning the objects in linear, angular fashions along with quick time dimensioning etc. Creating and working with blocks, creating symbols, use of blocks in creating a layout of a residential area-one exercise to be done as lab assignment.

Reference books:

Teyapoovan, T. Engineering Drawing with Auto CAD 2000. Vikas Pub. House Pvt. Ltd., New Delhi, 2000.
Parker, Daniel and Rice, Habert. Inside Auto CAD Daniel. 1987.
Georgeomura, Auto CAD Release 2000.
AutoCAD 2010 Textbook-AutoCAD 2010: A Problem-Solving Approach-Customizing AutoCAD 2010
Beginning AutoCAD 2007- By Bob McFarlane, Robert McFarlane

FIFTH SEMESTER

AR 5.1 ARCHITECTURAL DESIGN – IV

L/s: 9/Wk	*Int: 200*	*End Exam: 200*	*Total:400*	*End Exam: Viva-voce*	*Cr: 9*

Course Overview:
This course focuses on institutional design - facilities required and detailing design for institutions in urban context.

Objectives of the Course:
To enable the student to design institutions within the given conditions.

Expected Skills / Knowledge Transferred:
Detailing skills required for the design of institutions in urban contexts.

Course Contents:
The following issues relating to institutional design will be addressed to:

- Nature of contemporary institutions, correlation to urban structure.
- Development control and urban infrastructure affecting design.
- Various attitudes to building in urban context.
- Integration of function: movement, climate, acoustics, structure and services into the group of buildings.
- Landscaping and site planning
- Institutional character from abstract to detail.
- User behavior and requirement pertaining to the physically handicapped.

Necessary theoretical inputs to be given highlighting the norms and design issues. The topics not covered as design problems may be covered by the studio faculty members through lecture/slide shows. And site visits.

The topics to be covered as design problems may include:

- Institution of learning –colleges with its various departments such as medical, engineering. Law, business, music and dance colleges, vocational training institutions etc.

- Institutions of health such as hospitals, reformatories and rehabilitation institutes for the disabled.

- Institutions of research in various disciplines.

- Administrative and Legal institutions such as high courts, secretariat, development authorities, directorates etc.

At least two major exercise (one problem should be pertinent to the urban fabric) and two minor design/time problems should be given and the final submission shall necessarily include a model for at least one of the two main problems.

Note: In end exam which is a viva-voce the students have to present the entire semester work for assessment.

Reference books:

Chiara Joseph de and Others. Time Savers Standards of Building Types. McGraw – Hill, 1990.
Hand Book of Planning and Design Data.
Kirk, Paul Hayden and Sternberg, D. Eugene. Doctors Offices and Clinics, 2nd ed. Reinhold Pub., USA, 1960.
Konya, Allan. Libraries: A Briefing and Design Guide. The Architectural Press, London, 1986.
Neufert, Ernst. Ernst Neufert Architects Data. Granada Pub. Ltd., London, 2000.

Pevsner, Nikolaus. A History of Building Types. Thames and Hudson, London, 1976.
Rosenfield, Isadore. Hospital Architecture and Beyond. Van Nostrand Reinhold,New York, 1969.
Stone, G. Louis. Institutional Buildings Architecture of Controlled Environment.
Tergsone, W.R. Practical Laboratory Planning.
Wild, Friedemann, Libraries for Schools and Universities. Van Nostrand Reinhold,New York, 1972.

AR 5. 2 BUILDING CONSTRUCTION – V

L/s: 4/Wk	*Int: 50*	*End Exam: 50*	*Total: 100*	*End Exam: 5 hrs*	*Cr:4*

Course Overview:
Course focuses on issues related to failures in buildings, decay and damage, approaches for maintenance, repairs and renovation of buildings.

Objectives of the Course:
To create awareness among the students regarding problems related to old buildings and methods to mitigate their problems.

Course Contents:

Unit - I

Failures:

Introduction to building failures: causes of decay and damage in old buildings, issues of maintenance and repair. Preliminary inspection and general observation, decayed elements difference between decay and damage.

Unit - II

Timber:

Moisture content, treatment prior to installation, factors reducing strength of timber, approach to repair and to the timber roofing system.

Unit - III

Bricks:

Strength reducing factors in brick work, effect of ageing, weathering, temperature variation of brick-work, joints and cracks, construction defects, repair and maintenance.

Unit - IV

R.C. Concrete:

Mixing methods at site, structural design for repairs, causes of failure in concrete structures, pressure-grouting.

Unit - V

Methodical approach to Repairs:

Cracks over openings, sinking and sagging balconies, repairs to decayed floors and floor joints, example: Jack arch., madras roof terrace, foundation sinking, repairs to walls. Propping, strutting and under pinning.

Unit - VI

Unusual problems:

Repairs to large span rooms, water proofing the roof terraces, leakages from toilets, case studies and site visits.

Note: This is a studio subject and students should be made to document the problems in old buildings through inspections and propose remedial measures by preparing construction drawings as studio exercise with the theoretical inputs given through lectures.

Reference books:

Feilden, M. Bernard. Conservation of Historic Buildings. Butterworth Scientific, London, 1992.

McKay, W.B. Failures and Repair of Concrete Structures Vol. IV.

Raikar, R.N. Learning From Failures: Deficiencies in Design. Construction and Service, R and D Centre, New Bombay, 1987.

AR 5.3 DESIGN OF STRUCTURES-II

L/s: 3/Wk	*Int:50*	*End Exam: 50*	*Total: 100*	*End Exam: 3 hrs*	*Cr:3*

Course Overview:
Course focus is on Structural Design of elements of Industrial Building in Steel.

Objectives of the Course:
To develop the structural design skills of the student in steel.

Expected Skills / Knowledge Transferred: Develop capability to design Steel structures.

Course Contents:

Unit – I
Design of simple beams including check for shear and deflection for laterally supported and unsupported conditions, analysis of simple beam from strength and stiffness considerations.

Unit – II
Design of built up beams with flange plates only, Introduction to plate girders (No Design calculations)

Unit – III
Axially loaded tension members: introduction, net effective areas, analysis and design of tension members including rivet and welded connections, (L-Angle and T-section only)

Unit – IV
Columns: Analysis and design of axially loaded steel columns using single I-section, 2 channels placed back to back and toe to toe, 4-angles etc., including lacing system.

Unit-V
Design of slab base and gusseted base for axial loads (with out moments) for different columns.

Unit-VI
Design of grillage foundation for isolated columns only

Unit-VII
Purlins: Introduction, Dead load, live load and wind loads, design of angle purlin and I-section purlin.

Unit-VIII
Bracket Connections, Riveted & Welded Connections design of Joints.

Reference books:

Ram Chandra. Design of Steel Structures Vol. I, 10th ed. Standard Book House, Delhi, 1999.
Dayaratnam, P. Design of Steel Structures. Wheeler Pub., Allahabad, 1992.
Ramamrutham, S. and Narayanan, R. Design of Steel Structures, 4th ed. Dhanpat Rai and Sons, Delhi, 1995.

AR 5.4 HISTORY AND THEORY OF ARCHITECTURE-II

L/s: 3/Wk	*Int:50*	*End Exam: 50*	*Total: 100*	*End Exam: 3 hrs*	*Cr:3*

Course Overview:
The course is designed to study the contemporary developments in Architecture and its impact on built form, structure, construction methods etc.

Objectives of the Course:
To orient the students to various developments in the field of architecture for a greater understanding of trends in contemporary architecture.

Course Contents:

Unit – I
Contemporary trends in architecture of India after Independence. Influence of Le Corbusier and. Louis.I.Khan.

Unit – II
Theory and works of Achyut Kanvinde, J.A. Stein, Habib Rehman etc.,

Unit - III
Contributions made by Pioneers - Charles Correa and B.V. Doshi. Anant Raje, Raj Rewal

Unit – IV
Design Theories and works of contemporary architects - Uttam Jain, Hasmukh Patel, including Chandravarkar and Thacker, Jaisim, Anil Laul, Shirish Beri, Romi Khosla, Ranjit Sabiki, Shashi Bhooshan and Sanjay Mohe.

Unit – V
Familiarisation of architecture at Auroville and Laurie Baker's work in Kerala.

Unit – VI
Contemporary trends in the rest of the world architecture. Theory of Post Modernism.

Unit – VII
Design Theories and works of Charles Moore, Michael Graves, Richard Meyer, Aldo Rossi, Cesar Pelli, I.M. Pei, Yamasaki, Peter Eisenmann etc.

Unit – VIII
Design Theories and works of Hassan Fathy, Geoffery Bawa, Norman Foster, Renzo Piano, Richard Rogers, Frank Gehry, Zaha Hadid, Santiago Calatrava, Tadao Ando etc.

Reference Books:

Bahga, S.S: Post Independent Architecture.
Bhatt, Vikram and Scriver, Peter. Contemporary Indian Architecture After the Masters. Mapin Pub. Pvt. Ltd., Ahmedabad, 1990.
Curtis, J.R. William. Modern Architecture since 1900. Prentice-Hall, Inc., New Jersey, 2002.
Jencks, Charles. The Language of Post-Modern Architecture, 4th ed. Academy Editions, London, 1984.
Frampton, K Tad Ando- buildings, Projects Writings, New York Rizzoli, 1984.

AR.5.5 BUILDING ESTIMATING COSTING AND SPECIFICATIONS

L/s: 4/Wk	*Int: 50*	*End Exam: 50*	*Total: 100*	*End Exam: 3 hrs*	*Cr:4*

Course Overview:
The course deals with various methods of quantity surveying, rate analysis of building and valuation and specifications for different materials used.

Expected Skills / Knowledge Transferred:
Techniques of estimating and costing and writing specification related to building construction.

Course Contents:

Unit - I
Quantity Surveying: Introduction - Definitions and terms used, principles, units of measurements. Methods of preparing approximate estimates (plinth area and cubic

content method), basic differences and advantages.

Unit - II

Detailed Building Estimation: Method of obtaining detailed quantities of building items (center line method, long wall and short wall method) PWD System to be followed.

Unit - III

Detailed estimation for load bearing structures framed structure (ground floor only)

Unit - IV

Example and exercise in obtaining all items from excavation to finishes.

Unit - V

Preparing approximate estimates for services like water supply, plumbing, electrical work, mechanical equipment and air conditioning. (for residential building).

Unit - VI

Rate analysis: Cost of materials and labour for various works, data sheet for different items of works, different methods of execution i.e. piece work, daily basis, lump sum, labour rates and percentage etc

Unit - VII

Valuation – Introduction – state the purposes of valuation of building explain the terms, market value, book value, capital cost, capitalized cost, year's of purchase, list out various methods of estimating the depreciation of building properties, calculate the value of the property by different methods.

Unit-VIII

Specifications: Definition, purpose and importance of specifications, General or brief specifications, Detailed specifications, writing of specifications, for items like earthwork excavations, foundation, CRS masonry, DPC, PCC, RCC, brickwork, doors and windows (wooden), mortars, plaster, painting, flooring like terrazzo flooring and tiles, ceramic tiles, marble, granite, distemper, snowem, glazing, specification, writing to include materials, tests pre and post installation, modes of measurements.

Reference books:

Datta, B.N. Estimating and Costing in Civil Engineering: Theory and Practice, 23rd ed. UBS Pub. Distributors Ltd., New Delhi, 1993.

Bride, G.S. Estimating and Costing, 2nd ed. Dhanpat Rai and Sons, Delhi, 1982.

Rangwala, S.C. Valuation of real Properties, 6th ed. Charotar Pub.

6 House, Anand, 2003.

Standard Specification and rates, Government of Andhra Pradesh,Government Press, Hyderabad
Indian Standards Institution. National Building Code of India 1983. Indian Standards Institution, New Delhi, 1984.
Lerrs, Jack. Engineering Construction Specification.
Macey, W. Frank. Specification in Detail, 5th ed. Technical Press ltd, London, 1955.
Lewis, R. Jack. Building Construction Specifications. Prentice-Hall, Inc., New Jersey, 1975.
Govt. of Maharashtra. Standard Specifications, Government Press, Nagpur, 1972.

AR 5.6 ENVIRONMENTAL STUDIES

L/s: 3/Wk	*Int:50*	*End Exam: 50*	*Total: 100*	*End Exam: 3 hrs*	*Cr:3*

Course Overview:
A compulsory subject for all the undergraduate students of various discipline highlights significance of maintaining balance and sustainability of various components of the environment.

Objectives of the Course:
To sensitize the students towards sustainable environment.

Course Contents:

Unit – I

Environmental studies – Introduction: - Definition, scope and importance, Measuring and defining environmental development indicators.

Unit - II
Environmental and Natural Resources: Renewable and non-renewable resources - Natural resources and associated problems - Forest resources - Use and over - exploitation, deforestation, case studies - Timber extraction - Mining, dams and other effects on forest and tribal people - Water resources - Use and over utilization of surface and ground water - Floods, drought, conflicts over water, dams - benefits and problems - Mineral resources: Use and exploitation, environmental effects of extracting and using mineral resources, case studies. - Food resources: World food problems, changes caused by agriculture and overgrazing, effects of modern agriculture, fertilizer-pesticide problems, water logging, salinity, case studies. - Energy resources: Growing energy needs, renewable and non-renewable energy sources use of alternate energy sources. Case studies. Land resources: Land as a resource, land degradation, man induced landslides, soil erosion and desertification. Role of an individual in conservation of natural resources. Equitable use of resources for sustainable lifestyles.

Unit - III

Basic Principles of Ecosystems Functioning: Concept of an ecosystem. - Structure and function of an ecosystem. - Producers, consumers and decomposers. - Energy flow in the ecosystem Ecological succession. - Food chains, food webs and ecological pyramids. Introduction, types, characteristic features, structure and function of the following ecosystem:

a. Forest ecosystem b. Grassland ecosystem c. Desert ecosystem
d. Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries).

Unit - IV

Biodiversity and its conservation: Introduction - Definition: genetic, species and ecosystem diversity. Bio-geographical classification of India - Value of biodiversity: consumptive use, productive use, social, ethical, aesthetic and option values - *Biodiversity* at global, National and local levels. - India as a mega-diversity nation - Hot-sports of biodiversity - Threats to biodiversity: habitat loss, poaching of wildlife, man-wildlife conflicts. - Endangered and endemic species of India - Conservation of biodiversity: In-situ and Ex-situ conservation of biodiversity.

Unit - V

Environmental Pollution: Definition, Cause, effects and control measures of:
a. Air pollution b. Water pollution c. Soil pollution d. Marine pollution e. Noise pollution f. Thermal pollution g. Nuclear hazards

Solid waste Management: Causes, effects and control measures of urban and industrial wastes. - Role of an individual in prevention of pollution. - Pollution case studies. - Disaster management: floods, earthquake, cyclone and landslides.

Unit - VI

Social Issues and the Environment: From unsustainable to sustainable development -Urban problems related to energy -Water conservation, rain water harvesting, watershed management -Resettlement and rehabilitation of people; its problems and concerns. Case Studies -Environmental ethics: Issues and possible solutions. -Climate change, global warming, acid rain, ozone layer depletion, nuclear accidents and holocaust. Case Studies. -Wasteland reclamation. -Consumerism and waste products. -Environment Protection Act. -Air (Prevention and Control of Pollution) Act. -Water (Prevention and control of Pollution) Act -Wildlife Protection Act -Forest Conservation Act -Issues involved in enforcement of environmental legislation. -Public awareness.

Unit - VII

Human Population and the Environment: Population growth, variation among nations. Population explosion - Family Welfare Programme. -Environment and human health. -Human Rights. -Value Education. -HIV/AIDS. -Women and Child Welfare. -Role of information Technology in Environment and human health. -Case

Studies.

Unit - VIII

Field work: Visit to a local area to document environmental assets River /forest grassland/hill/mountain -Visit to a local polluted site-Urban/Rural/industrial/ Agricultural Study of common plants, insects, birds. -Study of simple ecosystems - pond, river, hill slopes, etc.

TEXT BOOK:

Erach Bharucha, A Text Book of Environmental Studies for Undergraduate Courses, University Grants Commission.

AR 5.7 COMPUTER APPLICATIONS-III

L/s: 4/Wk	*Int:50*	*End Exam: 50*	*Total: 100*	*End Exam: 5 hrs*	*Cr:4*

Course Overview:

This subject aims to further architectural design skills through advanced computer applications. The subject focus is in the area of computational media techniques and technologies and their impact on architectural design and production. This digital studio critically explores the impact of existing and emerging digital media and software, for advanced digital visualization, simulation and communication as well as associated theories and methods on the conceptualization and development of architecture. Computational media is broadly defined across three categories: digital techniques for visualization; data collection and analysis, building information modeling (BIM) and introduction to physical model making using computer technologies.

Unit –I

Introduction to digital theory and this unit equips students with an understanding of the territory of computational design through its theoretical vocabulary and relevant histories.

Making of Architectural vector diagrams to explore design and for digital communication using vector applications like coreldraw, illustrator etc.

Unit –II

3d modeling and different types of methods in 3 modeling like polygonal modeling , NURBS modeling ,subdivision surface modeling and building information modeling etc to design and test Architectural built environments virtually.

Unit –III

Scene setup involves arranging virtual objects, lights, cameras and other entities on a scene which will later be used to produce a still image or an animation. Image

processing and video editing to create Architectural walkthroughs.
Digital solar studies

Unit –IV

Building information modeling; using 3 dimensional, real-time, dynamic building modeling software to increase productivity in building design and construction. The process produces the Building Information Model (also abbreviated BIM), which encompasses building geometry, spatial relationships, geographic information, and quantities and properties of building components.
Design and documentation using building information modeling application like Revit Architecture, ArchiCAD, Bentley Architecture etc

Unit –V

Introduction to Organic modeling and 3d printing to explore biomimetics and emergent concepts in the field of architecture and design by using advanced computational technologies

References:

Catalytic Formations: Architecture and Digital Design. Ali Rahim
BIM Handbook: A Guide to Building Information Modeling for Owners, Managers, Designers, Engineers and Contractors- Chuck Eastman
Building Information Modeling – Willem Kymmell

SIXTH SEMESTER

AR 6.1 ARCHITECTURAL DESIGN –V

L/s: 9/Wk	*Int: 200*	*End Exam: 200*	*Total: 400*	*End Exam: Viva-voce*	*Cr: 9*

Course Overview:

Course aims at teaching the design of buildings for passive recreation and large span buildings for public uses.

Expected Skills / Knowledge Transferred:

Design vocabulary, enhancement and sensitization of student in design preparation and its relation to structural systems

Course Contents:

Design issues should address the following:

- Environmental and micro climate.
- User behavior and requirements.
- Utility and space enhancement.

- Form and function.
- Circulation: horizontal and vertical.
- Site Planning and Landscape detailing.
- Structural details such as beam framing, Building Services / HVAC etc.
- Design detailing considering the barrier free environment.
- Socio-economic profile of user group.
- Parking details and standards.

Topics considered for design are:
Passive Recreation buildings such as:
- Infotainment center.
- Civic Centre
- Convention Centre.
- Cultural Centre.
- Community Centre.

Public Buildings - Large Span structures**:**
- Bus terminals.
- Multiplex.
- Auditorium Complex.
- Museum and Art Gallery.
- Kalyana Mandapam.

At least two major exercises and one minor design / time problem need to be covered. Design proposal along with a scale model / digital model must be submitted for the two main problems**.**
Sufficient theoretical inputs need to be given highlighting the norms and standards of design parameters.

Note: In end exam which is a viva-voce the students have to present the entire semester work for assessment.

Reference books:
Chiara Joseph de and Others. Time Savers Standards of Building Types. McGraw – Hill, 1980.
Dawes, John. Design and Planning for Swimming Pools. The Architectural Press, London, 1979.
Ruknitein, M. Harvey. Central City Malls.

AR 6.2 WORKING DRAWINGS & DETAILS

L/s: 6/Wk	*Int: 50*	*End Exam: 50*	*Total: 100*	*End Exam: Viva-voce*	*Cr:6*

Course Overview:
The focus of the course is to impart skills related to the preparation of drawings meant for construction work on the site and to improve the students' ability of detailing.

Objectives of the Course:
To impart training in the preparation of working drawings for buildings with specific reference to code of practice as per IS Code No. 962 of 1969 and incorporating specifications as complementary to the working drawings.
To sensitize the students in preparing finer design details required for buildings.

Expected Skills / Knowledge Transferred:
To prepare working drawings for a project and resolve complex aspects in the buildings with appropriate materials and design details.

Course Contents:
Unit - I
Preparation of working drawings: Suitable scales of drawings, methods of giving dimensions: on plans, sections, elevations and other standards.

Unit – II
Preparation of Plans Building marking plan, centerline plan, foundation plan, column centerlines drawings, floor plans, terrace floor plan.

Unit - III
Elevation and Sections
Detailed elevations, detailed sections – at least one through staircase and one through toilet, typical wall profile sections and elevations.

Unit - IV
Details
Layout for Sanitation: and detailed plans, Electrical layout: plans and details, details of staircases, toilets and kitchens.

UNIT – V
Detailing for walls, floors, ceilings through detail drawings to large scale in the form of plans, sections, elevations. Surface Treatment; Cladding, texture treatment.

UNIT – VI
Detailing of architectural elements such as staircase, balcony, verandah, shading devices vertical and horizontal components of the building.

UNIT – VII

Detailing of Doors, windows, storage shelves for frames, shutters, joinery of frame to shutter, shutter to panelling etc. and other fixing details.

UNIT – VIII

Design details appropriate for creating Barrier Free Environment.

*Note: - Students shall prepare at least two working drawing sets, one for a small residence and one for a large building.

Reference books:

Lerrs, Jack. Engineering Construction Specification.

Liebing, W. Ralph and Raul, Ford Mimi. Architectural Working Drawings, 2nd ed. John Wiley and Sons, New York, 1983.

Macey, W. Frank. Specification in Detail, 5th ed. Technical Press ltd, London, 1955.

Shah, M.G., and Others. Building Drawing: with an integrated approach to build environment, 3rd ed. Tata McGraw Hill Pub., co. Ltd, New Delhi,1996.

Standard Specification of Government of Andhra Pradesh State.

Lewis, R. Jack. Building Construction Specifications. Prentice-Hall, Inc., New Jersey, 1975.

Govt. of Maharashtra. Standard Specifications, Government Press, Nagpur, 1972.

Datta, B.N. Estimating and Costing in Civil Engineering: Theory and Practice, 23rd ed. UBS Pub. New Delhi, 1993.

Wakita, Osamu A. & Linde, Richard M. The professional practice of architectural detailing, 2nd ed. New York: Wiley, 1987.

Robert, C. Mc Hugh. Working Drawing Hand Book, New York: VNR, 1977.

AR 6.3 ARCHITECTURAL ACOUSTICS

L/s: 3/Wk	*Int: 50*	*End Exam: 50*	*Total: 100*	*End Exam: 3 hrs*	*Cr:3*

Course Overview:

Acoustics to be studied as a determinant of built form with emphasis on the application to architecture.

Objectives of the Course:

To give an over view of acoustics as a determent of built from.

To equip the students with tools for application of acoustical design in architecture.

Expected Skills / Knowledge Transferred:

The knowledge of specific acoustic requirements of different spaces

Skills to deal with acoustic problems within buildings

Knowledge that enables to deal effectively with specialists and consultants in

acoustics

Course Contents:

Unit – I
Need to study acoustics; pioneers and their works. Acoustics examples from the past: methods used for good acoustics.

Unit – II
Basic theory: Generation, propagation, transmission; reception of sound; Frequency, wavelength and velocity of sound; sound intensity; inverse–square law; decibel scale, decibel addition, small numerical examples in intensity of sound.

Unit – III
Human ear, Loudness perception, subjective effects, characteristics of sound in speech and music, A-weighted sound levels.

Unit – IV
Room acoustics: Behavior of sound in enclosed spaces. Ray-diagrams, sound paths, effect of geometry and shapes, sound adsorption, sound absorption coefficients, Sabine's formula, and resonant panels.

Unit – V
Acoustic design process and different types of buildings, Auditoriums, concert halls, cinema halls, Seminar rooms, lecture halls, class rooms and open offices.
Case study of an auditorium with a report containing drawings and calculations of reverberation time etc. Detailed acoustic design for any one type of building.

Unit-VI
Noise reduction: Sound isolation, transmission loss TL, TL for walls, sound leaks in doors, noise reduction between rooms, Construction details for noise reduction. Noise reduction and built form, Noise reduction through landscapes elements, land use planning for noise control.

Unit-VII
Noise reduction from mechanical equipment, Rubber mounts, vibration isolation guidelines, characteristics of duct system, noise in AC ducts, vibration isolation of pumps and generators.

Unit-VIII
Speech privacy, annoyance, background noise. Communication in open plans, electronic sound systems, loud speaker's layout.

Reference books:

Poella. L. Lestie. Environmental Acoustics.
Moore, J.E. Design of Good Acoustics, The Architectural press, London, 1961.
Burris, Harlod. Acoustics for the Architect.
Lord, Peter and Templetion, Duncan. The Architecture of Sound: Designing Places of Assembly. Architectural Press Ltd., London, 1986.
Egan, David. Architectural Acoustics, MC Graw-Hill Book Ccompany, New York, 1988

AR 6.4 BUILDING CODES AND BYELAWS

L/s: 3/Wk	*Int: 50*	*End Exam: 50*	*Total: 100*	*End Exam: 3 hrs*	*Cr:3*

Course Over View: Deals with codes and regulations tobe applied to building Projects.

Objectives of the Course: To provide an introduction to the codes and bye laws applicable to building projects

Unit-I
Introduction to building codes and norms
Need and nature of building codes, standards and regulations, overview of basic terminologies, nature of building codes in special regions like heritage zones, air funnels, environmentally sensitive zones, disaster prone regions, coastal zones, hilly areas, etc.

Unit-II
Study of building regulations
Overview of administrative processes for obtaining building permits at various stages; General Land-use, building classifications and permissible uses; Norms for exterior and interior open spaces, Setbacks and margins, norms for building projections in open spaces, considerations in FAR, guidelines for open green areas.

Unit – III
Norms for Vehicular Areas
Means of access, norms for access widths for various types of buildings, requirements of parking spaces, standards for turning radius, access to service areas.

Unit-IV
Norms for Fire Protection
Overview of fire protection norms for various building classifications, norms for fire-exit ways and building materials, concept of fire zoning, doorways, stairways, passages and corridors, fire escapes etc.

Unit-V

Norms for building services

Norms for lighting and ventilation, introduction to basic terminologies, components of daylight factor, general principles of opening for good lighting, considerations in artificial lighting; general principles for natural and mechanical ventilation, overview of norms for acoustical and electrical installations.

Unit – VI

Requirements for parts of buildings

Plinth, Habitable rooms, kitchen, wet areas, mezzanine, store rooms, elevated parts like chimneys, parapets etc.

Unit - VII

Introduction to local building byelaws

Study of local administrative provisions for obtaining building permits, architectural control and provision of building services, regulations for super structures, building height regulations, regulations for multi-storied buildings etc.

Reference books:

Bhagiratha Rao, E.L. Land Acquisition Manual in Andhra Pradesh.

Buch, N. Mahesh. Planning the Indian city.

Chand, Mahesh and Puri, Vinay Kumar. Regional Planning in India. Allied Pub. Ltd., Bombay, 1990.

Gallion, B. Arthur and Eisner, Simon. Urban Pattern: City Planning and Design, 5th ed. Van Nostrand Reinhold, New York, 1986.

Hyderabad Urban Development Authority. Hyderabad Urban Development Authority, HUDA, 1981.

Khosla, R.K. Urban and Rural Development in India, Delhi: Indian Publishers & Distributors.

Patterson, T. William. Land-use Planning Techniques of Implementation.

Rama Reddy, Padala and Srinivas Reddy, Padala. Commentates on Land Reforms Laws in Andhra Pradesh.

Rame Gowda, K.S. Urban and Regional Planning. Univ. of Mysore, Mysore, 1972.

Rangwala, S.C. and Others. Town Planning, 18th ed. Charotar Pub. House, Anand, 2003.

Singh, Alok Kumar, and Others (ed). Strategies in Development Planning.

Durga Prasad, M.V. Law of Flats, Apartments and Buildings, 4th ed. Asia Law House, Hyderabad, 1997.

Hyderabad Municipal Bye laws.

Indian Standards Institution. National Building Code of India 1983. Indian Standards Institution, New Delhi, 1984.

Scott, G. James. Architectural Building Codes, New York: Vanstrand Reinhold.

AR 6.5 BUILDING ECONOMICS AND SOCIOLOGY

L/s: 3/Wk	*Int: 50*	*End Exam: 50*	*Total: 100*	*End Exam: 3 hrs*	*Cr:3*

Course Overview:
To introduce the economics and sociological aspects in architecture.

Course Contents:

Unit – I
Brief introduction of general economics through an introductory survey of concepts in micro and macro economics as applicable to building industry as follows.
Micro Economics: The market, budget constraint, choice, demand and supply, uncertainties, equilibrium, technological constraints, profit maximization and cost minimization, monopoly and oligopoly, production welfare and public good.

Macro Economics: GNP, NNP, demand and supply, inflation, interest rate, employment, saving and investment, monitory and fiscal systems and policies.

Unit – II
General discussions on various economic issues such as public versus private participation, equity, labour intensive versus capital intensive projects.

Unit – III
General economics of the basic inputs into building construction- land, labour, capital and materials.

Unit – IV
Financing for projects, sources costs and utility in financing. Agencies and institutions directly and indirectly influencing economic aspects of project.

SOCIOLOGY:

Unit – V
Family as the basic unit of 'Society'. Differences in lifestyles due to regional background, religion, caste, income group, etc. and their implication in Architectural design of the housing units.
Sociological aspects in the history of the evolution of housing / shelter forms.

Unit – VI
Sociological problems of interaction, isolation, privacy, accessibility, conflict, alienation related to the planning and design of different buildings with the references to the people of different age group/population groups.

Unit – VII

Power structures in society – local self government, administrative structures – structure of decision making processes related to building projects at various government and private organizations levels.

Reference books:

Amos Rappoport, House Form and Culture

Wallis, Wilson D and Willey, M.M, Text book of Sociology, 1st ed., Khel Sahitaya Kendra, New Delhi, 2001.

Charon, Joel M. The Meaning of Sociology, 6th ed., Prentice Hall, New Jersey, 1999.

Thio, Alex. Sociology: a brief introduction, 4th ed. Allyn and Bacon, Boston, 2000.

Schaefer, Richard T. Sociology: a brief introduction, 4th ed. McGraw Hill, Boston, 2002.

Bilton, Tony and Oth. Introductory Sociology, 3rd ed. Palgrave, New York, 1997.

Stone, P.A. Building Economy: Design Production and Organisation a synoptic view, 2nd ed., Pergamon Press, Oxford, 1976.

Koutsoyiannis, A. Modern Microeconomics, 2nd ed., ELBS with MacMillan Press, 1994.

Nobbs, Jack and Hopkins, Ian. Economics: a core text, 4th ed. McGraw-Hill, London, 1995.

Teck, Hoon Hian and Oth. Economics: theory and applications, McGraw-Hill, Taiwan, 1998.

Dewett, K.K. Modern Economic Theory, Shyam Lal Charitable trust, New Delhi, 2005.

AR 6.6 HUMAN SETTLEMENTS AND TOWN PLANNING

L/s: 4/Wk Int: 50 End Exam: 50 Total: 100 End Exam: 3 hrs Cr:4

Course Overview:

This course focuses on the review of origin of Human Settlements to the level of understanding the various Town Planning problems.

Objectives of the Course:

To make the student understand about various planning related issues.

Expected Skills / Knowledge Transferred:

Should be in a position to make a neighbourhood plan for 5000 people.

Course Contents:

Unit - I

Historic Evaluation: Brief review of the origin of early human settlements, factors responsible. Development of various settlement forms. Types of settlements

(urban and rural) classification of areas within the urban settlements in terms of types of land uses, densities, administrative division, building types etc. Land use and factors influencing it in urban and rural settlements.

Unit - II

Sociological aspects: Essential elements of society Rural and Urban Communities, Growth of Socio-cultural thought through the ages.
Influence of religion and culture on domestic and civil architecture.

Unit - III

Urbanization: Facts, Theories. Socio-spatial problems of migrants, slums, high and low density housing; high rise living such as isolation, alienation, accessibility, conflicts etc as related to planning and design of buildings in different areas of the city. Social Survey and social research.

Unit - IV

Transportation and communication: potential and limitations of roadways, railways, airways and waterways in the development of a settlement.

Unit - V

Principles of Ekistics: Brief introduction to the theory of "Ekistics". Introduction to the concepts of green belts, satellite towns, neighbourhood, roads in solving some of the problems in urban development. Indian context: Growth pattern of urban and rural settlements; problems and potentials.

TOWN PLANNING

Unit - VI

A brief introduction to the implication of town forms in urban planning and development processes. National, regional, urban, rural, local etc. emphasizing the difference and relationships among them.

Unit - VII

A general and introductory study of inputs, objectives, preparation and outputs of Master plan for a city; land-use classification, features and relationships with transportation. Meaning and use or implication of O-D surveys, desire line diagrams trip generation, attraction, distribution and modal split.

Unit - VIII

Introduction to housing and community facilities; role of F.S.I, densities in housing.

Unit - IX

Basic methodology for planning of industrial areas and recreation areas.

Unit - X

Brief introduction to redevelopment schemes and urban renewal, problem of slum and shanty areas and a review of the concepts regarding solutions: clearance, rehabilitation and improvement.

At least one exercise related to the preparation of a layout for a residential neighbourhood of about 5000 populations.

Reference books:

Bhagiratha Rao, E.L. Land Acquisition Manual in Andhra Pradesh.
Buch, N. Mahesh. Planning the Indian city.
Chand, Mahesh & Puri, Vinay Kumar. Regional Planning in India. Allied Pub. Ltd., Bombay, 1990.
Doxiadis, C.L. Ekistics: Introduction to the science of Human Settlement.
Gallion, B. Arthur & Eisner, Simon. Urban Pattern: City Planning & Design, 5th ed. Van Nostrand Reinhold, New York, 1986.
Hyderabad Urban Development Authority. Hyderabad Urban Development Authority, HUDA, 1981.
Khosla, R.K. Urban and Rural Development in India.
Patterson, T. William. Land-use Planning Techniques of Implementation.
Rama Reddy, Padala & Srinivas Reddy, Padala. Commentates on Hand Reforms Laws in Andhra Pradesh.
Rame Gowda, K.S. Urban and Regional Planning. Univ. of Mysore, Mysore, 1972.
Rangwala, S.C. & Others. Town Planning, 18th ed. Charotar Pub. House, Anand, 2003.
Rappoport, Amos. House, Form and Culture.
Singh, Alok Kumar, & Others (ed). Strategies in Development Planning.

AR 6.7 BARRIER FREE BUILT ENVIRONMENT

L/s: 2/Wk	*Int: 50*	*End Exam: 50*	*Total: 100*	*End Exam: 3 hrs*	*Cr:2*

Course Overview: Indian Disabilities Act, is promulgated in 1995 for the purpose of ensuring equal opportunities to persons with disabilities in society for their development through education, training and rehabilitation services. The principle objective is to ensure their full participation by preventing discrimination and integrating them into the mainstream of society. An Architect plays a very crucial role in this endeavor by designing the needed barrier free environment. The

objective of this course is to acquaint the students of architecture regarding the various provisions and design issues.

Knowledge Transfer /Expected Skills:
Multi sectoral collaborative approaches in design for persons with disabilities and elderly persons / Inculcate skills required for designing for barrier free built environments for physically challenged persons. techniques involved in making such provisions.

Course Contents:

Unit – I
Introduction to Provisions of persons with Disabilities (Equal opportunities, Protection of Rights and Full Participation) Act, 1995, Type of disabilities - Orthopedic, Hearing, Visual Impairments, National Policy for provisions for elderly persons, Concept of equal opportunity, human rights, social justice and empowerment of physically challenged persons.

Unit-II
Introduction to similar efforts in other countries. Initiatives at global and International level for protection of rights of disabled and also elderly person. American disabilities Act 1990 etc.

Unit-III
Information on various types of national Institutes, agencies and professional bodies involved in disabled welfare, associated norms and standards there of. The role of NGO's, professional and outreach.

Unit-IV
Design principles in Architecture for creating environments friendly for various types of physically challenged persons. Educational Institutions, Hospitals, Transportation terminals such as bus, railway stations and airports for barrier free spaces. Study of Standards as given in TSS, TCPO, CPWD, ADA etc., and others.

Unit-V
Provisions in public spaces and site planning – parks, play grounds, public transportation, parking lots, Details of side walks, road intersections, access to public toilets, in, ,.

Unit-VI
Provisions in design of public buildings - Details in, ramps, guide rails, lifts, dimensions of wheel chairs, accessibility in public buildings, Signage, audio visual facilities etc. Design of Toilets and interiors spaces for use of physically challenged.

Exercises in design of user friendly spaces for physically challenged persons. Term paper on certain type of disability and requirements there of for making environs barrier free or any other exercise appropriately framed by the subject faculty.

Reference books:

Micheal J. Bednar. "Barrier Free Environments", Dowden, Hutchinson and Ross, Ive 1977.
Ministry of Urban Affairs and Employment. Central Public Works Department, India, "Guidelines and Space Standards for Barrier Free Environment for Disabled and Elderly Person, 1998.

Unnati. "Design Manual for a Barrier – Free Built Environment", Handicap International, December, 2004,

SEVENTH SEMESTER

AR 7.1ADVANCE DESIGN STUDIO

AR 7.1.1 ADVANCE ARCHITECTURAL DESIGN [DESIGN STUDIO]

L/s: 12/Wk	*Int: 200*	*End Exam: 200*	*Total: 400*	*End Exam: Viva-voce*	*Cr:12*

Course Overview:
This Course deals with the design of large scale, multistorey, complex projects and aims to develop skills for a comprehensive design approach in the areas of, Urban Design Housing Design and Campus Design.

Objectives of the Course:
To develop skills for a comprehensive design in areas of urban design, housing and campus design for making a complete design portfolio from the brief to tender drawings.

Expected Skills / Knowledge Transferred: To develop skills for comprehensive understanding and dealing with Architecture of a group of buildings, inter connected with elements of urban design.

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Course Contents:
I. Urban Design: issues to be addressed:

- Issues of urban structure, urban space and form.
- Issues of conservation.
- Issues in zoning, land use, density, development control.
- Issues of building in context, urban infill

Design exercise related integration of diverse functional needs, access systems, parking, services etc. Design detail shall comprise of (at least one example each) using

1. 'Hi-tech' materials / construction.
2. Conservation related materials / construction.

II Housing Design: Issues to be addressed for the design project pertaining to housing design:

- Density, mixed land use, ground coverage, development controls.
- Urban systems, services and their integration with the project.
- User requirements (derived from surveys)
- Issues in appropriate technology and costs.
- Issues of hierarchy, identity of space, public and private scales of space. Integration of community institutions etc.
- Detailing for the disabled and the elderly.
- Indian / local architectural responses to climate, culture, traditional values, building elements, symbols motifs and special character.

Design exercise related to housing design for specific target groups.

III. Campus Design: Issues to be addressed for the design project pertaining to campus design:

- Issue in preparation of Master Plan for Institutions: academic, administrative, staff housing, student hostels etc.
- Environmental considerations.
- Phases of development.
- Scope for expansion for future developments
- Safe and comfortable vehicular and pedestrian movement.
- Issues of character and landscaping.
- Details pertaining to the disabled.

Students would need to undertake one of the design subjects for the studio exercise. Students may be required to develop a brief, translate it into requirements and design.

One Major design exercise and one Time problem/minor design exercise should be given

The evaluation shall be through periodic internal reviews. The final submission will include a brief report of about 1000 words explaining the concept and design proposals for main portfolio. It will also include a model.

Note: In end exam, which is a viva-voce, the students have to present the entire semester work for assessment.

Reference books:

Alexander, Christopher. Pattern language: Towns, Buildings, Construction. Oxford University Press, New York.
Richard. D. Dober. Campus Architecture: Building in the Groves of Academy. McGraw Hill, New York, 1996.
Chiara, De Joseph and Others. Timesavers standard for Housing and Residential development, 2nd ed. McGraw Hill, Inc, New York.
Newman, Oscar and Others. Defensible space: People and Design in the Violent City. Architectural Press, London, 1972.

AR 7.1.2 BUILDING CONSTRUCTION MANAGEMENT (DESIGN STUDIO)

L/s: 12/Wk	*Int: 200*	*End Exam: 200*	*Total: 400*	*End Exam: Viva-voce*	*Cr:12*

Note: Students of Building *Construction Management* major are required to take this subject under *Design Studio.*

Course Overview:
Major studio work, focusing on construction management of large scale projects for effective and efficient implementations.

Objectives of the Course:
To equip students of Construction Management specialization with various techniques of project implementation.

Expected Skills / Knowledge Transferred: The skills related to construction management of large building projects.

Course Contents:
Preparation of working drawings in detail for large building project (building more than 5000 sq. mtrs.) covering the following aspects Implementation scheduling – Resource planning-time, labour, material, equipment and personnel requirements, estimation-scheduling, control and procurement.
Preparation of network charts and flow charts with control mechanism in place, including quality and cost control – sticking to budgetary estimates and foreseeing any disturbances in scheduling, devise resilience and adaptive measures.

Report of Construction Management: Preparation of Project report on any live, ongoing or completed-large scale project.

Reference books:

Gupta, B.L. and Gupta, Amit. Construction Management, Machinery and Accounts, 3rd ed. Standard Pub, 2005.
Loraine, R.K. Construction Management in Developing Countries. Thomas Telford, London, 1993.
Srinath, L.S. PERT and CPM Principles and Applications, 3rd ed. Affiliated East-West Press, New Delhi, 2003.
Singh, Harpal. Construction Management and Accounts 14th ed. Tata McGraw-Hill Pub., New Delhi, 1981.
Gould, E. Frederick and Joyce, E. Nancy. Construction Project Management. Prentice Hall, New Jersey, 2000.
Shrivastava, U.K. Construction Planning and Management, 3rd ed. Galgotia Pub., New Delhi, 2004.
Chitkara, K.K. Construction Project Management: Planning, Scheduling and Controlling. Tata **McGraw-Hill Pub.**, New Delhi, 1999.
Sharma, S.C. Construction Equipment and its Management, 4th ed. Khanna Pub., New Delhi, 2004.

AR 7.1.3 LANDSCAPE ARCHITECTURE (DESIGN STUDIO)

L/s: 12/Wk	*Int: 200*	*End Exam: 200*	*Total: 400*	*End Exam: Viva-voce*	*Cr:12*

Note: Students of *Landscape Architecture Major* are required to take this subject under *Design Studio.*

Course Overview:
This course will focus on design and development of small to medium scale projects and aims to develop skills for design of comprehensive landscape proposal for simple residential landscape, community level open spaces and campus design.

Objectives of the Course:
To expose students to issues concerned with landscape design and site planning.
To expose students to wide range of design alternatives and preparation comprehensive designs for landscape projects.

Expected Skills / Knowledge Transferred:
Basic skills in design and orientation in landscape design are prerequisites for the students. The student is expected to obtain skills in development of concepts based on perceptual evaluation of site and propose design alternatives. Solutions to small and medium scale landscape design projects

Course Contents:

- Emphasis on form and spatial relationships leading to open space order and frame work.
- Concerns for Social, Psychological considerations of the individual and large groups of people, their interaction and resultant forms of environment.
- Issues related to functional requirement and design strategies.
- Microclimate and environmental consideration.
- Issues related to health, welfare, safety and enjoyment.
- Issues related to zoning, density and develop controls.
- Issues related to services and site development.
- Issues related to visual and aesthetic and contextual consideration.

Students would need to undertake one small and one medium scale designs in site planning.

The exercises taken up shall deal the issues comprehensively from general understanding to providing complete landscape design solutions. The exercise can be split into different stages such as Data collection, Case studies, Synthesis and Design development.

Reference books:

Southerland, Designing the new landscape.

Hacket, Brian. Planting Design.

Laurie, Michael. An Introduction to Landscape, 2nd ed. Prentice Hall, New Jersey, 1986.

Lynch, Kevin. Site Planning. MIT Press, Massachusetts, 1962.

Jellico, Man and Landscape**.**

AR 7.1.4 INTERIOR DESIGN (DESIGN STUDIO)

L/s: 12/Wk	*Int: 200*	*End Exam: 200*	*Total: 400*	*End Exam: Viva-voce*	*Cr:12*

Note: Students of *Interior Design* Major are required to take this subject under *Design Studio.*

Objectives of the Course:

To enable the students to demonstrate design ideologies in the field of interior design

Course Contents:

Interior requires that students have a full understanding of the interior design field and have mastery of the design process, presentations, project administration and

business skills.

Two interior schemes of different functional types: Residential / commercial at different scales will form the major design assignments.

Focus is on Portfolio creation by producing a complete and correct set of working drawings, from plans through details and specifications and sample boards

Portfolio preparation

The student will create a portfolio that clearly expresses his/her ability to design by using detailed drawing, rendering and Model Making. Usage photography and graphic design in preparing a professional portfolio is also encouraged.

Reference books:

Archi World. Interior Best Collection: Residence, Commerce, Office, Restaurant Asia I-IV. Archi World Co., Korea, 2003.
Friedmann, Arnold and Others. Interior Design: An Int. to Architectural Interiors. Elsevier, New York, 1979.
Miller, E. William. Basic Drafting for Interior Designers. Van Nostrand Reinhold, New York, 1981.
Kurtich, John and Eakin, Garret. Interior Architecture, Van Nostrand Reinhold, New York, 1993.
Rao, M. Pratap. Interior Design: Principles and Practice, 3rd ed. Standard Pub., 2004.

AR 7.2 ADVANCED CONSTRUCTION & MATERIALS

L/s: 6/Wk Int: 50 End Exam: 50 Total: 100 End Exam: 5hrs Viva-voce Cr:6

Course overview:
The course supplements the previous theory of construction and to introduce the advanced developments in Building Construction. The students are expected to understand the theory and Practical nuance of Advanced Construction Practices.

Objectives of course:
To introduce the students to the latest developments in construction and building materials. Students should be able to grasp the construction Techniques and their adoptability to architectural forms.

Course contents

Unit I

Advanced construction methods in RCC , pre-stressed concrete beams slabs frames, lift slab construction post tensioning, multi-storied building frames, circular slabs and beams. uses of rapid-hardening cement, ready mix concrete [RMC} , light weight concrete surface finishes of cement

Unit II

Folded plates like prismatic, V-type, trough type, pyramidal, prismatic and RCC folded plate and geometrical staircases, Shell structures, cyclonical shells, hyperbolic paraboloids,

Unit III

Construction techniques for erection of space frames, suspended roofs, membrane structures, cable structures.

Unit IV

Curtain walls: types of curtain walls, components, structural solutions, construction and erection. glass wall system-glass; sheet metal wall systems sheet metal cladding.

Unit V

Advanced Building Materials plastic, PVC, metals, synthetic boards, fire proof/ resistant boards/tiles, acoustic materials, glass, composite panels and their applications, non- load bearing gypsum blocks

Reference books:

James Ambrose, Building Construction Enclosure System 1990

Andrea deplazes (ED), Constructing Architecture: Materials processes structures-A hand Book Second Extended edition

Robert E Fischer, Engineering for Architecture 1989

R Barry, The construction of Buildings Volume 4 4th Edition

Schall, Rolf. Curtain Walls: Design Manual. Reinhold Pub., New York, 1962.

AR 7.3 ADVANCED STRUCTURAL SYSTEMS

L/s: 2/Wk	*Int: 50*	*End Exam: 50*	*Total: 100*	*End Exam: 3 hrs*	*Cr:2*

Course Overview:

The course supplements the previous courses on theory of structures, while introducing the advanced development in structural form. The students are expected to understand the theory behind these structural forms and not expected to solve numerical problems.

Objectives of the Course:

- To inform the students about the recent developments in structural forms.
- To increase the student's ability to identify the structural forms suitable for architectural expression.

Expected Skills / Knowledge Transferred:

- The students are expected to gain knowledge about the recent developments and advanced concepts in the structural forms.
- The students are expected to analyse and understand the nature of stresses that are developed in the major elements of advanced types of structures.

Course Contents:

Unit – I

Construction and form, Structure and Form Equilibrium under simple tension or compression, the catenary and the arch, the simply supported beam, the domical shell.

Unit – II

Structural elements: Beams and slabs Arches and catenaries; vaults, domes and curved membranes; Trusses, Portal frames and space frames.

Unit – III

Relation between structure and architecture, Geometry of form and structural function, Aesthetic theories of the expression of structural function in architectural form.

Unit – IV

Structural Systems: single and double layer grids; braced domes, ribbed domes, plate type domes, Network domes, Lamella domes, Geodesic domes, Grid domes. Braced and folded structures.

Unit – V

Space frames: Folded plates, shells, cyclonical shells, Hyperbolic paraboloids, free forms.

Cable structures: Simply curved suspended roofs, combination of cables and struts.

Unit –VI

Curtain Walls: Types of Curtain Walls and their Components Structural problems, construction and erection.

Reference books:

Candela, Felix. Architecture and Structuralism. 1963.

Lane, Allen. Developments in Structural Form. Penguin Books ltd, London, 1975.
Macdonald, J. Angus. Structure and Architecture, 2nd ed. Architectural Press, Oxford, 2003.
Michaels, Leonard. Contemporary Structures in Architecture. 1950.
Schall, Rolf. Curtain Walls: Design Manual. Reinhold Pub., New York, 1962.
Siegel, Curt. Structure and Form in Modern Architecture. Crosby Lockwood and son Ltd., London, 1962.
Subramanian, N. Principles of Space structures. Wheeler and Co., Allahabad, 1983.
Zannos, Alexander. Form and Structure in Architecture: The role of statical function. Van Nostrand Reinhold Co., New York, 1987.

AR 7.4 GREEN BUILDING AND INFRASTRUCTURE

L/s: 2/Wk	*Int: 50*	*End Exam: 50*	*Total: 100*	*End Exam: 3 hrs*	*Cr:2*

Course Overview:
The course focuses on developing an understanding regarding environmental sustainability and environmentally responsible green buildings. It address the design concerns in architecture to develop resource-efficient buildings that have minimum adverse impact on the natural environment.

The emphasis is to gain an understand regarding the existing concepts, ideas and processes in Architecture and built environment and also recognize rapidly emerging building solutions and technological initiatives that complement current practices in order to attain human health and environmental goals.

Objectives of the Course:
Develop skills to promote eco friendly characteristics in the area of architecture and buildings and identify crucial technologies, facilities and applications that help in developing green buildings.
Course Contents:

Unit - I
Introduction to Macro Environment: Elements of climate, weather, Water cycle, Carbon cycle, Environmental quality, Deforestation, climatic change, Ozone depletion and implications.

Unit - II
Micro-environment: Natural environment Vis a vis built environment. living environment Characteristics and components of Urban Ecosystem solar radiation, heat flow, air-movement, Land use, drainage and sanitation.

Unit - III

Concepts of green field development: Brown field development, environmental impact and ecological balance, FAR, layouts, sustainable Site development, vegetation, landscape elements, alternative services and technologies, rain water harvesting, on site sewerage retention, treatment, recycle and reuse

Unit - IV

Building Resources: Passive energy system Design, Building envelope, orientation and components of building fabric and Shading, High rise buildings, modular building Construction, curtain walls, Sourcing and recycling of building materials, alternative Calcareous, metallic and non metallic, materials

Unit - V

Building Infrastructure: Active Energy Systems in buildings, Utilities and services, building automation. electro-mechanical systems, lifts and transportation, captive power plant and equipment, operation & maintenance

Unit - VI

Indoor air quality: fresh air requirements standards, Sick Building Syndrome, VOC and pollutants.

Unit - VII

Introduction to building rating systems: building auditing, points system, components, and weight age, agencies and institutions, GBC, TERI etc, green buildings in the contexts of Indian sub continent,

Reference books:

Green Building Technologies - Godrej Centre CII a Madhapur, Hyderabad.
Greening Building – Green Congress, US.(web).
HSMI. Sustainable Building Technology – HUDCO, HSMI (Human Settlement Management Institution, New Delhi.
Koenigsberger, O.H. and Others. Manual of Tropical Housing and Building. Orient Longman, Chennai, 2003.
Odum, P. Eugene. Ecology and Environments, 2nd ed. Oxford and IBH Pub., New Delhi.
TERI, The Building Energy Audit – TERI (Tata Energy Research Institute).
HMDA Hyderabad- Green building guidelines

AR 7.5 ADVANCED SERVICES

L/s: 2/Wk	*Int: 50*	*End Exam: 50*	*Total: 100*	*End Exam: 3 hrs*	*Cr:2*

Course Overview:

Study of services and facilities used in special type of buildings. The emphasis is laid on operation of services, working of different equipment employed for carrying out building function in specific different building types

Objectives of the Course:

To develop understanding of special services, definitions and terms used, working of equipment, installation of facility, special provisions to be made in building design.

Expected Skills / Knowledge Transferred: Principles and installations of specialized services in buildings and building complexes and NBC standards.

Course Contents:

Unit - I

Special services in High rise buildings: Types of lifts, Passenger, Capsule, Hospital bed lift; goods lift etc. Working and operation of lifts, parts of lifts; industry standards and capacity calculations. Provision to be made in buildings for installation, Introduction to working and design of escalator.

Unit - II

Electronic Systems in Buildings: Telephone and communication, networks in buildings EPABX, Security systems, Burglar alarms, video surveillance, access control, design of computer labs, access flooring, server rooms.

Unit - III

Fire safety in buildings: portable fire fighting equipment, NBC standards, built in wet riser system, sprinkler system, fire hydrant, class of fire and occupancy, cooking gas distribution in buildings, piped gas supply, bottled gas supply, kitchen Stoves, burners

Unit - IV

Swimming Pools: Pool tank design, patio, finishes, Water circulation, cascades, channels, filtration and water treatment, Water quality and disinfection, balancing tank.

Unit - V

Hotel services: Specialty services required for hospitality industry, Laundry services, Kitchen services, Channeled Music, Internet,

Unit – VI

Environmental services: waste generation in Industrial buildings, various types of waste, solid, liquid, gas, treatment and disposal facilities, waste generation in hospital buildings, design provision for its disposal,

Unit - VII
Alternative energy sources for buildings:, hot water solar energy system, applications of photo voltaic cells, biomass digesters, wind energy.

Reference books:

Faber, Oscar and Kell, J.R. Heating and Air-Conditioning of Building. Architectural Press, Surrey, 1945.
Prasad, Manohar. Refrigeration and air-conditioning, 5th ed. New Age Intl. Pub., New Delhi, 1996.
Tiwari, Satish. Water and Energy resources.

AR 7.6 PRE THESIS SEMINAR

L/s: 2/Wk	*Int: 100*	*End Exam: 0*	*Total: 100*	*End Exam: NIL*	*Cr:2*

Course Overview:
The course provides students with a framework to understand some emerging concepts in architecture and projects of design complexity and equip the student with adequate architectural design research methods for the realization of thesis concept. During the course of study, the subject of the thesis is developed and the project articulated.

Objectives of the Course: To impart knowledge to students, on the tools and methods needed to handle a design project of reasonable complexity individually,

Expected Skills / Knowledge Transferred: The skills required to collect, assimilate and synthesis data relevant to handle a design thesis project independently.

Course Contents:

UNIT - I
Introduction to architectural thesis Project, Difference between design thesis and design studio, selection of topics for architectural design thesis, design thesis topics based on building typologies, preparation of synopsis, Methodology of design thesis

UNIT - II
Emerging concepts in architecture due changes in social, economic, technological variables. Review of design projects related to real world instances and relevant to community at large. Review of projects of design complexity, involving themes, sub themes and architectural expression.

UNIT - III

Research in architecture: Tools and Methods required to handle a design project. Scientific methods of research with special emphasis on architectural research methods. Architectural enquiry visual, observations, questionnaire formats of enquiry, Literature Review and case studies. Data analysis techniques interpretation of data.

Unit IV

Thesis report writing and presentation:

- Formats for presentation of data, case studies and analysis.
- Formats for presentation of thesis design- media appropriate in the architectural profession such as two dimensional drawing, physical models, three dimensional computer models.
- Report Writing: Techniques in report writing, presentation of contextual information relevant to interpretation of the data collected and design; reporting the design development from concept to design solution, explain the relation of the design to existing knowledge on the topic in the form of coherently written thesis report.

The inputs to the students on various design thesis topics would be in the form of Expert /Guest Lectures

Each student in consultation with the faculty shall choose a thesis topic, collect necessary data, review literature on the chosen topic and present a written paper and seminar at the end of the semester.

Reference books:

Mukhi, H.R. Technical Report Writing: Specially prepared for Technical and Competitive Examinations, New Delhi: Satya Prakashan, 2000.

Barrass, Robert. Writing At Work \b a guide to better writing in administration, business and management, London: Routledge, 2003.

Seely, John. The Oxford guide to effective writing and speaking, 2nd ed., Oxford ; New York : Oxford University Press, 2005.

Jo Ray McCuen, Anthony Winkler. Readings for writers, 9th ed., Fort Worth : Harcourt Brace College Publishers, 1998.

Treece, Malra. Effective reports, 2nd ed., Boston: Allyn and Bacon, 1985.

AR 7.7 ELECTIVE – I (For General Architecture)

AR 7.7.1 URBAN DESIGN (Elective – I)

L/s: 4/Wk	*Int: 50*	*End Exam: 50*	*Total: 100*	*End Exam: 3 hrs*	*Cr:4*

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Course Overview:

The course focuses on creating awareness in students in the subject ‘Urban

Design' as a specialization in the area of architecture and urban planning.

Objectives of the Course:
To give an overview of urban design as an interface between the fields of architecture and urban planning.
To import the knowledge about various developments in the field of urban design.

Course Contents:

Unit - I
Discussion on Architecture, Urban design, Town Planning Interface. Urban Morphology and Elements of Urban Design. Nature of urban design projects in public and private developments.

Unit - II
Classical cities, medieval towns, neoclassic cities, and industrial towns. Characteristics of towns built by Hindu and Muslim rulers in India. Colonial inheritance, growth of post towns, civil lines, cantonments, railway and resort towns and Design in New Delhi.

Unit - III
Modern movements in city design such as 'city- beautiful' and 'Garden city' movements, utopian model Towns in the west. Changing structure of cities: sectors, blocks, streets, squares, buildings and open spaces.

Unit – IV
Role of planning agencies such as development authorities, Urban Arts Commission in the design of cities. Influence of city development policies namely Master plans, zoning regulations, on Urban Design. Built-form and space requirement in residential, commercial industrial and recreational land uses, activities. Patterns of subdivision and land-development.

Unit – V
Elements of urban spaces: squares and streets. Use of landscape in urban design, such as tree avenues, street fencing, side walks etc.
Lighting and illumination of cities, methods of lighting, signage and elements of utility services in the city.

Unit – VI
Urban conservation and its role in urban design. Past and present trends in urban conservation. Role of architectural control in urban conservation and city character and style.

Reference books:

Bacon, N. Edmund. Design of Cities. Penguin Books, New York, 1976.
Benevolo , Leonard. History of the City.
Krier, Rob. Urban Space, 3rd ed. Academy Editions, London, 1984.
Moughtin, Cliff and Others. Urban Design: Ornament and Decoration. Butterworth-Heinemann, London, 1995.
Moughtin, Cliff. Urban Design Street and Square.
Mumford, Lewis. City in History: Its origin transformation and its prospects.
Sprelregen, Paul. Urban Design: The Architecture of Towns and Cities.
Lynch, Kwin, the Image of the city Cambridge mass: MIT press, 1965

7.7.2 HOUSING (Elective – I)

L/s: 4/Wk	*Int: 50*	*End Exam: 50*	*Total: 100*	*End Exam: 3 hrs*	*Cr:4*

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Course Overview:
The course introduces the basic concepts and issues related to urban and rural housing.

Objectives of the Course:
To give an understanding and appreciation of housing in terms of issues, problems and directions.

Course Contents:
Unit – I
Evolution of Housing:
Brief review of the historical development of housing in various contexts.

Unit – II
Housing situation in India
Housing need and Demand: Housing and Habitat policy and perspective at the national level. Problems and Issues in urban & Rural Housing, Housing Agencies and their role in housing development.
Unit – III
Housing Standards
Issues involved in formulating housing standards for rural and urban areas, desirable and minimum standards. Residential Densities

Unit – IV
Housing Strategies
Review of different forms of housing globally – particularly with reference to the third world countries.

Brief acquaintance with some strategies such as sites and services upgrading existing shelter, stimulating private – sector production, developing building materials and alternative technologies, improving architectural design., protecting inner-city renters, land sharing, resettlement etc.

Unit – V

Housing Layouts and Design

Traditional pattern of housing design, Row Housing, Cluster Housing Apartment housing, low rise versus high rise housing, Incremental housing, neighborhood unit. Case studies of housing Projects

Unit – VI

Housing Process

Managing and financing of housing projects. People's participation, Technology Transfer, development control rules and environmental aspects

Reference books:

Alexander, Christopher. Pattern language: Towns, Buildings, Construction. Oxford University Press, New York.

Chiara, De Joseph and Others. Timesavers standard for Housing and Residential development, 2nd ed. McGraw Hill, Inc, New York.

Desai, A.R. and Pillai, Devadas. Slums and Urbanization, Popular Prakashan Pvt. Ltd.

HUDCO. Housing for the Low Income. HUDCO.

Poulose, K. Thomas. Reading Material on Housing. Institute of Town Planners, New Delhi.

Cedric Prgh (1990) Housing and Urbanisation, Sage Publication New Delhi

AR. 7.7.3 BUILDING CONSTRUCTION MANAGEMENT (Elective – I)

L/s: 4/Wk	*Int: 50*	*End Exam: 50*	*Total: 100*	*End Exam: 3 hrs*	*Cr:4*

Course Overview:

To introduce the importance of construction management in the field of architecture.

Course Contents:

Unit – I

Introduction

Construction in India; its role in development, importance of Management in Construction, role of Construction Manager, Construction team, responsibilities and authorities of Construction Manager Organization.

Unit - II

Management Techniques:

Planning for Construction Projects: Principles, objectives, advantages of planning, stages of planning.

Scheduling: Definition, advantages

Methods of Scheduling: Bar chart, Milestone chart, Controlling, Life cycle cures.Job layout, work break down structure

Project Management through Networks
Introduction, objectives, advantages, terms and definitions, types of networks, rules for drawing a network, Fulker son's Rate of numbering the events.

Introduction to PERT, CPM, difference between PERT and CPM, finding critical path.

Unit – III
Introduction to construction equipments, performance, characteristics and usage of equipment used in large scale projects.
Human Resource management: manpower estimation at various stages, recruitment, training, under and over manning.

Materials Management: Materials of construction, classification codification, ABC analysis, estimation of materials procurement, inventory / stock control, purchase procedure, stores management.

Quality control in Construction: Importance of quality, elements of quality, organization for quality control, quality assurance techniques.

Unit – IV
Labour Legislations pertaining to construction industry, payment of wages act, migration Act, Factories Act, Contract Labour Act, Labour Welfare Fund Act, Workmen's Compensation Act.
Construction Safety Management: Importance of safety causes of accidents, safety measures, safety benefits to employees, employees and customers.

Unit – V
Economics of Project Management: Economic analysis of projects, economic studies, sensitivity analysis. Cost estimating principles, parameter estimation, detailed estimates, cost concepts, classification of costs, elements of costs, and cost analysis for control.

Unit – VI

Budgetary Control Systems: Types of budgets, new approaches for budgeting, responsibility of accounting, profit centre approach.

Financial Management: Meaning and scope, financial statement analysis, ratio analysis, funds flow analysis.

Working Capital Management: Meaning, policy for working capital, estimating working capital needs. Capital investment decision, long term financing working of financial institutions in India and abroad, self-financing, financing mechanisms.

Value engineering: Definition, value engineering job plan, life cycle casting, value engineering applications.

Unit – VII

Introduction to Linear programming, Transportation problem, Sensitive analysis.

Reference books:

Gupta, B.L. and Gupta, Amit. Construction Management, Machinery and Accounts, 3rd ed. Standard Pub, 2005.

Loraine, R.K. Construction Management in Developing Countries. Thomas Telford, London, 1993.

Srinath, L.S. PERT and CPM Principles and Applications, 3rd ed. Affiliated East-West Press, New Delhi, 2003.

Singh, Harpal. Construction Management and Accounts 14th ed. Tata McGraw-Hill Pub., New Delhi, 1981.

Gould, E. Frederick and Joyce, E. Nancy. Construction Project Management. Prentice Hall, New Jersey, 2000.

Shrivastava, U.K. Construction Planning and Management, 3rd ed. Galgotia Pub., New Delhi, 2004.

AR 7.7.4 INTERIOR DESIGN (Elective – I)

L/s: 4/Wk	*Int: 50*	*End Exam: 50*	*Total: 100*	*End Exam: 3 hrs*	*Cr:4*

Note: This course is intended for students of Architecture and specific to students of Interior Design Major.

Course Overview:

The course provides a frame work of the discipline by addressing to the theoretical, social, historical, technological, professional aspects of Interior Design.

Course Contents:

Unit – I

The profession of Interior Design; Role of an Interior Designer- past and present; Scope of services; Interior Design Process. Interior Design and Concepts: Elements and Principles of design- an overview and their applications in interior designing.

Unit - II

Interior Space planning and human dimensions. Focuses on physical, psychological Behavioural and human factors, study of Proxemics, Behavioural settings.

Unit - III

Introduction to the fundamentals of Interior Design such as Lighting, Furniture, Space, Materials, Furnishings, Art etc.

Unit – IV

Colours in interiors – Colour Theory, Effect of light on colour, various colour schemes like analogues, complementary, triadic etc. Colour symbolism. Psychology of colour, Industrial colour codes. International standards.

Unit – V

Introduction to Furniture and Accessories: An overview of historical perspective of furniture and styles, accent pieces and accessories from Egyptian period to the present. Basic Furniture vocabulary. Styles of Interiors – Italian, English, French, Japanese styles etc.

Unit – VI

Interior lighting – direct and indirect lighting, location and light grid systems, types of luminaries, quality of lighting. Ambient, task and accent lighting. Exposure to eminent interior designers' works- Indian and international

.

Unit – VII

Business perspectives of Interior design – an overview of practice of interior design in India.

Reference books:

Archi World. Interior Best Collection: Residence, Commerce, Office, Restaurant Asia I-IV. Archi World Co., Korea, 2003.

Friedmann, Arnold and Others. Interior Design: An Int. to Architectural Interiors. Elsevier, New York, 1979.

Miller, E. William. Basic Drafting for Interior Designers. Van Nostrand Reinhold, New York, 1981.

Kurtich, John and Eakin, Garret. Interior Architecture, Van Nostrand Reinhold, New York, 1993.
Rao, M. Pratap. Interior Design: Principles and Practice, 3rd ed. Standard Pub., 2004.

AR. 7.7.5 LANDSCAPE ARCHITECTURE (Elective – I)

L/s: 4/Wk	*Int: 50*	*End Exam: 50*	*Total: 100*	*End Exam: 3 hrs*	*Cr:4*

Course Contents:

Unit - I
Study of landform its technical expression through grading plan, section, profiles layout plans and earthwork computations.
Principles of soil mechanics and landscape drainage and their application to surface and subsurface drainage of small scale projects.

Unit –II
Basic principles of outdoor lighting, types of fixtures and their use in varying situations.
Introduction to irrigation systems – sprinkler trickle irrigation, drip irrigation and laying irrigation networks.

Unit -III
Factors related to construction; of structures and systems.
Materials and techniques of landscape construction with emphasis on appropriateness for intended use.
Construction of structure in landscape
Circulation roads, parking, paths; Level changes – walls, steps, ramps; Construction of Garden, landscape feature Such as screens, trellis, wall fences gates decks; fountains and pool construction.

Unit -IV
Planting and establishment of woody plants, installing time, covers and herbaceous plants.
Planting principles – Bed preparation, mounding, application of fertilizers, roll preparation, pruning and maintenance.

Reference books:
Landphair, C. Harlow. Landscape Architecture Construction, 2nd ed. Elsevier, New York, 1988.
Motloch, L. John. Int. to Landscape Design, 2nd ed. John Wiley and Sons, Inc., New York, 2001.

Moorhead, Steven (Ed.). Landscape Architecture. Rockport Pub, Massachusetts, 1997.
Pregill, Philip and Volkman, Nancy. **Landscapes in History: Design and Planning in the western Tradition. Van Nostrand Reinhold, New York, 1993**

EIGHTH SEMESTER

AR 8.1 DESIGN THESIS

L/s: 22/Wk	*Int: 300*	*End Exam: 300*	*Total: 600*	*End Exam: Viva-voce*	*Cr: 22*

Course Overview:
Thesis should reflect the knowledge gained from all the courses undertaken by the student in all the previous semesters.

Objectives of the Course:
To develop assimilation, synthesis and application of research in Architecture

Expected Skills / Knowledge Transferred:
Student should be in a position to comprehend the design philosophy, theories, data analysis and application in a chosen area of study.

Course Contents:
Each student is expected to prepare a design thesis based on the preliminary work undertaken in the Pre Thesis Seminar, under an approved guide/adviser by the department.

The design Thesis shall comprise of Architectural Design proposals, Structural design for a component of architectural design proposal. The Component of Design for which structural design is to be provided will be chosen with the help of faculty in charge of structural design subject. The student will aslo be required to produce a project feasibility report for the specific design undertaken for the design thesis.

Thesis should reflect the knowledge gained from the course learnt in the previous semesters
The particulars of schedule, content, presentation, format etc., is to be decided by the department, from time to time and shall be strictly followed.

At the end of the semester, each student is expected to submit all original drawings prepared as per the department's specifications. Three copies of the report in the specified format along with a model submitted to the department, after obtaining the approval of the respective guides / advisers.
The department shall schedule the final viva-voce, at its convenience, only after the receipt of the thesis submission by a student. The performance sheet submitted by

the advisor and the thesis committee should be the basis for allowing the student to appear for the final viva- -voce.

For End exam, viva-voce is to be conducted by a jury comprising of an external examiner, one internal examiner and head of the department or his nominee.

For the structural design project and Project Feasibility report a separate External Viva voce will be conducted. A total of 50 internal Marks (30 and 20 respectively) and 50 external marks (30 and 20 respectively) shall be allotted for the same out of total 300 marks.

References:

Mukhi, H.R. Technical Report Writing: Specially prepared for Technical and Competitive Examinations, New Delhi: Satya Prakashan, 2000.
Barrass, Robert. Writing At Work \b a guide to better writing in administration, business and management, London: Routledge, 2003.
Seely, John. The Oxford guide to effective writing and speaking, 2nd ed., Oxford ; New York : Oxford University Press, 2005.
Jo Ray McCuen, Anthony Winkler. Readings for writers, 9th ed., Fort Worth : Harcourt Brace College Publishers, 1998.
Treece, Malra. Effective reports, 2nd ed., Boston: Allyn and Bacon, 1985.

AR 8.2 PROFESSIONAL PRACTICE

L/s: 4/Wk	*Int: 50*	*End Exam: 50*	*Total: 100*	*End Exam: 3 hrs*	*Cr:4*

Course Overview:
The course provides overview and specific conditions of COA regulations, Architects Act 1972 in Architectural practice.
Objectives of the Course:
To impart awareness and technicalities of code of conduct, and the significance of Architects Act 1972 in Professional Practice.

Expected Skills / Knowledge Transferred: Legal, Technical and Financial aspects of Architectural practices and management skills for professional practice.

Course Contents:

Unit - I

Role and responsibility of architect in society; architectural profession as compared to others professions; difference between profession and business; architect's registration, COA, IIA and other organizations related to architectural profession.

Architects approach to works; ways of getting works; types of works, works partly

executed by other architect; various precautions to be taken before taking up the work; conditions of engagement between the architect and client; commencement of work.

Unit - II

Architect's duties; drawings to be prepared; Architects relation with other parties connected with works such as client, contractor, sub-contractors, consultants, municipal and public authorities.

IIA Code professional conduct; COA Architects Professional conduct Regulations 1989

Scale of charges; units and mode of measurements - clerk of work and his duties; Inspection of work: during 'construction; certificate of payment to contractor; bill of quantities; Schedule of rates, tenders; public, limited and negotiated tender documents and allied formalities.

Unit – III

Contracts; types of contracts such as item rate, lumpsum, cost plus percentage etc. General principles of Indian contract Act; Building contracts, conditions and forms of contract, study of standard contract of the Indian Institute of Architects. Administration of contract. Principle of Arbitration, Indian Arbitration act 1940, Powers and duties of arbitrators, revoking authority; umpire, award cost fixedfee, cost with penalty, labour day work, piece work Daily

Easement: definition; various types of easements; Dominant, and servient owners; essential conditions for enjoyment of easement; Fire insurance's definition, cover note; insurance for new work and additions; insurable value of property, claim for damage due to fire**.** Insurance of completed and pied building

Unit - IV

Preliminary knowledge of transfer of property Act; registration, stamp duty under registration and Govt. Power. Income tax, wealth, land acquisition Acts; general information about land acquisition procedures.

Accidents during progress of work and after completion, damage to persons and properties affected; workmen's compensation Act with regards to the affected persons and properties.

Consumer protection Act and related acts on Architects.

(Atc 20 of 1942) Architects Act 1972; Professional Practice Regulation and architectural education regulations under the Architects Act.

Unit - V

Types of offices for architectural practice; staff structure; filing of records; correspondence and drawings; maintenance of accounts; presentations in meetings, recording minutes of meeting. A small report to be prepared by each student after visiting an architect's office.

Role of consultants and Co-ordination between different convctants on a big project.
Study of building byelaws to enable to design and prepare drawings for submission to concerned bodies.
National building code, Fire prevention and safety measures.

Reference books:

Banerjee, D.N. Principles and Practice of Valuation, 5th ed. Eastern Law House, Calcutta, 1998.
Dalton, J. Patrick. Land Law, 4th ed. Pitman Pub., London, 1996.
Indian Institute of Architects. H.B. Professional Practice. The Architects Pub. Bombay.
Indian Standards Institution. National Building Code of India 1983. Indian Standards Institution, New Delhi, 1984.
Namavati, H. Roshan. Professional Practice, 8th ed. Lakshani Book Depot, Bombay, 2001.
Namavati, H. Roshan. Theory and Practice of Valuation, 2nd ed. Lakshani Book Depot, Bombay, 1991.
M.Dedbhkth Architectural practice in India by Prof.M.Deobhkta
V.SApte: Arch Practice Procedures

AR 8.3 ELECTIVE – II (For General Architecture)

AR 8.3.1 ARCHITECTURAL ILLUMINATION (Elective II)

L/s: 4/Wk	*Int: 50*	*End Exam: 50*	*Total: 100*	*End Exam: 3 hrs*	*Cr:4*

Objectives of the Course:
The course is intended to give an in depth understanding of the scientific and design aspects of lighting in Architecture

Course Contents:

Unit – I

Light and vision, basic units, photometry and measurement, quality and quantity of light of different sources of light. Daylight, incandescent lamps, halogen lamps, electric gas discharge lamps, fluorescent lamps, high discharge lamps. A market survey of lamps with cost and technical specifications.

Unit – II

Design of lighting; lumen method, point by print method, design tools, design

documentation, simple numerical.

Unit – III

Specific lighting design requirement of different buildings such as homes, offices, industrial, hospital, art galleries, museums and exhibitions, case study of at least one type of the building by each student.

Unit – IV

Out door lighting: road lighting, high-mast lighting, tunnel lighting, landscape lighting, decorative lighting, facade lighting, spot lighting.

Unit – V

Lighting as determinant of form for architecture with graphic examples.

Unit – VI

Daylighting, advantages of daylighting; design tools in daylighting. Case studies and various examples, behaviour of daylighting in an interior spaces. Potentials of daylighting as an energy resource.

Unit – VII

Integration of daylighting with artificial lighting; lighting controls, intelligent building systems for lighting.

Unit – VIII

Conservation of energy in lighting use of daylight, optical fiber lighting, LED in lighting and the emerging trends in lighting.

Reference books:

Moore, Fuller. Concepts and practice of Architectural Day Lighting. Van Nostrand Reinhold co., New York, 1985.
Valia, Anil. Designing with light: A Lighting H.B. International Lightning Academy, Mumbai, 2002, Architecturl Physics: Lighting.
Hopkinson R.G, Her Majestrip stationery office, London.
David Egan. M, concepts in Architectural lighting Mc Grew Hill Book company, New York, 1983

AR.8.3.2. ARCHITECTURAL JOURNALISM (Elective II)

L/s: 4/Wk	Int: 50	End Exam: 50	Total: 100	End Exam: 3 hrs	Cr:4

Course Overview:

The Course prepares ground for the students to gain an understanding into the

fundamental issues in architectural Photography and develop the skill to create Articles/presentation capturing the essence through the photographs.

Course Contents:

Unit – I

Definition of Photo Journalism - Brief History - Photographs as social Documentaries - Birth of modern Photo Journalism since 1950s - visual awareness – visual survey - EDFAT methods in using the camera - Equipment required for Photo Journalism.

Unit - II

Development of writing skills: Usage of language and Vocabulary and grammar-introduction to methodology of writing essays, news writing, precis writing, writing in architectural blogs; listening comprehension, analyze talks and information gathered and to edit gathered information to build an article. Originality of topic.
Collecting clippings from articles, blogs and books.

Unit -III

Photo Journalism in perspective - Snap shots - Advance amateur Photography - Art Photography - Photo Journalism - Approach to Photo Journalism - News Papers and Magazine Design elements: Page make -up - Layout - color scheme - Font - Blurb - Pictures - Ads etc- Other magazines - Documenting of Places - Rural- Urban - Public relations.

Unit - IV

Key texts concerning architectural journalism and journalists; to critically contrast their outputs in terms of production, content and/or presentation; to develop an ability to critically appraise selected individual pieces of journalism. Awards for Architectural Journalism and some of the important recipients
People journalism and law-legal boundaries-issues libel and invasions of privacy-ethics-the photo journalist on scene

Unit - V

Production of contemporary architectural journalism; Building pictures - Instant, Report - Editing - Editorial thinking – the picture Editor - Editing practices, creating drama - Photo editing -Documentary-evolution of the word document-methods and techniques.
Assignments should include an article based on ability to originate, plan, research, present and produce a piece of architectural journalism. The techniques and processes used in the production should be identified by the student.

Reference books:

Kopelow, Gerry. How to photograph buildings and interiors, 3rd ed. New York: Princeton Architectural Press, 2002.
De Mare, Eric Samuel. Architectural photography, London: Batsford, 1975.
Busch, Akiko. The photography of architecture: twelve views, New York: Van Nostrand Reinhold Co., 1987.
Mehta, Ashvin. Happenings: \b a journal of luminous moments, Vapi, Gujarat: Hindustan Inks, 2003.
Mohd, Al Asad. Architectural Criticism and Journalism
Sommer, Robert. Tom Wolfe on Modern Architecture

AR 8.3.3 FURNITURE AND PRODUCT DESIGN (Elective II)

L/s: 4/Wk	Int: 50	End Exam: 50	Total: 100	End Exam: 3 hrs	Cr:4

Course Overview:
The course provides a framework in understanding the Theoretical, historical functional and human issues of the subject.
Objectives of the Course:
To impart a comprehensive understanding of the general theory and practice of the subject.
To inculcate in student a natural curiosity in allied discipline of design

Course Contents:
Unit – I
Understanding of the functional and formal issues in design – study and evaluation of popular dictums such as “Form follows function”, form and function are one”, “Less is more”, “God is in details” etc.
Evaluation of visual design for functional objects.
Gestalt theory of design: Law of closure, law of proximity, law of continuity etc.
Unit – II
Evolution of furniture through ages till present day

Unit – III
Human factors engineering and Ergonomic considerations; Principles of Universal Design and their application in furniture and product design.

Unit – IV
An introduction of various manufacturing processes most frequently adopted in furniture and product design such as, Injection Moulding; investment casting, sheet metal work, die-casting, blow-moulding , vaccum – forming etc.

Unit – V
Signage and Graphics – Environmental graphics: signage categories and materials.

Unit – VI
A detailed study involving the design aspects of any on of the following: Lifestyle accessories, Luminaire design, a piece of furniture, Point of Purchase design, Signage.

References:

Héctor Roqueta. Product design, London: te Neues, 2002.
Morley, John. The history of furniture: twenty-five centuries of style and design in the Western tradition, Boston: Little, Brown and Company, 1999.
Aronson, Joseph. The Encyclopedia of Furniture, 6th printing, New York: Crown Pub. 1944.
Saville, Laurel. Design secrets: furniture, Gloucester, Mass. : Rockport Publishers, 2006.
Datschefski, Edwin. The total beauty of sustainable products, Hove: Rotovision, 2001.
Papanek, Victor J. The green imperative: natural design for the real world, New York: Thames and Hudson, 1995.

AR 8.3.4 DISASTER RESISTANT ARCHITECTURE (Elective II)

L/s: 4/Wk	*Int: 50*	*End Exam: 50*	*Total: 100*	*End Exam: 3 hrs*	*Cr:4*

Course Overview:
This course introduces and explains disaster resistant methods of construction

Objectives of the Course:
To develop understanding about the nature of disasters and their effects on built environment.
To develop understanding about the ways of building that world resist disasters.
Course Contents:
Unit - I
Building safety from Natural Hazards:
Earthquake, Fire safety in buildings, Cyclone effects: High winds, storm surge and safety aspects in buildings, related to Cyclones, Floods, Landslides.
Elementary Seismology:
Occurrence of earthquake in the world, plate tectonics, faults, earthquake hazard maps of India and the states.

Causes of earthquake, seismic waves; magnitude, intensity, epicenter and energy release, characteristics of strong earthquake ground motions. Seismological Instruments: Seismograph, Accelerograph, Seismoscope / Multi SAR.

Unit - II

Introduction to Theory of Vibrations:

Single degree undamped and damped systems, resonance, response to earthquakes, elastic response, concepts of response spectrum. Flexibility of long and short period structures.

Unit - III

Site Planning, Building Forms and Architectural Design Concepts for Earthquake Resistance:

Historical experiences, Site Selection, Site Development.

Building forms: - Horizontal and vertical eccentricities, mass and stiffness distribution, soft storey etc.; Seismic effects related to building configuration.

Plan and vertical irregularities, redundancy and setbacks, Special Aspects:- Torsion, appendages, staircases, adjacency, pounding; Contemporary international approaches.

Unit – IV

Performances of Ground and Buildings in Past Earthquakes:

Earthquake Effects:- On ground, soil rupture, liquefaction, landslides; Behavior of various types of buildings, structures, power plants, switch yards, equipments, lifelines and collapse patterns; Behavior of Non Structural Elements like services, fixtures, mountings. Social and Economic Consequences of earthquakes, Lab simulations of models.

Seismic Design Principles:

Concept of seismic design, stiffness, strength, period, ductility, damping, hysteric energy dissipation, center of mass, center of rigidity, torsion, design eccentricities; Ductility based design: Design of energy absorbing devices, Seismic base isolation and seismic active control.

Unit – V

Structural Detailing:

Innovations and Selection of appropriate materials; IS Code provisions for the buildings:-IS:1893-2002, IS:4326-1993; Horizontal and Vertical seismic coefficients, valuation of base shear, distribution of shear forces in multi-storey building; Seismic Detailing Provisions: Masonry and Wooden Buildings (IS: 4326, IS: 13828), Adobe houses (IS: 13827); Seismic Designs and Detailing of RC and Steel Buildings:IS: 1893 – 2002; IS: 13920 – 1993; IS: 456 – 2000; IS: 800 – 2004; Special reinforcing and connection details in structural drawings.

Unit – VI

Earthquake Resistance Construction Details:

Various Types and Construction details of: Foundations, soil stabilization, retaining walls, plinth fill, flooring, walls, openings, roofs, terraces, parapets, boundary walls, under ground and overhead tanks, staircases and isolation of structures; Local practices: traditional regional responses.

Unit – VII

Construction Quality Control:

Sequences of Construction: Good supervision practices, Critical check points and certification at certain stages, reporting, maintenance of records, testing.

Vulnerability Assessments and Seismic Strengthening of Buildings:

Seismic vulnerability evaluation of existing buildings; Weakness in existing buildings, aging, weathering development of cracks; Concepts in repair, restoration and seismic strengthening, materials and equipments for restoration of masonry and concrete structures. Methodologies for seismic retrofitting.

Reference books:

Abbott, L. Patidc. Natural disasters.
Arhold, Christopher and others. Building configuration and Seismic Design.
Disasters and Development -
National Geographic. Restless Earth: Disaster of nature.
Singh, P.P. and Sharma, Sandhir. Modern dictionary of natural disasters.

FINAL YEAR (NINETH & TENTH SEMESTER)

AR 9.1 PRACTICAL TRAINING

Int: 200	EndExam:200	Total: 400	EndExam:Viva-Voce	Cr:60

Course Overview:
Internship for a period of not less than 40 weeks in both the semesters put together in one year.

Objectives of the Course:
To provide experience in Architectural Practice.

Expected Skills / Knowledge Transferred: The skills required for an architect to grow into a complete professional.

Course Contents:
Every student must work in an Architect's Office as a full-time trainee for a period of 40 calendar weeks in one year (excluding Viva-voce) from the date of commencement of training. The Chief Architect in the firm should be registered with the Council of Architecture and have a minimum of five years of practical/professional experience after her/his graduation. The student should involve herself/himself in various aspects of work in an office like working drawings, presentation drawings, quantity and cost estimation, site supervision, municipal drawings, etc.

Note*:* Detailed instructions given by the University regarding the training, the frequency of reporting to the department, etc. will be issued at the end of the Eighth Semester, which the student must strictly follow.

After completion of training, every student will have to submit a detailed report with a set of drawings on at least four projects on which she/he has worked during the forty calendar weeks of the practical training period.

Evaluation:

- The internal assessment shall be evaluated at the end of 40 weeks (Tenth Semester) and shall be conducted by the faculty deputed by the department in the institute.
- The detailed report and drawings prepared during practical Training by students will be evaluated at a viva-voce by a jury consisting of one external, one internal and head of the department or his nominee.

After submission of the report the department at its convenience will arrange for the conduct of the viva-voce examination.

B.TECH (PLANNING)
ACADEMIC REGULATIONS,
COURSE STRUCTURE AND SYLLABUS
(Effective from the Academic year 2011-12)

COURSE OUTLINE

PLANNING

JNAFAU

School of Planning and Architecture

Mahavir Marg,Masab Tank, Hyderabad-500028, A.P, India

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B.TECH (PLANNING)
(BACHELOR OF TECHNOLOGY IN PLANNING)

COURSE OUTLINE

ACADEMIC REGULATIONS,
COURSE STRUCTURE AND SYLLABUS
(Effective from Academic Year 2011-2012)

DEPARTMENT OF URBAN &REGIONAL PLANNING
SCHOOL OF PLANNING AND ARCHITECTURE
JNAFAU
MAHAVEER MARG, MASAB TANK,
HYDERABAD- 500028

Academic Regulations for B. Tech (Planning) (Bachelor of Technology in Planning)

(As Approved by the Board of Studies in Planning on 22-08-2011.Effective from the Academic Year 2011-12)

1. Award of the B. Tech (Planning) Degree:

A student will be declared eligible for the award of the "B. Tech (Planning)" Degree if he fulfills the following academic regulations:

i. He has to pursue a course of study for not less than four academic years and not more than eight academic years.

ii. B. Tech. (Planning) is a four year course and is offered in Semester pattern.

iii. The orientation of each semester prescribed in the course structure shall be accordingly followed.

iv. He has registered for and studied all the subjects for a total of 280 credits and secured all the 280 credits.

v. Students, who fail to fulfill all the Academic requirements for the Award of the Degree within eight academic years from the year of their admission, shall forfeit their admission in the said course and their seat shall stand cancelled.

2. Courses of Study:

The Subjects offered are prescribed in the Course Structure.

3. Minimum Instruction days:

There shall be a minimum of 90 instruction days for each semester as per UGC Norms excluding the examination and miscellaneous days.

Practical training in the 6th and 8th semesters shall be for the duration of four and ten calendar weeks respectively from the date of commencement of actual training including summer vacation and excluding the Viva voce examination.

4. Attendance requirements:

i. A student has to put in a minimum of 75% of the attendance in aggregate of all subjects for becoming eligible to register for the end semester examinations and for acquiring credits in each semester.

ii. Condonation of shortage of average attendance up to 10% (i.e. between 75% to 65%) in each semester may be granted by the College Academic Committee (CAC) on genuine and valid grounds with supporting evidence.

iii. A stipulated fee shall be payable towards condonation of shortage of attendance.

iv. Shortage of aggregate attendance below 65% shall in no case be condoned.

v. Students detained for shortage of attendance are not eligible to take the end semester examinations. They will have to seek re-admission for that semester or repeat the semester when next available /offered.

5. Weight age and Distribution of the marks:

i. The performance of the student in each semester shall be evaluated Subject-wise as per the course structure given ahead.

ii. The distribution of marks for the all subjects in general shall be as follows;
50% Internal Evaluation and 50% for External Evaluation (End Examination) except other-wise specified.

iii. The performance of the student in each semester shall be evaluated subject -wise with a maximum of 200 marks in Graphics, Planning and Design Studio and 100 marks in other subjects and practicals. The Planning project in the eighth semester shall be evaluated for 400 marks.

6. Evaluation

i. The performance of each student enrolled in a course will be assessed in the form of Continuous assessment (internal) and End Semester Examination in a ratio of 50:50.

ii. The mode of continuous assessment will be decided by the respective teacher /department concerned.

iii. Internal Evaluation for all studios shall be of continuous evaluation with two (2) or more examiners assessing the student's works periodically.

iv. The evaluation for the subjects Introduction to Communication skills, Seminar, Workshop shall be 100 % Internal Evaluation.

7. Revaluation for External Examination:

No request for re evaluation after the result declared in any course will be entertained.

8. Valuation for Internal Assessment Marks

No request for re-evaluation of the internal marks after the results are declared in any course will be entertained.

9. Evaluation of Planning Project.

Students are required to present an open seminar/Viva-voce on the Project work. The Internal Assessment for 50% of the total marks should be done on a periodic basis by the guide and two or more internal examiners as decided by the department.

Out of a total of 400 marks for the project work in the eighth semester, 200 marks shall be for Internal Evaluation and 200 marks for the End Evaluation, which shall be an external jury and viva- voce. The End Evaluation shall be conducted by a board of examiners consisting of the thesis coordinator/ Head of the Department or their nominee and an external examiner.

For the External Evaluation, one Internal Examiner should award 25% of the prescribed marks and 75% marks should be assessed by the appointed External Examiner.

10. Evaluation of Practical Lab/Practical Training

i. For the internal Examination of the Lab/Practical Lab work of the students will be evaluated in phases viz., periodic and final. Each phase of the assessment will carry proportionate percentage of the prescribed marks.

ii. For External evaluation for Practical Lab, there would be a practical exam and External jury and Viva-Voce.

iii. The End Evaluation for Practical Training in VIII Semester shall be by external Jury and will be a Viva-

voce.

iv. For the Subjects Practical Training in VIII Sem in the External Evaluation Pass/Fail will be awarded. There are no Internal & External Marks given for the Subject.

11. Minimum Academic Requirements (Promotion criteria & Re- registration).

The following academic requirements have to be satisfied in addition to the attendance requirements mentioned in item No.4:

i. A student shall be deemed to have satisfied the minimum academic requirements in each subject or project if he secures not less than 45% of marks in the End Evaluation and a minimum of 50 % of marks in the sum total of the internal evaluation and End Evaluation taken together.

ii. The candidate will be promoted from 3rd year to 4th year only if he/she fulfills the academic requirements of all the subjects of the first year.

iii. A student who fails to fulfill the minimum academic requirements in any subject and secures less than 50% of marks in the internal evaluation, may be permitted the option of re-registering in that subject, which will enable him to improve and resubmit the work for internal evaluation. The candidate who has re-registered and has already put in the requisite attendance in the course need not attend the classes once again.

iv. In such cases of re-registration, the student's previous performance both in the internal evaluation and end evaluation for the particular subject/s shall stand cancelled and he shall be required to appear for his end evaluation (end examination or external jury as

the case may be), again. The candidate who has re-registered and has already put in the requisite attendance in the course need not attend the classes once again.

v. However, such re-registration shall be subject to a limit of only three theory subjects or two theory subjects and one studio/seminar/practical subject at any given time. Re-registration of any course should be done within 15 days from the date of commencement of class work. A stipulated fee shall be payable towards re-registration for each subject re registered.

vi. Transfer of candidate from one course to another shall not be permitted, due to legal and administrative constraints.

Supplementary Examinations

i. To enable the students to satisfy the academic requirements, the supplementary examinations shall be arranged at the end of each semester.

ii. A candidate who has backlogs can appear either at the regular or supplementary examinations.

12. Withholding of the results:

The results of a student are withheld if:

i. He has not cleared any dues to the Institution / Hostel.

ii. A case of disciplinary action is pending against him

13. Award of Class:

After a student has satisfied the requirements prescribed for the completion of the program is eligible

for the award of the B.Tech. (Planning) Degree he shall be placed in one of the following three classes:

First Class with Distinction	70% and above	From the aggregate marks secured for 280 credits/in the whole program
First Class	Below 70% but not less than 60%	
Second Class	Below 60% but not less than 50%	

14. General:

i. The academic regulations should be read as a whole for the purpose of any interpretation.

ii. The marks in internal evaluation and end examination shall be shown separately in the marks memo.

iii. Students who have completed the course duration or have not registered for any regular semester and wish to re-register for more than the stipulated limit of the courses, can do so by appealing to the Vice-Chancellor, who may permit the judicious number of subjects in which the candidate can re-register at a given time on case to case basis to enable him to earn the degree.

iv. Candidates who have not been able to complete the course on any genuine reason even after the stipulated time, (twice the time period of the duration of the course), may also secure one more chance (special permission) from the Vice-Chancellor for course completion.

v. In case of any doubt or ambiguity in the interpretation of the academic regulations, the decision of the Vice-Chancellor is final.

vi. The University may change or amend the academic regulations or syllabi at any time and the change or amendments made shall be applicable to all the students with effect from the dates notified by the University.

vii. The New Syllabus contains some new subjects added and few subjects modified. For students with back logs equivalent subjects will be offered from the New Syllabus i.e. Syllabus effective from the Academic Year 2011-12

viii. Where the words "he", "him", "his", occur in the regulations, they include "she", "her", "hers".

ix. A good understanding of the academic regulations and a strict adherence to the proposed schedules will enable the students to complete the B.Tech planning programme successfully within the stipulated time.

COURSE STRUCTURE

B.TECH (PLANNING)
(BACHELOR OF TECHNOLOGY IN PLANNING)

FIRST SEMESTER

Course No.	*Course Title*	*S/Th/ L/P/Pt Hrs per wk*		*Marks*			*Credits*
				Int.	End	Total	
PL2011	Graphics & Presentation Techniques- I	S	9	100	100*	200	9
PL2012	Introduction to Physical Planning	Th	4	50	50	100	4
PL2013	Quantitative Methods- I	Th	4	50	50	100	4
PL2014	Elements of Geology & Settlement Geography	Th	4	50	50	100	4
PL2015	Materials and Structural Systems	Th	4	50	50	100	4
PL2016	Ecology & Environment	Th	2	50	50	100	2
PL2017	Introduction to Communication Skills	Th	2	100	0***	100	2
PL2018	Computer Applications	L	6	50	50**	100	6
			35	500	400	900	35

Note:

** External Jury and Viva-voce.*

*** End Examination shall be a practical exam with Viva-voce.*

**** Only Internal Assessment and No End examination*

SECOND SEMESTER

Course No.	*Course Title*	*S/Th/ L/P/Pt Hrs per wk*		*Marks*			*Credits*
				Int.	End	Total	
PL2021	Graphics & Presentation Techniques- II	S	12	100	100*	200	12
PL2022	Quantitative Methods- II	Th	4	50	50	100	4
PL2023	Demography & Urbanization	Th	4	50	50	100	4
PL2024	Quantity Surveying, Estimation and Specifications	Th	4	50	50	100	4
PL2025	Elements of Economics & Sociology	Th	4	50	50	100	4
PL2026	Surveying & Photogrammetry	Th/L	4	50	50**	100	4
PL2027	Seminar – I (History of Civilizations)	Th	3	100	0***	100	3
			35	450	350	800	35

Note:

** External Jury and Viva-voce.*

***End Examination shall be a practical exam with Viva-voce*

**** Only Internal Assessment and No End examination .*

THIRD SEMESTER

Course No.	*Course Title*	*S/Th/ L/P/Pt Hrs per wk*		*Marks*			*Credits*
				Int.	End	Total	
PL2031	Site Planning & Built Environment	S	9	100	100*	200	9
PL2032	Traffic &Transportation Planning- I	Th	4	50	50	100	4
PL2033	Planning Principles –I	Th	4	50	50	100	4
PL2034	Planning Techniques	Th	4	50	50	100	4
PL2035	Urban Economics & Sociology	Th	4	50	50	100	4
PL2036	CAD Applications in Planning	Th/L	6	50	50**	100	6
PL2037	Housing & Community Planning	Th	4	50	50	100	4
			35	400	400	800	35

Note:

** External Jury and Viva-voce.*

*** End Examination shall be a practical exam with Viva-voce.*

FOURTH SEMESTER

Course No.	*Course Title*	*S/Th/ L/P/Pt Hrs per wk*		*Marks*			*Credits*
				Int.	End	Total	
PL2041	Neighbourhood & Area Planning	S	9	100	100*	200	9
PL2042	Traffic &Transportation Planning II	Th	4	50	50	100	4
PL2043	Planning Principles – II	Th	4	50	50	100	4
PL2044	Infrastructure Planning I	Th	4	50	50	100	4
PL2045	Planning for Informal sector	Th	4	50	50	100	4
PL2046	Geographical Information Systems	Th/L	6	50	50**	100	6
PL2047	Rural Development	Th	4	50	50	100	4
			35	400	400	800	35

Note:

**External Jury and Viva-voce.*

*** End Examination shall be a practical exam with Viva-voce.*

FIFTH SEMESTER

Course No.	*Course Title*	*S/Th/ L/P/Pt Hrs per wk*		*Marks*			*Credits*
				Int.	End	Total	
PL2051	Rural Area Planning Studio	S	9	100	100*	200	9
PL2052	Real Estate Development	Th	4	50	50	100	4
PL2053	Urban Design & Conservation	Th	4	50	50	100	4
PL2054	Infrastructure Planning II	Th	4	50	50	100	4
PL2055	Development Planning	Th	4	50	50	100	4
PL2056	Planning Workshop I (Traffic Studies)	S	6	50	50*	100	6
PL2057	Planning Theory and Urban Policy	Th	4	50	50	100	4
			35	400	400	800	35

Note:

** External Jury and Viva-voce.*

SIXTH SEMESTER

Course No.	*Course Title*	*S/Th/ L/P/Pt Hrs per wk*		*Marks*			*Credits*
				Int.	End	Total	
PL2061	Urban Planning Studio	S	9	100	100*	200	9
PL2062	Regional planning	Th	4	50	50	100	4
PL2063	Environmental Planning & Management	Th	4	50	50	100	4
PL2064	Project Formulation, Appraisal & Management	Th	4	50	50	100	4
PL2065	Planning and Management for Disasters	Th	4	50	50	100	4
PL2066	Planning Workshop II (Infrastructure Studies)	S	6	50	50*	100	6
PL2067	Seminar- II (Emerging Planning Contexts, Issues and Alternatives)	Th	4	100	0**	100	4
			35	450	350	800	35
Practical training for 4 calendar weeks inclusive of summer vacation***							

Note:

** External Jury and Viva-voce.*

*** Only Internal Assessment and No End examination*

****Practical training shall be undertaken by the student during the summer vacation between sixth and seventh semester and will be evaluated as part of the subject PL2076 Planning Colloquium.*

SEVENTH SEMESTER

Course No.	*Course Title*	*S/Th/ L/P/Pt Hrs per wk*		*Marks*			*Credits*
				Int.	End	Total	
PL2071	Metropolitan and Regional Planning Studio	S	9	100	100*	200	9
PL2072	Financing And Institutional Mechanisms for Projects	Th	4	50	50	100	4
PL2073	Urban Governance & Management	Th	4	50	50	100	4
PL2074	Professional Practice	Th	4	50	50	100	4
PL2075	Planning Workshop III (Redevelopment)	S	6	50	50*	100	6
PL2076	Planning Colloquium	Th	4	100	0**	100	4
PL2077	Planning Legislation	Th	4	50	50	100	4
			35	450	350	800	35

Note:

**External Jury and Viva-voce.*

*** Only Internal Assessment and No End examination. Practical training undertaken by the Student during the summer vacation between sixth and seventh semester. will be evaluated as part of the subject PL2076 Planning Colloquium.*

EIGHTH SEMESTER

Course No.	*Course Title*	*S/Th/ L/P/Pt Hrs per wk*		*Marks*			*Credits*
				Int.	End	Total	
PL2081	Planning Project	P	26	200	200*	400	26
PL2082	Seminar-III (Ethics, Values, Philosophy and Planning)	Th	3	100	0**	100	3
PL2083	Climate Change and Planning	Th	3	50	50	100	3
PL2084	Project Documentation	P	3	100	0**	100	3
PL2085	Practical Training	Pt	-	0	Pass/ Fail***	Pass/ Fail	0
			35	450	250	700	35

Note:

** External Jury and Viva-voce.*

*** Only Internal Assessment and No End examination*

**** Practical training for 10 calendar weeks inclusive of summer vacation. Pass/Fail is awarded in External Jury and Viva-voce*

Note: S= Studio, Th=Theory, L=Lab, Pt=Practical Training, P=Project work.

SEMESTER I

PL2011 GRAPHICS& PRESENTATION TECHNIQUE- I

Studio Hours Per Week	*: 9*
Total Marks	*: 200*
Internal Assessment	*: 100*
End Examination (External jury and Viva-voce)	*: 100*
Credits	*: 9*

UNIT I

Introduction to drawing equipments & mediums Simple exercises in drafting, points, types of lines, line thickness and intensities, polygons, texture, colour and tone in materials.

UNIT II

Concepts of Scales & Proportions

Graphic and numerical scales, dimensioning of lines and planes, enlargement and reduction of drawings, anthropometrics and the scale of man to function, lettering for titles and annotations, freehand lettering, measuring and drawing to scale different objects, rooms etc.

UNIT III

Freehand Drawing & Rendering Techniques

Graphical representations of trees, hedges, foliage, vehicles, human figures etc in pen and ink, observation recordings through different mediums.

UNIT IV

Orthographic projections and views

Orthographic projections of point, lines, planes and solids, section of solids, study of isometric, axonometric and oblique views.

UNIT V
Model Making

Exercises in model making with different materials, preparation of block models, making building blocks & forms using different materials.

Expected Outputs & Assignments

- *Scale drawings of simple objects to minimum one room building plan, elevation, section*
- ***Exercises in:***
  1. *Fundamentals of 2 D compositions*
  2. *Rendering techniques using different mediums*
  3. *Applications of anthropometrics in design*
  4. *Freehand sketching*
  5. *Model making using different materials*
  6. *Orthographic projections.*

References

Robert Gill: Rendering with Pen & Ink
Kevin Forseth: Graphics for Architecture
Frank Ching: Architectural Graphics
Bhatt: Engineering Drawing

PL2012 INTRODUCTION TO PHYSICAL PLANNING

Lecture Hours Per Week	*: 4*
Total Marks	*: 100*
Internal Assessment	*: 50*
End Examination (3 hrs.)	*: 50*
Credits	*: 4*

UNIT I
Evolution of Human Settlements

Evolution of human settlements through civilizations, - Sumerian, Egyptian, Greek, Roman, Baroque, Renaissance, industrial and contemporary.

History of settlements in India: Ancient, medieval, colonial and modern. Changing form and pattern of human settlements.

UNIT II

Introduction to history of Planning Thoughts

City Beautiful movement by Daniel Burnham, F.L. Wright's Broad-Acre city, man and machine: La Ville Radieuse, Clarence Perry's neighborhood unit formula. Ebenezer Howard's Garden City of Tomorrow, Lewis Mumford's views on new social order, Dynapolis concept of Doxiadis. Patrick Geddes' contributions to evolution of planning thought and his work in India.

UNIT III

Introduction to contemporary physical planning

Meaning and need of Planning; scope and nature of planning, multidisciplinary approach, Planning distinguished from design and management, definitions, goals and approaches to physical planning at different levels.

UNIT IV

Growth versus Development

Meaning and concept of development, development versus growth, indicators of development, overview of development process.

Physical aspects, Zoning, landuse planning and infrastructure services; Environmental concerns, sustainability; Socio–cultural and economical perspective; Politics and planning; Need for legislations in planning- Municipal Acts, development controls and regulations, etc; Aesthetics in planning, Urban Design & Conservation; management of human settlements and built environment, public participation, failures and success in physical planning.

Expected Outputs & Assignment

The internal assessment to be in the form of term papers, tests and presentations on above mentioned aspects of physical planning.

References:

Clara Greed: Introducing Planning

Shamsher Singh: Urban Planning and Development Issues and Imperatives
Rangwala: Town Planning
Reading material of ITPI on Socio Economic basis for planning
Stanley D. Brown: Cities of the World.

PL2013 QUANTITATIVE METHODS- I

Lecture Hours per Week	*: 4*
Total Marks	*: 100*
Internal Assessment	*: 50*
End Examination (3 hrs.)	*: 50*
Credits	*: 4*

UNIT I
Introduction
Importance & need of planning need o surveys and their relevance to spatial planning.

UNIT II
Methods of collection of data:
Direct observation, questionnaire, schedule, telephone and video conference methods. Survey Vs Experiment
Survey: population, Universe, sample Vs census merits and demerits, sampling frame, sample size, purposive sampling, and probability sampling.

UNIT III
Data Processing and Presentation
Type of data, Editing and coding of data, Diagrammatic and Graphic representation of data related to population, land use and housing.

UNIT IV
Statistical Methods for analysis of data
Frequency distribution of data, measures of central tendency and dispersion, Skewness and Kurtosis.

Probability: Introduction, Mutually exclusive and mutually independent events. Addition and multiple rules, Not mutually exclusive events, conditional probability, Bayes theorem

Probability Distribution
Random variable Mathematical expectation of random variable, Binomial, Poisson and Normal distribution and their properties and fitting.

UNIT IV
Sampling Methods
Simple random sampling stratifies random sampling, proportional and optimum allocation in stratified random sampling, cluster sampling and systematic sampling.

Expected Outputs & Assignment
The students will formulate sample survey formats for at least two aspects and conduct surveys at respective unit level and end with brief presentation with analysis of the same. Internal assessment also to be in the form of term papers and tests on above mentioned topics.

References:
SP Gupta: Statistical Methods
Ram Ahuja: Research Methods
Philip I. Good: A practical Guide to Data Analysis

PL2014 ELEMENTS OF GEOLOGY AND SETTLEMENTGEOGRAPHY

Lecture Hours per Week	*: 4*
Total Marks	*: 100*
Internal Assessment	*: 50*
End Examination (3 hrs.)	*: 50*
Credits	*: 4*

UNIT I
Introduction
Types of geological structure, landforms, types of regions, concepts of spatial organization and region (in India),

geological structures suitable for buildings with relevance to selection of site and foundations.

UNIT II

Study of Land Forms and Indian Stratigraphy

General considerations and overview of preliminary geological data particularly related to Indian Stratigraphy, basic understanding of landforms- erosional, depositional, fluvial, glacial, delta and marine with relevance to landuse planning.

UNIT III

Ground Water

Concept and role in town planning for different types of terrain, vertical distribution of groundwater in India, water table and isometric surface, surface water reservoirs and springs, artificial recharge and ground water mound hydrographs, geological structure and underground passage for water supply.

UNIT IV

Thematic Mapping

Types of thematic maps, interpretation of SOI topographic sheets, conventional signs, Indian physiographic maps, Andhra Pradesh physiographic maps, district maps etc.

UNIT V

Introduction to Settlement Geography

Nature and scope of settlement geography, origin, setting evolution and structure of human settlements, man, environment and society; social economic and political consequences of geographical conditions; physical features and its effect on urban and rural communities

UNIT VI

Classification of Settlements

Census classification, urban, rural census size classes; theories of settlement systems, primate city settlement system, rank size rule relationship; central place settlement

systems, fundamental concepts, concepts of hierarchy, concept of complimentary area, range of goods; dynamics of central places.

UNIT VII
Rural Settlements
Types, patterns, morphology, house types, comparative study of origin and growth of settlements in ancient and modern times rural housing problems and policies.

UNIT VIII
Urban Settlements
City structure, Theories of urban structure - concentric zone theory, sector theory, multiple nuclei theory, gradient analysis, form of the pre-industrial city, dual structure of the colonial city, modern city forms, new towns and cities, environmental impact of planned and unplanned growth, rural-urban fringe.

UNIT IX
Settlements as a System (Settlement System) and Role of Urban Areas
Rural and urban continuum, city region relationships; growth pole theory, settlement systems in a developing economy, structure of city regions, area of influences, dominance; rural-urban fringes; its structure, stages of growth, its role in urban growth; urbanization, industrialization and urban development; push and pull factors; migration trends and impacts on urban and rural development.

Expected Outputs & Assignment
Students to make a brief recording of the geological studies at local or regional level in terms of the factors mentioned above. Internal assessment also to be in the form of term papers and tests on above mentioned topics.

References:
Das Gupta: Physical Geography
Harold Carten: Urban Geography
Truman & Hartshone: Interpreting Cities – An Urban Geography
R Y Singh: Geography of settlements

PL2015 MATERIALS AND STRUCTURAL SYSTEMS

Lecture Hours Per Week	*: 4*
Total Marks	*: 100*
Internal Assessment	*: 50*
End Examination (3 hrs.)	*: 50*
Credits	*: 4*

UNIT I

Introduction to built elements

Study of built elements in settlements with respect to materials used, basic construction methods and general specifications. General types & classifications of buildings; overview of different functional, structural and architectural elements.

UNIT II

Fundamentals of Structures

Introduction to basic structural systems, elements of structure, their functions & behaviour, beams, slabs, columns, walls, foundations, bearing wall systems, trusses, rigid frames, linear and curved elements; simply supported, cantilever and overhanging beams for various loads; effect of simple geometric forms on the overall structural behaviour.

UNIT III

Fundamentals of Forces

Primary and secondary forces acting on structures - dead loads, live load, wind, seismic forces, distribution of loads through the elements of the system.

Basic fundamentals in force systems, stresses and strains, temperature variation and resultant stresses, relation between E, N, and K; relation between bending moment and shear force, BM and SF diagrams.
Moment of inertia and section modulus for various structural shapes. Theory of simple bending, Columns and struts, failure of columns, Arches.

UNIT IV
Materials and finishes
Structural properties of basic materials like masonry, timber, concrete and steel, bricks, stone, timber, steel, plastics, composites, sand and aggregates, cement, types of paints and varnishes, claddings, finishes; uses, advantages and disadvantages.
Scope of the subject is limited only to understanding/ appreciating applications of above concepts/ principles in:
Infrastructure - roads, kerbs, paving, medians/ traffic islands, drainage channels, pipes, culverts, bridges, street furniture, lampposts, distribution poles.
Buildings- structural and functional typologies such as high-rise, large span, cantilevers, basements and cellars, ramps and elevators.

Expected Outputs & Assignment
Students to make documentation of different built elements and their aspects mentioned above. Structural/ study models of different structures such as arches, truss etc. shall be made along with short notes on the same and on relevant topics and tests on relevant topics.

References:
Rowland J. Mainstone: Development of Structural Form
Rangwala: Engineering Materials
S. P. Bindra, S. P. Arora: Building Construction
B.C. Punmia: Strength of Materials vol – I

PL2016 ECOLOGY AND ENVIRONMENT

Lecture Hours Per Week	*: 2*
Total Marks	*: 100*
Internal Assessment	*: 50*
End Examination (3 hrs.)	*: 50*
Credits	*: 2*

UNIT I

Ecology, Ecosystems and its relevance to Planning

Concepts and definitions of ecology, approaches in study of ecology and its relevance in Planning, types of ecosystems, structure, energy flow and bio-chemical cycles in ecosystems, ecological stability, nutrient budget, processes of invasion, succession and adaptation; impact of advanced agricultural methods, urbanization and industrialization on nature ecosystems in India & AP.

UNIT II

Basic Climatology

Components of climate, characteristics of different climates, micro and macro- climate, implications on settlement patterns and climatic aspects of building design, CBRI Climate map of India & NAO's Agro-Climatic zones of India.

UNIT III

Environmental Disruptions

Air, Water and Noise pollution, constituents, sources and processes; effects on human health; other types and sources of pollution, ozone depletion and global warming.

UNIT IV

Appropriate Technologies

Techniques of mitigating and monitoring various types of pollution; indigenous methods of wastewater treatment, waste stabilization ponds, aerated lagoons, oxidation ditches etc; methods of soil conservation and water harvesting etc.

Expected Outputs & Assignment
Internal assessment to be in the form of group studies and presentations on different ecosystems, climatic regions and settlement design aspects specifically in India and term papers and tests on relevant mentioned topics.

References:
Yadav, Mishra: Environmental Ecology
Koenigsberger: Manual for Tropical Housing and Building
K N Joshi, T N Chouhan: Environmental Monitoring & Environmental Measures
Bush, Mark B: Ecology of Changing Planet
Andrew Gaudi: The Human Impact
Khan, Agarwal: Environmental Geography

PL2017 INTRODUCTION TO COMMUNICATION SKILLS

Lecture Hours Per Week	*: 2*
Total Marks	*:100*
Internal Assessment	*:100*
End Examination	*:Nil*
Credits	*:2*

UNIT I
Introduction
Orientation for improving the skills of grammar, punctuation, and vocabulary in English focused primarily on developing communication and presentation skills.

UNIT II
Written Skills
Types & classification of reports, difference between technical, scientific, legal and other types of communication; Format and elements of reports, structuring of preamble, contents, chapterization bibliography, footnotes, appendices and references.

UNIT III
Formal Letters & Specifications
Business and official letters, styles and format, requests for specifications and other types of business enquirer, conduct

of meetings responsibilities of the chairman and secretaries; agendas and minutes of meeting official records.

UNIT IV
Literature Survey
Use of libraries, knowledge of indexing and available reference material.

UNIT V
Spoken English
Neutralization of accent, pronunciation, formal and informal communication, importance of voice and body language.

UNIT VI
Listening Comprehension
Role of listening in communication, listening for accent, rhythm and intonation, listening for main idea and specific information.

UNIT VII
Use of Multimedia in Communication
Computer adaptive presentations slide shows, using the overhead projector, etc. Style and format for the presentation of the seminar papers, technical reports, and dissertations.

Expected Outputs & Assignment
Each student shall present a written paper and a seminar at the end of the semester for final assessment on a topic to be finalized in consultation with the concerned faculty. Internal assessment to be in the form of book reviews, exercises in writing comprehensions and group discussions on any relevant topics.

References:
Geetha Rajivan, Kiranmai: Course in Listening and Speaking Skills Part I, Foundation Books Pvt Ltd.
Lorven: Enrich your Communication in English
The C Programming Language –Karningh and others
HTML Black Book

PL2018 COMPUTER APPLICATIONS

Lecture/ Practical Hours Per Week	*: 6*
Total Marks	*:100*
Internal Assessment	*: 50*
End Examination (Practical and Viva-voce)	*:50*
Credits	*: 6*

UNIT I

Introduction

Introduction and history of computer, software & hardware concepts - bits, bytes - types of languages – Operating systems (windows, DOS, Linux).

Introduction to Word Processing Package (like MS office), toolbar, creating a new document, formatting text, inserting tables, pictures, page numbers and date/time, spelling and grammar checking, taking print outs.

UNIT II

Spread Sheets

Introduction to spread sheets (like MS Excel), creating formulae, order of operations, borders and shading, inserting chart, taking print outs.

UNIT III

Multi-media Presentations

Introduction to multi-media presentation (like MS Power Point), creating a presentation, opening an existing presentation, creating a blank presentation, different Power Point views, slide manipulation, slide animation, slide transitions, view slide show, navigating while in slideshow, hyper linking to various other media/ application outputs, scanning of different media in different formats, setting of options, resolution settings, management of file size, integrating partial scans of large documents, pack up a a presentation for use on another computer, taking print outs.

UNIT IV

Exploring Microsoft Access

Introduction, creating new and opening existing databases, creating a database using a wizard, creating a database without using a wizard, tables - what they are and how they work, create a table from scratch in design view, primary keys, switching views, entering data, manipulating data, advanced table feature examples. Relationships - how to link multiple tables together, forms - what they are and how they work, creating a form using a wizard, reports - what they are & how they work, creating report & mail merge labels using a wizard.

Internet concepts

Introduction to Internet, Hyper Text Markup Language, introduction to basic features and uses of Java, VB.

UNIT V

Graphical Concepts

Photo editing and Desktop publishing (application) software Introduction, software & system requirements, preferences, workspace, graphics terminology, image depth, resolution and image size, up sampling and down sampling, image sources, straightening an image, cropping an image, basic image correction, printing photo edited documents, selections, choosing foreground and background colors, filling with color, options & preferences revisited, file browser,stepping back in time, use ram efficiently, sharpening images, working with layers, painting in photo editing software, color theory, image modes, channels, more advanced adjustment commands, file format categories.

Import and export of photo edited files, objects in photo editing, fills, outlines, basic toolbox of photo editing software (like Coral Draw), color management tools, starting your page right, introduction to Flash multimedia software.

UNIT VI

Programming languages

C language, flow charts; Introduction, What is C? Structure of C program, Variables, I/O statements, Branching and Looping, Arrays, Strings, Functions, Pointers, Structures, files.

UNIT VII

Database management systems

SQL (structured query language), PL/SQL; Introduction, creating and inserting data into tables, updating values, modifying tables, working with quires Basic Structure of PL/SQL, Variables and Types, Simple PL/SQL Programs.

Expected Outputs & Assignment

The internal assessment to be in the form of tests and practicals on above mentioned topics.

References:

Microsoft Office 2000- Leon Hard Woody, New Delhi, Prentice hall of India.
Microsoft Office for Windows –Sagman India Addison Wesley, 1999.
Adobe Photoshop CS Classroom in a Book (Classroom in a Book) by Adobe Creative Team (Paperback - December 1, 2003).
Fundamental Photoshop: A Complete Introduction by Adele Droblas-Greenberg.
SQL/PL/SQL – The Programming Language Of Oracle By Ivanbayross, Bpb Publications
LET US C –Yashwath Kanitkar
Programming In ANSIC –Balaguruswamy
The C Programming Language –Karningh and others
HTML Black Book

SEMESTER II

PL2021 GRAPHICS & PRESENTATION TECHNIQUES II

Studio Hours Per Week	*:12*
Total Marks	*:200*
Internal Assessment	*:100*
End Examination (External jury and Viva-voce)	*: 100*
Credits	*: 12*

UNIT I
Photography & Applications

Scope of photography and media, techniques and principles of photographic compositions, documentations in field studies.

UNIT II
Base mapping protocols

Types and contents of maps- topographic, cadastral, landuse, administrative maps, etc. Choice of appropriate scales (graphic and numeric); orientation of maps; title of sheet and lettering; techniques of reducing and enlarging maps, legends items, notations, use of monochrome and colour.

UNIT III
Techniques of base map preparation

Tracing the topographic sheets manually by identifying the regional/district boundaries, city and municipal ward boundaries, existing settlement boundaries, major water bodies, reserve forests, rocky formations ecologically sensitive areas, major roads, major electric power lines, historical monuments of national importance , and protected defence establishments; using of appropriate legend items, standard patterns, symbols and notations.

UNIT IV
Map analysis

Superimposition of the cadastral map to identify the revenue boundaries; ground verification of region/area for updation

and modification; land suitability analysis; layering exercises; techniques and application.

UNIT V

Preparation of thematic maps

Appreciation studies of land use classification of residential, commercial, institutional, transportation, recreation areas small urban and/ or rural settlements; tabulation and graphic presentation of statistical data; use of monochrome and colour coding, black and white as presentation techniques by using internationally accepted hatching patterns.

Expected Outputs & Assignments

- *Case studies to understand concepts of maps at different levels*
- *Exercise in preparation of maps for different scales.*
- *Base map preparation for a small area & documentation for the same.*
- *Photographic documentation of a small area.*

References:

Lanse Bowen Bellings: Perspective- Space and Design
Bhatt: Engineering Drawing
Frank Ching: Architectural Graphics

PL2022 QUANTITATIVE METHODS- II

Lecture Hours Per Week	*:4*
Total Marks	*:100*
Internal Assessment	*: 50*
End Examination (3 hrs.)	*: 50*
Credits	*: 4*

UNIT I

Tests of Hypotheses; Null hypothesis, Alternate hypothesis, Type I and Type II errors, level of significance, degrees of freedom, Critical region one and two-sample Z-Tests when

population S.D is known and not known, one and two-sample t-tests, paired t-test.

Chi-Square distribution: Introduction, properties, Chi-square test for goodness of fit of distributions, Chi-square test for 2 x 2 and m x n contingency tables.

Correlation and Regression: Simple correlation, scatter diagram, partial correlation, simple regression testing of correlation Coefficient for its significance, Testing of regression coefficients for their significance.

UNIT II

Time series: Components of time series analysis, Method of semi-averages, fitting of 1st and 2nd degree polynomials for trend fitting, seasonal variation, Method of moving averages for finding seasonal indices.

UNIT III

Index Numbers: Introduction, price relative, price Index, Laspeyre, paasche, Marshall- Edgeworth and Fisher's price Index Numbers, cost of living Index Number, Laspeyre, paasche, ,Marshall-Edgeworth and Fishers quantity index Numbers, Time anf Factor reversal tests for fishers index Number, points to be considered for construction of Index Numbers.

UNIT IV

Scaling Techniques: Measurement of data at Nominal, ordinal Interval and Ratio levels, Techniques of scale construction trough Method of paired comparisons, Internal Consistency check, Test of significance for paired comparison judgments, Method of Equal. Appearing Interval for Attitude scale construction, Method of summated ratings.

Introduction to Decision theory: Introduction, pay-off matrix, Decision making under certainty and uncertainty, Decision tree, transportation problem, Baye's theorem application for decision making.

Introduction to Queuing theory: Queuing situations Basic Queue Characteristics, Simple Queue formulae.

Expected Outputs & Assignment
The internal assessment to be in the form of tutorials and tests on applications to actual planning problems as stated above.

References:
SP Gupta: Statistical Methods
Ram Ahuja: Research Methods
Philip I. Good: A practical Guide to Data Analysis

PL2023 DEMOGRAPHY & URBANISATION

Lecture Hours Per Week	*: 4*
Total Marks	*: 100*
Internal Assessment	*: 50*
End Examination (3 hrs.)	*: 50*
Credits	*: 4*

Unit I
Introduction to Demography

Definitions, need for demographic studies, Demographic Variables, Data Sources, Theories of Demography, Population and Development; Concepts, measures, trends and explanations / determinants, data sources of Nuptiality, Fertility, Mortality (with special reference to infant mortality and maternal mortality), health and morbidity, in India (including differentials within India); biological and social factors. Cause of Death statistics; Life Table.

Unit II
Sources of Population Data

World: Census; Registration of vital events; Demographic Surveys; Population Registers. India: Census, Civil Registration System (CRS); Sample Registration Scheme

(SRS); National Sample Survey (NSS); Demographic surveys and other sources;

Unit III

Population Composition and Change

Spatial and temporal changes in the size, composition & distribution of population – global perspective with special focus on India; Composition of India's population; Demographic Composition; Social Composition; Economic Composition; Cultural Composition Concept of ageing.

Unit IV

Population Theories

Theories of Population Growth – Malthus to modern; limits to population growth; Theory of Demographic Transition; Population and Gender – its relationship with components of population – fertility, mortality, migration; Status of women – social, economic, cultural and health; Women empowerment and its demographic consequences; Population Policies and Programs; Population policies in the context of growth, structure, distribution and quality of life; National and State population policies in India.

Unit V

Population, Development and Environment

Concepts, definitions, relevance and measurement; Inter – relationship between population growth, environment and sustainable development with special reference to India; Implications of population growth on food supply, water, sanitation, housing, employment, health, education, etc; Spatial Distribution of Population; Measures of density and concentration; factors affecting spatial distribution and temporal changes in density and concentration; World / India's pattern of population distribution.

Population Movements: Basic concepts and definitions; circulation, commutation, mobility, migration – their environmental impact assessment; determinants and consequences of internal / international migration;

urbanization and migration in developed and developing countries; Theories of migration, pull and push factors; Lee's theory of migration; Ravenstein's Law of migration; Stouffer's model of intervening opportunities and competing migrants; gravity models; Harris – Todaro Model of Migration; Direct and indirect interrelations of population, natural resources and environment;

Unit VI

Urbanization: Introduction and Overview

Urbanization, History of urbanization, histories that shaped (post) colonial and transition societies in the Third World; Theorizing Urbanization/Urban Typologies; Concepts and definitions of urban; trends and patterns of urbanization in India; Issues in urbanization and urban problems in developing countries with focus on India; Urbanization as a global phenomenon; Urbanization and economic growth.

Unit VII

World Urbanization and Urbanization in India

Urban revolution; its preconditions; brief history of urbanization in the world leading up to the industrial cities, related problems, concepts of urbanism and urbanization; history of urbanization in India; Mughal and British influences of Indian cities; post-independence urbanization; urbanization process as influenced by socio-cultural, political, economic and administrative factors; definition of urban centers, concepts of rural urban continuum and dichotomy; census definition of urban places-town, cities, town groups, urban agglomerations, standard urban area metropolis, megalopolis etc. functional classification of urban centre.

Unit VIII

Policies and Strategies for directing Urbanization Trends in India

National Urbanization policy; basic issues in urbanization policy; role of national and state level policies; five year plans; salient features of the national commission of urbanization.

Programs / schemes such as the IDSMT, Mega-city project, JnNURM, UIDSSMT, Satellite towns / countermagnets of million plus cities, etc.

Expected Outputs & Assignment
The internal assessment to be in the form of term papers tests and presentations on above mentioned aspects of physical planning.

References:
Demographic and population problem by Rajendra K.Sarma Publisher: Atlantic
Hand book of Urbanisation in India,Second edition by K.C.Sivarama Krishnan, Amitabkundu, B.N.Singh Oxfor University pren.
Population and sustainable development in India by Ehsanul Haq,Sudhir kumar Singh
Population of India-2001 by S.N.Dubey.
Demography and population studios O.S.Shrivartama

PL 2024 QUALITY SURVEYING, ESTIMATION & SPECIFICATIONS

Lecture Hours Per Week	*: 4*
Total Marks	*: 100*
Internal Assessment	*: 50*
End Examination (3 hrs.)	*: 50*
Credits	*: 4*

UNIT I
Introduction to Specification & Estimation

Why the knowledge of quantity surveying and specifications is necessary for Planners? Significance and methods of writing specifications, classifications of specifications, sources of specifications; and Types and methods of cost estimation rates for different components of planning projects; ISI units of measurement and modes of payment for different items of works – prevalent rates types of estimates.

UNIT II

Specifications writing

Significance and methods of writing specifications; issues related to housing, infrastructure, pumping et; general specifications for housing, city level infrastructure like water supply network, pumping stations, sewerage network, power supply, road network, street lighting etc.

UNIT III

Specifications for Infrastructure & External Work

Detailed specifications for infrastructure works like W. S. system, sewage drains, roads, landscaping, railings, paving, pathways, and boundary walls, fencing.

UNIT IV

Estimation

Purpose of estimation, methods of estimation, types of estimates-approximate estimates, definite estimate; levels of detailed estimate; Cost estimation and determination of rates for different types of housing; Cost estimation and determination of rates of works involved in the infrastructure services (roads, water supply, sewer systems etc.);

Costing procedure for different land use categories, development works, interest on investment, and phasing; preparation of detailed Development Costs of a Planning Schemes for an approximate population of 5000 as per Norms and standards.

UNIT V

Valuation

Valuation, value and purpose of valuation; Definition and importance of valuation of land and buildings; Factors affecting property and land value at a city and locality level; fiscal and administrative measures of land value; Betterment charges, introduction to methods of calculating depreciation value of buildings.

Expected Outputs & Assignment
Internal assessment shall be in the form of case study by taking small unit of urban or rural area. Tutorials and tests to be conducted for estimation and valuation taking any field problems.

References:
Rangwala: Valuation of Real Properties (Charota Publications)
Vazirani/Chandala: Estimation & Costing
B.N. Datta: Estimation & Costing
Gurucharan Singh: Building Planning, Designing and Scheduling

PL2025 ELEMENTS OF ECONOMICS & SOCIOLOGY

Lecture Hours Per Week	*: 4*
Total Marks	*: 100*
Internal Assessment	*: 50*
End Examination (3 hrs.)	*: 50*
Credits	*: 4*

UNIT I
Introduction
Definition and scope of economics and its importance in urban and regional planning, general problems of economics, micro economics, macro economics, Basic concepts-Market, price, value, wealth, capital, rent, etc.,

UNIT II
Economic Theories
Theory of production, factors of production, scale of production - internal external economics, division of labour. Theory of Demand, Supply and demand, the market mechanism, imperfection of competition and economic role of Government, Theory of income, employment and money, indicators of economic development used by World Bank & UNDP and their interpretations. Problems of economic growth and development, characteristics of under developed economics, balanced growth and industrialization, population

problems, technological change and innovations long-term economic plans, economics of urbanization.

UNIT III

Introduction to Economic Thought in India

Ancient economic thoughts: approaches of Kautilya's Arthashastra, Vedas, Epics, Smritis, Vartha, etc to national economy, economic functions of state, town planning and social security.

Medieval economic thoughts: Economic ideas of Aladdin Khilji, Mohammad Tughlaq, Feroz Shah Tughlaq, Sher Shah, Akbar.

Beginning of Indian Economics: Dadabhai Naoroji- Poverty & Economic Problems; M.G.Ranade- Idea of Economic Development, India's Poverty; Gopal Krishna Gokhale- Public Expenditure and Financial Reforms; Brij Narain- Democratic Planning.

The three phases of Gandhi's economic thoughts, background of Gandhian era, welfare economy, non-violent economy, and decentralization, regeneration of villages, Gandhi and Sarvodaya programme.

UNIT IV

Modern Economic Planning in India

Planning Commission, National Five Year Plans, annual budgets, National Finance Commission, National Development Council, State Finance Commission, allocation of resources, State Plans and budgets (particular emphasis on AP) etc.; basic structure and interpretations, income groups, definition of poverty, poverty lines, introduction to poverty alleviation programmes, income distribution, inequalities and regional disparities, national income (GNP and NNP) fiscal policy and inflation, Indian financial institutions- Study of relevant documents.

UNIT V

Introduction to Sociology

Definition and scope of Sociology; Basic concepts in the study of society. Ethnic groups, Social groups, Social institutions. Social stratification, order and change. Social control.

Levels of social organization and the evolution of social institutions over time (with special emphasis to institutions in India and AP). Sociological tenets and schools of thought from classical Indian treatises such as Manusmruti, the Arth-Shastra, Dharma Shastras, Upanishads, etc.

UNIT VI

Behavioural Sociology

Conveyed meanings in terms of societal values, communication patterns, symbols and meanings. Selected examples from the 'vernacular' and 'classical' cultures in AP, India and other parts of the world.

Relationship between Sociology and Physical Planning The effects of physical environment on behavior. Expressions of different scales and different levels of social organizations in built form, issues of social organization - urban sociology - social anthropology.

UNIT VII

Sociology of India & AP. Basic features of Indian society and culture - language, religion, caste and tribes (with emphasis on AP).

Rural community and relationship with urban community.

UNIT VIII

Urban and Industrial sociology: Urbanization and its social aspects, rural-urban migration. Concept of an Industrial society, social aspects of industrialization.

Social issues and problems of the urban community – crime, delinquency and violence with case examples in India & AP.

Expected Outputs & Assignment;

Economics:

The internal assessment to be in the form of term papers on above mentioned aspects relating specifically to settlement and development planning.

Sociology:

The course should deal with the topics through lecture and field study. Students to record different cultural patterns and social aspects, current issues and problems pertaining to a unit area (neighbourhood or public spaces etc) at local level. The internal assessment also to be in the form of term papers and tutorials emphasizing on issues regarding above mentioned aspects at state, regional and national level.

References:

Raj Kumar Sen, Biswajeet Chattered: Indian Economy – Agenda for the 21st Century
M.K.Gandhi: Constructive Programme-Its meaning and Place
S.K.Srivastava: History of Economic Thoughts
Kansal: Sociology of Social change
Schaefer: Sociology Brief Introduction (Fourth Edition)
K.Motwani, R.D. Saxsena: Encyclopedia of Sociology of Politics
Ahuja: Social problems in India (Second Edition
Adams Sydie: Sociological Theory

Note:

- Both in internal assessment & external Examination weightage of marks shall be 50% for Economics & 50% for Sociology.
- External examination paper shall have part A & part B testing the knowledge of students in Economics & Sociology separately giving equal weightage.

PL2026 SURVEYING & PHOTOGRAMMETRY

Lecture/ Practical Hours Per Week	*: 4*
Total Marks	*: 100*
Internal Assessment	*: 50*
End Examination(Practical and Viva-voce)	*: 50*
Credits	*: 4*

UNIT I

Basic Principles and Chain Surveying

Definitions, scales and symbols, measurement of distance, instruments used, ranging of survey lines, chaining a line with

examples, chaining on sloping ground, errors in chaining, tape corrections, chain surveying, principles, off-sets, field notes, instruments, obstacles in chaining, plotting chain survey with practical examples, introduction to total station survey.

UNIT II

Compass Surveying and Plain tables surveying

Definition of compass surveying, traversing, types of traversing, applications, advantages and disadvantages, principles and instruments used in compass surveying; Concept of bearings, meridian and angles, designation of bearing, fore bearing and back bearing, local attraction;

Definition, application, advantages and disadvantages of plane table survey; instruments used, working operation, methods of plane table survey; Preparation of map of a small area with plane table survey.

UNIT III

Automated Surveying

Introduction to use of digital surveying – instruments such as distomat – total station, electronic theodlite – temporary adjustments – traversing - Measurement of horizontal and vertical angle, GPRS Technology.

UNIT IV

Computation of Areas and Leveling

Computation of areas; from field notes and from plan with examples, leveling; instruments used, definitions, principles, reduction of levels, classifications of leveling, errors in leveling, contouring; characteristics of contour lines, interpolation and interpretation of contours, uses of contour lines.

UNIT V

Photogrammetry

Basic principles and concepts in aerial remote sensing; aerial photography, types of photographs; stereoscopic principles, elementary stereoscopic devices; scale of photographs,

measurement of heights from photographs and use of parallax bar; principles of Photogrammetry; applications in urban and regional planning.

Expected Outputs & Assignment
Internal assessment shall be in the form of practical by taking of small unit of urban or rural area Tutorials and tests to be conducted for surveying and photogrammetry taking any field problems.

Part field exercises:
Exercises using Automated surveying tools have to be given assignments. Exercises to be given in Total station and GPRS Technology.

References:
R. Agor: Surveying and Leveling
Kanetkar: Surveying and Leveling
B.C. Punmia: Surveying and Leveling

PL2027 SEMINAR-I (HISTORY OF CIVILIZATIONS)

Lecture Hours Per Week	*: 3*
Total Marks	*: 100*
Internal Assessment	*: 100*
End Examination	*: Nil*
Credits	*: 3*

UNIT I
Concept of Civilization
Correlation of culture, civilization, architecture and planning. Sources of culture and civilizations.

UNIT II
Character of Early Civilizations
Indus Valley civilization, Harappan civilization, Vedic civilization, Egyptian and Maya civilizations. Evolution of Summerian, Babylonian and Persian Cultures.

UNIT III

Historical Background of Greek & Roman Civilizations

Evolution of city, states in Greece, Development of art, sculpture and architecture; Evolution of Republican states in Rome; Impact of Religion on civilization, Birth and spread of Christianity, Islam, etc. and their impact on civilizations; Chinese and Japanese cultures and an outline of those civilizations.

UNIT IV

Influence of Industrial Revolution and Modern Movements

Effect of Industrial Revolution and other modern movements on cities, urban life, architecture, urban spaces, art, construction technology, etc; Man-made landscape in history; a comparative study of the major traditions of landscape design in the east and the west in relation to concepts of space and variations in the use of landscape elements.

Expected Outputs & Assignment

The internal assessment to be in the form of presentations focusing on understanding the process of evolution and the social and cultural development of man. Each student shall present a written paper and a seminar at the end of the semester for final assessment on a topic to be finalized in consultation with the concerned faculty. This shall be based on extensive literature reviews, site visits (wherever possible) and interviews with experts.

Reference & Essential readings:

Colinewood: The Idea of History
Arnold Toynbee: A Study of History
Lewis Mumford: City in History
Sybel Maholy Nagy: Matrix of Man
G.P.Singh: Republics, Kingdoms, Towns and Cities in Ancient India

SEMESTER III

PL2031 SITE PLANNING & BUILT ENVIRONMENT

Studio Hours Per Week	*: 9*
Total Marks	*:200*
Internal Assessment	*:100*
End Examination (External jury and Viva-voce)	*:100*
Credits	*:9*

Case study: Detail case study of a residence, study of various rooms (living, dining, kitchen, bedroom, toilets etc) including furniture and generating measured drawings of the same.

Climatology: Introduction to effects of micro and macro climates on built forms, orientation, and ventilation, protection from excessive sun, rain, dust and insects. Students in groups of 3-4 shall study effects of climate on buildings, open spaces, vegetation and draft a report on protecting buildings from climatic variations of a local campus.

Site Appraisal and Analysis: Site analysis and user analysis including environment and quality of life. Inventory of existing features of a selected site (minimum 10 acres) understanding contours. Cut and fill vs geomorphic approach to site development, principles of geomorphic layout, types of soils, slopes, natural drainage pattern, types vegetation and their implications on the development of the site. Students in groups of 3-4 have to survey a selected site and study the natural features. The study shall relate to layout level regulation modules of GRIHA, LEED and HMDA Guidelines on Environment and National Building Codes

Expected outcome:

Site appraisal and analysis of a existing project - site appraisal and analysis sheets are to be prepared.

Site plans need to assessed based on LEED, GRIHA layout stipulations/ building regulations and submitted in the form of report

Landscape aspects in Site Planning: Study of development as a response to constraints and opportunities offered by the site, grading in relation to existing contours, plinth levels, road alignment and storm water drainage. Role of landscape, its environmental benefits, functional requirements, aesthetic considerations, and principles of organizing outdoor spaces need to be emphasized. Community layouts containing 20-30 houses have to be analyzed.

Site planning:

One Minor studio exercise emphasizing on relationship between built form and outdoor areas and site planning issues for any one of the areas such as institutional campus plans, residential layouts or IT parks layouts. Exercise on understanding and modifying land form Examples- Surface Parking Plan, Road layouts (grading and alignment) layouts of small communities etc;

The distribution of marks in the studio subject may be as follows:

40% for individual assignment
60% for group work

References:

R Gene Brook: Site planning, environment, process and development TSS, NBC
Kevin Lynch: Site Planning
Premier on Problem Seeking
Michael Laurie: An introduction to landscape architecture
Tom Turner: Landscape Planning
S. K. Bhattarcharjee: Landscape Gardening & Design with Plants
Landscape and Land use Planning by lovJoy

PL2032 TRAFFIC & TRANSPORTATION PLANNING- I

Lecture Hours Per Week	*: 4*
Total Marks	*: 100*
Internal Assessment	*: 50*
End Examination (3 hrs.)	*: 50*
Credits	*: 4*

UNIT UNIT I

Transport and Road Development

Economic, political and social significance and transport development; Characteristics and role of various forms of transport. Transport policies and programmes in India before and after independence. Historical perspective of road development in India; Scope and content of Nagpur, Mumbai and Lucknow road development plans; Schemes for Road development in Urban and rural areas and industries, Road development Plan by Indian Roads Congress 2021.

UNIT II

Geometric Design and Road design

Components of geometric design – Horizontal and vertical alignment, sight distance, cross section, alignment check lateral and vertical clearance, control of axis, design guidelines for transport infrastructure

Road hierarchies, classification, capacity and level of service, space standards for road design, land acquisition-components, objectives and functions, intersection types – controlled and uncontrolled and rotaries, space sharing and time sharing junctions – their merits and demerits, design in built up areas, cycling and pedestrian systems – design considerations and guidelines, road and transport infrastructure- terminals, depots, bus bays, stops, fuel stations etc

UNIT III

Surveys and Studies

Demand and supply surveys and studies; traffic volume-traffic density, traffic flow and speed; parking supply and demand, provision and layout of on street and off street parking, traffic regulatory measures for parking, pedestrian facilities; pedestrian volume studies, origin- destination studies, accidents surveys.

Volume count, Origin-Destination, Speed and delay, parking and accidents surveys – their need, design of proforma, methods of conducting surveys, analysis and interpretation.

UNIT IV

Urbanization and Transport problem

Traffic characteristics and problems at National, regional and urban level; different modes of transport modes – slow and fast and their characteristics; vehicle types, capacity, overloading factor, road characteristics. Public and Intermediate Transport systems-Rationale, criteria, choices.

UNIT V

Traffic Management

Objectives, principles and approach for traffic management; traffic signs and signals; types signs, signs standards, location and maintenance; traffic signals- types, advantages and disadvantages, traffic safety, environmental impact

Expected Outputs & Assignment

The internal assessment to be in the form of term papers/tests and presentations on above mentioned aspects focusing on their applications to current planning issues.

References:

Khanna & Justo: Highway Engineering
L.R. Kadiyali: Traffic and Transportation Planning Vazirani and Chandola Transportation Engineering, New Delhi
Road Development Plan of India 2021 – Indian Road Congress
GV Rao: Principles of Transportation and Highway Engineering
VS Mahajan: Transport Planning, Policy and development

PL2033 PLANNING PRINCIPLES-I

Lecture Hours Per Week	*: 4*
Total Marks	*: 100*
Internal Assessment	*: 50*
End Examination (3 hrs.)	*: 50*
Credits	*: 4*

UNIT I
Introduction
The importance and significance of study of history, human settlement as the physical expression of a civilization; increasing urbanization and need for the higher levels of expertise to handle the situation in future; human settlements planning as the end result of this understanding.

UNIT II
Concepts of time as dimensions of the built form
Concept of space and scale as followed through different cultures; the elements of the town, the house, the street, the chowk; social and cultural criteria of location of towns and activities within it.

UNIT III
Concept Formation and Perception of Space
Thinking process; cognitive units, concept formation, hypothesizing, conceptual scheme and behaviour formation; perception of space, behaviour pattern in small spaces; space at city scale; urban activity patterns, urban symbolism image of the city, building attributes, cognitive maps, urban behavior; attitudes towards city, metropolitan personality, geographical space, functional space.

UNIT IV
Planning Through the Ages
Planning in ancient India; Manasara treatise and socio-cultural role of the Agora as an element of planning in Greece; the Roman city, the European Medieval cities and

Medieval planning in India, the common man and idea of the baroque plan.

UNIT V
The Modern City
Technological advances and their effect on the town; utopian thinking and movements about urban improvement and planning; the concept of neighborhood planning; planning concept and city structure in typical new town design, foreign examples; planning concept of Chandigarh.

UNIT VI
Synthesis
The concept of ring towns and satellite towns; Delhi Master Plan and the concept of NCR, disorientation of contemporary towns from their cultural context; the concept of conservation, the role of planner as a central figure to understand the present day problems through the medium of the study of history.

UNIT VII
Planning Practice in India
An overview of evolution from piecemeal projects, town planning schemes, comprehensive development plans for towns and cities to regional planning, efforts; metropolitan planning and metropolitan region development plans; scope and content of planning practice today; role of central, state and local governments in urban and regional planning and development; evolution of local governments, development authorities and other planning and development agencies and their role in planning and planning administration.

Expected Outcomes & Assignment
Students in-group shall carry out documentation of model cities based on above concepts and may culminate as seminar on the same. Internal assessment also to be in the form of tutorials on theories mentioned.

Reference:
Demetxios Caraley: City Governments & Urban problems A New introduction to urban politics
Edited by Ravinder Singh Sandhu, Sarup Singh Minhas & Jasmit Sandhu: Sustainable Human settlements the Asian Experience
Levy: Contemporary Urban Planning (fourth Edition)
N.V.Modak & V.N. Ambedkar: Town and Country Planning and housing

PL2034 PLANNING TECHNIQUES

Lecture/ Practical Hours Per Week	*: 4*
Total Marks	*: 100*
Internal Assessment	*: 50*
End Examination (3 hrs.)	*: 50*
Credits	*: 4*

UNIT I
Spatial Standards

Formulation of spatial standards for residential, industrial, commercial and recreational areas, space standards for facility areas and utilities. Performance standards.

UNIT II
Demographic Analysis

Sources of demographic data; population structure and composition-age sex composition, sex ratio, dependency ratio, child-woman ratio; measures of age-sex structure, age-sex pyramid, population composition; martial status, cast region, literacy level, etc; life table techniques; techniques in preparing life tables, abridged; basic cohorts survival model, inter regional cohorts survival model.

UNIT III
Population projection

Simplex population forecasting models – The linear model, Exponential curves, modified exponential, Gompertz growth

curve, comparative method and ratio method. Composition population forecasting models – the cohort-survival model, Migration model.

UNIT IV

Regional Survey

Techniques for conducting regional surveys; data requirements for various types of regional plans; direct level plans, metropolitan region plans, backward regions, resource regions etc; regional delineation techniques, rationalization - cluster and factor analysis, input-output techniques.

UNIT V

Economic Analysis

Multipliers, Input-Output Analysis, Brief introduction to projection techniques like ratio and econometric methods, Analysis of labour force; sectoral shifts and employment.

UNIT VI

Spatial Analysis

Comparative analysis techniques – Specialization, Concentration and Independence Systems approach to planning, Understanding structure of urban areas - density patterns, locational decisions - forces of concentration, and dispersal association Gini coefficients and Lorenz curves, Spatial distribution analysis using cartography techniques, Rent and Gradient models, Location equilibrium of the firm - transport and labour orientation, Market and supply area analysis and thresholds. Pure gravity models, Reilly's law and mapping of trade areas - constrained and unconstrained gravity model - methods for parameter estimation.

UNIT VII

Plan Preparation Techniques

Methods of identifying urban and regional problems, Setting of goals, objectives priorities. Methodologies for preparation of urban/regional development plans, master plans, structure plan and strategy plan techniques; plan implementation

techniques; public participation and plan implementation; techniques of urban renewal and central area redevelopment.

Expected Outputs & Assignment

The internal assessment to be in the form of term papers and tutorials on above mentioned aspects. Students shall take up any one example area at any level and apply above analysis techniques.

References:

Martin Cadwallader: Analytical urban Geography
Lewis Keble: Principles and Practice of Town and Country Planning
Peter Hall: Urban and Regional Planning
Leslie J King: City, Space and Behaviour, the elements of Urban Geography
C. Lee: Models in Planning
A. G. Wilson: Urban and Regional Models in Geography and Planning.

PL2035 URBAN ECONOMICS & SOCIOLOGY

Lecture/ Practical Hours Per Week	*: 4*
Total Marks	*: 100*
Internal Assessment	*: 50*
End Examination (3 hrs.)	*: 50*
Credits	*: 4*

UNIT I

Introduction to Urban and Regional Economics

Use of economic concepts in urban planning, housing, transport, taxes, land use, location, etc; use of economic concepts in regional planning; location, disparities in development, input-output techniques, sectoral development etc.

Nature of urban areas; scale economies; agglomeration economies; urban size limits vis-à-vis transportation systems; trends in sizes and structure of urban areas; suburbanization;

UNIT II

Land Economics and Urban structure

Economic concept of land; basic principles of land economics – and economic principles of land use; relevance for spatial planning, economic rent - market mechanism, land use pattern and land values; location economics. Urban area with a single industry; households in an urban spatial context; several urban sectors; realistic urban location patterns and urban simulation models; variations in rent, wages and density predictions; rural-urban boundary; criteria for economic performance; conditions for economic efficiency; externalities in an urban context; simplified model of urban structure.

UNIT III

Economics of Town Planning decisions

Land and real estate market, private ownership and social control of land, effects of legislation and town planning decisions on land development and urban land economics. Land development charges and betterment levy; land use restriction, compensation and requisition, taxation of capital gain on land versus public ownership's, economic aspects of land policies at various levels of decision making. Theory of land rent and land use; welfare and ethical aspects of land rent.

UNIT IV

Urban challenges

The problem of poverty; measures and demography of poverty; policies and programmes for reducing poverty; housing – quantity and price measure for housing; cost of capital; market for housing; cash flow, inflation and housing finance; housing problems associated with slums and squatters.

SOCIOLOGY

UNIT V

Relationship between sociology and town planning. Concepts of social and physical utopias in history – relevance in Indian context. The 'dual city' of the colonial era and of the globalization era; Neighbourhood Concept - Implications and limitations in India context.

UNIT VI

Urbanisation and Socilogy

Urbanisation and urbanism in the context of the sociological dynamics in urban areas; study of the historical patterns of urbanisation as a process influenced by socio-cultural, political, economic and administrative factors; culture, language, religion, caste, rural community and its relationship with urban community, social stratification of the urban and rural poor.

UNIT VII

Urban and Industrial Sociology

Urbanisation and urbanism; social aspects of urban-rural migration; concepts of industrial society; social aspects of industrialisation; The Chicago school of sociological thought, social organisation and space in the city; urban space and segregation; suburbanization and gentrification, changing inequalities; Louis Wirth and the urban way of life; metropolitan culture, the culture of modernity; urban culture and post modernity.

UNIT VIII

Introduction to the sociological concepts of Marx, Talcot Parsons, Weber, Durkheim, Riesman, Jane Jacobs, Gans, Castells, David Harvey, etc. with reference to urban development, structure, planning and management.

Expected Outputs & Assignment
The internal assessment to be in the form of term papers,tests and presentations on above mentioned aspects focusing on their applications to current planning issues.

References:
Irwin McGraw Hill: Urban Economics
Mill & Hamilton: Urban Economic
Evans: Urban Economics
B.L. Mathur: Economic Planning & Development Theory & Practice

PL2036 CAD APPLICATIONS IN PLANNING

Lecture/ Practical Hours Per Week	*:6*
Total Marks	*:100*
Internal Assessment	*:50*
End Examination (Practicals and Viva-voce)	*:50*
Credits	*:6*

UNIT I
Starting AutoCAD
Introduction to the menu, starting drawings from scratch, Creating and using templates-starting drawings with setup wizards. Saving and closing a file.

UNIT II
Using co-ordinate system
The UCS, Working with Cartesian and polar co-ordinate systems, using displays with key shortcuts.

UNIT III
Setting up the drawing environment
Setting the paper size, Setting units, Setting grid limits, drawing limits, Snap controls, Use of paper space and model space.

UNIT IV
Basic 2d drawing and editing commands

Basic commands dealing with drawing properties, Layer control, change properties, line weight control, etc.

Inquiry methods

Using database information for objects, calculating distance and angle, areas.

UNIT V

Blocks

Creating and working with blocks, creating symbols, use of blocks in creating a layout of a residential area- one exercise to be done as lab assignment.

2D & 3D conversion, perspective view, walk through of layout.

UNIT VI

Digital cartography

Use of AutoCAD Map in creating and editing maps. Scanning the primary source/map, importing / scanned maps/ images / drawings into AutoCAD, digitizing / vector sing and editing, creating a layout / map and printing - one exercise to be done as lab assignment.

Expected Outputs & Assignment

Students shall prepare a basemap using CAD for any given area. Practicals shall be conducted from time to time for internal assessment.

References :

- Mastering Auto CAD-2011 and Auto CAD LT 2011.
  Auto Desk official training guide.
  -Wiley publishing Inc.
  By George Omura.
- Learning Auto CAD-2010
  Auto desk official training guide

PL2037 HOUSING & COMMUNITY PLANNING

Lecture Hours Per Week	*: 4*
Total Marks	*: 100*
Internal Assessment	*: 50*
End Examination (3 hrs)	*: 50*
Credits	*: 4*

UNIT I

Introduction

Significance of housing in National Development Goals; Equity and efficiency parameters of housing; current issues in housing. Housing as a Basic Human Necessity and a major land use component and integral sector of urban and regional development.

UNIT II

Assessing Housing

Existing Housing Statistics; definitions; urban and rural housing statistics; introduction to concepts of Housing Shortage, Housing Need, quantitative and qualitative aspects of housing; Housing Demand – Understanding current methods of demand assessment; knowledge of data sources and their use and interpretation; census, NSSO and other data; Limitations of existing methods of assessments.

UNIT III

Housing Development Process

Understanding of factors affecting residential location, theoretical knowledge of ecological, neo-classical, institutional approach to housing; Housing subsystems and their characteristics; formal and non-formal housing; Process of Public and private sector housing development process; policy context, actors and their interrelationships; Inner city housing, Slums, Squatter housing, Unauthorized Housing; Role of different institutions in housing; International agencies, NGOs, State, Financing Organizations, Private developers, Cooperatives.

UNIT IV

Housing Standards and Design

Factors determining residential densities; Densities, costs and development control regulations; Housing design parameters and their relationship to costs; Housing design and climate; Housing for disaster prone areas.

UNIT V

Housing Policy Analysis

Understanding and evaluation of Housing Policy and programmes in India; five year plans, Central government policy; Policy frame work for urban and rural housing; Comparative policy analysis; Housing for the low income groups; Co-operative housing, objectives and principles; management and financing of housing projects; investment in housing in public and private sectors.

UNIT VI

Housing typologies in various contexts

Brief review of the historical development of housing typologies in various contexts - the pre-urban house, Transient dwellings, Temporary dwellings, Semi-permanent and permanent dwellings, the oriental urban house. (Mesopotamia, The Indus., Egypt, China, The Greek and the Romans).

Evolution of housing - the urban house - history of modern housing typologies. (The age of the Renaissance, The industrial revolution, Current practices - various design approaches].

Expected Outputs & Assignment

Apart from tests and assignments each student shall present a written paper and a seminar at the end of the semester for internal assessment on a topic to be finalized in consultation with the concerned faculty. This shall be based on extensive literature reviews, site visits (wherever possible) and interviews with experts.

The distribution of marks for the subject may be as follows:

40% for individual assignment/tests
60% for written paper and seminar

SEMESTER IV

PL2041 NEIGHBOURHOOD & AREA PLANNING

Studio Hours Per Week	*: 9*
Total Marks	*: 200*
Internal Assessment	*: 100*
End Examination (External jury and Viva-voce)	*: 100*
Credits	*: 9*

The course is oriented towards study of a neighborhood involving location, salient features, spatial characteristics, facilities and amenities, road circulation patterns, spatial and non-spatial linkages to surrounding areas, Comparison with standards, building byelaws, Zoning regulations and NBC codes also shall be undertaken to understand implications of byelaws and regulations.

Surveys: Students in groups shall study about techniques of conducting surveys for land use, building use, land utilization and physical features of the land. Also Questionnaire design, sampling techniques and types of socio economic surveys need to be studied. Survey of a locality consists of

a. Identify the area/locality on map of city, study the area for its relation to surrounding land uses
b. Prepare broad based questionnaire under heads of Land use type, building condition, aesthetics, socio economic character and infrastructure etc ; Also identify sample unit and type to be used
c. Field visit to study land use types, activities, boundaries of the area, circulation, open spaces, drainage, building types, water requirement, and sanitation
d. Identify problem areas in physical, visual and environmental areas
e. Prepare land use and other maps

f. Compile socio economic data, identify planning issues, problems and potentials of the area

Expected outcome: Presentation of data and a report with all case study details and survey results to be submitted

Techniques of Presenting and Analysing Data: Land use classification, coding and analysis; residential and non-residential density patterns and analysis, tabulation of data;

Expected outcome: Group presentations on Analysis of data

Role of Landscape Planning: Landscape elements like plant materials, surface materials, outdoor fittings and structures; Role of vegetation, Environmental benefits, functional requirements, aesthetic consideration; typical situations and criteria for design with plants and selection of species in planning.

Expected outcome: Presentation on uses of landscape for functional, aesthetic purposes, Street/roadside planting and Principles of organization of outdoor spaces

Group Housing Design: Students shall plan individually a residential housing layout for a selected site, accommodating at least 5000 people. Students also have to plan and prepare alternate layouts for different residential densities and their variations, typology of housing (row housing, Cluster housing, Apartments, low rise vs high rise, incremental housing, neighborhood unit etc)taking into account building bylaws, zoning regulations GRIHA, LEED rating etc. The proposals shall address issues of Sustainability, environment, and infrastructure.

Expected outcome:

Site layout alternates, site sections showing contour differences and block heights, circulation, patterns, basic infrastructure, block level layout, working drawings of layout, a block model of the layout in selected medium.

- ***The distribution of marks in the studio subject may be as follows:***

  40% for individual assignment
  60% for group work

PL2042 TRAFFIC & TRANSPORTATION PLANNING- II

Lecture Hours Per Week	*: 4*
Total Marks	*: 100*
Internal Assessment	*: 50*
End Examination (3 hrs.)	*: 50*
Credits	*: 4*

UNIT I
Evaluation of Urban Structures

Transport systems, infrastructure and management, transport systems and their types, design and operating characteristics, urban road hierarchy, planning engineering and management criteria for road and junction improvements, arterial improvement techniques.

UNIT II
Planning and management of Transport System

Introduction to transport planning process; trip generation, trip distribution, trip assignment, modal split, land use transportation models; existing orgnisational and legal frame work, traffic and environmental management techniques; review of the existing traffic management schemes in case cities.

UNIT III
Regional Transport Systems

Importance of accessibility in regional transport planning, role of road, rail, air and water transport systems, regional transport systems planning; road network planning for micro regions.

UNIT IV

Transport and Environment

Traffic noise, factors affecting noise, noise abatement measures, standards; air pollution standards; traffic safety; accident reporting and recording systems, factors affecting road safety; transport planning for target groups - children adults, handicapped and women; norms and guidelines for highway landscape; street lighting types, standards and design considerations.

UNIT V

Economic – Evaluation and Transport Policies

Pricing and funding of transport service and systems, economic appraisal of highway and transport projects; techniques for estimating direct and indirect road user costs and benefits, value of time; review of national, state and local level transport policies and their relevance in spatial and economic planning, pricing and funding of transport systems; energy and environmental implications in transport; transport policy planning; transport planning in developing countries.

Expected Outputs & Assignment

Students are expected to study and evaluate any significant transportation project covering above aspects at village or town/city level. Internal assessment could also be in terms of tutorials on related topics.

Reference:

John W. Dickey: Metropolitan Transportation Planning, Tat Mc Grawhill Publishing Company Ltd.

S. K. Roy: Transportation Planning for developing Countries, Prentice – Hat India, New Delhi.

Hutchison .B.G: Principles of Urban Transport Systems Planning, Mc Graw Hill Book Company

Bruton M.J: Introduction to Transportation Planning, Hutchison & Company London

PL2043 PLANNING PRINCIPLES-II

Lecture/ Practical Hours Per Week	*: 4*
Total Marks	*: 100*
Internal Assessment	*: 50*
End Examination (3 hrs.)	*: 50*
Credits	*: 4*

UNIT I
The Meaning of Planning

Definitions, planning as a hierarchical process, systems concept, systematic planning, optimization, planning as a problem solving process, philosophy and purpose of planning, justification of planning, normative planning, positive planning and ameliorative planning, ecological perspective of planning, the scope and meaning and objectives of planning; town planning as a practice, profession and discipline; the nature of town planning problems; development of planning thought.

UNIT II
Physical Planning

Origin of physical planning; basic questions; essential features and cornerstones of physical planning, changes within physical environment; systemic change, systems approach to physical planning, control mechanisms, physical planning as a guidance and control of change, contributions of physical to economic and social development, planning in transition; dimensions of change, future directions.

UNIT III
Process of Planning

Definition and meaning of values, norms, goals and objectives; methodology of goal formulation; development plans; structure plans, local plans, district plans, action area plans, public participation, people and plans; regional planning.

UNIT IV

Land Use and Planning

Concepts of land, location attributes and land uses, determinants of land use and relationship to the Planning Process, Demand and supply of land for urban use - means and mechanisms - impact on urban structure. General goals of land policy.

Rationales for land use planning, Approach to land use planning. Land use and transportation planning. Transport Network classification and standards, elements, etc., planning principles, land use planning information system, Activity systems and choice of space qualities; Systems approach and physical planning.

UNIT V

Plan Preparation and Implementation Agencies

Central, state and local government agencies; management structures of agencies; development control; regulations; importance of town and country planning acts in India.

Expected Outputs & Assignment

The internal assessment to be in the form of term papers and presentations on above mentioned aspects of physical planning.

Reference:

Demetxios Caraley: City Governments & Urban problems A New introduction to urban politics
Sustainable Human settlements the Asian Experience
Clifford Guy: The Retail development process location, property & planning
Levy: Contemporary Urban Planning (fourth Edition)
Nicholas R. Fyle: Images of the Street
Dino Borvi, Abdul Khakee and Cosino Lacirignola:
Evaluating Theory – Practice and Urban – Rural Interplay in Planning

PL2044 INFRASTRUCTURE PLANNING- I

Lecture/ Practical Hours Per Week	*: 4*
Total Marks	*: 100*
Internal Assessment	*: 50*
End Examination (3 hrs.)	*: 50*
Credits	*: 4*

UNIT I
Introduction, Basic Concepts and Theories

Role of physical planner in planning of utilities and services; objectives of utilities and services planning and implications for public health and environmental protection.

UNIT II
Storm Water System

Definition of hydrology, Classification, hydrological cycle, Significance of interpretation and presentation of rain fall data; Surface water run-off, hydrograph, method for estimating run off, unit hydrograph and its application, definition of watershed; flood frequencies, flood protection measures in urban areas.

Layout and design of storm water system; general considerations, inlets, self-cleaning velocity, non-scouring velocity, physical layout-design principles, data requirement.

UNIT III
Water Supply System

Surface and ground water sources, quality and quantity, location of sources and water intakes, area requirements of the components of water intakes; water requirement for different land uses, factors affecting water demand, per capita requirement and its relationship with population sizes, variation of water consumption; seasonal & hourly, peak factor; demand of water for firefighting; Water treatment system, location and space requirements; Components of water distribution systems, water storage location, capacity, fire fighting components, fire hydrants location, spacing, pressure requirement in pipe; Planning of water supply

system, organizations and their jurisdictions, basic design guideline and layout of water supply distribution system; Financing water supply system, public and private partnership of providing water; Legal aspects and government policy for urban and rural water supply.

UNIT IV

Sanitation and Sewer System

Methods of sanitations, advantages of limitations; on-site detention, off-site and on-site technology up gradation, low cost appropriate technologies for sanitation.

Quantity of sewage, standards for Indian cities; Sanitary sewer system, network and layout, data needs and procedure of planning; Water conveyance and building drainage systems and septic tanks.

Sewer lift station, sewer pumping and forced main manholes; Sewage disposal methods and their advantages and disadvantages, location criteria and capacity.

UNIT V

Solid Waste Disposal and Management

Solid waste management for Indian cities, issues and data base, quantity of solid waste and its character; Methods of solid waste management, collection and transportation, disposal of solid waste; Land filling and composting, pre and post treatment; incineration, pyrolysis and recycling park; Area requirements, location and cost aspects of different methods of solid waste disposal systems; Community participation and NGOs, involvement in efficient and solid waste management.

UNIT VI:

Fire and Electrification:

Planning for fire protection, services and space standards, location criteria

UNIT VII:
Social Infrastructure:

Planning for Education, health, civic, cultural infrastructure etc.,

Expected Outcomes & Assignment

The internal assessment to be in the form of term papers and presentations on above mentioned aspects. The class and assignment work to be supplemented with appropriate site visits.

Case study of innovative approaches/best practices in sewage disposal in urban area could also be taken up for internal assessment.

References:

Arora K.R: Irrigation, Water Power and water Resource Engineering, Standard Publishers distributors, New Delhi

Gurcharan singh: Water supply and Sanitary Engineering-, Standard Publishers, Distributors, New Delhi.

AK. Chaterjee: Water Supply, Waste Disposal and Environmental Poll. Engineering – Khanna publishers

Garge S.K: Hydrology and Water Resource Engineering, Standard Publishers

G.S. Birdie: Water supply and Sanitary Engineering

PL2045 PLANNING FOR INFORMAL SECTOR

Lecture/ Practical Hours Per Week	*: 4*
Total Marks	*: 100*
Internal Assessment	*: 50*
End Examination (3 hrs.)	*: 50*
Credits	*: 4*

UNIT I
Informality and Poverty

Characteristics of informal economic activities, other types of informality; informal sector vis-à-vis poverty; Dimensions of urban poverty, magnitude of problem, urban poverty alleviation programs; impact of macro-economic structural adjustment policies on poor urban households.

UNIT II

Informality in the commercial sector

Formal and informal economy at the local scale; types and categories of informal sector service providers; advantages and disadvantages in the Indian context; statistics related to employment and turnover of informal sector market; examples of integration between formal and informal sector market entities; dependency factors of local economy on formal sector.

UNIT III

Slums

Slums – definitions, legislation, dimensions, causative factors, determinants, location characteristics of settlements; Informal sector- growth, characteristics, functions, linkages with formal sector.

UNIT IV

Basic Needs and Alternative Approaches for delivery of Basic Services to the Urban Poor

Development of the concept of basic needs; identification of basic needs and their provision for various target groups and informal sectors; standards for basic needs, NGOs and voluntary organizations associated with provision of basic needs, Alternative Approaches for Delivery of Basic Services to the Urban Poor- Community planning approach, low cost alternatives and institutional reforms approach.

UNIT V

Migratory Impulses and Impact on/of Informal Sector

Development of informal sector concept, Characteristics of migrants and their association with growth of informal sector; socio-economic deprivation and informal sector; role of informal sector in housing stock, economy, commercial activities, impact on Urban Development; implications in physical planning.

UNIT VI

Consequences of spontaneous Growth

Study of major aspects; spontaneous living and working, their characteristics and functions in urban context, consequences of spontaneous growth on various aspects of urban planning and management (land use, development control, densities, water supply, drainage, sanitation, traffic, etc).

UNIT VII

Management of Informal Sector - Case Studies

Actions for improvement, appraisal of the role of government, private and voluntary organizations; existing management; their organizational set-up and limitations; planning and development of urban settlements in respect of the spontaneous growth; case studies from India and other developing countries.

UNIT VIII

Inclusive Urban Planning

Definitions and Components, Stakeholders- their role, Planning interventions- Inclusive zoning, development and building regulations, slum development, Plans, Policies and Programmes, Legislation- Related Acts, Five year plans, policies and programmes at various levels. The RAY program and the AP MEPMA - Guidelines, standards, processes and progress in 'Slum Free City Planning'.

Expected Outputs & Assignment

The internal assessment to be in the form of term papers, tests and presentations on above mentioned aspects of physical planning.

References:

Ravinder Singh: Sustainable Human Settlements – The Asian Experiences, Sandhu Rawat publication

Penelope J. Brooke: Infrastructure for poor people – Public policy for private Participation

UN- Habitat, The challenge of slums, London, Earthscan, 2003

Jain, A.K., Inclusive planning and social infrastructure , New Delhi, Wiley Eastern, 2010

Housing and Urban Development Corporation, HUDCO 2001 and housing the urban poor of India
M.S. Ramanujam Employment promotion on the Urban Informal Sector - New age international publishers
Satish Tiwari: Urban Development, Anmol Publications, and New Delhi
Amitabh Kundu: On the name of Urban poor – Access to Basic Amenities, Sage Publications.

PL2046 GEOGRAPHICAL INFORMATION SYSTEMS

Lecture/ Practical Hours Per Week	*:6*
Total Marks	*:100*
Internal Assessment	*:50*
End Examination (Practical and viva-voce)	*:50*
Credits	*:6*

Planning Information Systems (PIS)

Definition of Systems, Systems approach to planning as basis for planning Information Systems; Systems and information hierarchy, Data and Information, Value of Information, Information Security and Sharing; Planning Information Systems; Human Settlement Information Needs, Scales and Levels, Preconditions for using Planning Information Systems; Types of Planning Information Systems – Municipal Information Systems, Land Information Systems, Cadastre Systems; Applications and Limitations; Tools for Spatial Data Handling. PIS in India – NNRMS, NUIS, NSDI, National Urban Observatory, etc.

UNIT II

Introduction to Geoinformatics

Definitions of geoinformatics and Geographic Information Systems (GIS); the concept of earth surface projections and geoids; limitations of DBMS, engineering drawings and CADD packages – the need for GIS. Digitisation of cadastral

maps and digital imageries; understanding and formation of attribute types and data; linking and extracting of attribute data; image interpretation; rectification of digitised data; geo-coding; using layers of spatial and non-spatial data; thematic mapping.

UNIT III

Introduction to Remote Sensing

Limitations of Traditional Surveys for Planning; Remote Sensing – Definition, Aerial and Satellite Remote Sensing, Aerial Remote Sensing; Aerial Photo Interpretation, principles of resolution; principles of electromagnetic radiations; Satellite imagery interpretation Qualitative and Quantitative; Elements of Photo – Interpretation; salient features of popular Remote Sensing satellites Introduction to Digital Image Processing; Applications in Planning.

UNIT IV

Introduction to GIS

Geographic Information Systems, Introduction, Components, Benefits, Needs for GIS. Computerized GIS, Input and Output Devices; Spatial Data Entry into GIS, Spatial Information Security and Sharing; Data Structure for GIS, Vector and Raster Data Structures, Comparative Advantages and Disadvantages; Maps, Base maps and Thematic maps, Mapping and Spatial Analysis Software, Linking of Attribute Data, Spatial Data, Aggregation Data Generalization; Limitations of GIS, Laboratory Exercises.

UNIT V

Components of GIS

Techniques of Database Creation, Steps involved in Database Creation, Spatial Database Management Requirements, Spatial Database Management in Current Day Techniques of Data Analysis and Management, Generation of Planning Views.

UNIT V

Specific Packages

Introduction to laboratory exercises on selected GIS packages (eg. Arc Info, Arc View, Geo-Concept, Geo-Media, ILWIS, MapInfo etc.): Comparative Advantages and Disadvantages; Planning Applications. Open source software – Introduction to different packages and simple exercises in using any one software.

UNIT VI

GIS Modeling

Overlay Functions in GIS; Using Attribute over Spatial Data in Modeling; Case Study based land suitability Analysis; Modeling Service Area for Social Infrastructures; environmental monitoring, Impact Analysis, etc. Generation of 3D Models in GIS.

UNIT VII

Advanced Concepts in GIS

Introduction to Dynamic GIS; Integration of GIS and Digital Image Processing; Integration of GIS and GPS. Integrating GIS to derive a decision support model for use in any specific context, focusing on the data structure, thematic maps, map-data organization, goal setting and projecting needs and trends.

Expected Outputs & Assignment

Satellite data interpretation, Interpretation of Survey of India toposheets of the district Theme-wise map preparation through satellite data, from toposheets, Identification of secondary data, Mapping of other developed/ undeveloped villages in district, Identification of resource utilization and future scenario. Students shall also have to undertake a Group Project in GIS emphasizing on applications in various sectors such as Watershed Management, District Development Plan, Urban Sustenance - Decision Support System, Environmental Monitoring and Urbanization Process - A case study of A.P. State.

References:

Roger Tomlinson: Thinking about GIS; Stephen Wise: GIS Basics
Tor Bernhardsen: Geographic Information Systems (An Introduction)
Keith C. Clarke: Getting Started with Geographic Information Systems

David Martin: Geographic Information Systems (Socio Economic Applications)

PL2047 RURAL DEVELOPMENT

Lecture/ Practical Hours Per Week	*: 4*
Total Marks	*: 100*
Internal Assessment	*: 50*
End Examination(3 Hrs)	*: 50*
Credits	*: 4*

UNIT I

Introduction

Village as an organic entity; physical, social and economic structure of village; village problems related to cultivated land, cultivable land, waste land, flooding and water logging, utilities and services, poverty and distress; rural urban relationship; complementarities, continuation and dichotomy; problems related to rural-urban migration.

UNIT II

Village Planning: Concepts and Institutional Framework

Trans-humane, accessibility of villages, inter-village communication, delivery of social services, improvement of rural sanitation, hygiene and drainage.

UNIT III

Roots of Rural Development in India

Rural reconstruction and Sarvodaya programme before independence; Impact of voluntary effort and Sarvodaya Movement on rural development; Constitutional direction,

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directive principles; Panchayati Raj – beginning of planning and community development; National extension services.

UNIT IV

Post Independence rural Development

Balwant Raj Mehta Committee – three tier system of rural local Government; Need and scope for people's participation and Panchayati Raj; Ashok Mehta Committee – linkage between Panchayati Raj, participation and rural development.

UNIT V

Rural Planning in Relation to National and Regional Policies Norms, principle and strategies for rural development; Five year Plans and Rural development, Planning process at National, State, Regional and District levels; afforestation, soil conservation and wild life preservation; planning for sustainable agriculture; rural development programs.

UNIT VI

Resources Planning Development and Management

Endowments; types of resources, exhaustive and replenishible resources development; utilization and conservation of national, technological and human resources, natural resources planning and management, recycling of resources and resources equilibrium; water resource management, waste land management; rural industrialization and use of non-conventional energy in rural development; major resource development programs in India; case studies of resource development projects in agriculture, forestry, minerals, water, manpower, etc.

UNIT VII

Community Development and Participation

Community development, community development and rural planning; base principles of self-help techniques and role of voluntary organizations in community development; appropriate technologies, innovation and entrepreneurship.

UNIT VIII
Post 73rd Amendment Scenario

73rd Constitution (Amendment) Act – XI schedule, devolution of powers, functions and finance, Panchayati Raj institutions – organizational linkages; Recent charges in rural local planning; Gram Sabha – revitalized Panchayati Raj Institutionalization; resource mapping, resource mobilization including social mobilization; Information Technology and rural planning; Need for further amendments- PURA Concept.

Expected Outputs & Assignment

Internal assessment is based on seminar presentation by individual students on a selected topic. This shall be based on extensive literature reviews, site visits (wherever possible) and interviews with experts.

The distribution of marks for the subject may be as follows:

40% for individual assignment/tests
60% for written paper and seminar

References:

Satish Tiwan: Rural Development
Ashok Kumar: New Approaches is Rural Development
D. Robins, W Tansly & K G Wills: Rural Resources Development
Vivender Singh K: Socio – Economic Planning for Rural Development

SEMESTER V

PL2051 RURAL AREA PLANNING

Studio Hours Per Week	*: 9*
Total Marks	*: 200*
Internal Assessment	*: 100*
End Examination (External jury and Viva-voce)	*: 100*
Credits	*: 9*

Survey: The academic objective of this exercise is to get a firsthand experience about the lifestyle of the rural people. The students are required to undertake the study of a cluster of village ora village with a population of around 10,000s and conduct a detailed primary survey. The villages selected should be outside the zone of influence of any metropolis. The primary survey is also expected to give them an exposure to research methodology and techniques of data collection. The students will have to visit and stay at the villages for a few days to conduct the survey. Primary survey shall be conducted for adequate households for detailed study. As part of the secondary survey, the Provision of Urban Amenities in Rural Areas (PURA) Regulations, a PPP Scheme of the Ministry of Rural Development (Govt. of India) under the XII Five Year Plan are also required to be studied. Village level information shall be collected from the Panchayat Office, Census handbook and other secondary sources.

Expected outcome: Detail primary survey and secondary survey results and questionnaire format along with a report.

Analysis: The students are required to study various issues like demography, employment and asset structure, agriculture and allied activities, social and cultural issues, livelihood patterns, community development and participation, institutions, government programmes, village level amenities and linkage, energy utilization pattern, resource profile and natural resources planning; and recent changes and development in the villages and the surrounding areas.

Expected outcome: SWOT analysis of available resources and funds.

Plan preparation: The output of the studio exercise shall be in the form of preparation of a strategy plan for the overall short and long-term development of the village.

Expected outcome:
Strategy plan report along with maps, plans, photographs and charts.

- ***The distribution of marks in the studio subject may be as follows:***
  40% for individual assignment
  60% for group work

PL2052 REAL ESTATE DEVELOPMENT

Lecture/ Practical Hours Per Week	*: 4*
Total Marks	*: 100*
Internal Assessment	*: 50*
End Examination (3 hrs.)	*: 50*
Credits	*: 4*

UNIT I
Land
Economic concepts of land, objectives, and scope of land economics; relevance for spatial planning, economic principles of land uses; economic rent, land use and land values, market mechanism and land use pattern.

UNIT II
Development of Land and Real Property
Process, cost of development, source of finance, and financial calculation for real estate developer.

UNIT III

Real Property Markets

Heterogeneity and imperfections, valuation of real property – principles and practices; private ownership and social control of land; disposal of land; land development charges and betterment levy; land use restrictions, compensation and requisition taxation of capital gain on land versus public ownerships, economic aspects of land policies at various levels of decision making.

UNIT IV

Factors Influencing Locational Decisions

Analysis of location of specific uses like residential, industrial, commercial and institutional in the light of location theories in intra-regional and inter-regional context; Techniques of cost benefit analysis of urban development programme.

Case studies

Case studies of real estate development in public, private, partnership sectors, Real estate as facilitator of development; Development of real estate as a tool for controlling land and property prices; Transaction and renting of real estate, Lease deeds/ sale deeds, sale documents, registration; Mortgage and pledging.

Expected Outcomes & Assignment

The internal assessment to be in the form of term papers and presentations on above mentioned aspects.

References:

Irwin McGraw Hill: Urban Economics
Mill & Hamilton: Urban Economics
Evans: Urban Economics
B.L. Mathur: Economic Planning & Development Theory & Practice
R.L. Nelson: Real Estate & City Planning

PL2053 URBAN DESIGN AND CONSERVATION

Lecture/ Practical Hours Per Week	*: 4*
Total Marks	*: 100*
Internal Assessment	*: 50*
End Examination (3 hrs.)	*: 50*
Credits	*: 4*

UNIT I

Introduction to Urban Design Theory

Relationship between architecture, urban design and planning; city as a three dimensional entity; study of volumes and open spaces at all levels; a brief historic review of the development of the urban design discipline and principles.

UNIT II

Elements of Urban Design

Urban form as determined by inter-play of masses, voids, building typology; scale, harmony, symmetry, color, texture, light and shade, dominance, height, urban signage and graphics; organization of spaces and their articulation in the form of squares, streets, vistas and focal points, image of the city and its components such as edges, paths, landmarks, street features, skyline, etc; urban transportation.

UNIT III

Physical and Non-Physical Determinants of Urban Forms

Activity and the morphology of places; form size and structure of cities and the related geometry co-related with their determinants; case studies of urban design characteristics of cities in India and abroad; related issues for public intervention.

UNIT IV

Urban Landscape

Characteristics and components of open space, patterns in towns and cities (traditional and contemporary) basic types: streets, squares, ghats and maidan, plazas, different concepts of gardens with examples, hierarchy of open spaces at

various planning level, public parks at district, local and neighbourhood levels; national parks, landscape design related to land-use, circulation networks and activity; street furniture and vegetation as a component of urban landscape.

UNIT V

Basic Principles of Conservation

Overview and introduction of the basic concepts of conservation values, attitudes and principles for judging the conservation importance of sites, areas and related typology; scope and basic techniques of urban conservation.

UNIT VI

Aspects of Urban Conservation

Legal and administrative aspects archaeological acts/charters pertaining to conservation, development and conservation; case studies of proposals for urban conservation of sites/areas in India and abroad.

Expected Outputs & Assignment

The internal assessment to be in the form of term papers and presentations on above mentioned aspects of physical planning. Students shall carry out documentation of any significant area emphasizing on its urban design and heritage conservation aspects.

References:

Edmond Beckons: Design of cities
Rob Krier: Urban space
Kevin Lynch: Image of City
Geoffery Broadbent: Emerging Concepts in Urban Space Design
Planning for Conservation
Bernard Fielden: Technical Manual for Conservation of Buildings
A.K. Singh: Origin and Growth of Town

PL2054 INFRASTRUCTURE PLANNING- II

Lecture/ Practical Hours Per Week	*: 4*
Total Marks	*: 100*
Internal Assessment	*: 50*
End Examination (3 hrs.)	*: 50*
Credits	*: 4*

UNIT I

Planning for Social Infrastructure

Basic need approach, Health, Education, Religion, Recreation, Cultural - Planning standards, spatial standards, Hierarchy of provision - different types of units and scales, critical issues in public and private development, ownership, management and maintenance of the same, provisions in Infrastructure Development Enabling Act of A.P, UIDSSMT & Infrastructure.

UNIT II

Financing Urban Infrastructure

Financing mechanisms in addition to tax and grant financing - user charges, public-private partnerships like BOT, BOLT, BOOT etc., Impact fee, Municipal bonds, etc. Subsidies and social aspects in the planning, operation and maintenance of infrastructure with special reference to the urban poor. Capacity building of organizations for infrastructure development and services. Review of multi-national and bilateral activities and programs such as DFID and FIRE programs in India. Overview of World Bank programs in India.

UNIT III

Other aspects of Urban Infrastructure

Integrated Infrastructure Planning, socio-cultural aspects, Decentralization, community participation in the delivery of services and networks, problems of operation and maintenance; Environmental issues related to quality and level of network and services, impacts of choice of technology, system design, costs benefits to the urban community, Effects of land use and density, Case studies

APUSP, APURMS, APUFIDC, APIIDC, City Development Strategy (Hyderabad), etc.

UNIT IV

Infrastructure and Regional Development

Telecommunication, cable T.V., Wireless communications, digital communications - Internet and intranet, regional poverty and basic needs; regional infrastructure network systems, Physical (roads, irrigation system, water supply, sanitation, drainage, watershed management, fire services, telecommunication, energy, electricity, solid waste disposal etc), Social (Health and education) & Economics (banking, marketing and public distribution systems), Environmental, social and economic impacts of infrastructure network system, Role of District Planning Committee, Case Studies in District and Regional Planning.

Expected Outcomes & Assignment

The internal assessment to be in the form of term papers and presentations on above mentioned aspects. Class work and assignments to be supplemented with appropriate case studies at different level.

References:

Reports and research studies by HSMI
Reader volumes by ITPI

PL2055 DEVELOPMENT PLANNING

Lecture/ Practical Hours Per Week	*: 4*
Total Marks	*: 100*
Internal Assessment	*: 50*
End Examination (3 hrs.)	*: 50*
Credits	*: 4*

UNIT I

Introduction

Major concepts in political economy and types of economies - capitalism, socialism, communism, etc.

UNIT II

Developed, Developing and Under-Developed Economics

Concepts and definition of development. Indicators of development. Factors influencing development. Efficiency versus equality. Broad introduction to main stream, classical and market theories of development and under development. Characteristics, indicators and phases of development; obstacles to development; business cycles; levels of development; series of development and planning relevance of economic development in physical planning.

Regional disparities in development. Surplus generation of primary sector and its influence on development. Investment, public policy and development. Development as defined and implied in Indian planning and related development programmes. Development planning as distinct from other types of planning.

UNIT III

Classical Theories of Development

Introduction to Adam Smith's theory, specialization and division of labor; Ricardian theory of rent; and value and quasi-rent.

UNIT IV

Modern Theories of Development

Keynesian revolution- innovation theory, backwash and spread effect; critical minimum effort and stages of economic growth.

UNIT V

Models of Development

Balanced vs. unbalanced - dualistic approach in development; derived development; Lewis model; Harrod-Domar model; Sean's model, etc; development models in Indian planning - first to tenth five year plan; effectiveness of the models in Indian planning. Theories of development (Trickle down,

Bottoms up) Settlements systems / secondary cities. Sectoral shifts- spatial implications of economic change.

UNIT VI

Issues in Growth and Development

Conditions for economic growth. Planning in India-goals and objectives; targets and achievements impact, types of planning- regional disparities, population and poverty, unemployment, savings, balance of trade and payments, resource transfers and regional development, sectional priorities and development; structural reform and its impact on growth; financing five year plans. Introduction to Marxist theories of development.

UNIT VII

Regional Development Theories

Export base theory, Neo-classical theory, Cumulative causative theory of Myrdal - Kaldor, Econometric model, Input - output model, Multisector development planning model. Location theory - agglomeration economics – transport sector -growth poles - cities and regional growth. Overview of regional development in India through history.

UNIT VIII

Liberalization and Globalization

Aspects of structural adjustments in economic policies; impacts of free trade, foreign direct investment, capital flows, migration, technology transfer on socio-economic factors and development in the 'third world' (specially in India); concepts of global cities, hierarchy of networked global cities.

Expected Outcomes & Assignment

The internal assessment to be in the form of term papers and presentations on above mentioned aspects.

References:

S.L.Goel & S.S. Dhaliwal: Urban Development & Management
Shri Bhagwan Dahiya: Theoretical Foundations of Development Planning

PL 2056 PLANNING WORKSHOP I
(TRAFFIC STUDIES)

Lecture/ Practical Hours Per Week	*: 6*
Total Marks	*: 100*
Internal Assessment	*: 50*
End Examination (External Jury &Viva-Voce)	*: 50*
Credits	*: 6*

This course is designed to expose students to hands - on, primary involvement with those typical problems/projects existing within a neighborhood/area level that require interaction with experts and implementing authorities/line departments in a focused way. The main objective of this course is to enhance learning through a combination of lectures, demonstrations and interactive practical exercise session on topics such as traffic junctions, rotary junctions, landscape developments, architectural & planning documentations, signage design within a neighborhood/area level.

Following surveys related to Transportation aspects should be conducted: Traffic volume survey, speed and delay studies, parking studies, pedestrian studies, road geometrics and road components, rotaries and signalized intersections.

Preparation of area traffic circulation plan by studying the existing land use, existing circulation pattern, level of service and other criteria if any.

***Expected outcome**:*
Students either in small groups or individually have to arrive at comprehensive traffic management plan/ traffic circulation plan for a selected locality and a detailed element level design and DPR.

PL 2057 PLANNING THEORY AND URBAN POLICY

Lecture/ Practical Hours Per Week	*: 4*
Total Marks	*: 100*
Internal Assessment	*: 50*
End Examination (3 hrs)	*: 50*
Credits	*: 4*

PLANNING THEORY

Introduction to basic and traditional theoretical frameworks establishing the rationale of planning as a profession, the role of planners, and the process of planning.

UNIT I

Introduction to planning theory

Understanding the concept of theory in general; differentiating between theories of planning and theories in planning and theories about planning; significance of planning theory; definitions of planning and their critical evaluation; understanding a paradigm and its stages of development.

Understanding rationality in planning in general; introduction to categories of rationality and associated paradigms; introduction to synoptic, incremental, transactive, advocacy and radical theories of planning, relating them with purpose and process of planning; reasoning and its various forms in planning - space, place and location.

UNIT II

Process of planning: instrumentality and communicative

Instrumental rationality and its associated schools of planning processes; means-ends planning; systems theory of planning; the emergence of communicative rationality and its associated schools of planning processes; participatory planning and action planning; deductive and inductive methods; prescriptive vs inclusive planning

UNIT III

Theories of urban growth, sustainability

Forms of cities in the developed and developing world; compact cities, global cities, hierarchy in global cities; agglomerations of scale, economies of scale and urban agglomeration; location theories, concentric zone theory, bid rent theory, sector theory; cross border regions (CBRs).

Sustainable urban development – evolution of the concept, components and processes; weak and strong sustainability; millennium development goals; equity in planning; globalisation and cities; networked cities.

UNIT IV

Systems approach to planning and other alternatives

Understanding systems theory in general; main characteristics of Rational Comprehensive Planning; components of systems based planning; understanding systematic change; key disadvantages with systems view of planning.

Introduction to alternative development paradigms; incremental planning and disjointed incrementalism; transactive planning and mixed scanning; main components and features of advocacy planning; ladders of citizens' participation and the art of muddling through; radical planning approaches – equity, social mobilisation and social change.

UNIT V

Participatory planning

Public interest and its forms, history and significance of public participation; the role of market in planning; the hurdles in systems theory of planning; conditions of effective communication and discourse for planning; public participation and empowerment; fundamentals of communicative rationality in planning; models of communicative and collaborative planning.

UNIT VI

Uncertainty in planning; New Public Management (NPM) theories

Matrix of uncertainity; agreed goals and known tools; disagreed goals and unknown tools; leapfrogged decision making – premature programming and premature consensus; implications of uncertainity; risk reduction; role of planners.

Role of market in development; economic planning vs physical planning; models of NPM; efficiency and efficacy in planning, transparency, accountability, collaboration and innovation.

URBAN POLICY

UNIT VII

Introduction to urban policy analysis

Tools for issue and policy analysis and alternate models of decision making in urban management

The four overlapping fields of urban policy analysis: Political leadership; leaders and political cultures, elite theories, group theory and pluralism, neo-Marxist work, network analysis, coalition theory, NGOs and civil society. Theory of change, Adaptive leadership, negotiation and conflict resolution. Political decision making

citizen preferences, participation, and policy options; populist spatial theories, budget snapshots, policy responsiveness

bureaucratic process and service delivery - bureaucratic theories; incrementalism, dynamic bureau head, professionalism and reform,

population and economic location; small firms, impacts of public policy

UNIT VIII

Policies, institutions and change

The relationship between capitalism, democracy, and civil society; effecting community change through leadership intervention- raising consciousness or building support

around an issue, implementing a program, or any initiative that requires the mobilization of multiple stakeholders, advocacy methods, leverage points, and resources for change.

The nature of power in its various forms (electoral power, issue framing, financial, citizen mobilization, public opinion) Case studies exploring how power and resources can be acquired, evaluated, mobilized, and deployed in the service of promoting a policy agenda, leverage points for achieving social change, the studies should promote familiarity with legislative processes, the budget cycle, the electoral arena, the regulatory system, public interest law, labor relations, procurement, and the various paths to influencing public opinion and decision makers. Comprehensive strategy for conducting a campaign for issue advocacy or political change.

***Expected outcome**:*

Internal assessment should include at least one report on urban policy: *Students are required to complete a professional, applied research and analytical report written for a specific client, usually a policy maker or a non-profit organization manager and shall be presented as written paper and seminar.*

- ***The distribution of marks in the studio subject may be as follows:***

  40% for individual assignment/Test.
  60% for seminar and Written paper and seminar.

Reference;

Modern growth theory by Dipankar Dasgupa
George Chadwick, ASystem view of Planning
M.Fagance,Citizen participation in Planning
Andreas Faluda,Reader in Planning Theory
Andreas Faluda, Planning Theory
Lichfield,N,….,Evaluation Planning Porcess
Ed.ElizabathA.Strom &John H.Mollenkopf.The Urban Politics Reader
Ed.Devid.T.Beito and others ,tThe voluntary City: Markets Community and Urban Planning

SEMESTER VI

PL2061 URBAN PLANNING STUDIO

Studio Hours Per Week	*: 9*
Total Marks	*: 200*
Internal Assessment	*: 100*
End Examination (External Jury & Viva-Voce)	*: 100*
Credits	*: 9*

The objective of this studio program is to expose the student to study and establish appropriate planning standards, techniques of population projection, Identification of the data to be collected and the sources thereof, organizing surveys and collecting socio-economic, traffic and other data, Using selected computer software to analyze the data, Projecting the future with different scenarios and identification of *Action Areas* (i.e., specific problems related with housing, services, circulation, etc.).
The output of this studio exercise shall be the preparation of a Comprehensive Development Plan of a medium/small city and the proposals may include a focus on planning for tourism or energy conservation or heritage conservation, etc. The plan process to be evolved in terms of the following stages.

Understanding Legal Framework - Review of legal framework (Urban Development Acts) Review of Development Plans, Identification of Urban Developmental Planning Issues - Review of literature.

Selection of City for Plan Preparation - Based on the geographical location, population size, Functional category, rate of growth - four cities are to be identified and methodology for data collection is to be evolved.

A ten day visit to each of the cities by group of students - visit the selected cities, prepare existing land use (broad), collect

necessary secondary information, discuss/survey public about the problems, vision etc.

Plan preparation of a strategy plan for the overall short and long-term development of the village

Plan preparation: Two minor exercises in Population projections, City Sanitation Plan, CDM, Transportation plan or Environmental impacts of urbanization. Major exercise identifies Long-term and short term goals, Objectives identified and quantified within two time five year time frame. Converting actions into physical plan & Projectization of the plan proposals.

Expected outcome: *A report along with base maps, survey results, physical planning proposals and recommendations has to be submitted at the end of the semester. Also students should present their work on sheets to the external jury.*

The distribution of marks in the studio subject may be as follows:

40% for individual assignment
60% for group work

PL 2062 REGIONAL PLANNING

Lecture/ Practical Hours Per Week	*: 4*
Total Marks	*: 100*
Internal Assessment	*: 50*
End Examination (3 hrs.)	*: 50*
Credits	*: 4*

UNIT I
Introduction

Definition, scope and content of Regional Planning, need for Regional planning and basis, concepts of spatial organization and region;

The nature of a region – functional regions and formal regions, regional specialization, development and growth of regions; regionalization - inter-regional trade and factor

movements; settlements, pattern, hierarchy; rural and urban, role of cities in regional development.

UNIT II

Regional Economics

Individual location decisions, transfer costs, locational patterns, markets, existence, conditions and size, market locations and regional development – inter and intra regional economic analysis

UNIT III

Regional Analysis

Techniques of delineation of regions; centrographic analysis; input-output analysis – income and expenditure multipliers; inter and intra regional economic analysis - multivariate analysis of industrial groupings – principal components and factor analysis – sectoral shift analysis – rank size rule. Disparities – use of development indicators, composite development index

UNIT IV

Regions in India

Types of regions, methods and purpose of regionalization – Delineation of regions in India; Population growth, distribution, resource base, migration in India, causes; Urbanization, spatial variations – reasons, factors and implications in planning, IDSMT and metro regional approaches

UNIT V

Regional Growth Processes

Some approaches of Rostow, Hirschman, Myrdal, Concept of core and periphery, Growth centers, growth poles, service center and agropolitan district and their approaches in India and other countries**;** Spatial growth process, theories of Christaller, Losch – Rank size rule, primary spatial innovation, diffusion etc

UNIT VI

Regional Planning and Development

Regional development; balanced and unbalanced development; under development; models of regional development; regional planning processes; identification of plan objectives; collection, classification and analysis of data; norms and standards for regional planning; Planning Commision's Manual of Integrated District Planning, role of district planning committees (DPC) and metropolitan planning committees (MPC); settlement pattern, population and resource allocation/distribution; infrastructure; environmental concerns and protection; alternative strategies; implementation and financing strategies.

Regional basis of decentralized and multi-level planning in India, National level, state level, district planning, block level planning.

UNIT VII

Case studies

Case studies of district plans in India (Kollam, Chandrapur, etc); Case studies of Damodar valley Corporation, National Capital Region, Narmada Command Area Development Plan, Mumbai Metropolitan Region Development Plan, etc.

UNIT VIII

Reducing disparities and optimizing resources

Disparities and imbalances in India and its impact; Sectoral basis- integrated rural energy planning, watershed management with respect to common property resources, community based resource management, traditional knowledge and institutional systems; Backward area development

References:

Mahesh Chand, Vinay Kumar Puri - Regional planning in India.

PL2063 ENVIRONMENTAL PLANNING & MANAGEMENT

Lecture/ Practical Hours Per Week	*: 4*
Total Marks	*: 100*
Internal Assessment	*: 50*
End Examination (3 hrs.)	*: 50*
Credits	*: 4*

UNIT I

Resource Planning

Classification of resources; processes that affect physical and human environment; economic and technology impacts; Concepts, theories related to conservation & management of resources, energy and water; settlement planning and resource conservation, concept of common pool resources & their management, data needs and type of analysis required to evolve ecological parameters for urban development.

UNIT II

Sustainable Development & Environmental Economics

Concept and principles of sustainability, Sustainability versus Development, Role of local knowledge systems in sustainable development; Issues in Sustainable Development, sustainable development in developed and developing nations, Gender and livelihood, Economic versus Environmental sustenance; concepts of environmental economics, environmental accounting, resource pricing, green house gases and implications on global trade etc.

UNIT III

Biodiversity Conservation and Management

Concept and definitions of Biodiversity, Significance of systems diversity; Bio-geographical classification of India, Hot-spots of biodiversity, Issues in Biodiversity management, Valuing biodiversity; Significance of Urban Biodiversity in planning process, JFM & biodiversity conservation in tribal areas, In-situ and Ex-situ conservation of biodiversity; Broad views of various national and international policies and

instruments of biodiversity, Biodiversity Convention, Biodiversity Act etc.

UNIT IV

Environmental Impact studies

EIA – meaning, significance and framework; Methodologies – checklist, matrices, network and social cost-benefit analysis; sources and acquisition of environmental information; Environmental land use classification; Environment impact studies of development projects.

UNIT V

Environmental Policies and Awareness

Global and national policies on environment; Conventions, treaties and protocols on environment, RAMSAR convention, Convention on Climate Change, Rio Earth Summit, Stockholm conference, Kyoto Protocol, etc; Environmental awareness and movements in India; Agencies involved in environment protection, Public participation, case studies.

Expected Outputs & Assignment

Students are expected to undertake a brief documentation and impact study of any recent developmental project in India. Internal assessment also to be in the form of tutorials on above mentioned topics. The class and assignment work to be supplemented with appropriate site visits.

References:

Sandhu. Minhas: sustainable Human Settlement the Asian Experience
Gopal K. Kadekodi: Environmental economics in practice
RK Pachmi: The Message from WSSD
Reinhanrdt. Forest: Down to the Earth: Applying Business Principles to Environmental Management
Ratandeep Singh: Indian Ecotourism: Environmental Rules and Regulations
S C Kalwar, S Yadav: Resources and Development

PL2064 PROJECT FORMULATION, APPRAISAL & MANAGEMENT

Lecture/ Practical Hours Per Week	*: 4*
Total Marks	*: 100*
Internal Assessment	*: 50*
End Examination (3 hrs.)	*: 50*
Credits	*: 4*

UNIT I
Introduction to Project Formulation & Appraisal

The Concept of projects, Importance of project formulation, project identification and formulation, detailed project report, and feasibility studies; techniques of financial appraisal, pay back period, IRR, DCF, NPV, CBR. Project formulation; definition, objectives; Stages of project formulation their significance; input analysis, financial cost-benefit analysis, social-cost benefit analysis; Project appraisal and report.

UNIT II
Introduction to Project Management

Definitions and meanings; importance of project management, Reasons or shortfall in its performance, scientific management, life cycle of project.

UNIT III
Project Management

Planning and control, Human aspects, Development of project network, Critical path, PERT & CPM, Project organization, Contracting, Procurement and Recruitment budget and fund flow statement, stabilization and finish. Organization of project; matrix organization, task forces, project teams; monitor and control of project. Project Management Strategies: Tools and Techniques for project management, classical persuasive and non-persuasive strategies and techniques. New techniques of management by objectives (MBO). Integrated reporting system, flow diagrams, bar, charts, milestone, charts, CPM and PERT, LOB. Techniques of monitoring of development works-standard oriented costs

control, turnkey system, vertical production method, inventory cost control techniques, and unified status, index techniques. Tecno economic analysis of the project.

UNIT IV

Techniques of Project Appraisal

Technical/Financial/Organizational criteria, Appraisal Criteria (NPV/B/C. Ratio/I.R.R. - Financial Analysis - Capital Costs, Financing plans, Operation costs, Projections of costs and revenues, Financial viability, Debt servicing, Tariff and revenues, Income and expenditure statements, Project balance sheets, Rate of returns. Social Cost Benefits Analysis -Rationale for SCBA, UNIDO Approach.

Expected Outputs & Assignment

The internal assessment to be in the form of term papers and presentations on above mentioned aspects focusing on their applications to current projects related to physical planning.

References:

Dr. B.C. Punmia, K.K. Khadelwal: Laxmi Publications (P) Ltd: Project Planning and Control with PERT & CPM

L.S. Srinath: PERT and CPM Principles and Applications, Affiliated East-West Press Pvt. LTd.

Dr. A.N. Sachithanandan: Reading Material on Project Formulation and Appraisal, Institute of Town Planners, India, New Delhi.

PL2065 PLANNING & MANAGEMENT FOR DISASTERS

Lecture/ Practical Hours Per Week	*: 4*
Total Marks	*: 100*
Internal Assessment	*: 50*
End Examination (3 hrs.)	*: 50*
Credits	*: 4*

UNIT I

Basic concepts, classification and definitions

Hazard, Risk, Vulnerability, Disaster and Disaster Management. Types of disasters; Hazard and vulnerability profile of India.

UNIT II

Disaster Risk, Vulnerability and Capacity Assessment (concepts and methodology)

Relevance of Disaster Risk, Vulnerability & Capacity Assessment in Planning, Concept of Hazard Assessment, Vulnerability Assessment, Risk Assessment and Capacity Assessment, Hazard Identification and Analysis.

UNIT III

Disaster Management and Planning

Four elements of comprehensive disaster management (Preparedness, Response, Recovery and Mitigation), Concept of Mitigation and its importance (Structural and non-structural mitigation measures, identification of mitigation measures relating to different types of hazards and implementing strategies).

Land-use Management tools for disaster risk reduction. (Building codes, GDCR, zoning ordinances, land acquisition, transfer of development rights, recovery and reconstruction plan).

UNIT IV

Introduction to various Hazard Safety Legislations

National Disaster Management Act, Various state Disaster Management Acts (Gujarat, Uttar Pradesh, Uttaranchal, Bihar) and state disaster management policies (eg: Orissa, Gujarat, Uttaranchal, Tamil Nadu, Delhi, Uttar Pradesh).

Relevance of Rehabilitation and Resettlement Policy in recovery and reconstruction phase of disaster management-planning process.

Coastal zoning regulation notification for construction and reconstruction phase in the coastal areas.

UNIT V

Understanding the role of various stakeholders and Community based Disaster Risk Management

Role of Government/Civil Society/ International Organizations/ Communities And Approaches to Community Based Disaster Risk Management and Planning. (Local coping mechanisms, Importance of mock drills and onsite volunteer management in Community level disaster preparedness activities).

Expected Outputs & Assignment

Students shall carry out case studies in groups from state and undertake (a). Zonal mapping highlighting the disaster prone/sensitive areas. (b) Indicate possibilities of integrating Disaster management and Development planning (c) Linking up of community development planning with community based disaster management. (d). Formulation of hazard Mitigation Plan/Disaster management plan, The internal assessment to be in the form of term papers and presentations on above mentioned aspects focusing on their applications.

References:

B K Prasad: Sustainable Rural Development for disaster mitigation

PL 2066 PLANNING WORKSHOP II (INFRASTRUCTURE STUDIES)

Lecture/ Practical Hours Per Week	*: 6*
Total Marks	*: 100*
Internal Assessment	*: 50*
End Examination (External Viva-voce)	*: 50*
Credits	*: 6*

The course begins with a review of infrastructure systems, how they work, and the role of planners in the provision of these services. The course then discusses how infrastructure planning might be the best approach to managing growth,

offering a potentially more effective means of directing the timing and intensity of development in a community.
For the purposes of the planning workshop, the following areas need to be covered:
1) Solid waste management
2) Domestic water supply
3) Sanitation and storm water drainage
4) Electrical services
5) Roads and circulation pattern

Benchmark service level parameters against standards, develop small proposals for improvement
This is individual exercise where each student will choose one city/town and look at all parameters for services like SWM, water supply, sanitation & storm water drainage, roads and compare against standards to analysis the shortfalls in service levels and finally suggest small proposals for improvements. During this study students document the best practices if any within the specified sectors in city/town selected. Exercise in this may be followed by Sustainable Area Development Plan

Sustainable Area Development Plan
Students will be divided into small groups and each group will choose one infrastructure system to study all aspects of sustainability of that infrastructure system and come up with proposal/recommendations for making the area self sustainable.
Aspects of sustainability like sewerage treatment plan recycle and reuse of waste water, rain water harvesting, SWM (vermi composting, waste to energy, etc.), parking & predestination and electrical sub stations.

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Expected outcome
Expected outcome: Students either in small groups or individually have to deal the above aspects and arrive at infrastructure planning proposals for the selected ares.
At least two studio exercises have to be dealt.

PL 2067 SEMINAR-III

(Emerging Planning Contexts, Issues and Alternatives)

Lecture/ Practical Hours Per Week	*: 4*
Total Marks	*: 100*
Internal Assessment	*: 100*
End Examination	*: Nil*
Credits	*: 4*

UNIT I:

Infrastructure

Public private partnerships, capacity building, integrated infrastructure, community participation, land acquisition, public distribution systems and solid waste management

UNIT II:

Transportation

Logistic hubs, CNG vehicles, trams, BRTS, MRTS, LRTS, MMTS, bus bays, road safety, transportation for target groups – children, adults, handicapped and women, pricing and funding of transport systems

UNIT III:

Environment

Carbon footprints, eco-housing, eco-city, ECOSAN, green buildings, renewable energies, sustainability, green cities, carbon credits, utilization and conservation of natural resources

UNIT IV:

Disaster Management

Vulnerability and capacity assessment, land use management, community based disaster risk management, rehabilitation and resettlement

UNIT V:

Rural Development

Sustainable agriculture, waste land management, rural industrialization and use of non-conventional energy,

information technology, self help groups and non government organizations, PURA, village clusters concept.

UNIT VI:

Information Systems

Management information systems, municipal information systems, land information systems, intelligent transport systems, geographic information systems and passenger information systems

Expected Outputs & Assignment

Each student shall present a written paper and a seminar at the end of the semester for final assessment on a topic to be finalized in consultation with the concerned faculty. This shall be based on extensive literature reviews, site visits (wherever possible) and interviews with experts.

SEMESTER VII

PL2071 METROPOLITAN AND REGIONAL PLANNING STUDIO

Studio Hours Per Week	*: 9*
Total Marks	*:200*
Internal Assessment	*:100*
End Examination (External jury and Viva-voce)	*:100*
Credits	*:9*

Understanding the role and relevance of regional planning, critical appraisal of district/sub-district plans, District planning in context of 73rd and 74th amendment acts. The emphasis will be on exposing students to special regions like hill, tribal, industrial, agro, resource, coastal, eco-sensitive, backward or city regions etc.

Study of Development Indices/Indicators:
The students should be introduced to two small exercises based on the literature survey on Metro/Regional Planning/District Planning, Study of Development Indices/Indicators, legislative framework for the concerned study areas selected (metro regions, districts) which will be based on secondary data sources. This is to create and understanding about the process of metro/regional/district planning amongst the students.

Data collection and Surveys: The students will be divided into two or three groups and take up the district selected based on the development criteria . The groups will have to formulate goals, objectives, methodology, and identification of data source, analysis of data available, survey and preparation of schedules for the study area selected.
Fieldwork: Visit to the field study area; conducting surveys, collection of data from secondary sources, sectoral and block/mandal wise will be undertaken.

Data Analysis and Proposals: Detailed data analysis, identification of potential thrust areas and development issues both sectoral and block/mandal wise. Appropriate alternate strategy planning, settlement development strategy and programs.

Pre-Project Report:
Student shall submit a formal report on any topic and this shall be based on extensive literature survey, data collection. The Pre-project report will form the preliminary work on which the students planning project (VIII Semester) could be based.

Expected Outputs
Study of towns resulting in: Formulation of sectoral prioritization and financial allocation (mandal wise): final recommendations for a district/sub district/mandal development plan-projectization.
***Note**: The students are expected to work on the Pre-Project report parallel to the main studio exercise.*
The distribution marks in the studio subject may be as follows

- *40% for individual assignment*
- *60% for group work*

PL 2072 FINANCING AND INSTITUTIONAL MECHANISMS FOR PROJECTS

Lecture/ Practical Hours Per Week	*: 4*
Total Marks	*:100*
Internal Assessment	*: 50*
End Examination (3 hrs)	*: 50*
Credits	*:4*

UNIT I
Identifying urban projects for implementation & Municipal finance

Process of identifying various urban sector projects with scope for funding and implementation, indentifying the risk mitigation during project development & implementation

Municipal Finance

Nature and composition of income and expenditure, limitations and need for revenue enhancements through municipal internal resource mobilization i.e, Municipal taxes (advertisement, entertainment and stamp duty etc); Land based taxes (vacant land tax, change of land use, development charges); user charges (parks, playgrounds, water supply, sanitation, SWM, parking), property tax. Expenditure control methods and mechanisms – privatization of O&M of municipal civic services.

UNIT II

Policy support and budgetary allocations for implementation & financing of urban projects

13th finance commission recommendations and 11th five year plan; budgetary allocations from central and state government for urban development; grants and funding under various government schemes. Assistance from foreign donors and multi national agencies (external aids form world bank , ADB)

UNIT III

Additional Funding Sources

FDIs, Institutional finance – HUDCO, NHB, LIC, ILFC(infrastructure lease finance corporation), etc; PPP mechanisms - India infrastructure project development fund by MoUD, GoI, Pooled finance development fund, National urban infrastructure fund, scheme for financing viable infrastructure projects through SPV (Special purpose vehicle) – India infrastructure finance company Ltd,.

UNIT IV

Resources based on achievement of urban reforms

Role of state government and ULBs; City's challenge fund; urban reform implication on resources, initiative fund and state level funds related to reforms.

UNIT V

Implementation of urban projects

Internal capacity building of ULBs to new concepts of financing urban projects; role of various agencies (Urban Development Authority, ULB, Water board, etc.) in implementation of municipal projects, challenges and opportunities for PPP in implementation of urban projects, Creating enabling environment for implementation of urban projects through PPP – PPP projects process management, scheme for financial support to PPPs in infrastructure, viability gap funding (VGF) – Government support, approval process, appraisal & monitoring, disbursement of grant.

UNIT VI

Institutional capacity enhancement

Better finance management, management process – accounting and budgeting, asset management, receivables management, cost center approach, computerization as tool for resource enhancement; role of management information systems.

UNIT VII

Issues on privatization

Debates and issues on privatization Vs equity and social development – problems of equity and impact on social development due to privatization, critics against external and internal funding agencies for the urban projects

UNIT VIII

Plan forms and indices

Financial operating plan, city corporate plan, development of urban indicators, infrastructure pricing and financing, impact fee, subsidies

References

Muncipal finance in India:Gokulananda Dash
Uraban Governance and Management: PSN Rao
Urabn Infrasturcture Development in Small and medium Towns:SS Dhaliwal.
Urabn Development and Manageament:SL Goel. & SS Dhaliwal.
Local Government Finance and Bond Markets;Yun-Hwan Kim,ADB.

Uraban Property tax reform:Guidline and recomondation:William R.Dillinger.
India Infrastructure reports
International Handbook on Public Private Partnerships:Graevne A.Hodge, Carsten Greve,Anthony E.Boardman.

PL2073 URBAN GOVERNANCE & MANAGEMENT

Lecture/ Practical Hours Per Week	*: 4*
Total Marks	*: 100*
Internal Assessment	*: 50*
End Examination (3 hrs.)	*: 50*
Credits	*: 4*

UNIT I
Introduction to Urban Governance and Development

Meaning: governance and government; Concepts, scope of governance, evolution of concept of governance; Theories of local government; History of urban local bodies in India, evolution of modern urban local governments during British rule; Decentralization of local governments; Recommendations of various committees; Politics and progress of decentralization.

Urban development in India; problems and issues, policies, programmes and provisions in the national five year plans; processes of decision making for urban development at national, regional, state, district and local levels.

UNIT II
Urban Management & Local governance

Definition, objectives and scope of management; Role of management in developing economy; scope of development management at National, state & local levels.

Determinants and indicators of good governance; citizen charter, right to information and other instruments, stake holders, their perception and role in urban management, local governance.

UNIT III

Urbanization & Public-Private Sector

Process of urbanization, developmental conflicts, resource constraints, system deficiencies, urban poverty and exclusion from development process.

Urban development bodies; urban development authorities, background, function, powers, organization structure and resources; Case Studies, role of NGOs and private organizations in Urban Development.

Urban Reforms and its implications on Urban Development

UNIT IV

Governance in post 74th Amendment Scenario

74th Constitutional Amendment-XII schedule, decentralization of powers and functions; Local and participatory planning, bottom up, decentralized and integrated planning processes; Planning, governance and spatial strategy; Best practices of planning and quality of governance.

UNIT V

Political Systems, Leadership, Decision-making, & Conflicts

Importance of effective communication and soft skills in management, introduction to theories of decision-making; rational theory, incremental theory, systems theory, game theory, conflict theory, Planner's functions as a leader, urban development manager & role in the decision-making process, Democracy and planning, Nature and mode of resolution of conflicts; public participation in planning as an aid to better understanding planning and implementation.

Expected Outcomes & Assignment

The internal assessment to be in the form of term papers and presentations on above mentioned aspects.

References:

Urban Development and Management: S.L. Goel, S.S. Dhaliwal: Deep and Deep Publications Pvt. Ltd.

Urban Infrastructure Development in Small and Medium towns: Dr. S. S. Dhaliwal; Deep and Deep Publications Pvt. Ltd.

Urban Development, Satish Tiwari; Anmol Publications Pvt Ltd, New Delhi

Reading Material on Development Management: N S Saini Institute of Town Planners, India New Delhi.
Decentralized Governance and Planning: Acompartitve study in three south Indian statyes @2001 by Abdul Aziz,Macmillan publication.

PL2074 PROFESSIONAL PRACTICE

Lecture/ Practical Hours Per Week	*: 4*
Total Marks	*: 100*
Internal Assessment	*: 50*
End Examination (3 hrs.)	*: 50*
Credits	*: 4*

UNIT I:

Scope of Professional practice

Scope of services for different scales of planning like Master plan for a city, Zonal/District plan, sector/neighbourhood plan, layout or group housing schemes, commercial centres, industrial estates; consultancy chares, nature of engagements, agreements and safeguards, completion and copyrights.

UNIT II

Organization, Scope and Scale of Charges: Aims and objectives of professional institutes, sister bodies; professional roles and responsibilities of planning consultants; professional ethics; responsibilities towards clients, fellow professionals and general public; scope of services for different projects like master plan for urban area, zonal/district plan, sector/neighborhood; layout, group housing schemes, commercial centers, industrial estates etc; constancy agreements, and safeguards; fees and scales of professional charges, competitions and copyrights

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UNIT III

Role of Planner-Planner's input as professional at various levels and organizations, his role in decision making processes, relevant issues; generalists vs. specialists,

professional vs. technocrats, planner as decision maker vs. advisor to decision maker; relationship with client, developers, institutions and contractors; relationship with other experts such a engineers, architects, sociologists, economist, lawyers, etc. For specialized studies related to planning.

UNIT IV

Valuation-Fundamentals of valuation, ownership of land, compound interest theory calculating for present value, concepts of economic rents and social rents, property taxes, sinking fund, annuity depreciation, valuation tables; legislative framework-rent control, land acquisition, easements and their effects on properties. Purpose of valuation for wealth tax, income tax, capital gains tax, property tax, gift tax , etc.

UNIT V

Methods of Real Property Valuation-Income capitalization methods, land and building method and other methods of valuation.

UNIT VI

Contract Documents and Project Formulation- Tenders, contracts, arbitration, schedule of rates for construction; materials labor and equipment for land development, units and mode of measurements, rate analysis; formulations of project proposals and outline; preparation of and response to Notice Inviting Tenders, Expression of Interest, Terms of Reference, penalty clauses,etc.

PL 2075 PLANNING WORKSHOP III (REDEVELOPMENT)

Lecture/ Practical Hours Per Week	*: 6*
Total Marks	*:100*
Internal Assessment	*: 50*
End Examination (External Viva-voce.)	*: 50*
Credits	*: 6*

This course is designed to expose students to hands - on, primary involvement with those typical problems/projects existing within a Settlement (Urban/Rural) that require interaction with experts and implementing authorities/line departments in a focused way. The main objective of this course is to enhance learning through a combination of lectures, demonstrations and interactive practical exercise session on topics such as Redevelopment, Conservative Surgery, Repair, Restoration, Conservation, Conservative Up-gradation, Inner city improvement, Urban renewal, Rehabilitation, Civilisational Characteristics Retention, Traditional and Cultural built forms Conservation as a tool/product of Urban renewal, Historic landscape developments, Heritage (Natural/Cultural) Area developments, Archaeological Areas Interface to the existing modern developments, Designated Traditional area architectural & planning documentations, signage and Infrastructure design within an existing Settlement (Urban / Rural/ Region).

Following surveys related to a Settlement (Urban/Rural) aspects should be conducted: Listing, Cultural geography, Traditional/ Historical/Old/Rural settlement Morphology including networks and people (Population), **People**, **Time**/Tradition/Heritage, **Place** link identification and listing , usability, reuse, sensitive use, diversion, low impact creating developments, past and present needs of the location studies, Characteristic features like Road width, Built form to Plot relationships, volume of streets for retaining the old / traditional/ Heritage character, studies relating to laws of protection for Heritage (Natural/ Cultural).

Preparation of Area redevelopment Plan/any such related plans as stated above by studying the existing land use, existing circulation pattern, level of service etc.

Expected outcome:
Students either in small groups or individually have to arrive at comprehensive Area redevelopment Plan/any such related plans as stated above for a selected locality.
At least two studio exercises have to be dealt.

PL2076 PLANNING COLLOQUIUM

Lecture/ Practical Hours Per Week	*: 4*
Total Marks	*: 100*
Internal Assessment	*: 100*
End Examination	*: Nil*
Credits	*: 4*

UNIT I: Practical Training

Each student will be required to undertake minimum four weeks of compulsory training in an approved social services / civil society organization during the summer vacation between sixth and seventh semester.

Individuals to present the work/project done as a part of their practical training in a civil society organization during the summer break after sixth semester. Students shall also present an organization analysis of the NGO where they worked. Each project and civil society is to be understood and critically appraised on terms of their role and significance in the contexts of a region's development. This unit will comprise minimum of 40% weight age of the overall marks in the subject.

UNIT II : Colloquim

The subject essentially aims to introduce the students to the issues related to planning as seen colloquially by the stake holders, decision makers, urban managers and advocates - all of whom may not necessarily be professionally trained in planning.

The students will be exposed to colloquial arguments and issues raised by NGOs, citizens, user groups, advocates,

other technocrats, urbanisms, etc. Interviews with the stakeholders have to be presented in the form of a report and presentation

The discussion will be organized on a fortnightly basis with the intervening week to be used for a debate / seminar by the students to clarify and extend the arguments and stances raised in the previous colloquium and also by making use of related press reports / articles.

The students shall participate in organizing the colloquiums, organizing background material, identifying potential participant and recording the minutes. Evaluation will be wholly based on internal marks given on the basis of the participation of the students in the colloquiums and in the internal seminars / debates and the reports submitted by the students on the colloquiums.

Expected outcome:

A report with the copy of the presentation in a CD has to be submitted at the end of the semester enclosing the minutes of the final meeting.

The distribution of marks in the studio subject may be as follows:

40% for Unit-I
60% for Unit-II

References: *Previous batches colloquium reports and CDs*

PL2077 PLANNING LEGISLATION

Lecture/ Practical Hours Per Week	*: 4*
Total Marks	*: 100*
Internal Assessment	*: 50*
End Examination (3 hrs.)	*: 50*
Credits	*: 4*

UNIT I

Concept of Law

Sources of law (custom, legislation and precedent); meaning of the term of law, legislation, ordinance, bill, act, regulations and bye-laws, Doctrine of separation of powers; significance of law and its relationship to planning; benefits of statutory backing for planning schemes; eminent domain and police powers.

UNIT II

Indian Constitution

Concepts and contents of Indian Constitution; provisions regarding property rights; evolution of planning legislation and overview of legal tools connected with urban planning and development; Legislative competence of State & Central Government to enact town planning legislation; model town planning laws (Model Urban & Regional Planning Acts, Model Municipal Corporation Act, UDPFI, Model Municipal Law etc).

UNIT III

Laws, Acts and Regulations for Planning and Development

Introduction, scope and relevance of various laws and acts relevant to planning; Model Town and Country Planning Acts, Development Authorities Act, 73rd and 74th Constitution (Amendment) Acts (confirming legislation of various states, hurdles to implementation; Municipal Acts, Environmental and Pollution control Acts, Rent control legislation, housing co-operative related legislation, slum related legislation, legislation related to Conservation & Restoration, Repeal of Urban Land Ceiling Act (status in various states) etc., Case studies.

Objectives, contents, procedures for preparation and implementation of master plans, ILUPs, town planning schemes & Regional Plans; Concept of arbitration, betterment levy, development changes & Public Participation in statutory planning process, concept of alternatives to master plan, regulations, transfer of development rights, other legal tools.

UNIT IV

Land Acquisition Act

Introduction to Land Acquisition Act, 1984, Historical background, need, advantages, limitations; Relevance in today's context; Case studies highlighting nature of contention, parties in dispute and the decisions in specific planning dispute.

UNIT V

Organisations for plan Implementation

Special purpose bodies for plan implementation such urban/ metropolitan development authorities, improvements trusts, water and sewerage boards, housing boards, slum improvement/clearance boards, transport undertakings; regional development boards, implementation agencies at state & district level.

Expected Outcomes & Assignment

The internal assessment to be in the form of term papers,tests and presentations on above mentioned aspects.

References:

ITPI Reader Volume
UDPFI Guidelines
Master Plan Approach: Efficacy & Alternatives

SEMESTER VIII

PL2081 PLANNING PROJECT

Project Work Hours Per Week	*: 26*
Total Marks	*: 400*
Internal Assessment	*: 200*
End Examination (External jury and Viva-voce)	*: 200*
Credits	*: 26*

Each student of B.Tech Planning is required to prepare a dissertation / project on a subject concerning urban, rural or regional development under a guide/adviser as approved by the Head of the Department. The dissertation / project will provide aid, opportunity to the student to synthesize the knowledge and skills acquired through the learning of various theories and practices during the course.

The particulars of schedule, content, presentation, format, etc., as decided by the department from time to time, shall be strictly followed. The course work is generally divided into four stages namely Introduction/need for the study, Data collection/ literature review, case study and analysis of data and recommendations/ proposals.

At the end of the semester, each student is expected to submit all original drawings prepared as per the department's specifications, copies of the report in the specified format and in a soft copy and a physical or digital / virtual model should be submitted to the department after obtaining the approval of the respective guide/ adviser.

The department shall schedule the final viva-voce, at its convenience, only after the receipt of the thesis submission by a student.

PL2082 SEMINAR-III
(ETHICS, VALUES, PHILOSOPHY AND PLANNING)

Lecture/ Practical Hours Per Week	*: 3*
Total Marks	*: 100*
Internal Assessment	*: 100*
End Examination	*: Nil*
Credits	*: 3*

UNIT I

The value-crisis in the contemporary Indian Society; The nature of values: the value spectrum for a good life; The Indian system of values.

UNIT II

Material development and its values; the challenge of science and technology; Values in planning profession, research and education.

UNIT III

Psychological values; integrated personality; mental health; Societal values: the modern search for a good society; justice, democracy, rule of law, values in the Indian constitution; Aesthetic values: perception and enjoyment of beauty; Moral and ethical values; nature of moral judgement; Spiritual values; different concepts; secular spirituality; Relative and absolute values; humanism and human values; human rights; human values as freedom, creativity, love and wisdom

UNIT IV

Canons of ethics; ethics of virtue; ethics of duty; ethics of responsibility; Work ethics; Professional ethics; Ethics in planning profession.

Management by values: professional excellence; inter-personal relationships at work place; leadership and team building; conflict resolution and stress management, management of power

UNIT V

Philosophy as differentiated from science - definitions of Philosophy, methods.

Major philosophical thinkers of the world and of India and their ideas from Socrates to Mahatma Gandhi and S. Radhakrishna - exploratory studies in relating these ideas to planning, particularly planning contexts, utopian ideals, values, process, goals, social forces, ethics and management, etc.

UNIT VI

Epistemology and its ideas as related to planning - doctrine of innate ideas, empiricism, rationalism, critical theory of knowledge, skepticism, evolutionary theory of knowledge, genetic theory of knowledge, intuitionism, logical empiricism, the dialectic method.

UNIT VII

Tests of truth - realism, pragmatism and idealism - causation - idea of causality and finality – contingency.

Naturalism, mechanism, organism views - teleology - creationism and other theories.

Ontology - materialism and dialectic materialism.

Theories of the mind, self and freedom of the will.

Theories of value and reality.

UNIT VIII

Review of the basic tenets of the various schools of Indian philosophy and isms and explorations of their possible relation to planning in the Indian contexts - the Vedas, Brahmanas, Upanishads, Sankya, Yoga, Nyaya, Vyseshika, Mimamsa, Saiva Siddhanta, Tantra, Vedanta, Buddhism, Jainism, etc. Gandhi's philosophy of Ahimsa, Satyagraha, Swarajya and rural development - as alternative paradigms to planning in India.

Expected Outputs & Assignment

Each student shall present a written paper and a seminar at the end of the semester for final assessment on a topic to be finalized in consultation with

the concerned faculty. This shall be based on extensive literature reviews, site visits (wherever possible) and interviews with experts.

PL2083 CLIMATE CHANGE AND PLANNING

Lecture/ Practical Hours Per Week	*: 3*
Total Marks	*: 100*
Internal Assessment	*: 50*
End Examination (3hrs)	*: 50*
Credits	*: 3*

UNIT I

Introduction to climate change

Climate and weather, concept of climate change, global warming, Ozone Depletion, global wind systems, Green house gases/emissions, Global energy balance, surface energy balance, hydrological cycle, atmosphere and oceanic general circulation as related to climate, changes in global mean sea level, natural and anthropogenic variability change, Changing perspectives in man-environment relationship, Eco-city approach.

UNIT II

Climate Change and Related Sectoral Issues

Agriculture, Health, Water and sanitation, food security, eco-system, Poverty and shelter, Disaster,

UNIT III

Urban Climate Change

Population, Landuse planning, Urban Heat Islands, Local climatic changes

UNIT IV

Climate Change Impact Assessment

Policy issues- Key Socio-economic Impact Issues, Impacts of changing climate, Vulnerability and coping with impacts, Environmental Impact and Strategic Environmental Assessment, Ecological Footprint Analysis for cities,

Sustainable Lifestyle Assessment, Ecological Footprint Analysis for cities

UNIT V

Mitigation and Adaptation To Climate Change

Mechanisms and measures for mitigation and adaptation to climate change at various levels- Carbon emissions trading, Ecological Footprints

UNIT VI

Climate Change and Governance/ Legislation

Institutional Mechanism, Plans, Policies and adaptation strategies.

UNIT VII

Climate Change And Related Case Studies

Planning in Resilient cities, sustainable spatial planning (city based exercise)

References-

- UN- Habitat, Cities and Climate Change: Global Report on Human Settlements 2011
- UN-Habitat, Planning for Climate Change , A STRATEGIC, VALUES-BASED APPROACH FOR URBAN PLANNERS
- UN-Habitat, Local Leadership for Climate Change Action
- UNEP, Mainstreaming Climate Change Adaptation into Development Planning: A Guide for Practitioner.

PL2084 PROJECT DOCUMENTATION

Lecture/ Practical Hours Per Week:	*: 3*
Total Marks	*: 100*
Internal Assessment	*: 100*
End Examination	*: Nil*
Credits	*: 3*

UNIT I

Types and classification of reports

Types of reports, difference between technical, scientific, legal and other types of communication; specific characteristics of technical writing

UNIT II

Formats of project documentation

Introduction to different components of a project documentation; format and elements of – notice inviting expression of interests (EoI), quotation documents, expression of interest (EoI) reporting, tendering process, technical and financial tender documents, evaluation of bids, request for detailed proposals (RFPs), terms of references (ToRs), detailed feasibility reports, compliance reports; inception reports, closure documents, etc.

UNIT III

Making of a project document

Assignment to make a project document; introducing styles and formats of official communication and letters; request for specifications and quotations; bidding process; recording or minutes and agenda notes for official records.

PL2085 PRACTICAL TRAINING

(TEN WEEKS INCLUDING SUMMER VACATION**)**

Practical Training	*: 10 Weeks*
Total Marks	*:Pass/Fail*
Internal Assessment	*: Nil*
End Examination (External Viva Voce)	*: Pass/Fail*
Credits	*: Nil*

Each student will be required to undertake minimum ten weeks of compulsory training in an approved private or public

planning office (the Chief Planner in the office should be a member of the Institute of Town Planners, India and have a minimum of five years of practical/professional experience after her/his post graduation) during the semester. The place of training is to be determined in consultation with the training supervisor (internal faculty-in-charge).

Students are expected to maintain a weekly log book of tasks undertaken and get feedback from training supervisor within one week of start of training.

The students are expected to submit a report highlighting the profile of the planning office, its organization, key work areas, etc, tasks undertaken based on a weekly log during the training and details of methods employed.

The students will submit relevant drawing/visuals and a report on the training. The students will also make presentation to the External Jury.

A jury will evaluate this report at a viva-voce. After submission of the report the department at its convenience will arrange for the conduct of the viva-voce examination.

FACULTY MEMBERS

Dr.P.Padmavathi B.Arch,M.U.R.P.(USA) Ph.D(Landon,UD)	Vice-Chancellor
Prof.Ravi Anand Kamal B.Arch.M.C.P	Professor in Architecture
Dr Kavita Daryani Rao B, Arch, M. H. Ph. D.	Professor in Architecture Director of Evaluation
Dr. D. Vijay Kishore B.Arch.,M.U.P.,Ph.D	Professor in Architecture Principal
Prof.K.Sudhakar B.Arch M.Planning(Urban and Rural)	Associate Prof.in Architecture
Prof.S.Kumar B.Arch,P.G.Diploma in planning(Housing)	Professor in Planning Director of Admissions
Dr.V.Phanisree B.Arch.,M.L.A.,Ph.D	Associate Prof.in Architecture Head,Dept.of Urban and Regional Planning
Prof.M.Vinod Ganesh B.Arch.,PG.Diploma in Urban Design(M.Arch)	Associate Prof.in. Architecture
Prof.M.Sitaramalakshmi B.Arch.,M.U.P	Associate Prof.in Architecture
Prof.Ch.Srinivas B.Arch.,M.U.R.P	Associate Prof.in Architecture
Prof.Ch.Sharmila B.Arch.,M.Arch(E.D.)	Associate Prof.in Architecture
Prof.H.Chinna Saidulu B.Arch.,M.Arch.	Assistant Prof.in Architecture
Dr.P.Venkata Ramana M.Com.,M.L.I.Sc.,Ph.D,PGDGA	Associate Professor & Head Library & Information Center

Lecturers (on Contract Basis)

Mr.B.Prasad Rao
MURP
Mr.C.Revapathi
MURP
Mrs.Tuhina Sinha MA,M.Plan
Mrs.E.SandhyaReddy M.U.R.P
Mrs. G Uma Rani
MURP
Mrs.P.V.L.Kanthi B.Arch,M.C.R.P
Mr.K.Suresh
M.E.,M.B.A
Mrs.G.Trupthi
B.Plan
Mr.B.Ramakrshnaiah
M.Sc,M.U.R.P,AITP
Mrs.P.Sailaja
M.U.R.P
Mrs.N.W.Shivangi
B. Arch, M. H.

Visiting Faculty

Dr.G.Nageswar Rao
Mr.Adbul Raoof
Mr.P.Venu Gopal
Syded Muzaffer Hussain
Devender Reddy
Mrs.Vasanta Sobha
Mr.Sharath
Mr.P.Anil Kumar
Mrs.K.Kalpana

When a planner speaks of implementing goals rationally, he implies that it is possible to demonstrate logically and experimentally the relationship between the proposed means ad the ends they are intended to further.

Alan A. Altshuler, planner, The City Planning Process (1965)

A plan is a list of actions arranged in whatever sequence is thought likely to achieve an objective.

John Argenti, author and founder of the Strategic Planning Society

Hippodamus, son of Euryphon, a native of Miletus, invented the art of planning and laid out the street plan of Piraeus.

Aristotle, Greek philosopher and educator (384-322 BC)



B.TECH - DTDP
ACADEMIC REGULATIONS,
COURSE STRUCTURE AND SYLLABUS
(Effective from the Academic year 2011-12)

COURSE OUTLINE

DIGITAL TECHNIQUES FOR DESIGN AND PLANNING



JNAFAU

School of Planning and Architecture
Mahavir Marg,Masab Tank, Hyderabad-500028, A.P, India

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JAWAHARLAL NEHRU ARCHITECTURE AND FINE ARTS UNIVERSITY
Mahavir Marg, Hyderabad - 500 028.

Academic Regulations for B. Tech (DTDP)
(Effective *for all the students* from the Academic Year 2011-12)

1. Award of the B. Tech (Digital Techniques for Design and Planning) Degree:

A student will be declared eligible for the award of the "B. Tech (Digital Techniques for Design and Planning)" Degree if he fulfills the following academic regulations:

i. He has to pursue a course of study for not less than four academic years and not more than eight academic years.

ii. B. Tech. Digital Techniques for Design and Planning is a four year Course and is offered in Semester pattern.

iii. The orientation of each semester is prescribed in the course structure shall be accordingly followed.

iv. He must satisfy the Minimum Academic Requirements in each year as stipulated herein.

v. He has registered for and studied all the subjects for a total of 240 credits and secured all the 240 credits.

vi. Students, who fail to fulfill all the Academic requirements for the Award of the Degree within eight academic years from the year of their admission, shall forfeit their admission in the said course and their seat shall stand cancelled.

2. Courses of Study:

The Subjects offered are prescribed in the Course Structure.

3. Minimum Instruction days:

There shall be a minimum of 90 instruction days for each semester as per UGC Norms excluding the examination and miscellaneous days.

Internship in the 8th semester shall be for the duration of 12 calendar weeks from the date of commencement of actual internship including summer vacation and excluding the Viva voce examination.

4. Attendance requirements:

i. A student has to put in a minimum of 75% of the attendance in aggregate of all subjects for becoming eligible to register for the end semester examinations and for acquiring credits in each semester.

ii. Condonation of shortage of average attendance up to 10% (i.e. between 75% to 65%) in each semester may be granted by the College Academic Committee (CAC) on genuine and valid grounds with supporting evidence.

iii. A stipulated fee shall be payable towards condonation of shortage of attendance.

iv. Shortage of aggregate attendance below 65% shall in no case be condoned.

v. Students detained for shortage of attendance are not eligible to take the end semester examinations. They will have to seek re-admission for that semester or repeat the semester when next available /offered.

5. Weight age and Distribution of the marks:

i. The performance of the student in each semester shall be evaluated Subject-wise as per the course structure given ahead.

ii. The distribution of marks for the all subjects in general shall be as follows;
50% Internal Evaluation and 50% for External Evaluation (End Examination) except other-wise specified.

iii. The performance of the student in each semester shall be evaluated subject -wise with a maximum of 200 marks in studio subjects and 100 marks in other subjects. The project in the eighth semester shall be evaluated for 300 marks and internship for 200 marks.

6. Evaluation

i. The performance of each student enrolled in a course will be assessed in the form of Continuous assessment (internal) and End Semester Examination in a ratio of 50:50 in general.

ii. The mode of continuous assessment will be decided by the respective teacher /department concerned.

iii. Internal Evaluation for all studios shall be of continuous evaluation with two (2) or more examiners assessing the student's works periodically.

iv. The evaluation for the subjects Introduction to Communication skills, Seminar shall be 100 % Internal Evaluation.

7. Revaluation for External Examination:

No request for re-evaluation after the result declared in any course will be entertained.

8. Revaluation for Internal Assessment Marks

No request for re-evaluation of the internal marks after the results are declared in any course will be entertained.

9. Evaluation of Project.

Students are required to present an open seminar/Viva-voce on the Project work. The Internal Assessment for 50% of the total marks should be done on a periodic basis by the guide and two or more internal examiners as decided by the department.

Out of a total of 300 marks for the project work in the eighth semester, 150 marks shall be for Internal Evaluation and 150 marks for the End Evaluation and End evaluation shall be an external jury and viva- voce. The End Evaluation shall be conducted by a board of examiners consisting of the thesis coordinator/ Head of the Department or their nominee and an external examiner.

For the External Evaluation, one Internal Examiner should award 25% of the prescribed marks and 75% marks should be assessed by the appointed External Examiner.

10. Evaluation of Practical and Internship.

i. For External evaluation for Practical Lab, there would be a practical exam and External jury and Viva-Voce.

ii. The End Evaluation for Internship shall be by external Jury and will be a Viva-voce.

11. Minimum Academic Requirements (Promotion criteria & Re-registration).

The following academic requirements have to be satisfied in addition to the attendance requirements mentioned in item No.4:

i. A student shall be deemed to have satisfied the minimum academic requirements in each subject or project if he secures not less than 45% of marks in the End Evaluation and a minimum of 50 % of marks in the sum total of the internal evaluation and End Evaluation taken together.

ii. The candidate will be promoted from 3rd year to 4th year only if he/she has no backlogs of 1st year.

iii. A student who fails to fulfill the minimum academic requirements in any subject and secures less than 50% of marks in the internal evaluation, may be permitted the option of re-registering in that subject, which will enable him to improve and resubmit the work for internal evaluation. The candidate who has re-registered and has already put in the requisite attendance in the course need not attend the classes once again.

iv. In such cases of re-registration, the student's previous performance both in the internal evaluation and end evaluation for the particular subject/s shall stand cancelled and he shall be required to appear for his end evaluation (end examination or external jury as the case may be), again.

v. However, such re-registration shall be subject to a limit of only three theory subjects or two theory subjects and one studio/seminar/practical subject at any given time. Re-registration of any course should be done within 15 days from the date of commencement of class work. A stipulated fee shall be payable towards re-registration for each subject re registered.

vi. Transfer of candidate from one course to another shall not be permitted, due to legal and administrative constraints.

Supplementary Examinations

1. To enable the students to satisfy the academic requirements, the supplementary examinations shall be arranged at the end of each semester.

2. A candidate who has backlogs can appear either at the regular or supplementary examinations.

12. Withholding of the results:

The results of a student are withheld if:
i. He has not cleared any dues to the Institution / Hostel.

ii. A case of disciplinary action is pending against him

13. Award of Class:

After a student has satisfied the requirements prescribed for the completion of the program is eligible for the award of the B.Tech. (Digital Techniques for Design and Planning) Degree he shall be placed in one of the following three classes:

First Class with Distinction	70% and above	From the aggregate marks secured for 240 credits/in the whole program
First Class	Below 70% but not less than 60%	
Second Class	Below 60% but not less than 50%	

14. General:

i. The academic regulations should be read as a whole for the purpose of any interpretation.

ii. The marks in internal evaluation and end examination shall be shown separately in the marks memo.

iii. Students who have completed the course duration or have not registered for any regular semester and wish to re-register for more than the stipulated limit of the courses, can do so by appealing to the Vice-Chancellor, who may permit the judicious number of subjects in which the candidate can re-register at a given time on case to case basis to enable him to earn the degree.

iv. Candidates who have not been able to complete the course on any genuine reason even after the stipulated time, (twice the time period of the duration of the course), may also secure one more chance (special permission) from the Vice-Chancellor for course completion.

v. In case of any doubt or ambiguity in the interpretation of the academic regulations, the decision of the Vice-Chancellor is final.

vi. The University may change or amend the academic regulations or syllabi at any time and the change or amendments made shall be applicable to all the students with effect from the dates notified by the University.

vii. Where the words "he", "him", "his", occur in the regulations, they include "she", “her", "hers".

viii. A good understanding of the academic regulations and a strict adherence to the proposed schedules will enable the students to complete the B.Tech. Digital Techniques for Design and Planning programme successfully within the stipulated time.

Jawaharlal Nehru Architecture And Fine Arts University

Mahaveer Marg, Hyderabad - 500 028.

(Approved by the Board of Studies on 18th February 2009)

COURSE STRUCTURE for B. Tech (Digital Techniques for Design and Planning)

(Effective *for all the students* from the Academic Year 2008-09)

I Semester

Code	Subject Name	Type	Credits	Inst.hr	Marks		End Exam
					Internal	External	
DT 101	Basic Design and Drawing	STU	8	12	100	100	Viva-voce
DT 102	C Programming and Data Structures	PRA	4	4	50	50	Practical & Viva-voce
DT 103	Computer Applications	PRA	4	4	50	50	Practical & Viva-voce
DT 104	Climatology for Built Environment	TH	4	4	50	50	3 hours
DT 105	Introduction to Communication Skills	SEM	3	3	100	-	Total internal evaluation
DT 106	Engineering Mathematics	TH	4	4	50	50	3 hours
DT 107	Workshop (IT & Model making)	WS	3	4	50	50	Practical & Viva-voce
Total			30	35			

II Semester

Code	Subject Name	Type	Credits	Inst.hr	Marks		End Exam
					Internal	External	
DT 201	Architectural Design- I	STU	8	12	100	100	Viva-voce
DT 202	Structural Systems	TH	4	4	50	50	3 hours
DT 203	Unix and Shell Programming	PRA	3	4	50	50	Practical & Viva-voce
DT 204	Applied Physics	TH	4	4	50	50	3 hours
DT 205	Mathematical Methods	TH	4	4	50	50	3 hours
DT 206	Quantitative Methods	SEM	3	3	100	-	Total internal evaluation
DT 207	Advanced Data Structures and algorithms	PRA	4	4	50	50	Practical & Viva-voce
Total			30	35			

III Semester

Code	Subject Name	Type	Credits	Inst.hr	Marks		End Exam
					Internal	External	
DT 301	Architectural Design- II	STU	8	12	100	100	Viva-voce
DT 302	Materials & Construction	TH	4	4	50	50	3 hours
DT 303	Planning Principles	TH	3	3	50	50	3 hours
DT 304	Object Oriented Programming	WS	3	4	50	50	Practical & Viva-voce
DT 305	Mathematical foundations of Computer Science	TH	4	4	50	50	3 hours
DT 306	Computer Aided Drafting and Design	PRA	4	4	50	50	Practical & Viva- voce
DT 307	Computer Graphics	PRA	4	4	50	50	Practical & Viva- voce
Total			30	35			

IV Semester

Code	Subject Name	Type	Credits	Inst.hr	Marks		End Exam
					Internal	External	
DT 401	Digital Methods in Design	STU	8	12	100	100	Viva-voce
DT 402	Geographical Information Systems- I	PRA	4	4	50	50	Practical & Viva-voce
DT 403	3D Modeling	PRA	4	4	50	50	Practical & Viva-voce
DT 404	2D Animation	WS	4	4	50	50	Practical & Viva-voce
DT 405	Multimedia and Production Techniques	PRA	3	3	50	50	Practical & Viva-voce
DT 406	Object Oriented Analysis and Design	TH	3	4	50	50	3 hours
DT 407	Building Services	TH	4	4	50	50	3 hours
Total			30	35			

V Semester

Code	Subject Name	Type	Credits	Inst.hr	Marks		End Exam
					Internal	External	
DT 501	Digital Methods in Planning	STU	8	12	100	100	Viva-voce
DT 502	Digital Gaming	WS	4	4	50	50	Practical & Viva-voce
DT 503	Image Processing	TH	4	4	50	50	3 hours
DT 504	Web Technologies	SEM	3	3	100	-	Total internal evaluation
DT 505	Building Management Systems	TH	3	4	50	50	3 hours
DT 506	Building Information Modeling	PRA	4	4	50	50	Practical & Viva-voce
DT 507	Introduction to Simulation and Modeling	PRA	4	4	50	50	Practical & Viva-voce
Total			30	35			

VI Semester

Code	Subject Name	Type	Credits	Inst.hr	Marks		End Exam
					Internal	External	
DT 601	Digital Techniques Studio-I (2D animation)	STU	8	12	100	100	Viva-voce
DT 602	Database Management Systems	PRA	4	4	50	50	Practical & Viva-voce
DT 603	Artificial Intelligence	TH	4	4	50	50	3 hours
DT 604	Cyber Laws	TH	3	4	50	50	3 hours
DT 605	Energy Simulation in Building Design	WS	4	4	50	50	Practical & Viva-voce
DT 606	Environmental Studies	TH	4	4	50	50	3 hours
DT 607	Management Science	SEM	3	3	100	-	Total internal evaluation
Total			30	35			

VII Semester

Code	Subject Name	Type	Credits	Inst.hr	Marks		End Exam
					Internal	External	
DT 701	Digital Techniques Studio- II (3D Animation)	STU	8	12	100	100	Viva-voce
DT 702	Professional Practice	TH	4	4	50	50	3 hours
DT 703	Concepts of Interactive and Virtual Worlds	WS	4	4	50	50	Practical & Viva-voce
DT 704	Project Management	TH	3	4	50	50	3 hours
DT 705	Project Studies	SEM	3	3	100	-	Total internal evaluation
DT 706	Elective	TH	4	4	50	50	3 hours
DT 707	Geographical Information System- II	PRA	4	4	50	50	Practical & Viva-voce
Total			30	35			

VIII Semester

Code	Subject Name	Type	Credits	Inst.hr	Marks		End Exam
					Internal	External	
DT 801	Internship	STU	10	-	-	200	Practical & Viva-voce
DT 802	Project	-	15	30	150	150	Viva-voce
DT 803	Seminar/Paper (Philosophy)	SEM	5	5	100	-	Total internal evaluation
Total			30	35			

Schedule of Student – Teacher Ratio

Code	Subject Type	Teacher - Student ratio
STU	Studio	1 teacher for every 15 students
TH	Theory	1 teacher for class
PRA	Practical	1 teacher for every 25 students
WS	Workshop	1 teacher for every 15 students
SEM	Seminar	1 teacher for class

JAWAHARLAL NEHRU ARCHITECTURE AND FINE ARTS UNIVERSITY

SCHOOL OF PLANNING AND ARCHITECTURE

MAHAVEER MARG, HYDERABAD – 500 028

B.TECH. (DIGITAL TECHNIQUES FOR DESIGN AND PLANNING)

(Syllabus Effective from Academic Year 2008-2009)

I SEMESTER

DT 101 BASIC DESIGN AND DRAWING

L/s: 12/Wk, Int Exam: 100, End Exam: 100, Total: 200, End Exam: Viva-voce Cr: 8

The course contains two parts viz. Basic Design and Architectural Drawing and Graphics

Basic Design

Course Overview:
Basic Design provides the framework for understanding design as a new language by sensitizing students to the conceptual, visual and perceptual issues involved in the design process.

Objectives of the Course:
To impart an understanding of design process and provide knowledge of the principles of design and design elements. Exercises complement the lectures and ensure that the students learn to develop a series of compositions in two and three dimension.

Expected Skills / Knowledge Transferred:
The Course prepares ground for the students to gain an understanding into the fundamental issues in building design and develop the skill to create appropriate solutions for simple problems.

Course Contents:
Introduction to design – definitions and meaning of design, importance of design. Examples of design from nature. Fundamental elements of design in 2-D and their definitions; point, line, shape, form, space, texture, value, colour and material. Introduction to the principles of design in 2-D and 3-D -unity, balance, symmetry proportion, scale, hierarchy, rhythm, contrast, harmony, focus, etc; use of grids, creating repetitive patterns.
Assignment: to compose patterns by incorporating the principles of design.

Concepts of geometry – introduction to different 3-D forms and primitive forms, shape and understand the behaviour when combined Transformations of 2-D to 3-D.
Assignment: to sketch the basic geometric forms and to analyze them based on transformation of simple to complex forms.
Principles of composition-using grids, symmetrical/asymmetrical, rule of thirds centre of interest etc.
Assignment: to compose patterns using grids and to incorporate the principles.

Color theory, color wheel, primary, secondary, tertiary colors, color schemes, color value and intensity. Theoretical inputs to be followed by exercises to develop the ability to translate abstract principles into compositions in 2D and 3D.
Assignment: prepare a colour wheel, and composition based on colour theory.

Study of ornament in architectural design. Different types of ornamentation in buildings. Study and evaluation of artifacts and historic examples and their applicability.
Assignment: to document artifacts historical sites and to understand them with respect to the surround environment; to incorporate them of the design aspects to present day

Context or usage.

Basic anthropometrics-average measurements of human body in different postures-its proportion and graphic representation, application in the design of simple household and street furniture. Role of mannequins in defining spatial parameter of design. Basic human functions and their implications for spatial planning.

Visual analysis of built forms, noted for aesthetic delight; analysis of solid and void relations. Integration of form and function in the design of bus shelter, milk booth, watchman's cabin, traffic police kiosk, flower stall, ATM Center, etc.
Note: In end-exam, which is a viva-voce, the students have to present the entire semester‘s work for assessment.

Reference books:

Ching, Francis D.K. Architecture: Form, Space, and Order, 2nd ed. Van Nostrand Reinhold, New York, 1996.
Hanks, A. David. Decorative Designs of Frank Lloyd Wright, Dover Publications, Inc. New York, 1999.
Hepler, E. Donald, Wallach, I. Paul. Architecture Drafting and Design, 3rd ed. McGraw-Hill Book Company, New York, 1977.
Itten, Johannes. Design and Form: The basic course at the Bauhaus, Thames and Hudson Ltd., London 1997.
Krier, Rob. Architectural Composition, Academy Editions, London, 1988.
Meiss, Pierre Von. Elements of Architecture: From form to place, E and FN Spon, London, 1992.
Pipes, Alan. Drawing for 3-Dimensional Design. Thames and Hudson Ltd., London 1990.
Shibikawa, Ikuyoshi and Takahashi, Yumi. Designers Guide to Colour.
Smithies, K.W. Principles of Design in Architecture. Chapman and Hall, 1983.
Wucius, Wong. Principles of two Dimensional Design. Van Nostrand Reinhold 1972.

Architectural Drawing and Graphics

Course Overview:
The course introduces the fundamental techniques of architectural drawing and develops the appropriate skills for visualization and representation**.**

Objectives of the Course:
To introduce architectural drawing techniques and to facilitate effective visual communication

Expected Skills / Knowledge Transferred:
Freehand, scale drawing, conventional architectural representations in drawings and graphics.

Course Contents:

Introduction: Fundamentals of drawing and its practice, introduction to drawing equipment, familiarization, use and handling.

Drawing: Drawing sheet sizes, composition, fixing. Simple exercises in drafting, point and line, line types, line weights, straight and curvilinear lines dimensioning, lettering, borders, title panels, tracing in pencil, ink, use of tracing cloth.

Architectural Symbols: Representation of building elements, openings, materials, accessories etc., terminology and abbreviations used in architectural presentation.

Measured and Drawing to Scale: Scales and construction of scales, simple objects, furniture, rooms, doors and windows etc., in plan, elevation and section. Reduction and enlargement of drawings

Building Geometry: Study of points, lines, and planes leading to simple and complex solid geometrical forms; Use of geometry in buildings, isometric, axonometric and oblique views; Exercises on Ionic volute, Entasis of column etc., working with models to facilitate visualization.

Free Hand Drawings /Sketching: Simple exercises in object drawing, light and shade of simple, natural and geometric forms. Outdoor sketching of simple building forms. Architectural representation of trees, hedges, foliage, human figures in different postures, vehicles, street furniture etc.; their integration to presentation drawings;

Note: This is a studio subject and students should be made to prepare drawings as studio exercises along with the theoretical inputs. The studio work should be supplemented with appropriate site visits.

Reference books:

Moris, I.H. Geometrical Drawing for Art Students.
Thoms, E. French. Graphic Science and Design, New York: MC Graw Hill.
Nichols, T.B. and Keep, Norman. Geometry of Construction, 3rd ed. Cleaver – Hume Press Ltd., London, 1959.
Bhatt, N.D. and Panchal V.M. Engineering Drawing: Plane and Solid Geometry, 42nd ed. Charotar Pub., Anand, 2000.
Gill, P.S. T.B. of Geometrical Drawing, 3rd ed. Dewan Suhil Kumar Kataria, Ludhiana, 1986.
Shah, M.G., Kale, C.M. and Patki, S.Y. Building Drawing: with an integrated approach to built environment, 7th ed. Tata McGraw Hill Pub., Delhi, 2000.
Bies, D. John. Architectural Drafting: Structure and Environment. Bobbs – Merrill Educational Pub., Indianapolis.
Nelson, A. John. H.B. of Architectural and Civil Drafting, Van Nostrand Reinhold, New York, 1983.

DT 102 C PROGRAMMING AND DATA STRUCTURES

L/s: 4/Wk, Int: 50, End Exam: 50, Total: 100, End Exam: Practical & Viva-voce Cr: 4

UNIT - I

Algorithm / pseudo code, flowchart, program development steps, structure of C program, A Simple C program, identifiers, basic data types and sizes, Constants, variables, arithmetic, relational and logical operators, increment and decrement operators, conditional operator, bit-wise operators, assignment operators, expressions, type conversions, conditional expressions, precedence and order of evaluation.

Input-output statements, statements and blocks, if and switch statements, loops- while, do-while and for statements, break, continue, goto and labels, programming examples.

UNIT - II

Designing structured programs, Functions, basics, parameter passing, storage classes- extern, auto, register, static, scope rules, block structure, user defined functions, standard library functions, recursive functions, header files, C pre-processor, example c programs.

UNIT - III

Arrays- concepts, declaration, definition, accessing elements, storing elements, arrays and functions, two-dimensional and multi-dimensional arrays, applications of arrays. pointers- concepts, initialization of pointer variables, pointers and function arguments, address arithmetic, Character pointers and functions, pointers to pointers, pointers and multidimensional arrays, dynamic memory managements functions, command line arguments, c program examples.

UNIT - IV

Derived types- structures- declaration, definition and initialization of structures, accessing structures, nested structures, arrays of structures, structures and functions, pointers to structures, self referential structures, unions, typedef, bitfields, C program examples.

UNIT - V

Input and output – concept of a file, text files and binary files, streams, standard I/o, Formatted I/o, file I/o operations, error handling, C program examples.

UNIT - VI

Searching – Linear and binary search methods, sorting – Bubble sort, selection sort, Insertion sort, Quick sort, merge sort.

UNIT – VII

Introduction to data structures, singly linked lists, doubly linked lists, circular list, representing stacks and queues in C using arrays and linked lists, infix to post fix conversion, postfix expression evaluation.

UNIT - VIII

Trees- Binary tress, terminology, representation, traversals, graphs-terminology, representation, graph traversals (dfs & bfs)

TEXT BOOKS:

1. Computer science, A structured programming approach using C, B.A. Forouzan and R.F. Gilberg, Third edition, Thomson.
2. DataStructures Using C – A.S.Tanenbaum, Y. Langsam, and M.J. Augenstein, PHI/Pearson education.

REFERENCES:

1. C& Data structures – P. Padmanabham, B.S. Publications.
2. The C Programming Language, B.W. Kernighan, Dennis M.Ritchie,PHI/Pearson Education
3. C Programming with problem solving, J.A. Jones & K. Harrow,dreamtech Press
4. Programming in C – Stephen G. Kochan, III Edition, Pearson Eductaion.

DT 103 COMPUTERS APPLICATIONS

L/s:4/Wk, Int: 50, End Exam: 50, Total: 100, End Exam: Practical & Viva-voce Cr: 4

Course Overview:

UNIT I

Introduction

Introduction and history of computer, software & hardware concepts - bits, bytes - types of languages – Operating systems (windows, DOS, Linux).

Introduction to Word Processing Package (like MS office), toolbar, creating a new document, formatting text, inserting tables, pictures, page numbers and date/time, spelling and grammar checking, taking print outs.

UNIT II

Spread Sheets

Introduction to spread sheets (like MS Excel), creating formulae, order of operations, borders and shading, inserting chart, taking print outs.

UNIT--III

Multi-media Presentations

Introduction to multi-media presentation (like MS Power Point), creating a presentation, opening an existing presentation, creating a blank presentation, different Power Point views, slide manipulation, slide animation, slide transitions, view slide show, navigating while in slideshow, hyper linking to various other media/ application outputs, scanning of different media in different formats, setting of options, resolution settings, management of file size, integrating partial scans of large documents, pack up a presentation for use on another computer, taking print outs.

UNIT IV

Exploring Microsoft Access

Introduction, creating new and opening existing databases, creating a database using a wizard, creating a database without using a wizard, tables - what they are and how they work, create a table from scratch in design view, primary keys, switching views, entering data, manipulating data, advanced table feature examples. Relationships - how to link multiple tables together, forms - what they are and how they work, creating a form using a wizard, reports - what they are & how they work, creating report & mail merge labels using a wizard.

UNIT V

Graphical Concepts-I

Photo editing and Desktop publishing (application) software Introduction, software & system requirements, preferences, workspace, graphics terminology, image depth, resolution and image size, up sampling and down sampling, image sources, straightening an image, cropping an image, basic image correction, printing photo edited documents, selections, choosing foreground and background colors, filling with color, options & preferences revisited, file browser, stepping back in time, use ram efficiently, sharpening images, working with layers, painting in photo editing software, color theory, image modes, channels, more advanced adjustment commands, file format categories.

UNIT VI
Internet concepts
Introduction to Internet, Hyper Text Markup Language, introduction to basic features and uses of Java, VB.

UNIT VII
Graphical concepts-II
Photo editing and Desktop publishing (application) software
Import and export of photo edited files, Objects in photo editing, fills, outlines, total text control, basic toolbox of photo editing software (like CorelDraw), color management tools, starting your page right. Introduction to Flash

Expected Outputs & Assignment
The internal assessment to be carried out through practicals and periodic tests on the mentioned topics.

The internal assessment to be in the form of term papers and practicals on above mentioned topics.

References:
Microsoft Office 2000- Leon Hard Woody, New Delhi, Prentice hall of India.
Microsoft Office for Windows –Sagman India Addison Wesley, 1999.
Adobe Photoshop CS Classroom in a Book (Classroom in a Book) by Adobe Creative Team (Paperback - December 1, 2003).
Fundamental Photoshop: A Complete Introduction by Adele Droblas-Greenberg.

DT 104 CLIMATOLOGY FOR BUILT ENVIRONMENT

L/s: 4/Wk, Int: 50, End Exam: 50, Total: 100, End Exam: 3hours, Cr: 4

Course Overview:
Science (tools, data, standards, methods and principles) of building design and site planning as related to climate, particularly to tropical climates as found in India.

Objectives of the Course:
To equip the student with the basic understanding of climatic types in India, and the impact on requirements of building design and site planning; to introduce them to the basic science of building design and site planning for thermal comfort, daylighting and natural ventilation; familiarize them with the data, methods, principles, standards and tools for planning and designing for climatic comfort

Expected Skills / Knowledge Transferred:
The student should be able to predict' climatic conditions in a given building (simple residence) and undertake redesign for given parameters

Course Contents:
Note: The topics here to be dealt with keeping in mind Indian climatic conditions. NBC and BIS guidelines / standards have to be introduced at all relevant contexts.

Unit – I
Introduction to Building Climatology:
Climate and built form interaction. Global Climatic factors, elements of climate, graphic representation of climatic data, Mahoneys Tables, macro and micro climate; challenge of rapid, extreme environmental change

Unit – II
Tropical Climates:
Definition, classification of tropical climates, characteristics of different climatic zones, Design considerations for warm-humid, hot-dry, composite and upland climates.

Unit – III
Thermal Comfort:
Thermal comfort factors, Physiological aspects, Body heat balance, comfort range, comfort charts.

Unit – IV
Heat flow through Buildings:
Basic principles of heat transfer through buildings, performance of different materials, Periodic heat flow.

Unit – V
Sun and the Design process:
Solar geometry, Solar charts, Sun angles and shadow angles, orientation for sun, sun control, design of shading devices, building form and heat gain, basic principles of day lighting, sunlight and glare

Unit – VI
Natural Ventilation:
Air movement around and through buildings, Orientation for wind, stack effect, Induced ventilation

Unit – VII

Passive Cooling:

Passive methods of Cooling, roof pond, desiccant cooling, evaporative Cooling, and earth sheltered buildings etc.

Site Planning (including landscaping) and building planning and design considering climate factors

Detailed appraisal/analysis of climatological performance of an existing residence and or a workplace; followed by redesigning or the same to improve climatological performance.

Reference books:

Koenigsberger, O.H. and Others. Manual of Tropical Housing and Building. Orient Longman, Chennai, 2003.

Konya, Allan. Design for Hot Climates.

Kukreja, C.P. Tropical Architecture. Tata McGraw-Hill Pub. Co. Ltd., New Delhi, 1978.

Markus, T.A. and Morris. E.N. Buildings, Climate and Energy. Pitman Pub. Ltd., London, 1980.

Olgyay and Olgyay. Solar Control and Shading Devices.

DT 105 INTRODUCTION TO COMMUNICATION SKILLS

L/s: 3/Wk, Int: 100, End Exam: --, Total: 100, End Exam: -- Cr: 3

Course Overview:

UNIT I

Introduction

Orientation for improving the skills of grammar, punctuation, and vocabulary in English focused primarily on developing communication and presentation skills.

UNIT II

Written Skills

Types & classification of reports, difference between technical, scientific, legal and other types of communication; Format and elements of reports, structuring of preamble, contents, chapterization bibliography, footnotes, appendices and references.

UNIT III

Formal Letters & Specifications

Business and official letters, styles and format, requests for specifications and other types of business enquirer, conduct of meetings responsibilities of the chairman and secretaries; agendas and minutes of meeting official records.

UNIT IV

Literature Survey

Use of libraries, knowledge of indexing and available reference material.

UNIT V

Spoken English

Neutralization of accent, pronunciation, formal and informal communication, importance of voice and body language.

UNIT VI

Listening Comprehension

Role of listening in communication, listening for accent, rhythm and intonation, listening for main idea and specific information.

UNIT VII

Use of Multimedia in Communication

Computer adaptive presentations slide shows, using the overhead projector, etc. Style and format for the presentation of the seminar papers, technical reports, and dissertations.

Expected Outputs & Assignment

Each student shall present a written paper and a seminar at the end of the semester for final assessment on a topic to be finalized in consultation with the concerned faculty. Internal assessment to be in the form of book reviews, exercises in writing comprehensions and group discussions on any relevant topics.

References:

Geetha Rajivan, Kiranmai: Course in Listening and Speaking Skills Part I, Foundation Books Pvt Ltd.

Lorven: Enrich your Communication in English

DT 106 ENGINEERING MATHEMATICS

L/s: 4/Wk, Int: 50, End Exam: 50, Total: 100, End Exam: 3hours, Cr: 4

UNIT – I

Differential equations of first order and first degree – exact, linear and Bernoulli. Applications to Newton‘s Law of cooling, Law of natural growth and decay, orthogonal trajectories.

UNIT – II

Non-homogeneous linear differential equations of second and higher order with constant coefficients with RHS term of the type e ^{ax} , Sin ax, cos ax, polynomials in x, e ^{ax} V(x),xV(x), method of variation of parameters.

UNIT – III

Rolle's Theorem – Lagrange's Mean Value Theorem – Cauchy's mean value Theorem – Generalized Mean Value theorem (all theorems without proof) Functions of several variables – Functional dependence- Jacobian- Maxima and Minima of functions of two variables with constraints and without constraints

UNIT – IV

Radius, Centre and Circle of Curvature – Evolutes and Envelopes Curve tracing – Cartesian, polar and parametric curves.

UNIT – V

Applications of integration to lengths, volumes and surface areas in Cartesian and polar coordinates multiple integrals - double and triple integrals – change of variables – change of order of integration.

UNIT – VI

Sequences – series – Convergences and divergence – Ratio test – Comparison test – Integral test – Cauchy's root test – Raabe's test – Absolute and conditional convergence

UNIT – VII

Vector Calculus: Gradient- Divergence- Curl and their related properties of sumsproducts-Laplacian and second order operators

UNIT – VIII

Vector Integration - Line integral – work done – Potential function – area- surface and volume integrals Vector integral theorems: Green's theorem-Stoke's and Gauss's Divergence Theorem (With out proof). Verification of Green's - Stoke's and Gauss's Theorems.

Text Books:

1. A text Book of Engineering Mathematics, Vol-1 T. K. V. Iyengar, B. Krishna Gandhi and Others, S. Chand & Company.
2. A text Book of Engineering Mathematics, C. Sankaraiah, V. G. S. Book Links.
3. A text Book of Engineering Mathematics, Shahnaz Bathul, Right Publishers.
4. A text Book of Engineering Mathematics, P. Nageshwara Rao, Y. Narasimhulu & N. Prabhakar Rao, Deepthi Publications.

References:

1. A text Book of Engineering Mathematics, B. V. Raman, Tata Mc Graw Hill.
2. Advanced Engineering Mathematics, Irvin Kreyszig, Wiley India Pvt. Ltd.
3. A text Book of Engineering Mathematics, Thamson Book Collection.

DT 107 WORKSHOP (IT & MODEL MAKING)

L/s: 4/Wk, Int: 50, End Exam: 50, Total: 100, End Exam: Practical & Viva-voce Cr: 3

Course Overview:

The main objective of this course is to enhance learning through practical exercise sessions.

I.T.

1. Introduction to Personal computers PC configuration, processor, memory, storage devices, i/o devices, Familiarization with key board, using typing tutor
2. Introduction to OS Overview, command line interface, DOS, UNIX, Linux, Windows, Mac
3. Computer Hardware Basics
4. Networks (LAN environment) and Servers introduction, Basic commands
5. Internet basics Introduction to Worldwide Web, Online vs. Offline
6. Installing an OS Underlying m/c concepts (Ex. partition); Installing & uninstalling various packages (RPM, make, tar, etc.); configuring, managing accounts, printing.
7. Office Productivity Tools overview of office automation suits like Microsoft Office and Open Office/Star office
8. Word Processing and Spreadsheets Document editing, formatting, printing, working with tables, drawing objects (use of MS Word, MS Excel)
9. Symbolic Mathematics-Overview, introduction to various commands and tool boxes, programming using MATLAB /OCTAVE
10. Open Source vs. Closed Source Software?
11. Unix shell Overview of Unix shell programming, UNIX utilities & regular expression.
12. Creating Web Content overview of HTML tags, Forms, Frames, Web pages using a text editor, using a WYSIWYG editor.

Model Making

Course Overview:

The course provides the foundation and capability to represent the concepts three dimensionally.

Objectives of the Course:

To introduce various fabrication skills and techniques necessary to produce scale-models and to encourage preparation of models as an essential phase in design development and evaluation.
Expected Skills / Knowledge Transferred: Dexterity; Knowledge of materials and their properties; craft skills; visualization skills;

Course Contents:

Unit – I
Introduction to model-making: Need; role of scale-models in design; general practices; Digital models.

Unit – II
Essentials of model-making: understanding of various tools and machines employed, best practices involved in operating the tools and the techniques.

Unit – III
Survey of various materials available for model making such as papers, boards, wood, plastics, films, plaster of paris, acrylic, Styrofoam, wax, metals, glass etc. and exploring their potential in model-making.

Unit – IV
Techniques of Scale-modeling: Use of different scales; templates; measuring aids; conventions followed.

Unit – V
Techniques for preparation of presentation models, mock-ups, simulation of various materials and textures such as wood, glass, aluminum, steel, bricks, roofing tiles, flooring, corrugated sheets, upholsteries etc.

II SEMESTER

DT 201 ARCHITECTURAL DESIGN -I

L/s: 12/Wk, Int: 100, End Exam: 100, Total: 200, End Exam: Viva-voce Cr: 8

Course Overview:
This course is intended to provide skills for designing a single use, small span and single-storey buildings.

Objectives of the Course:
To develop abilities in design in the context of user requirements. Expected Skills / Knowledge Transferred: use of standards, handling of space and application of knowledge gained from other subjects in design.

Course Contents:
The design issues to be addressed:
• Various functions and their spatial implications.
• Formulations of concept.
• Anthropometry and furniture layout
• Horizontal circulation
• Interior volumes and space articulation through different materials.
• Integration of form and function.

The list of suggested topics to be covered as design problems:
Balwadi, Kindergarten School, Primary Health Centre, Doctor‘s Clinic, small Cafeteria, Highway Restaurant, Village Post Office, Bank extension counter, Police Station, Architect‘s Office, Departmental Store, School Gymkhana and Youth Club etc.Necessary theoretical inputs to be given highlighting the norms and design issues. The topics not covered as design problems will have to be covered by the Studio faculty members through lecture/slide show sessions and site visits.

Course Contents:

Unit – I
Introduction to Sciagraphy:
Simple and composite forms, shadows on horizontal, vertical planes and on their own surfaces. Study of shade and shadows of simple geometrical solids of various forms and groups of forms.

Unit – II

Advanced Sciagraphy:

Shade and shadow techniques leading to advanced practical examples: shades and shadows on buildings or parts of buildings. Relative changes in building shades and shadows with sun angle, time, building height etc.

Unit – III

Perspective:

Characteristics of perspective drawings: perspectives of simple geometric solids and spaces and complex geometries. Advanced examples in one point or parallel perspective, two point or angular perspective, introduction to three point perspective.

Unit – IV

Introduction to Rendering:

Introduction to surfaces and media, observation, recording and basic representation techniques in different media through drawing pencil, pen, brush, charcoal, crayons etc

DT 202 STRUCTURAL SYSTEMS

L/s: 4/Wk, Int: 50, End Exam: 50, Total: 100, End Exam: 3hours, Cr: 4

UNIT I

Introduction to build elements

Study of built elements in settlements with respect to materials used, basic construction methods and general specifications. General types & classifications of buildings; overview of different functional, structural and architectural elements.

UNIT II

Fundamentals of Structures

Introduction to basic structural systems, elements of structure, their functions & behavior, beams, slabs, columns, walls, foundations, bearing wall systems, trusses, rigid frames, linear and curved elements; simply supported, cantilever and overhanging beams for various loads; effect of simple geometric forms on the overall structural behavior.

UNIT III

Fundamentals of Forces

Primary and secondary forces acting on structures - dead loads, live load, wind, seismic forces, distribution of loads through the elements of the system.

Basic fundamentals in force systems, stresses and strains, temperature variation and resultant stresses, relation between E,N, and K; relation between bending moment and shear force, BM and SF diagrams.

Moment of inertia and section modulus for various structural shapes. Theory of simple bending, Columns and struts, failure of columns, Arches.

UNIT IV

Materials and finishes

Structural properties of basic materials like masonry, timber, concrete and steel, bricks, stone, timber, steel, plastics, composites, sand and aggregates, cement, types of paints and varnishes, claddings, finishes; uses, advantages and disadvantages.

Scope of the subject is limited only to understanding/ appreciating applications of above concepts/ principles in:
Infrastructure - roads, kerbs, paving, medians/ traffic islands, drainage channels, pipes, culverts, bridges, street furniture, lampposts, distribution poles.
Buildings- structural and functional typologies such as high-rise, large span, cantilevers, basements and cellars, ramps and elevators.

Expected Outputs & Assignment

Students to make documentation of different built elements and their aspects mentioned above. Structural/ study models of different structures such as arches; truss etc. shall be made along with short notes on the same.

References:

Rowland J. Mainstone: Development of Structural Form
Rangwala: Engineering Materials
S. P. Bindra, S. P. Arora: Building Construction
B.C. Punmia: Strength of Materials vol – I

DT 203 UNIX AND SHELL PROGRAMMING

L/s: 4/Wk, Int: 50, End Exam: 50, Total: 100, End Exam: Practical & Viva-voce Cr: 3

Unit I:

Introduction to Unix:- Architecture of Unix, Features of Unix , Unix Commands – PATH, man, echo, printf, script, passwd, uname, who, date, stty, pwd, cd, mkdir, rmdir, ls, cp, mv, rm, cat, more, wc, lp, od, tar, gzip.

Unit II:

Unix Utilities:- Introduction to unix file system, vi editor, file handling utilities, security by file permissions, process utilities, disk utilities, networking commands, unlink, du, df, mount, umount, find, unmask, ulimit, ps, w, finger, arp, ftp, telnet, rlogin.Text processing utilities and backup utilities , detailed commands to be covered are tail, head , sort, nl, uniq, grep, egrep, fgrep, cut, paste, join, tee, pg, comm, cmp, diff, tr, awk, cpio

Unit III:

Introduction to Shells:

Unix Session, Standard Streams, Redirection, Pipes, Tee Command, Command Execution, Command-Line Editing, Quotes, Command Substitution, Job Control, Aliases, Variables, Predefined Variables, Options, Shell/Environment Customization.

Filters:

Filters and Pipes, Concatenating files, Display Beginning and End of files, Cut and Paste, Sorting, Translating Characters, Files with Duplicate Lines, Count characters, Words or Lines, Comparing Files.

Unit IV:

Grep:

Operation, grep Family, Searching for File Content.

Sed:

Scripts, Operation, Addresses, commands, Applications, grep and sed.

Unit V:

awk:

Execution, Fields and Records, Scripts, Operations, Patterns, Actions, Associative Arrays, String Functions, String Functions, Mathematical Functions, User – Defined Functions, Using System commands in awk, Applications, awk and grep, sed and awk.

Unit VI:

Interactive Korn Shell:

Korn Shell Features, Two Special Files, Variables, Output, Input, Exit Status of a Command, eval Command, Environmental Variables, Options, Startup Scripts, Command History, Command Execution Process.

Korn Shell Programming:

Basic Script concepts, Expressions, Decisions: Making Selections, Repetition, special Parameters and Variables, changing Positional Parameters, Argument Validation, Debugging Scripts, Script Examples.

Unit VII:

Interactive C Shell:

C shell features, Two Special Files, Variables, Output, Input, Exit Status of a Command, eval Command, Environmental Variables, On-Off Variables, Startup and Shutdown Scripts, Command History, Command Execution Scripts.

C Shell Programming:

Basic Script concepts, Expressions, Decisions: Making Selections, Repetition, special Parameters and Variables, changing Positional Parameters, Argument Validation, Debugging Scripts, Script Examples.

Unit VIII:

File Management:

File Structures, System Calls for File Management – create, open, close, read, write, lseek, link, symlink, unlink, stat, fstat, lstat, chmod, chown, Directory API – opendir, readdir, closedir, mkdir, rmdir, umask.

TEXT BOOKS:

1. Unix and shell Programming Behrouz A. Forouzan, Richard F.Gilberg.Thomson
2. Your Unix the ultimate guide, Sumitabha Das, TMH. 2nd Edition.

REFERENCES:

1. Unix for programmers and users, 3rd edition, Graham Glass, King Ables, Pearson Education.
2. Unix programming environment, Kernighan and Pike, PHI. / Pearson Education
3. The Complete Reference Unix, Rosen, Host, Klee, Farber, Rosinski, Second Edition, TMH.

DT 204 APPLIED PHYSICS

L/s: 4/Wk, Int: 50, End Exam: 50, Total: 100, End Exam: 3Hours, Cr: 4

UNIT I

BONDING IN SOLIDS: Introduction - Types of bonding in solids - Estimation of cohesive energy – Madelung constant.

CRYSTAL STRUCTURES AND X-RAY DIFFRACTION: Introduction -Space lattice - Basis - Unit cell - Lattice parameter - Bravais lattices – Crystal systems - Structure and packing fractions of Simple cubic - Body centered cubic – Face centered cubic crystals - Directions and planes in crystals – Miller indices - Separation between successive [h k l] planes - Diffraction of X-rays by crystal planes - Bragg's law - Laue method - Powder method.

UNIT II

PRINCIPLES OF QUANTUM MECHANICS: Waves and particles - Planck's quantum theory – de Broglie hypothesis – Matter waves - Davisson and Germer experiment – G. P. Thomson experiment – Heisenberg uncertainty principle - Schrödinger's time independent wave equation - Physical significance of the wave function - Particle in one dimensional potential box.

UNIT III

ELECTRON THEORY OF METALS: Classical free electron theory - Mean free path - Relaxation time and drift velocity - Quantum free electron theory - Fermi-Dirac distribution (analytical) and its dependence on temparature – Fermi energy – Electron scattering and resistance.

BAND THEORY OF SOLIDS: Bloch theorem - Kronig-Penney model (qualitative treatment) - Origin of energy band formation in solids – Classification of materials into conductors, semi conductors & insulators - Concept of effective mass of an electron.

UNIT IV

DIELECTRIC PROPERTIES: Introduction - Dielectric constant - Electronic, ionic and orientational polarizations - Internal fields in solids – Clausius - Mossotti equation – Dielectrics in alternating fields – Frequency dependence of the polarizability - Ferro and Piezo electricity.

MAGNETIC PROPERTIES : Permeability - Magnetization - Origin of magnetic moment – Classification of magnetic materials - Dia, para and ferro magnetism - Hysteresis curve - Soft and hard magnetic materials.

UNIT V

SEMICONDUCTORS : Introduction - Intrinsic semiconductor and carrier concentration – Equation for conductivity - Extrinsic semiconductor and carrier concentration - Drift and diffusion - Einstein's equation - Hall effect – Direct & indirect band gap semiconductors.

SUPERCONDUCTIVITY: General properties - Meissner effect - Penetration depth - Type I and Type II superconductors - Flux quantization – DC and AC Josephson effect –BCS Theory - Applications of superconductors.

UNIT VI

LASERS: Introduction - Characteristics of Lasers - Spontaneous and stimulated emission of radiation - Einstein's coefficients - Population inversion - Ruby laser - Helium-Neon Laser – CO_2 laser - Semiconductor Laser – Applications of lasers.

UNIT VII

FIBER OPTICS AND HOLOGRAPHY: Introduction - Principle of optical fiber - Acceptance angle and acceptance cone - Numerical aperture – Types of optical fibers and refractive index profiles – Attenuation in optical fibers - Application of optical fibers – Basic principles of holography – Construction and reconstruction of image on hologram – Applications of holography.

UNIT VIII

SCIENCE & TECHNOLOGY OF NANOMATERIALS: Introduction to Nano materials - Basic principles of Nanoscience & Technology – Fabrication of nano materials – Physical & chemical properties of nanomaterials – Carbon nanotubes – Applications of nanotechnology.

TEXTBOOKS:

1. Applied Physics 2nd edition by Dr. P. Appala Naidu & Dr. M. Chandra Shekar, V.G.S. Book links.
2. Introduction to Solid State Physics by C. Kittel ; Wiley Eastern Ltd.
3. Nanotechnology by Mark Ratner and Daniel Ratner; Pearson Education.

REFERENCES:

1. Materials Science and Engineering by V. Raghavan; Prentice-Hall India.
2. Materials Science by M. Arumugam; Anuradha Agencies.
3. Solid State Physics by N.W. Ashcroft & N. David Merwin; Thomson Learning.
4. Materials Science by M.S.Vijaya & G. Rangarajan; Tata McGraw Hill.
5. Solid State Physics by P.K. Palanisamy; Scitech Publications (India) Pvt. Ltd.
6. Nano Materials by A.K. Bandyopadhyay, New Age International Publishers.
7. Applied Physics by P.K.Mittal; I.K. International.
8. Applied Physics by K. Vijay Kumar & T. Sreekanth; S. Chand & Company Ltd.

DT 205 MATHEMATICAL METHODS

L/s: 4/Wk, Int: 50, End Exam: 50, Total: 100, End Exam: 3Hours, Cr: 4

UNIT – I

Matrices and Linear systems of equations: Elementary row transformations-Rank-Echelon form, Normal form – Solution of Linear Systems – Direct Methods- LU Decomposition- LU Decomposition from Gauss Elimination –Solution of Tridiagonal Systems-Solution of Linear Systems

UNIT – II

Eigen values, eigen vectors – properties – Cayley-Hamilton Theorem - Inverse and powers of a matrix by Cayley-Hamilton theorem – Diagonolization of matrix. Calculation of powers of matrix – Modal and spectral matrices.

UNIT – III

Real matrices – Symmetric, skew - symmetric, orthogonal, Linear Transformation – Orthogonal Transformation. Complex matrices: Hermitian, Skew-Hermitian and Unitary – Eigen values and eigen vectors of complex matrices and their properties. Quadratic forms-Reduction of quadratic form to canonical form – Rank - Positive, negative definite - semi definite - index - signature - Sylvester law.

UNIT – IV

Solution of Algebraic and Transcendental Equations: Introduction – The Bisection Method – The Method of False Position – The Iteration Method – Newton-Raphson Method.

Interpolation: Introduction- Errors in Polynomial Interpolation – Finite differences- Forward Differences- Backward differences – Central differences – Symbolic relations and separation of symbols-Differences of a polynomial-Newton‘s formulae for interpolation – Central difference interpolation Formulae – Gauss Central

Difference Formulae –Interpolation with unevenly spaced points-Lagrange's Interpolation formula.

UNIT – V

Curve fitting: Fitting a straight line –Second degree curve-exponentional curve-power curve by method of least squares. Numerical Differentiation and Integration– Trapezoidal rule – Simpson's 1/3 Rule –Simpson's 3/8 Rule.

UNIT – VI

Numerical solution of Ordinary Differential equations: Solution by Taylor's series-Picard's Method of successive Approximations-Euler's Method-Runge-Kutta Methods –Predictor-Corrector Methods- Adams- Moulton Method –Milne's Method.

UNIT – VII

Fourier Series: Determination of Fourier coefficients – Fourier series – even and odd functions – Fourier series in an arbitrary interval – even and odd periodic continuation – Half-range Fourier sine and cosine expansions. Fourier integral theorem (only statement)– Fourier sine and cosine integrals. Fourier transform – Fourier sine and cosine transforms – properties – inverse transforms – Finite Fourier transforms.

UNIT – VIII

Formation of partial differential equations by elimination of arbitrary constants and arbitrary functions –solutions of first order linear (Lagrange) equation and nonlinear (standard type) equations. Method of separation of variables. Z-transform – inverse z-transform - properties – Damping rule – Shifting rule – Initial and final value theorems. Convolution theorem – Solution of difference equation by z-transforms.

TEXTBOOKS:

1. Mathematical Methods, T. K. V. Iyengar, B. Krishna Gandhi and Others, S. Chand & Company.
2. Mathematical Methods, C. Sankaraiah, V. G. S. Book Links.
3. A text book of Mathematical Methods, V. Ravindranath, A. Vijayalaxmi, Himalaya Publishers.
4. A text book of Mathematical Methods, Shahnaz Bathul, Right Publisshers.

References:

1. A text Book of Engineering Mathematics, B. V. Raman, Tata Mc Graw Hill.
2. Advanced Engineering Mathematics, Irvin Kreyszig, Wiley India Pvt. Ltd.
3. Numerical Methods for Scientific and Engineering Computation, M. K. Jain, S. R. K. Iyengar & R. K. Jain, New Age International Publishers.

DT 206 QUANTITATIVE METHODS

L/s: 3/Wk, Int: 100, End Exam: 0, Total: 100, End Exam:--, Cr: 3

UNIT I

Introduction

Importance & need of analysis, scope & methods of analysis and their application to spatial planning.

UNIT II

Planning Surveys

Types of surveys, methods and sources of data collection; primary and secondary sources, their limitations, collection of data and guidelines for preparation for interviews, questionnaire, schedules, case study method, difference between survey and experiment, survey design.

Sampling design; fundamental definitions, need for sampling, census and sample survey, criteria for selecting a sample, sample size and its determinant, types of sampling methods.

UNIT III

Data Processing and Presentation

Data: editing, classification, tabulation, coding methods, and graphical methods: pictographs, charts, and diagrams. Presentation of data diagrams related to planning problem like population, landuse, housing, economic base of cities.

UNIT IV

Analysis of Data Statistical Methods

Raw data frequency distribution, measures of central tendency and dispersion, correlation, regression, partial correlation. Sampling techniques, random sampling, cluster sampling and stratified sampling.

Probability

Addition role, additional probability, implication roles, random variables & probability distribution, mathematical expectation.

Sampling distribution

Nature of sampling distribution, binomial distribution, poisons distribution and normal distribution.

(Graphic representation Matlab, SPSS, minitab programming)

Expected Outputs & Assignment

The students will formulate sample survey formats for at least two aspects and conduct surveys at respective unit level and end with brief presentation with analysis of the same. Internal assessment also to be in the form of term papers and tests on above mentioned topics.

References:

SP Gupta: Statistical Methods
Ram Ahuja: Research Methods
Philip I. Good: A practical Guide to Data Analysis

DT 207 ADVANCED DATA STRUCTURES AND ALGORITHMS

L/s: 4/Wk, Int: 50, End Exam: 50, Total: 100, End Exam: Practical& Viva Voce, Cr: 4

Unit I:-

C++ Class Overview- Class Definition, Objects, Class Members, Access Control, Class Scope, Constructors and destructors, parameter passing methods, Inline functions, static class members, this pointer, friend functions, dynamic memory allocation and deallocation (new and delete), exception handling.

Unit II:-

Function Overloading, Operator Overloading, Generic Programming- Function and class templates, Inheritance basics, base and derived classes, inheritance types, base class access control, runtime polymorphism using virtual functions, abstract classes, streams I/O.

Unit III:-

Algorithms, performance analysis-time complexity and space complexity,O-notation, Omega notation and Theta notation, Review of basic data structures - the list ADT, stack ADT, queue ADT, implementation using template classes in C++, sparse matrix representation.

Unit IV:-

Dictionaries, linear list representation, skip list representation, operations- insertion, deletion and searching, hash table representation, hash functions, collision resolution-separate chaining, open addressing-linear probing, quadratic probing, double hashing, rehashing,extendible hashing, comparison of hashing and skip lists.

Unit V:-
Priority Queues – Definition, ADT, Realizing a Priority Queue using Heaps, Definition, insertion, Deletion, Application-Heap Sort, External Sorting- Model for external sorting, Multiway merge, Polyphase merge.

Unit VI:-
Search trees (part I) : Binary search trees, definition, ADT, implementation, operations-searching,
insertion and deletion, Balanced search trees- AVL trees, definition, height of an AVL tree, representation, operations-insertion, deletion and searching.

Search trees (part II) : Introduction to Red –Black trees and Splay Trees, B-Trees-B-Tree of order m, height of a B-Tree, insertion, deletion and searching, Comparison of Search Trees.

Unit VII:-
Divide and Conquer- General method, applications – Binary search, merge sort, quick sort, Strassen's matrix multiplication
Efficient non recursive tree traversal algorithms, Biconnected components. Disjoint set operations, union and find algorithms.

Unit VIII:-
Greedy method and Dynamic programming : General method (Greedy), Minimum cost spanning trees, Job sequencing with deadlines, General method (Dynamic Programming), Optimal binary search trees, 0/1 knapsack problem, Ordering Matrix Multiplications

TEXT BOOKS:
1. Data Structures and Algorithm Analysis in C++, Mark Allen Weiss, Pearson Education, second edition.
2. Data structures, Algorithms and Applications in C++,S.Sahni,University press (India)
pvt ltd, 2nd edition, Orient Longman pvt.ltd.
3. Data Structures and Algorithms in C++, Third Edition, Adam Drozdek, Thomson.
4. Data Structures using C++, D.S. Malik, Thomson

REFERENCE:
1. Data structures and Algorithms in C++, Michael T.Goodrich, R.Tamassia and D.Mount, Seventh Edition Wiley student edition, John Wiley and Sons.
2. Data Structures and Algorithms in C++, Third Edition, Adam Drozdek, Thomson
3. Problem solving with C++, The OOP, Fourth edition, W.Savitch, Pearson education.
4. C++, The Complete Reference, 4th Edition, Herbert Schildt, TMH.

THIRD SEMESTER

DT 301 ARCHITECTURAL DESIGNS- II

L/s: 12/Wk, Int: 100, End Exam: 100, Total: 200, End Exam: Viva-voce Cr: 8

Course Overview:
This course focuses on buildings for residential use.

Objectives of the Course:
To enhance the understanding of the complexities of architectural design for residential needs and develop creative design solutions for good living environments.

Course Contents:
The design issues to be addressed: • Organization of functional activities in relation to user requirements and the site.
• Relating the system of horizontal and vertical circulation, open spaces, parking etc.
• Responding to socio-economic factors such as income levels, privacy, territoriality, interaction etc.
• Considering materials, structure and services in relation to the design proposal.
• Integration of plan forms and three dimensional compositions.
• Detailing for the physically handicapped and the elderly.
The list of suggested topics to be covered as design problems: Large guest house, students hostel, small hotel, holiday resort, motel, row houses, block of flats and residential complexes at an small scale, housing for specific communities in urban and rural areas such as home for the aged, fishermen's housing etc. Necessary theoretical inputs to be given highlighting the norms and design issues. The topics not covered as design problems will have to be covered by the Studio faculty members through lecture/slide show sessions and site visits. At least two major exercises and two minor design/time problems should be given. The final submission shall necessarily include a
model for at least one of the two main problems.

Note: In end exam which is a viva-voce the students are to present the entire semester work for assessment.

Reference books:

Chiara Joseph de and Others. Time Savers Standards of Building Types. McGraw – Hill, 1990.
Neufert, Ernst. Ernst Neufert Architects Data, Granada Pub. Ltd., London, 2000.
Peloquin, Albert. Barrier-Free Residential Design. McGraw-Hill, Inc., New York, 1994.
Pevsner, Nikolaus. A History of Building Types. Thames and Hudson, London, 1976.
Shah, S. Charanjit. Architects Hand Book Ready Reckoner. Galogotia Pub., New Delhi, 1996.
Untermann, Richard and Snall, Robert. Site Planning for Cluster Housing.

DT 302: MATERIALS AND CONSTRUCTION

L/s: 4/Wk, Int: 50, End Exam: 50, Total: 100, End Exam: 3Hours, Cr: 4

Note: The student is expected to maintain a record book in which he / she shall record all the examples of his / her observations of the materials as found in use in buildings / development, specifying the material, building in which used, where used, how used / fixed, sourcing of the material, (also suppliers addresses,) sizes, Characteristics, costs, critical analysis of the appropriateness of its' use, etc.

List the materials used in buildings by type of building, part of building, building process and/ or in the building industry with respective physical, chemical, etc. properties effecting its supply (size, shape, thickness etc.), transportation, handling, stacking and storing, etc. Process of selecting / specifying materials. Knowledge of the relevant codes of the Bureau of Indian Standards.

Classification of stones; granite, laterite, quartzite, marble and slates -properties and uses; stone units - header, rubble, quoins, black stones, stone metal, flag stones, paving sets. Preservation of stonework, quarrying of building stones, quarry dressing, tools used. Clay bricks: constituents, harmful constituents, selection of clay, requirements and tests. Fire clay bricks - varieties; sand lime bricks;paving bricks; Terra-cotta - its varieties: ordinary, glazed, porous, polished and fine - uses and properties. Building Tiles: Roofing Tiles, flooring and wall tiles.

Sand: Sources, classification, functions, properties, tests for silt and organic contents, size of sand and grading.

Mortars: Types, proportioning, mixing and grinding, mortar mills. Surkhi mortar, cement mortar, methods of preparing, handling and uses of mortars, light weight mortars i.e. cinder, sawdust and fibrous plasters, gypsum plaster, composition and uses, plaster of Paris.

Portland Cement: Raw materials, functions of cement ingredients, setting action of cement, tests for strength and setting time.

References:

I. Engineering Materials - by G.J.Kulkarni
2. Building Materials - by Deshapande
3. Engineering Materials - by Roy Chowdary
4. Building Materials Practice - by Ragsdale & Raynham
5. Engineering Materials - by S.c. Rangwalla

Elementary and simple construction methods explaining basic principles and considerations in the construction of one roomed rectilinear buildings with verandah: Foundations and footings using CRS, cement concrete, mortar (cement, lime, surkhi)

Walls:

Stone walls: rubblework, joints, plinths, and lintels) Brick walls: brickwork - English and Flemish brick bonds, stopped ends, quoins, piers, jambs, mortar joints. Openings: wooden doors and casement windows with simple and basic hardware Lintels

Arches: lintels of wood, stone, brick; arches: terms defined, forms of arches, i.e.segmental, semi-circular, elliptical, three-centered, flat and relieving arch etc. rough and gauged arch.

Roofs: RCC roof - simply supported, single way reinforced. The mode of teaching shall be through (graphic) basic models of 'standard' construction details incorporating a maximum of three alternative variations in the building components and how these interact or impact on each other in terms of jointing, dimensional coordination, resolving differential characteristics, etc.

The class and assignment work should include appropriate site visits by the students, and students will have to maintain field observation/record books.

DT 303: PLANNING PRINCIPLES

L/s: 3/Wk, Int: 50, End Exam: 50, Total: 100, End Exam: 3Hours, Cr: 3

UNIT I

The importance and significance of study of history, human settlement as the physical expression of a civilization; increasing urbanization and need for the higher levels of expertise to handle the situation in future; human settlements planning as the end result of this understanding.

UNIT II

Concepts of time as dimensions of the built form

Concept of space and scale as followed through different cultures; the elements of the town, the house, the street, the chowk; social and cultural criteria of location of towns and activities within it.

UNIT III

Concept Formation and Perception of Space

Thinking process; cognitive units, concept formation, hypothesizing, conceptual scheme and behaviour formation; perception of space, behaviour pattern in small spaces; space at city scale; urban activity patterns, urban symbolism image of the city, building attributes, cognitive maps, urban behavior; attitudes towards city, metropolitan personality, geographical space, functional space.

UNIT IV

Planning Through the Ages

Planning in ancient India; Manasara treatise and socio-cultural role of the Agora as an element of planning in Greece; the Roman city, the European Medieval cities and Medieval planning in India, the common man and idea of the baroque plan.

UNIT V

The Modern City

Technological advances and their effect on the town; utopian thinking and movements about urban improvement and planning; the concept of neighborhood planning; planning concept and city structure in typical new town design, foreign examples; planning concept of Chandigarh.

UNIT VI

Synthesis

The concept of ring towns and satellite towns; Delhi Master Plan and the concept of NCR, disorientation of contemporary towns from their cultural context; the concept of conservation, the role of planner as a central figure to understand the present day problems through the medium of the study of history.

UNIT VII

Planning Practice in India

An overview of evolution from piecemeal projects, town planning schemes, comprehensive development plans for towns and cities to regional planning, efforts; metropolitan planning and metropolitan region development plans; scope and content of planning practice

today; role of central, state and local governments in urban and regional planning and development; evolution of local governments, development authorities and other planning and development agencies and their role in planning and planning administration.

Expected Outcomes & Assignment
Students in-group shall carry out documentation of model cities based on above concepts and may culminate as seminar on the same. Internal assessment also to be in the form of tutorials on theories mentioned.

Reference:
Demetxios Caraley: City Governments & Urban problems A New introduction to urban politics
Edited by Ravinder Singh Sandhu, Sarup Singh Minhas & Jasmit Sandhu: Sustainable Human settlements the Asian Experience
Levy: Contemporary Urban Planning (fourth Edition)
N.V.Modak & V.N. Ambedkar: Town and Country Planning and housing

DT 304: OBJECT ORIENTED PROGRAMMING

L/s: 4/Wk, Int: 50, End Exam: 50, Total: 100, End Exam: Practical & Viva, Cr: 3

UNIT I:
Object oriented thinking :- Need for oop paradigm, A way of viewing world – Agents, responsibility, messages, methods, classes and instances, class hierarchies (Inheritance), method binding, overriding and exceptions, summary of oop concepts, coping with complexity, abstraction mechanisms.

UNIT II:
Java Basics History of Java, Java buzzwords, datatypes, variables, scope and life time of variables, arrays, operators, expressions, control statements, type conversion and costing, simple java program, classes and objects – concepts of classes, objects, constructors, methods, access control, this keyword, garbage collection, overloading methods and constructors, parameter passing, recursion, string handling.

UNIT III:
Inheritance – Hierarchical abstractions, Base class object, subclass, subtype, substitutability, forms of inheritance-specialization, specification, construction, extension, limitation, combination, benefits of inheritance, costs of inheritance. Member

access rules, super uses, using final with inheritance, polymorphism- method overriding, abstract classes.

UNIT IV:

Packages and Interfaces : Defining, Creating and Accessing a Package, Understanding CLASSPATH, importing packages, differences between classes and interfaces, defining an interface, implementing interface, applying interfaces, variables in interface and extending interfaces.

Exploring packages – Java.io, java.util.

UNIT V:

Exception handling and multithreading - Concepts of exception handling, benefits of exception handling, Termination or resumptive models, exception hierarchy, usage of try, catch, throw, throws and finally, built in exceptions, creating own exception sub classes. Differences between multi threading and multitasking, thread life cycle, creating threads, synchronizing threads, daemon threads, thread groups.

UNIT VI:

Event Handling: Events, Event sources, Event classes, Event Listeners, Delegation event model, handling mouse and keyboard events, Adapter classes, inner classes. The AWT class hierarchy, user interface components- labels, button, canvas, scrollbars, text components, check box, check box groups, choices, lists panels – scrollpane, dialogs, menubar, graphics, layout manager – layout manager types – boarder, grid, flow, card and grib bag.

UNIT VII:

Applets – Concepts of Applets, differences between applets and applications, life cycle of an applet, types of applets, creating applets, passing parameters to applets.

Swing – Introduction, limitations of AWT, MVC architecture, components, containers, exploring swing- JApplet, JFrame and JComponent, Icons and Labels, text fields, buttons – The JButton class, Check boxes, Radio buttons, Combo boxes, Tabbed Panes, Scroll Panes, Trees, and Tables.

UNIT VIII:

Networking – Basics of network programming, addresses, ports, sockets, simple client server program, multiple clients, Java .net package

Packages – java.util,

TEXT BOOKS:

1. Java; the complete reference, 7th editon, Herbert schildt, TMH.
2. Understanding OOP with Java, updated edition, T. Budd, pearson eduction.

REFERENCES:

1. An Introduction to programming and OOP design using Java, J.Nino and F.A. Hosch, John wiley & sons.
2. An Introduction to OOP, second edition, T. Budd, pearson education.
3. Introduction to Java programming 6th edition, Y. Daniel Liang, pearson education.
4. An introduction to Java programming and object oriented application development, R.A. Johnson- Thomson.
5. Core Java 2, Vol 1, Fundamentals, Cay.S.Horstmann and Gary Cornell, seventh Edition, Pearson Education.
6 .Core Java 2, Vol 2, Advanced Features, Cay.S.Horstmann and Gary Cornell, Seventh Edition, Pearson Education
7. Object Oriented Programming through Java, P. Radha Krishna, University Press.

DT 305: MATHEMATICAL FOUNDATIONS OF COMPUTER SCIENCE

L/s: 4/Wk, Int: 50, End Exam: 50, Total: 100, End Exam: 3hours, Cr: 4

UNIT-I

Mathematical Logic: Statements and notations, Connectives, Well formed formulas, Truth Tables, tautology, equivalence implication, Normal forms.

UNIT-II

Predicates: Predicative logic, Free & Bound variables, Rules of inference, Consistency, proof of contradiction, Automatic Theorem Proving.

UNIT-III

Set Theory: Properties of binary Relations, equivalence, compatibility and partial ordering relations, Hasse diagram. Functions: Inverse Function Comports of functions, recursive Functions, Lattice and its Properties, Pigeon hole principles and its application.

UNIT-IV

Algebraic structures: Algebraic systems Examples and general properties, Semi groups and monads, groups sub groups‘ homomorphism, Isomorphism.

UNIT-V

Elementary Combinatorics: Basis of counting, Combinations & Permutations, with repetitions, Constrained repetitions, Binomial Coefficients, Binomial Multinomial theorems, the principles of Inclusion – Exclusion.

UNIT-VI

Recurrence Relation: Generating Functions, Function of Sequences Calculating Coefficient of generating function, Recurrence relations, Solving recurrence relation by substitution and Generating funds. Characteristics roots solution of In homogeneous Recurrence Relation.

UNIT-VII

Graph Theory: Representation of Graph, DFS, BFS, Spanning Trees, planar Graphs

UNIT-VIII

Graph Theory and Applications, Basic Concepts Isomorphism and Sub graphs, Multi graphs and Euler circuits, Hamiltonian graphs, Chromatic Numbers

TEXT BOOKS :

1. Discrete and Combinational Mathematics- An Applied Introduction-5th Edition – Ralph. P.Grimaldi.Pearson Education
2. Discrete Mathematical Structures with applications to computer science Trembly J.P. & Manohar .P, TMH
3. Discrete Mathematics and its Applications, Kenneth H. Rosen, Fifth Edition.TMH.

REFERENCES:

1. Discrete Mathematics with Applications, Thomas Koshy, Elsevier
2. Discrete Mathematical Structures, Bernand Kolman, Roberty C. Busby, Sharn Cutter Ross, Pearson Education/PHI.
3. Discrete Mathematical structures Theory and application-Malik & Sen
4. Discrete Mathematics for Computer science, Garry Haggard and others, Thomson.
5. Discrete Mathematics for Computer Scientists & Mathematicians, J.L. Mott, A. Kandel, T.P. Baker Prentice Hall.
6. Logic and Discrete Mathematics, Grass Man & Trembley, Person Education.

DT 306: COMPUTER AIDED DRAFTING AND DESIGN

L/s: 4/Wk, Int: 50, End Exam: 50, Total: 100, End Exam: practical & Viva, Cr: 4

Course Overview:

To orient the student to create two and three-dimensional objects in space with special emphasis on presentation and visualization of interiors and exteriors of building using different rendering techniques using CAD

Objectives of the Course: To explore computer modelling techniques using CAD

Expected Skills / Knowledge Transferred:
To learn basic skills of modeling, scripting (rendering) in CAD, and to exercise methods of interface within CAD.

Course Contents:
Unit - I
Starting AutoCAD:
Introduction to the menu, starting drawings from scratch, Creating and using templates-starting drawings with setup wizards. Saving and closing a file.

Unit - II
Using co-ordinate system: The UCS, Working with Cartesian and polar co-ordinate systems, using displays with key shortcuts.

Unit – III
Setting up the drawing environment: Setting the paper size, Setting units, setting grid limits, drawing limits, Snap controls, Use of paper space and model space.

Unit - IV
Basic commands dealing with drawing properties:
Layer control, change properties, line weight control, etc.

Unit - V
Inquiry methods:
Using database information for objects, calculating distance and angle, areas etc.

Unit - VI
Dimensioning commands and Blocks:
Dimensioning the objects in linear, angular fashions along with quick time dimensioning etc. Creating and working with blocks, creating
symbols, use of blocks in creating a layout of a residential area- one exercise to be done as lab assignment.

Unit - VII
Orientation towards 3D:
2D to 3D conversion, perspective view, walk-through of layout 52 53

Unit - VIII

3-D Max:

Demonstration of 3-D Max, as a rendering tool for 3-D blocks/walk through etc.

Reference books:

Teyapoovan, T. Engineering Drawing with Auto CAD 2000. Vikas Pub. House Pvt. Ltd., New Delhi, 2000.

Parker, Daniel and Rice, Habert. Inside Auto CAD Daniel. 1987. **Georgeomura**, Auto CAD Release 2000.

DT 307: COMPUTER GRAPHICS

L/s: 4/Wk, Int: 50, End Exam: 50, Total: 100, End Exam: practical & Viva, Cr: 4

UNIT I:

Introduction, Application areas of Computer Graphics, overview of graphics systems, video-display devices, raster-scan systems, random scan systems, graphics monitors and work stations and input devices

(p.nos 22-90 of text book-1).

UNIT II:

Output primitives : Points and lines, line drawing algorithms, mid-point circle and ellipse algorithms. Filled area primitives: Scan line polygon fill algorithm, boundary-fill and flood-fill algorithms (p.nos 103-123,137- 145,147-150,164-171 of text book-1, p.nos. 72-99 of text book-2).

UNIT III:

2-D geometrical transforms: Translation, scaling, rotation, reflection and shear transformations, matrix representations and homogeneous coordinates, composite transforms, transformations between coordinate systems. (p.nos 204-227 of text book-1).

UNIT IV:

2-D viewing : The viewing pipeline, viewing coordinate reference frame, window to view-port coordinate transformation, viewing functions, Cohen-Sutherland and Cyrus-beck line clipping algorithms, Sutherland –Hodgeman polygon clipping algorithm(p.nos 237-249,257-261 of text book -1, p.nos. 111-126 of text book-2).

UNIT V:

3-D object representation: Polygon surfaces, quadric surfaces, spline representation, Hermite curve, Bezier curve and B-Spline curves, Bezier and B-Spline surfaces. Basic illumination models, polygon rendering methods. (p.nos 324-331,340-342, 347-364, 516-531, 542-546 of text book-1, p.nos 473-529,721-739 of text book-2).

UNIT VI:

3-D Geometric transformations: Translation, rotation, scaling, reflection and shear transformations, composite transformations.
3-D viewing: Viewing pipeline, viewing coordinates, view volume and general projection transforms and clipping (p.nos 427-443, 452-481 of text book -1).

UNIT VII:

Visible surface detection methods : Classification, back-face detection, depth-buffer, scan-line, depth sorting, BSP-tree methods, area sub-division and octree methods(p.nos 489-505 of text book -1, Chapter 15 of of text book-2).

UNIT VIII:

Computer animation: Design of animation sequence, general computer animation functions, raster animation, computer animation languages, key frame systems, motion specifications. (p.nos 604-616 of text book -1, chapter 21 of text book-2).

TEXT BOOKS :

1. ―Computer Graphics C version‖ , Donald Hearn and M.Pauline Baker, Pearson Education.
2. ―Computer Graphics Principles & practice‖ , second edition in C, Foley, VanDam, Feiner and Hughes, Pearson Education.

REFERENCES:

1. ―Computer Graphics‖ , second Edition, Donald Hearn and M.Pauline Baker, PHI/Pearson Education.
2. ―Computer Graphics Second edition‖ , Zhigand xiang, Roy Plastock, Schaum‘s outlines, Tata Mc- Graw hill edition.
3. Procedural elements for Computer Graphics, David F Rogers, Tata Mc Graw hill, 2nd edition.
4. ―Principles of Interactive Computer Graphics‖ , Neuman and Sproul, TMH.
5. Principles of Computer Graphics, Shalini Govil, Pai, 2005, Springer.
6. Computer Graphics, Steven Harrington, TMH

FOURTH SEMESTER

DT 401 DIGITAL METHODS IN DESIGN

L/s: 12/Wk, Int: 100, End Exam: 100, Total: 200, End Exam: Viva-voce, Cr:8

Course Overview:
This course focuses on digital design methods- problem solving, conceptualization, visualization, simulation and communication through the appropriate computer programs/ software.

Objectives of the Course:
To enable the student to apply digital techniques in design

Expected Skills / Knowledge Transferred:
Students are expected to design a building of approximately 1000 sq.m. of area .Students would learn to apply digital techniques at different stages of design from conceptualization to Bill or quantities

Course Contents:

The following issues relating to design will be addressed to:
• Pre-design studies
• User behavior and requirement pertaining to the building typology based on post occupancy evaluation
• Design as problem solving activity.
• conceptualizing for design. Creative thinking, Introduction to design process and principles of design and digital methods, use of conceptualization tools like Sketchup, Formz etc.
• generation of alternatives and evaluation of alternatives using digital methods
• Integration of function: movement, climate, acoustics, structure and services into building.
• site planning and Landscaping
• Preparation of the scheme, visualization through CAD.
•.simulation of at lest any three like thermal comfort, lighting, wind flow etc.
• Generation of detailed working drawings and BOQ s‘

Necessary theoretical inputs to be given highlighting the norms and design issues. The topics not covered as design problems may be covered by the studio faculty members through lecture/slide shows. And site visits.

The topics to be covered as design problems may include:
• Institution of learning –schools, music and dance
colleges, vocational training institutions etc.
• Institutions of health such as small hospitals, reformatories and rehabilitation institutes • Institutions of research in various disciplines.
• At least onemajor exercise (one problem should be pertinent to the urban fabric) and one minor design/time problems should be given and the final submission shall necessarily include a model

Note: In end exam which is a viva-voce the students have to present the entire semester work for assessment.

Reference books:

Chiara Joseph de and Others. Time Savers Standards of Building Types. McGraw – Hill, 1990.
Hand Book of Planning and Design Data.
Kirk, Paul Hayden and Sternberg, D. Eugene. Doctors Offices and Clinics, 2nd ed. Reinhold Pub., USA, 1960.
Konya, Allan. Libraries: A Briefing and Design Guide. The Architectural Press, London, 1986.
Neufert, Ernst. Ernst Neufert Architects Data. Granada Pub. Ltd.,London, 2000.
Pevsner, Nikolaus. A History of Building Types. Thames and Hudson, London, 1976.
Rosenfield, Isadore. Hospital Architecture and Beyond. Van Nostrand Reinhold, New York, 1969.
Stone, G. Louis. Institutional Buildings Architecture of Controlled Environment.
Tergsone, W.R. Practical Laboratory Planning.
Wild, Friedemann, Libraries for Schools and Universities. Van Nostrand Reinhold, New York, 1972.

DT 402 GEOGRAPHICAL INFORMATION SYSTEMS- I

L/s: 4/Wk, Int: 50, End Exam: 50, Total: 100, End Exam: practical & Viva, Cr: 4

UNIT I

Need for GIS

Maps and Spatial Information, Limitations of Typical DBMS Packages and CAD Packages; Needs for GIS.

UNIT II

Components of GIS

Techniques of Database Creation, Steps involved in Database Creation, Spatial Database Management Requirements, Spatial Database Management in Current Day Techniques of Data Analysis and Management, Generation of Planning Views.

UNIT III

Specific Packages

Introduction to laboratory exercises on selected GIS packages (eg. Arc Info, Arc View, Geo-Concept, Geo-Media, ILWIS, MapInfo etc.): Comparative Advantages and Disadvantages; Planning Applications.

UNIT IV

GIS Modeling

Overlay Functions in GIS; Using Attribute over Spatial Data in Modeling; Case Study based land suitability Analysis; Modeling Service Area a for Social Infrastructures; Impact Analysis, Generation of 3D Models in GIS.

UNIT V

Advanced Concepts in GIS

Introduction to Dynamic GIS; Integration of GIS and Digital Image Processing; Integration GIS and GPS. Integrating GIS to derive a decision support model for use in any specific context, focusing on the data structure, thematic maps, map-data organization, goal setting and projecting needs and trends.

Expected Outputs & Assignment

Internals assessment shall include tutorials on above topics. Students shall also have to undertake a Group Project in GIS emphasizing on applications in various sectors such as Watershed Management, District Development Plan, Urban Sustenance - Decision Support System, Environmental Monitoring and Urbanization Process - A case study of A.P. State.

References:

MapInfo Corp., Troy, New York, MapInfo Professional
MapInfo Corp., Troy, New York, MapInfo Professional (Users Guide)
Keith C. Clarke, Bradley O Parks, and Michael P Crane, Geographic Information Systems & Environmental Modeling: Andy Mitchell, the ESRI Guide to GIS Analysis
Bob Booth: Getting Started with Arc Info – GIS by ESRI
Bruce Ellsworth Davis, Bruce Davis: GIS_ A Visual Approach
David Martin: Geographic Information Systems (Socio Economic Applications)

DT 403 3D MODELING

L/s: 4/Wk, Int: 50, End Exam: 50, Total: 100, End Exam: practical & Viva, Cr: 4

Course Overview:
The course focuses on the convergence of techniques and skills acquired in the area of CAD and Computer applications in the earlier semesters, for developing digital tools and techniques for architectural presentations, digital gaming, 3D Animation and graphic design.

Objectives of the Course:
Exploring use of Computers for presentation, graphic design, 3D modeling

Course Contents:
Preparation of basic forms, shapes, Building Plans and layouts using software; Layers, Shape, Text, Line Weights, Line types, Scaling, import – export.

Wire frame model, Handling, Export Formats

Spline modeling- working with modifiers- compound objects- Standard and extended primitives -Surface modeling

Introduction to NURBS modeling– curves and surfaces,High resolution modeling, modeling using patches,

Rendering- assigning materials-developing materials for rendering, setting up lighting- rendering using various types of rendering engines- photo-realistic, artistic and true-color renderings

Animation- defining the paths, frames, and controls for animation

Video Streaming- editing the animation clips, adding sound and special effects etc.

Reference books:
CAD. Comedia Publications , New Delhi.
Guide to dream weaver - Macro Madia Publications.
Omura, George. Mastering in Auto CAD 2000. BPB Pub., New Delhi, 1999.
Parker, Daniel and Rice, Habert. Inside Auto CAD Daniel. 1987.
Teyapoovan, T. Engineering Drawing with Auto CAD 2000. Vikas Pub. House Pvt. Ltd., New Delhi, 2000.
Underdahl, Brian. Windows 98 one step at a time. Comdex Computer Pub. New Delhi, 1998.
Zampi, Giulian and Morgan, Conway Lloyd. Virtual Architecture.

DT 404 2D ANIMATION

L/s: 4/Wk, Int: 50, End Exam: 50, Total: 100, End Exam: practical & Viva, Cr: 4

Introduction to 2D Animation – Brief history of animation, development of various techniques in animation, introduction to different techniques of animation, the sequence of events of 2D animation.

Introduction to drawing and sketching for 2D animation, use of software like MS Paint, Coral painter, auto- sketch to make simple animations

Making of Flash Movie- simple commands related to setup, input of text, animation of text, grid, templates, tool panel and library.

Making simple graphics, concepts of drawing, fill and stoke colors, brushes, design of text, transformation of graphics and text, inserting images, editing sound and videos

Concepts of animation, types of animation, key frames, motion and shape controls buttons, movie clips controls, sound controls.

Defining paths, flash action script, understand symbols, creating simple movie clips, scripts for interactive and controlled movie clips.

Publishing the movie clips, optimizing on the file sizes, exporting the flash movies,

At least two complete projects in animation.

Alternative software for 2D animation.

DT 405 MULTIMEDIA AND PRODUCTION TECHNIQUES

L/s: 3/Wk, Int: 50, End Exam: 50, Total: 100, End Exam: practical & Viva, Cr: 3

UNIT-I

Fundamental concepts in Text and Image: Multimedia and hypermedia, world wide web, overview of multimedia software tools. Graphics and image data representation graphics/image data types, file formats, Color in image and video: color science, color models in images, color models in video.

UNIT-II

Fundamental concepts in video and digital audio: Types of video signals, analog video, digital video, digitization of sound, MIDI, quantization and transmission of audio.

UNIT-III

Action Script I : Action Script Features, Object-Oriented ActionScript, Datatypes and Type Checking, Classes, Authoring an ActionScript Class

UNIT-IV

Action Script II: Inheritance, Authoring an ActionScript 2.0 Subclass, Interfaces, Packages, Exceptions.

UNIT-V

Application Development : An OOP Application Frame work, Using Components with ActionScript MovieClip Subclasses.

UNIT VI

Multimedia data compression: Lossless compression algorithm: Run-Length Coding, Variable Length Coding, Dictionary Based Coding, Arithmetic Coding, Lossless Image Compression, Lossy compression algorithm: Quantization, Transform Coding, Wavelet-Based Coding, Embedded Zerotree of Wavelet Coefficients Set Partitioning in Hierarchical Trees (SPIHT).

UNIT VII

Basic Video Compression Techniques: Introduction to video compression, video compression based on motion compensation, search for motion vectors, MPEG, Basic Audio Compression Techniques.

UNIT-VIII

Multimedia Networks: Basics of Multimedia Networks, Multimedia Network Communications and Applications: Quality of Multimedia Data Transmission, Multimedia over IP, Multimedia over ATM Networks, Transport of MPEG-4, Media-on-Demand(MOD).

The lab exercises could be

1. Assigning Actions to an Object and a Button
2. Creating Loops
3. Generation Random Numbers
4. Creating a Function, Calling a Function
5. Detecting the Player Version
6. Detecting the Operating System
7. Checking the System language
8. Detecting Display Settings
9. Tinting a Movie Clip‘s Color
10. Controlling a Movie Clip‘s Color with Sliders
11. Drawing a Circle
12. Drawing a Rectangle
13. Filling a Shape with a Gradient
14. Scripting Masks
15. Converting Angle Measurements
16. Calculating the Distance Between the Two Points
17. Formatting Currency Amount
18. Converting Between Units of Measurement
19. Determining Points Along a Circle
20. Sorting or Reversing an Array
21. Implementing a Custom Sort
22. Creating a Text Field
23. Making a Password Input field

All the above programs are to be done in Flash MX 2004.

TEXT BOOKS:

1. Fudamentals of Multimedia by Ze-Nian Li and Mark S. Drew PHI/Pearson Education.
2. Essentials ActionScript 2.0, Colin Moock, SPD O, REILLY.

REFERENCE BOOKS:

1. Digital Multimedia, Nigel chapman and jenny chapman, Wiley-Dreamtech
2. Macromedia Flash MX Professional 2004 Unleashed, Pearson.
3. Multimedia and communications Technology, Steve Heath, Elsevier(Focal Press).
4. Multimedia Applications, Steinmetz, Nahrstedt, Springer.
5. Multimedia Basics by Weixel Thomson.
6. Multimedia Technology and Applications, David Hilman , Galgotia.
7. Action Script Cookbook, Joey Lott, SPD-Oreilly.
8. Flash MX Action Script for designers, Doug Sahlin, Dreamtech Wiley.
9. Flash MX Professional 2004 Unleashed, David Vogeleer and Matthew Pizzi, Pearson Education.

DT 406 OBJECT ORIENTED ANALYSIS AND DESIGN

L/s: 4/Wk, Int: 50, End Exam: 50, Total: 100, End Exam: 3hours, Cr: 3

UNIT - I

Introduction to UML

: Importance of modeling, principles of modeling, object oriented modeling, conceptual model of the UML, Architecture, Software Development Life Cycle.

UNIT - II

Basic Structural Modeling: Classes, Relationships, common Mechanisms, and diagrams.

Advanced Structural Modeling: Advanced classes, advanced relationships, Interfaces, Types and Roles, Packages.

UNIT - III

Class & Object Diagrams: Terms, concepts, modeling techniques for Class & Object Diagrams.

UNIT - IV

Basic Behavioral Modeling-I: Interactions, Interaction diagrams.

UNIT-V

Basic Behavioral Modeling-II: Use cases, Use case Diagrams, Activity Diagrams.

UNIT - VI

Advanced Behavioral Modeling: Events and signals, state machines, processes and Threads, time and space, state chart diagrams.

UNIT - VII

Architectural Modeling: Component, Deployment, Component diagrams and Deployment diagrams.

UNIT - VIII

Case Study: The Unified Library application

TEXT BOOKS:

1. Grady Booch, James Rumbaugh, Ivar Jacobson : The Unified Modeling Language User Guide, Pearson Education.
2. Hans-Erik Eriksson, Magnus Penker, Brian Lyons, David Fado: UML 2 Toolkit, WILEY-Dreamtech India Pvt. Ltd.

REFERENCES:

1. Meilir Page-Jones: Fundamentals of Object Oriented Design in UML, Pearson Education.
2. Pascal Roques: Modeling Software Systems Using UML2, WILEY-Dreamtech India Pvt. Ltd.
3. Atul Kahate: Object Oriented Analysis & Design, The McGraw-Hill Companies.
4. Mark Priestley: Practical Object-Oriented Design with UML, TATA McGrawHill
5. Craig Larman Appling UML and Patterns: An introduction to Object – Oriented Analysis and Design and Unified Process, Pearson Education.

DT 407: BUILDING SERVICES

L/s: 4/Wk, Int: 50, End Exam: 50, Total: 100, End Exam: 3hours, Cr: 4

WATER SUPPLY AND SANITATION

Water Supply

Introduction to water supply and sanitation. Traditional sources of water supply and sanitation. Classification of water based on its usage.

Elements of public / private water supply system, Different sources of water supply such as wells, reservoirs, etc. Water and its qualities, pumping and Distribution

Types of fittings like taps, bathtubs, showers, jets, cocks, valves, electrical fixtures, etc. Faucets for kitchens, bathrooms and toilets. Check valves, foot valves, sump pump check valves, and pressure test gauges.

Building service connections, cold and hot water distribution systems in buildings and their design, materials, joints, fittings and valves (gate, flap, ball, flush valves etc.). Direct and indirect systems, individual water supply, special installation in multistoried buildings. Special emphasis on city level distribution of water.

Sanitation

Conventional water treatment – sedimentation, coagulation, filtration and disinfection. Distribution system, sanitary, storm and combined sewerage system. Design of sewerage systems, Location of sewage systems, conventional wastewater treatment, activated sludge, trickling filters etc.

Design of drainage and vent pipes, system for low-rise and high-rise buildings, building drains, sewers, gullies, inspection chambers, manholes, connection to public sewer, cross connections, ferrule, water meters, stopcocks, bib cocks etc.

Types of fixtures and materials- wash basins, water closets, urinals, bidets, sinks etc. Conditions of flow in building drainage pipes, traps, vents and their material specifications. Over-head and under-ground reservoirs.

Waste -water disposal systems, septic tank and its design, soil absorption system, alternatives, solid wastes collection and removal from buildings. On-site processing and disposal methods. Aerobic and Anaerobic decomposition, purifying capacity of water bodies. Biochemical Oxygen Demand.

Roads and Pavements – Different types, water bound macadam, tar bitumen, asphalt and Cement concrete roads, soil stabilization, types of paving-murram, brick, and stone paving. Drainage of roads, sub drains, culverts, ditches and gutters.

References:

Husain, S.K. T.B. of Water Supply and Sanitary Engineering, 3rd ed. Oxford and IBH Pub. Ltd., New Delhi, 1994.
Kshirsagar, S.R. Water Supply Engineering, 6th ed. Roorkee Pub., Roorkee, 1980.
Rangwala, S.C. Water Supply and Sanitary Engineering: Environmental Engineering, 19th ed. Charotar Pub. House, Anand, 2004.

ELECTRICAL

Electrical Energy System: Fundamental principles of Electricity, Voltage, Amperage, wattage. Generation and distribution of power, HT and LT consumers. Types of Generators, Indian Electricity Act.

Building Wiring System: Service wires, metering distribution boards circuits. MCB‘s cut outs. Conductors, wiring methods switch boards, electrical devices in general building. Light and power circuits. ISI Codes and standard material. Electrical safety system: ELCB, pipe earthing, plate earthing
Electric layouts: Electrical symbols, NBC, 3 phase connection, preparation of layouts for residences, offices etc. Domestic appliances: Types of electric motors and electro mechanical devices. Construction and working of at least six domestic appliances and location in buildings.

Building Illumination: Artificial lighting various compression, advantages and disadvantages. · Method of lighting: Direct, Semi

direct, Indirect · Decorative lighting for building interiors, Concealed lighting, Spot lighting, Task illumination, Dining lights, Under water lighting

Calculation of intensity illumination for nominal application as per standards. Flood lighting – Light of Monuments, Façade illumination, Yard lighting.

Air-conditioning: principles of Air-condition IAQ, carnot cycles, gas laws, refrigeration, cycles and refrigerants. Different types of Air-conditioning, single zone, multi zone, equipment and Devices. Compressors, condensers, evaporators, heat exchangers, etc all in working.

Window air conditioner and split air conditioners. Ductable air conditioners and package system. Central air conditioning. - AC plant and room. - All air systems and chilled water systems. - AHU and FC units. - Building ducting, diffusers and grills.

Reference books:

Electrical wiring and Contracting (Vol.1 to Vol.4), London The New era Publishing Company.
Dr. Frith Abnwos and others, Electrical Engineering hand Book
William. J. Guinnesss, Mechanicla and electrical Eqipment for Buildings, New York: Willey
Bovay. H.E., Handbook of Mechanical and Electrical Systems for BuildingsNew York: MC Graw Hill 60 61

Special services in High rise buildings and provision to be made for installation and operation.

Lifts: Types of lifts, Passenger, Capsule, Hospital bed- lift; goods-lift etc. Working and operation of lifts, parts of lifts; industry standards and capacity calculations. Provision to be made in buildings for installation; Introduction to working of escalator and design;

Electronic Systems in Buildings: Telephone and communication, EPABX networks, transmission. Security systems, Burglar alarms, video surveillance, access control. Computer labs, access flooring, server rooms.

Fire safety in buildings, portable fire fighting equipment, built in wet riser system, sprinkler system, fire hydrant, class of fire and occupancy.Cooking gas distribution, piped gas supply, bulk gas supply, bottled gas supply, Relevant NBC other standards, Stoves, burners and grills.

Swimming Pools: Pool design, Tank and channels, cascades, finishes; Water circulation, balancing tank. Filtration and water treatment; Water quality and disinfection

Hotel services: Specialty; services required for hospitality industry; Laundry services; Kitchen services; Channeled Music, Internet.

Environmental services: Waste generation, types of waste, treatment and disposal facilities, Industrial buildings; Hospital buildings.

Alternative energy sources for buildings: Solar energy, Hot water system, photo voltaic cells; Biomass digesters; Wind energy.

Reference books:

Faber, Oscar and Kell, J.R. Heating and Air-Conditioning of Building. Architectural Press, Surrey, 1945.
Prasad, Manohar. Refrigeration and air-conditioning, 5th ed. New Age Intl. Pub., New Delhi, 1996.
Tiwari, Satish. Water and Energy resources.

FIFTH SEMESTER

DT 501 DIGITAL METHODS IN PLANNING

L/s: 12/Wk, Int: 100, End Exam: 100, Total: 200, End Exam: Viva, Cr:8

UNIT I

Data Base for Planning and Socio-Economic Surveys

Data requirements for urban and regional planning; sources of primary and secondary data; questionnaire design, measurement scales and their application; sampling techniques, types of socio-economic surveys; self surveys, interviews, mailed questionnaires and observer participation. *Coding, analysis and presentations using digital techniques*

UNIT II

Role of Landscape Planning

Landscape planning in the context of urban extensions and new towns, landscape assessment techniques, characteristics and components of different landscapes; Landscape elements like plant materials, surface materials, outdoor fittings and structures; Role of vegetation, Environmental benefits, functional requirements, aesthetic consideration; typical situations and criteria for design with plants and selection of species in planning (eg. Street/roadside planting), Principles of organization of outdoor spaces].

UNIT III

Physical Surveys

Techniques of conducting surveys for land use, building use, density, and structural condition of buildings, heights of building, land utilization and physical features of land. *Coding, analysis and presentations using GIS*

UNIT IV

Techniques of Presenting and Analysis Data using appropriate computer programs.Land use classification, coding and analysis; residential and non-residential density patterns and analysis, tabulation of data; graphical presentation of data; pie diagrams, histograms, bar charts, normal, semi-log and double log graphs and their uses; color, black and white presentation techniques; basic disciplines of illustration and tables.

PROJECT - PLANNING FOR RESIDENTIAL AREAS

UNIT V

Group Housing Design

Design and preparation of plan, sections and elevation of low rise and high rise apartments taking into account the building by laws and zoning regulations; preparation of presentation drawings.

UNIT VI

Working Drawings

Introduction to the working drawings; preparation of plans, sections, elevations and important details of an apartment unit; internal jury for group housing design and working drawings.

UNIT VII

Site Layout

Site analysis, development standards, and preparation of the design brief, various considerations for the layout, conceptual approach to site planning preparation of preliminary layout and area analysis. Final layout showing the circulation and basic infrastructure.

Expected Outcomes & Assignment

Study of a neighbourhood involving location, salient features, spatial characteristics, facilities and amenities, road circulation patterns, spatial and non-spatial linkages to surrounding areas. Comparison with standards, building byelaws etc.

Concept design for a given area. Design brief, drawings, Design of a neighbourhood unit analytical charts etc.

The distribution of marks in the studio subject may be as follows:

40% for individual assignment

60% for group work

DT 502 DIGITAL GAMING

L/s: 4/Wk, Int: 50, End Exam: 50, Total: 100, End Exam: Practical &viva, Cr: 4

History, design, technology, production, programming, and psychological aspects of digital gaming- production of game, pre-design studies related to production of games, software/hardware tools, aesthetics, and strategies of game play, testing games-artificial intelligence in games, sociological and psychological implications of games. Fundamentals of programming for gaming and graphic development

At least two different games to be developed by the students during the course work.

DT 503 IMAGE PROCESSING

L/s: 4/Wk, Int: 50, End Exam: 50, Total: 100, End Exam: 3hours, Cr: 4

UNIT - I

Introduction: Examples of fields that use digital image processing, fundamental steps in digital image processing, components of image processing system. Digital Image Fundamentals: A simple image formation model, image sampling and quantization, basic relationships between pixels (p.nos. 15-17, 21- 44, 50-69).

UNIT - II

Image enhancement in the spatial domain: Basic gray-level transformation, histogram processing, enhancement using arithmetic and logic operators, basic spatial filtering, smoothing and sharpening spatial filters, combining the spatial enhancement methods (p.nos 76-141).

UNIT - III

Image restoration: A model of the image degradation/restoration process, noise models, restoration in the presence of noise–only spatial filtering, Weiner filtering, constrained least squares filtering, geometric transforms; Introduction to the Fourier transform and the frequency domain, estimating the degradation function (p.nos 147-167, 220-243, 256-276).

UNIT - IV

Color Image Processing : Color fundamentals, color models, pseudo color image processing, basics of full–color image processing, color transforms, smoothing and sharpening, color segmentation (p.nos: 282- 339).

UNIT - V

Image Compression: Fundamentals, image compression models, error-free compression, lossypredictive coding, image compression standards (p.nos: 409-467,492-510).

UNIT - VI

Morphological Image Processing: Preliminaries, dilation, erosion, open and closing, hit or miss transformation, basic morphologic algorithms (p.nos:519-550).

UNIT - VII

Image Segmentation: Detection of discontinuous, edge linking and boundary detection, thresholding, region–based segmentation (p.nos: 567-617).

UNIT - VIII

Object Recognition : Patterns and patterns classes, recognition based on decision–theoretic methods, matching, optimum statistical classifiers, neural networks, structural methods – matching shape numbers, string matching (p.nos: 693-735).

TEXT BOOK:

1. Digital Image Processing, Rafeal C.Gonzalez, Richard E.Woods, Second Edition, Pearson Education/PHI.

REFERENCES:

1. Image Processing, Analysis, and Machine Vision, Milan Sonka, Vaclav Hlavac and Roger Boyle, Second Edition, Thomson Learning.
2. Introduction to Digital Image Processing with Matlab, Alasdair McAndrew, Thomson Course Technology
3. Digital Image Processing and Analysis, B. Chanda, D. Datta Majumder, Prentice Hall of India, 2003.
4. Computer Vision and Image Processing, Adrian Low, Second Edition, B.S.Publications
5. Digital Image Processing using Matlab, Rafeal C.Gonzalez, Richard E.Woods, Steven L. Eddins, Pearson Education.
6. Digital Image Processing, William K. Prat, Wily Third Edition
7. Digital Image Processing, Jahne, Springer.

DT 504 WEB TECHNOLOGIES

L/s: 3/Wk, Int: 100, End Exam: --, Total: 100, End Exam: --, Cr: 3

This course demonstrates an in-depth understanding of the tools and Web technologies necessary for business application design and development. The course covers client side scripting like HTML, JavaScript and server side scripting like servlets, JSPs. And also XML and web servers and database interfacing.

UNIT-I:

HTML Common tags- List, Tables, images, forms, Frames; Cascading Style sheets;

UNIT-II:

Introduction to Java Scripts, Objects in Java Script, Dynamic HTML with Java Script.

UNIT-III:

XML: Document type definition, XML Schemas, Document Object model, Presenting XML, Using XML Processors: DOM and SAX

UNIT-IV:

Java Beans: Introduction to Java Beans, Advantages of Java Beans, BDK

Introspection, Using Bound properties, Bean Info Interface, Constrained properties

Persistence, Customizes, Java Beans API, Introduction to EJB's

UNIT-V:

Web Servers and Servlets: Tomcat web server, **Introduction** to Servelets: Lifecycle of a Serverlet, JSDK, The Servelet API, The javax.servelet Package, Reading Servelet parameters, Reading Initialization parameters. The javax.servelet HTTP package, Handling Http Request & Responses, Using Cookies-Session Tracking, Security Issues,

UNIT-VI:

Introduction to JSP: The Problem with Servelet. The Anatomy of a JSP Page, JSP Processing. JSP Application Design with MVC Setting Up and JSP Environment: Installing the Java Software Development Kit, Tomcat Server & Testing Tomcat

UNIT-VII:

JSP Application Development: Generating Dynamic Content, Using Scripting Elements Implicit JSP Objects, Conditional Processing – Displaying Values Using an Expression to Set an Attribute, Declaring Variables and Methods Error Handling and Debugging Sharing Data between JSP pages, Requests, and Users Passing Control and Date between Pages – Sharing Session and Application Data – Memory Usage Considerations

UNIT VIII:

Database Access: Database Programming using JDBC, Studying Javax.sql.* package, Accessing a Database from a JSP Page, Application – Specific Database Actions, Deploying JAVA Beans in a JSP Page, Introduction to struts framework.

TEXT BOOKS:

1. Web Programming, building internet applications, Chris Bates 2nd edition, WILEY Dreamtech (UNIT s 1,2,3)
2. The complete Reference Java 2 Fifth Edition by Patrick Naughton and Herbert Schildt. TMH (Chapters: 25) (UNIT 4)
3. Java Server Pages –Hans Bergsten, SPD O'Reilly (UNITs 5,6,7,8)

REFERENCE BOOKS:

1. Programming world wide web-Sebesta,Pearson
2. Core SERVLETS ANDJAVASERVER PAGES VOLUME 1: CORE TECHNOLOGIES By Marty Hall and Larry Brown Pearson
3. Internet and World Wide Web – How to program by Dietel and Nieto PHI/Pearson Education Asia.
4. Jakarta Struts Cookbook , Bill Siggelkow, S P D O'Reilly for chap 8.
5. Murach's beginning JAVA JDK 5, Murach, SPD
6. An Introduction to web Design and Programming –Wang-Thomson
7. Web Applications Technologies Concepts-Knuckles,John Wiley
8. Programming world wide web-Sebesta,Pearson
9. Web Warrior Guide to Web Programmming-Bai/Ekedaw-Thomas
10. Beginning Web Programming-Jon Duckett WROX.
11. Java Server Pages, Pekowsky, Pearson.

DT 505 BUILDING MANAGEMENT SYSTEMS

L/s: 4/Wk, Int: 50, End Exam: 50, Total: 100, End Exam: 3hours, Cr: 3

Introduction building electronics, various types of sensors, protocols, consoles and networking systems, Intelligent Building Systems, Their applications in various aspects of building management - security, energy, HVAC, lighting- Role of IBS in management of various services like water supply, drainage, lighting, for large buildings, high-rise building and campuses.

Building performance – Building management systems. Measuring Building Performance. Intelligent Buildings. Introduction to CAFM. Introduction to BMS

Network Infrastructure for building connectivity-Benefits of advanced building cabling, Definitions, basic principles, building network infrastructure & design considerations, data transmission over twisted pair lines, LAN(local area network), optical fibre, testing.

DT 506 BUILDING INFORMATION MODELING

L/s: 4/Wk, Int: 50, End Exam: 50, Total: 100, End Exam: 3hours, Cr: 3

Building Information Modeling, background and history, need for BIM

Revit Architecture Basics, Exploring the User Interface, Working with Revit Elements and Families, Starting a Project

Starting a Design, Creating a Basic Floor Plan , Creating and Modifying Levels , Working with Grids , The Basics of the Building Model, Adding and Modifying Walls, Working with Compound and Vertically Compound Walls ,Using Editing Commands , Working with Doors, Adding and Modifying Windows, Loading Additional Building Components, Adding and Modifying Component Families

Viewing the Building Model, Managing Views, Controlling Object Visibility, Working with Section and Elevation Views , Creating and Modifying 3D Views,

Using Dimensions and Constraints, Working with Dimensions, Applying and Removing Constraints

Developing the Building Model, Creating and Modifying Floors, Adding and Modifying Ceilings, Adding and Modifying Roofs, Creating Curtain Walls, Adding Stairs and Railings

Detailing and Drafting, Creating Callout Views, Working with Text and Tags, Working with Detail Views
Working with Drafting Views,

Construction Documentation, Creating and Modifying Schedules, Creating Rooms and Room Schedules
Creating Legends and Keynotes

Presenting the Building Model, Creating and Printing Drawing Sheets, Working with Title Blocks, Managing Revisions,

Creating Renderings, Using Walkthroughs, Using Sun and Shadow Settings

Reference:

BIM Handbook: A Guide to **Building Information Modeling** for Owners, Managers, Designers, Engineers and Contractors- Chuck Eastman
Building Information Modeling – Willem Kymmell

DT 507 INTRODUCTION TO SIMULATION AND MODELING

Introduction to Modeling and Computer Simulation, Simulation in decision making, elements of simulation modeling, modeling packages, languages for, simulation, interpretation of simulation data, Probability and Statistical Tools Probability distributions, discrete and continuous random variables, pseudorandom number generation and testing, hypothesis testing, confidence intervals, one-way analysis of variance, variance reduction
Simulation Modeling Procedures, Techniques, and Case Studies

Model design
Inventory and queuing models, single models, alternative models
Collection and analysis of input data
Simulation performance
Analysis of simulation results, simulation verification and model validation, sensitivity analysis
Discrete Event Simulation with a Simulation Language

Deterministic and stochastic models, probability distribution sampling, simulation i/o, simulation

projects with written and oral presentations

REFERENCES

Banks, J., Editor, Handbook of Simulation, Wiley, 1998.
Banks, Carson, and Nelson, Discrete-Event System Simulation, 3 Ed., Prentice Hall, 2001.
Banks, Carson, and Sy, Getting Started with GPSS/H, Wolverine Software Corp., 1989.
Fishwick, Simulation Model Design and Execution, Prentice Hall, 1995.
Kelton, Sadowski, and Sadowski, Simulation with Arena, 2 Ed., McGraw-Hill, 2002.
Law, A. M. and Kelton, W. D. Simulation Modeling and Analysis, 3 Ed., McGraw-Hill, 2000.
Shriber, An Introduction to Simulation Using GPSS/H, Wiley, 1991.
Silverman, A Laboratory Manual for Simulation with GPSS/H for Computer Science Majors: an Integrated
Approach, NSF Workshop, 1997

SIXTH SEMESTER

DT 601 DIGITAL TECHNIQUES STUDIO- 1 (2D Animation)

L/s: 12/Wk, Int: 100, End Exam: 100, Total: 200, End Exam: Viva, Cr: 8

Introduction to different techniques of animation, the sequence of events of 2D animation

Drawing and sketching for 2D animation:
Character design and anatomy

Use of software like MS Paint, Coral painter, auto- sketch to make simple animations

Making of Flash Movie- simple commands related to setup, input of text, animation of text, grid, templates, tool panel and library.

Making simple graphics, concepts of drawing, fill and stoke colors, brushes, design of text, transformation of graphics and text, inserting images, editing sound and videos

Concepts of animation, types of animation, key frames, motion and shape controls buttons, movie clips controls, sound controls.

Defining paths, flash action script, understand symbols, creating simple movie clips, scripts for interactive and controlled movie clips.

Publishing the movie clips, optimizing on the file sizes, exporting the flash movies,

At least two complete projects in animation.

Alternative software for 2D animation

DT 602 DATABASE MANAGEMENT SYSTEMS

L/s: 4/Wk, Int: 50, End Exam: 50, Total: 100, End Exam: Practical & Viva, Cr: 4

UNIT I:
Data base System Applications, data base System VS file System – View of Data – Data Abstraction –Instances and Schemas – data Models – the ER Model – Relational Model – Other Models – Database Languages – DDL – DML – database Access for applications Programs – data base Users and Administrator – Transaction Management – data base System Structure – Storage Manager – the Query Processor

UNIT II:
History of Data base Systems. Data base design and ER diagrams – Beyond ER Design Entities, Attributes and Entity sets – Relationships and Relationship sets – Additional features of ER Model – Concept Design with the ER Model – Conceptual Design for Large enterprises.

UNIT III:
Introduction to the Relational Model – Integrity Constraint Over relations – Enforcing Integrity constraints – Querying relational data – Logical data base Design – Introduction to Views – Destroying /altering Tables and Views.
Relational Algebra – Selection and projection set operations – renaming – Joins – Division – Examples of Algebra overviews – Relational calculus – Tuple relational Calculus – Domain relational calculus – Expressive Power of Algebra and calculus.

UNIT IV:
Form of Basic SQL Query – Examples of Basic SQL Queries – Introduction to Nested Queries – Correlated Nested Queries Set – Comparison Operators – Aggregative Operators – NULL values – Comparison using Null values – Logical connectivity‘s – AND, OR and NOT – Impact on SQL Constructs – Outer Joins – Disallowing NULL values – Complex Integrity Constraints in SQL Triggers and Active Data bases.

UNIT V:
Schema refinement – Problems Caused by redundancy – Decompositions – Problem related to decomposition – reasoning about FDS – FIRST, SECOND, THIRD Normal forms – BCNF – Lossless join Decomposition – Dependency preserving

Decomposition – Schema refinement in Data base Design – Multi valued Dependencies – FORTH Normal Form.

UNIT VI:

Transaction Concept- Transaction State- Implementation of Atomicity and Durability – Concurrent – Executions – Serializability- Recoverability – Implementation of Isolation – Testing for serializability- Lock –Based Protocols – Timestamp Based Protocols- Validation- Based Protocols – Multiple Granularity.

UNIT VII:

Recovery and Atomicity – Log – Based Recovery – Recovery with Concurrent Transactions – Buffer Management – Failure with loss of nonvolatile storage-Advance Recovery systems- Remote Backup systems.

UNIT VIII:

Data on External Storage – File Organization and Indexing – Cluster Indexes, Primary and Secondary Indexes – Index data Structures – Hash Based Indexing – Tree base Indexing – Comparison of File Organizations – Indexes and Performance Tuning- Intuitions for tree Indexes – Indexed Sequential Access Methods (ISAM) – B+ Trees: A Dynamic Index Structure.

TEXT BOOKS:

1. Data base Management Systems, Raghurama Krishnan, Johannes Gehrke, TATA McGrawHill 3rd Edition
2. Data base System Concepts, Silberschatz, Korth, McGraw hill, V edition.

REFERENCES:

1. Data base Systems design, Implementation, and Management, Peter Rob & Carlos Coronel 7th Edition.
2. Fundamentals of Database Systems, Elmasri Navrate Pearson Education
3. Introduction to Database Systems, C.J.Date Pearson Education

DT 603 ARTIFICIAL INTELLIGENCE

L/s: 4/Wk, Int: 50, End Exam: 50, Total: 100, End Exam: 3hours, Cr: 4

Course Contents:
Introduction to AI. Agents and environments. Problem solving by search; uninformed search, informed ("heuristic") search, constrained satisfaction problems, adversarial search, Knowledge representation and reasoning; rule based representations, logical formalisms, frames or object oriented systems, network based approaches and mixed representations. Theorem-proving. Knowledge bases and expert systems. Overview of LISP and PROLOG. Reasoning in uncertain environments. Planning communication and multiagent systems. Learning. Vision. Natural Language Processing.

Books and References:
Charniak and Mcdermott. Introduction to Artificial Intelligence , Addison-Wesley, 1985.
Ginsburg. Essentials of Artificial Intelligence, Morgan Kaufmann, 1993.
Winston. Artificial Intelligence , 3rd Edition, Addison Wesley, 1992

DT 604 CYBER LAWS

L/s: 4/Wk, Int: 50, End Exam: 50, Total: 100, End Exam: 3hours, Cr: 3

The emerging jurisprudence of Cyber Space

Defining Cyber Space, Understanding Cyber Space, Interface of Technology and Law Defining Cyber Laws,

Jurisdiction in Cyber Space, Concept of Jurisdiction, Internet Jurisdiction, Indian Context of Jurisdiction, International position of Internet Jurisdiction Cases in Cyber Jurisdiction,

Understanding Electronic Contracts, The Indian Law of Contract, Construction of Electronic Contracts, Issues of Security Issues of Privacy Technical Issues in Cyber Contracts. Types of Electronic Contracts- Employment Contracts Consultant Agreements Contractor Agreements Sales, Re-Seller and Distributor Agreements Non-Disclosure Agreements Software Development & Licensing Agreements Shrink Wrap Contract Source Code Escrow Agreements, Cyber Contracts & Indian Legal Position, Legal Issues in Cyber Contracts, Cyber Contract and IT Act 2000, Indian Law on Shrink Wrap Contracts Drafting of Cyber Contracts

IPR in Cyber Space

Understanding Copy Right in Information Technology, Understanding the technology of Software, Software - Copyrights vs Patents debate, Authorship and Assignment Issues Commissioned Work and Work for Hire, Idea/Expression dichotomy, Copyright in Internet

Legal Issues in Internet and Software Copyright, Jurisdiction Issues and Copyright Infringement, Remedies of Infringement, Multimedia and Copyright issues, Software Piracy

Patents, Understanding Patents, International context of Patents, European Position on Computer related Patents, Legal position of U.S. on Computer related Patents, Indian Position on Computer related Patents

Trademarks, Understanding Trademarks, Trademark Law in India, Infringement and Passing Off, Trademarks in Internet, Domain name registration, Domain Name Disputes & WIPO

Databases, Databases in Information Technology, Protection of Databases, Legal Position of Database protection in U.S., European Legal position on Databases Indian Law on Databases, Sui Generis Extraction Right

Cyber Crimes

Understanding Cyber Crimes, Defining Crime, Crime in context of Internet –Actus Rea/Mens Rea, Types of crime in Internet, Computing damage in Internet crime

Indian Penal Law & Cyber Crimes, Fraud, Hacking, Mischief, Tresspass Defamation, Stalking, Spam

Freedom of Speech & Human Rights Issues in Internet, Freedom of Expression in Internet, Issues of Censorship, Hate speech, Sedition, Libel, Subversion, Privacy Issues, International Positions on Free Speech in Internet

DT 605 ENERGY SIMULATION IN BUILDING DESIGN

L/s: 4/Wk, Int: 50, End Exam: 50, Total: 100, End Exam: Practical & Viva, Cr: 4

Energy simulation –-HVAC, mechanical equipment etc. Simulation of wind flow- Introduction to various simulation programs like Energy-plus, design builder DOE, etc-
Course Introduction and Background, brief history, need for simulation, simulation as part of design process-various methods in simulation process, data collection, the variables which effect energy consumption in buildings

Fundamentals of energy, mass transfer, and Thermal analysis of building components, Numerical methods, and Theoretical framework for energy simulation for buildings related to various aspects

Energy simulation tools , Introduction to DOE2 (eQUEST) software, Building envelope analyses, HVAC System analyses, Parametric Analyses, Lighting Analyses, Special emphasis shall be given to the open source code software-their applications and customization for the specific needs in the context of energy simulation.

Simulation of at least two building typologies to be undertaken. Students may be encouraged to prepare the algorithms and develop programs for simulation

Introduction to Energy Audit
Definition, need, and types of energy audit; Energy management (audit) approach:
Understanding energy costs, bench marking, energy performance, matching energy use to requirement, maximizing system efficiencies, optimizing the input energy requirements; Fuel & energy substitution; Energy audit instruments; Energy Conservation Act; Duties and responsibilities of energy managers and auditors.

Reference
1.J A Clarke, 2002, *Energy Simulation in Building Design (2nd Edn),* Butterworth-Heinemann, ISBN 0 7506 5082.
2.2001 ASHRAE Handbook: Fundamentals. IP or SI edition, hard copy or CD.
3.S V Patankar, 1980, *Numerical Heat Transfer and Fluid Flow*, ISBN: 0891165223.
4.John A. Duffie, William A. Beckman, 1991, *Solar Engineering of Thermal Processes*, ISBN: 0471510564.
5.Hamies, *Energy Auditing and Conservation; Methods, Measurements, Management & Case study,* Hemisphere, Washington, 1980.

DT 606 ENVIRONMENTAL STUDIES

L/s: 4/Wk, Int: 50, End Exam: 50, Total: 100, End Exam: 3hours, Cr: 4

Course Overview:
A compulsory subject for all the undergraduate students of various discipline highlights significance of maintaining balance and sustainability of various components of the environment.

Objectives of the Course:
To sensitize the students towards sustainable environment.

Course Contents:
Unit – I
Environmental studies – Introduction: - Definition, scope and importance, Measuring and defining environmental development indicators.

Unit - II
Environmental and Natural Resources: Renewable and nonrenewable resources - Natural resources and associated problems -Forest resources - Use and over - exploitation, deforestation, case studies - Timber extraction - Mining, dams and other effects on forest and tribal people - Water resources - Use and over utilization of surface and ground water - Floods, drought, conflicts over water, dams - benefits and problems - Mineral resources: Use and exploitation, environmental effects of extracting and using mineral resources, case studies. - Food resources: World food problems, changes caused by agriculture and overgrazing, effects of modern agriculture, fertilizer-pesticide problems, water logging, salinity, case studies. - Energy resources: Growing energy needs, renewable and non-renewable energy sources use of alternate energy sources. Case studies. Land resources: Land as a resource, land degradation, man induced landslides, soil erosion and desertification. Role of an individual in conservation of natural resources. Equitable use of resources for sustainable lifestyles.

Unit - III
Basic Principles of Ecosystems Functioning: Concept of an ecosystem. - Structure and function of an ecosystem. - Producers, consumers and decomposers. - Energy flow in the ecosystem Ecological succession. - Food chains, food webs and ecological pyramids. Introduction, types, characteristic features, structure and function of the following ecosystem:

(a) Forest ecosystem
(b) Grassland ecosystem
(c) Desert ecosystem
(d) Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries).

Unit - IV

Biodiversity and its conservation: Introduction - Definition: genetic, species and ecosystem diversity. Bio-geographical classification of India - Value of biodiversity: consumptive use, productive use, social, ethical, aesthetic and option values *Biodiversity* at global, National and local levels. - India as a mega-diversity nation - Hot-sports of biodiversity - Threats to biodiversity: habitat loss, poaching of wildlife, man-wildlife conflicts. - Endangered and endemic species of India - Conservation of biodiversity: In-situ and Ex-situ conservation of biodiversity.

Unit - V

Environmental Pollution: Definition, Cause, effects and control measures of:
a) Air pollution b) Water pollution c) Soil pollution d) Marine pollution e) Noise pollution f) Thermal pollution g) Nuclear hazards

Solid waste Management: Causes, effects and control measures of urban and industrial wastes. - Role of an individual in prevention of pollution. - Pollution case studies. - Disaster management: floods, earthquake, cyclone and landslides.

Unit - VI

Social Issues and the Environment: From unsustainable to sustainable development -Urban problems related to energy -Water conservation, rain water harvesting, watershed management - Resettlement and rehabilitation of people; its problems and concerns. Case Studies - Environmental ethics: Issues and possible solutions. -Climate change,global warming, acid rain, ozone layer depletion, nuclear accidents and holocaust. Case Studies. - Wasteland reclamation. –Consumerism and waste products. - Environment Protection Act. -Air (Prevention and Control of Pollution) Act. -Water (Prevention and control of Pollution) Act - Wildlife Protection Act -Forest Conservation Act - Issues involved in enforcement of environmental legislation. –Public awareness.

Unit - VII

Human Population and the Environment: Population growth, variation among nations. Population explosion - Family Welfare Programme. -Environment and human health. -Human Rights. -Value Education. -HIV/AIDS. -Women and Child Welfare. -Role of information Technology in Environment and human health. –Case Studies.

Unit - VIII

Field work: Visit to a local area to document environmental assets River /forest grassland/hill/mountain -Visit to a local polluted site-Urban/Rural/industrial/ Agricultural Study of common plants, insects, birds. -Study of simple ecosystems pond, river, hill slopes, etc.

Reference book:

Erach Bharucha, A Text Book of Environmental Studies for Undergraduate Courses, University Grants Commission.

DT 607 MANAGEMENT SCIENCE

L/s: 3/Wk, Int: 100, End Exam: --, Total: 100, End Exam: --, Cr: 3

Unit - I

Introduction to Management: Concepts of Management and organization- nature, importance and Functions of Management, Taylor‘s Scientific Management Theory, Fayol‘s Principles of Management, Mayo‘s Hawthorne Experiments, Maslow‘s Theory of Human Needs, Douglas McGregor‘s Theory X and Theory Y, Herzberg‘s Two-Factor Theory of Motivation, Systems Approach to Management, Leadership Styles, Social responsibilities of Management.

Unit - II

Designing Organisational Structures : Basic concepts related to Organisation - Departmentation and Decentralisation, Types of mechanistic and organic structures of organisation (Line organization, Line and staff organization, functional organization, Committee organization, matrix organization, Virtual Organisation, Cellular Organisation, team structure, boundaryless organization, inverted pyramid structure, lean and flat organization structure) and their merits, demerits and suitability.

Unit - III

Operations Management : Principles and Types of Plant Layout-Methods of production (Job, batch and Mass Production), Work Study -Basic procedure involved in Method Study and Work Measurement- Statistical Quality Control: chart, R chart, c chart, p chart, (simple Problems), Acceptance Sampling, Deming's contribution to quality.

Unit -IV

a) Materials Management: Objectives, Need for Inventory control, EOQ, ABC Analysis, Purchase Procedure, Stores Management and Stores Records.

b) Marketing: Functions of Marketing, Marketing Mix, Marketing Strategies based on Product Life Cycle, Channels of distribution

Unit - V

Human Resources Management (HRM) : Concepts of HRM, HRD and Personnel Management and Industrial Relations (PMIR), HRM vs.PMIR, Basic functions of HR Manager: Manpower planning, Recruitment, Selection, Training and Development, Placement, Wage and Salary Administration,

Promotion, Transfer, Separation, Performance Appraisal, Grievance Handling and Welfare Administration, Job Evaluation and Merit Rating.

Unit - VI

Project Management *(PERT/CPM)* : Network Analysis, Programme Evaluation and Review Technique (PERT), Critical Path Method (CPM), Identifying critical path, Probability of Completing the project within

given time, Project Cost Analysis, Project Crashing. (simple problems)

Unit - VII

Strategic Management : Mission, Goals, Objectives, Policy, Strategy, Programmes, Elements of Corporate Planning Process, Environmental Scanning, Value Chain Analysis, SWOT Analysis, Steps in Strategy Formulation and Implementation, Generic Strategy alternatives.

Unit - VIII

Contemporary Management Practices : Basic concepts of MIS, End User Computing, Materials Requirement Planning (MRP), Just-In-Time (JIT) System, Total Quality Management (TQM), Six sigma and Capability Maturity Model (CMM) Levels, Supply Chain

Management, Enterprise Resource Planning (ERP), Performance Management, Business Process outsourcing (BPO), Business Process Re-engineering and Bench Marking, Balanced Score Card.

TEXT BOOKS:

1. Aryasri : *Management Science*, TMH, 2004.
2. Stoner, Freeman, Gilbert, *Management*, 6th Ed, Pearson Education, New Delhi, 2004.

REFERENCES:

1. Kotler Philip & Keller Kevin Lane: Marketing Mangement 12/e, PHI, 2005
2. Koontz & Weihrich: Essentials of Management, 6/e, TMH, 2005
3. Thomas N.Duening & John M.Ivancevich Management — Principles and Guidelines, Biztantra,2003.
4. Kanishka Bedi, *Production and Operations Management*, Oxford University Press, 2004.
5. Memoria & S.V.Gauker, *Personnel Management*, Himalaya, 25/e, 2005
6. Samuel C.Certo: *Modern Management*, 9/e, PHI, 2005
7. Schermerhorn, Capling, Poole & Wiesner: *Management*, Wiley, 2002.
8. Parnell: Strategic Management, Biztantra,2003.
9. Lawrence R Jauch, R.Gupta &William F.Glueck:Business Policy and Strategic Management, Frank Bros.2005.
10. L.S.Srinath: PERT/CPM,Affiliated East-West Press, 2005.

SEVENTH SEMESTER

DT 701 DIGITAL TECHNIQUES STUDIO- II (3D ANIMATION)

L/s: 12/Wk, Int: 100, End Exam: 100, Total: 200, End Exam: Viva, Cr: 8

Spline modeling- working with modifiers- compound objects- Standard and extended primitives -Surface modeling

Introduction to NURBS modeling– curves and surfaces, High resolution modeling, modeling using patches,

Human anatomy, Character modeling, controlling the character,

Introduction to MAYA- NURBS modeling- polygon modeling, subdivision modeling,- Applying textures using nodes- UV unwrapping- lighting concepts, types of lights- using cameras, working with paint effects,

Rendering- assigning materials-developing materials for rendering, setting up lighting- rendering using various types of rendering engines- photo-realistic, artistic and true-color renderings, rendering techniques with different rendering engines- Limitations of software and hardware, overcoming the software and hardware limitations,

Animation- defining the paths, frames, and controls for animation, freedom animation, walk through

Video Streaming- editing the animation clips, adding sound and special effects mixing special effects, composing with visual effects, wire removal, colour gradient, colour corrections, SFX and VFX composing,

Students are required to create one neighborhood scene and walkthrough, one interior view and walkthrough, 10 minute length movie using character, half minute length commercial apart from practice renderings.

DT 702 PROFESSIONAL PRACTICE

L/s: 4/Wk, Int: 50, End Exam: 50, Total: 100, End Exam: 3hours, Cr: 4

Project cycle- pre-production studies, formation of the project brief, terms of reference- Industry standards in quality and the costs- Reducing production size, improving production processes, improving team effectiveness, improving automation, Achieving required quality, peer inspections.

Knowledge of alternative open source codes for the industry standard software, customizing them for the project purposes. Managing the limitations of software and hardware,

Post production support and maintenance required for the client, improvising and research into the user satisfaction levels, Protecting Intellectual Property, Copyrighting the designs and processes,

DT 703 CONCEPTS OF INTERACTIVE AND VIRTUAL WORLDS

L/s: 4/Wk, Int: 50, End Exam: 50, Total: 100, End Exam: practical &Viva, Cr: 4

UNIT-I

Introduction: The three I's of virtual reality, commercial VR technology and the five classic components of a VR system. (1.1, 1.3 and 1.5 of Text Book (1))

UNIT - II

Input Devices: (Trackers, Navigation, and Gesture Interfaces): Three-dimensional position trackers, navigation and manipulation, interfaces and gesture interfaces. (2.1, 2.2 and 2.3 of Text Book (1)).

UNIT - III

Output Devices: Graphics displays, sound displays & haptic feedback. (3.1,3.2 & 3.3 of Text Book (1))

UNIT - IV

Modeling : Geometric modeling, kinematics modeling, physical modeling, behaviour modeling, model management. (5.1, 5.2 and 5.3, 5.4 and 5.5 of Text Book (1)).

UNIT - V

Human Factors: Methodology and terminology, user performance studies, VR health and safety issues. (7.1, 7.2 and 7.3 of Text Book (1)).

UNIT - VI

Applications: Medical applications, military applications, robotics applications.
(8.1, 8.3 and 9.2 of Text Book (1)).

UNIT - VII

VR Programming-I: Introducing Java 3D, loading and manipulating external models, using a lathe to make shapes.
(Chapters 14, 16 and 17 of Text Book (2))

UNIT - VIII

VR Programming-II: 3D Sprites, animated 3D sprites, particle systems. (Chapters 18, 19 and 21 of Text Book (2))

TEXT BOOKS:

1. Virtual Reality Technology, Second Edition, Gregory C. Burdea & Philippe Coiffet, John Wiley & Sons, Inc.,
2. Killer Game Programming in Java, Andrew Davison, Oreilly-SPD, 2005.

REFERENCES :

1. Understanding Virtual Reality, interface, Application and Design, William R.Sherman, Alan Craig, Elsevier(Morgan Kaufmann).
2. 3D Modeling and surfacing, Bill Fleming, Elsevier(Morgan Kauffman).
3. 3D Game Engine Design, David H.Eberly, Elsevier.
4. Virtual Reality Systems, John Vince, Pearson Education.

DT 704 PROJECT MANAGEMENT

L/s: 4/Wk, Int: 50, End Exam: 50, Total: 100, End Exam: 3hours, Cr: 3

UNIT - I

Conventional Software Management : The waterfall model, conventional software Management performance.

Evolution of Software Economics: Software Economics, pragmatic software cost estimation.

UNIT - II

Improving Software Economics : Reducing Software product size, improving software processes, improving team effectiveness, improving automation, Achieving required quality, peer inspections.

The old way and the new: The principles of conventional software Engineering, principles of modern software management, transitioning to an iterative process.

UNIT - III

Life cycle phases: Engineering and production stages, inception, Elaboration, construction, transition phases.

Artifacts of the process: The artifact sets, Management artifacts, Engineering artifacts, programmatic artifacts.

UNIT - IV

Model based software architectures: A Management perspective and technical perspective.

Work Flows of the process: Software process workflows, Iteration workflows,

UNIT - V

Checkpoints of the process: Major mile stones, Minor Milestones, Periodic status assessments.

Iterative Process Planning: Work breakdown structures, planning guidelines, cost and schedule estimating, Iteration planning process, Pragmatic planning.

UNIT - VI

Project Organizations and Responsibilities: Line-of-Business Organizations, Project Organizations, evolution of Organizations.

Process Automation: Automation Building blocks, The Project Environment.

UNIT - VII

Project Control and Process instrumentation: The seven core Metrics, Management indicators, quality indicators, life cycle expectations, pragmatic Software Metrics, Metrics automation.

Tailoring the Process: Process discriminants

UNIT - VIII

Future Software Project Management: Modern Project Profiles, Next generation Software economics, modern process transitions.

Case Study: The command Center Processing and Display system-Replacement (CCPDS-R)

TEXT BOOK:

1. Software Project Management, Walker Royce: Pearson Education, 2005.

REFERENCES:

1. Software Project Management, Bob Hughes and Mike Cotterell: Tata McGraw-Hill Edition.
2. Software Project Management, Joel Henry, Pearson Education.
3. Software Project Management in practice, Pankaj Jalote, Pearson Education.2005.

DT 705 PROJECT STUDIES

L/s: 3/Wk, Int: 100, End Exam: --, Total: 100, End Exam: --, Cr: 3

This subject forms the preliminary work on which the students' project in the next semester would be based. Therefore the objective of seminar in this semester is to encourage students to identify and select topics of interest and explore the theoretical issues based on extensive literature survey, interviews with experts and site visits wherever possible.

As it is mandatory that students subsequently carry the work into the Digital Techniques project, students will have to submit a detailed proposal on the chosen topic. The topic has to be approved by the committee and supervisor. Periodic reviews will be held to facilitate exchange of ideas, clarify the issues pf concern and pave the way for further study in the planning project. Emphasis will be placed on clear understanding of the topic so that the student can work independently on the terminal project subsequently.

Note:

Each student shall present a formal report and a seminar for final assessments.

DT 706 ELECTIVE

L/s: 4/Wk, Int: 50, End Exam: 50, Total: 100, End Exam: 3hours, Cr: 4

DT 706.1 COMPUTER HUMAN INTERACTION

UNIT - I

Introduction : Importance of user Interface – definition, importance of good design. Benefits of good design. A brief history of Screen design.

UNIT - II

The graphical user interface – popularity of graphics, the concept of direct manipulation, graphical system, Characteristics, Web user – Interface popularity, characteristics- Principles of user interface.

UNIT - III

Design process – Human interaction with computers, importance of human characteristics human consideration, Human interaction speeds, understanding business junctions.

UNIT - IV

Screen Designing : Design goals – Screen planning and purpose, organizing screen elements, ordering of screen data and content – screen navigation and flow – Visually pleasing composition – amount of information – focus and emphasis – presentation information simply and meaningfully – information
retrieval on web – statistical graphics – Technological consideration in interface design.

UNIT - V

Windows – New and Navigation schemes selection of window, selection of devices based and screen based controls.

UNIT - VI

Components – text and messages, Icons and increases – Multimedia, colors, uses problems, choosing colors.

UNIT - VII

Software tools – Specification methods, interface – Building Tools.

UNIT - VIII

Interaction Devices – Keyboard and function keys – pointing devices – speech recognition digitization and generation – image and video displays – drivers.

TEXT BOOKS :

1. The essential guide to user interface design, Wilbert O Galitz, Wiley DreamaTech.
2. Designing the user interface. 3rd Edition Ben Shneidermann , Pearson Education Asia.

REFERENCES:

1. Human – Computer Interaction. ALAN DIX, JANET FINCAY, GRE GORYD, ABOWD, RUSSELL BEALG, PEARSON.
2. Interaction Design PRECE, ROGERS, SHARPS. Wiley Dreamtech,
3. User Interface Design, Soren Lauesen , Pearson Education.

DT 706.2 E-COMMERCE

UNIT - I

Electronic Commerce-Frame work, anatomy of E-Commerce applications, E-Commerce Consumer applications, E-Commerce organization applications.

UNIT - II

Consumer Oriented Electronic commerce - Mercantile Process models.

UNIT - III

Electronic payment systems - Digital Token-Based, Smart Cards, Credit Cards, Risks in Electronic Payment systems.

UNIT-IV

Inter Organizational Commerce - EDI, EDI Implementation, Value added networks.

UNIT - V

Intra Organizational Commerce - work Flow, Automation Customization and internal Commerce, Supply chain Management.

UNIT - VI

Corporate Digital Library - Document Library, digital Document types, corporate Data Warehouses. Advertising and Marketing - Information based marketing, Advertising on Internet, on-line marketing process, market research.

UNIT - VII

Consumer Search and Resource Discovery - Information search and Retrieval, Commerce Catalogues, Information Filtering.

UNIT - VIII

Multimedia - key multimedia concepts, Digital Video and electronic Commerce, Desktop video processings, Desktop video conferencing.

TEXT BOOK:

1. Frontiers of electronic commerce – Kalakata, Whinston, Pearson.

REFERENCES:

1. E-Commerce fundamentals and applications Hendry Chan, Raymond Lee, Tharam Dillon, Ellizabeth Chang, John Wiley.
2. E-Commerce, S.Jaiswal – Galgotia.
3. E-Commerce, Efrain Turbon, Jae Lee, David King, H.Michael Chang.
4. Electronic Commerce – Gary P.Schneider – Thomson.
5. E-Commerce – Business, Technology, Society, Kenneth C.Taudon, Carol Guyerico Traver.

DT 706.3 SOFTWARE TESTING METHODOLOGIES

UNIT - I

Introduction: Purpose of testing, Dichotomies, model for testing, consequences of bugs, taxonomy of bugs

UNIT - II

Flow graphs and Path testing: Basics concepts of path testing, predicates, path predicates and achievable paths, path sensitizing, path instrumentation, application of path testing.

UNIT - III

Transaction Flow Testing: Transaction flows, transaction flow testing techniques. Dataflow testing:- Basics of dataflow testing, strategies in dataflow testing, application of dataflow testing.

UNIT - IV

Domain Testing:-domains and paths, Nice & ugly domains, domain testing, domains and interfaces testing, domain and interface testing, domains and testability.

UNIT - V

Paths, Path products and Regular expressions: Path products & path expression, reduction procedure, applications, regular expressions & flow anomaly detection.

UNIT - VI

Logic Based Testing: Overview, decision tables, path expressions, kv charts, specifications.

UNIT - VII

State, State Graphs and Transition testing: State graphs, good & bad state graphs, state testing, Testability tips.

UNIT VIII:

Graph Matrices and Application: Motivational overview, matrix of graph, relations, power of a matrix, node reduction algorithm, building tools.

Usage of JMeter and Winrunner tools for functional / Regression testing, creation of test script for unattended testing, synchronization of test case, Rapid testing, Performance testing of a data base application and HTTP connection for website access.

TEXT BOOKS:

1. Software Testing techniques - Baris Beizer, Dreamtech, second edition.
2. Software Testing Tools – Dr.K.V.K.K.Prasad, Dreamtech.

REFERENCES:

1. The craft of software testing - Brian Marick, Pearson Education.
2. Software Testing Techniques – SPD(Oreille)
3. Software Testing in the Real World – Edward Kit, Pearson.
4. Effective methods of Software Testing, Perry, John Wiley.
5. Art of Software Testing – Meyers, John Wiley.

706.4 COMPUTER NETWORKS

UNIT –I

Introduction: OSI, TCP/IP and other networks models, Examples of Networks: Novell Networks, Arpanet, Internet, Network Topologies WAN, LAN, MAN.

UNIT-II

Physical Layer: Transmission media copper, twisted pair wireless, switching and encoding asynchronous communications; Narrow band, broad band ISDN and ATM.

UNIT-III

Data link layer: Design issues, framing, error detection and correction, CRC, Elementary Protocol-stop and wait, Sliding Window, Slip, Data link layer in HDLC, Internet, and ATM.

UNIT-IV

Medium Access sub layer: A LOHA, MAC addresses, Carrier sense multiple access. IEEE 802.X Standard Ethernet, wireless LANS. Bridges,

UNIT-V

Network Layer: Virtual circuit and Datagram subnets-Routing algorithm shortest path routing, Flooding, Hierarchical routing, Broad cast, Multi cast, distance vector routing.

UNIT –VI

Dynamic routing – Broadcast routing. Rotary for mobility. Congestion, Control Algorithms – General Principles – of Congestion prevension policies. Internet working: The Network layer in the internet and in the ATM Networks.

UNIT –VII

Transport Layer: Transport Services, Connection management, TCP and UDP protocols; ATM AAL Layer Protocol.

UNIT –VIII

Application Layer – Network Security, Domain name system, SNMP, Electronic Mail; the World WEB, Multi Media.

TEXT BOOKS:

1. Computer Networks — Andrew S Tanenbaum, 4th Edition. Pearson Education/PHI
2. Data Communications and Networking – Behrouz A. Forouzan.Third Edition TMH.

REFERENCES:

1. An Engineering Approach to Computer Networks-S.Keshav, 2nd Edition, Pearson Education
2. Understanding communications and Networks,3rd Edition, W.A.Shay, Thomson

DT 707 GEOGRAPHIC INFORMATION SYSTEMS- II

L/s: 4/Wk, Int: 50, End Exam: 50, Total: 100, End Exam: Practical & Viva, Cr: 4

UNIT I

Planning Information Systems

Definition of Systems, Systems approach to planning as basis for planning Information Systems; Systems Hierarchy, Types; Data and Information, Value of Information, Information Security and Sharing; Information Systems, Types, Limitations; Planning Information Systems; Human Settlement Information Needs, Scales

and Levels, Preconditions for using Planning Information Systems; Introduction to various Planning Information Systems – Municipal Information Systems, Land Information Systems, Cadastre Systems; Applications and Limitations; Tools for Spatial Data Handling.

UNIT II

Introduction to Remote Sensing

Limitations of Traditional Surveys for Planning; Remote Sensing – Definition, Aerial and Satellite Remote Sensing, Aerial Remote Sensing; Aerial Photo Interpretation, Qualitative and Quantitative; Elements of Photo – Interpretation; Introduction to Digital Image Processing; Applications in Planning.

UNIT III

Introduction to GIS

Geographic Information Systems, Introduction, Components, Benefits; Computerized GIS, Input and Output Devices; Spatial Data Entry into GIS, Spatial Information Security and Sharing; Data Structure for GIS, Vector and Raster Data Structures, Comparative Advantages and Disadvantages; Maps, Base maps and Thematic maps, Mapping and Spatial Analysis Software, Linking of Attribute Data, Spatial Data, Aggregation Data Generalization; Limitations of GIS, Laboratory Exercises.

Expected Outputs & Assignment

Satellite data interpretation, Interpretation of Survey of India toposheets of the district Theme-wise map preparation through satellite data, Theme-wise map preparation from toposheets, Identification of secondary data, Mapping of other developed/ undeveloped villages in district, Identification of resource utilization and future scenario.

References:

Roger Tomlinson:Thinking about GIS; Stephen Wise: GIS Basics
Tor Bernhardsen:Geographic Information Systems (An introduction)
Keith C. Clarke: Getting Started with Geographic Information Systems.

EIGHTH SEMESTER

DT 801 INTERNSHIP

L/s: -/Wk, Int: --, End Exam: 200, Total: 200, End Exam: Viva, Cr: 10

Course Overview:
Internship for a period of not less than 12 weeks.

Objectives of the Course:
To provide experience in practical aspects of digital techniques for Design and planning
Expected Skills / Knowledge Transferred: The skills required for a student to grow into a professional.

Course Contents:
Every student must work in an Office as a full-time trainee for a period of 12 calendar weeks (excluding Viva-voce) from the date of commencement of training. The Chief in the firm should have a minimum of five years of practical/professional experience after her/his graduation. The student should involve herself/himself in various aspects of work in an office. Detailed instructions regarding the training, the frequency of reporting to the department, etc. will be issued at the end of the seventh Semester, which the student must strictly follow.

After completion of training, every student will have to submit a detailed report with a set of drawings on at least two projects on which she/he has worked during the twenty calendar weeks of the practical training period. This report will be evaluated at a viva-voce by a jury consisting of one external, one internal and head of the department or his nominee. After submission of the report the department at its convenience will arrange for the conduct of the viva-voce examination.

DT 802 PROJECT

L/s:30/Wk, Int: 150, End Exam: 150, Total: 300, End Exam: Viva , Cr: 15

Course Contents:

Each student of Bachelor of Technology (Digital Techniques for Design and Planning) is required to prepare a dissertation / project on a subject concerning Digital Techniques for Design and Planning under a guide/adviser as approved by the Head of the Department. The dissertation / project will provide an opportunity to the student to synthesize the knowledge and skills acquired through the learning of various theories and practices during the course.

The particulars of schedule of internal Juries, content, presentation, format, etc., as decided by the department from time to time, shall be strictly followed.

At the end of the semester, each student is expected to submit all original drawings prepared as per the department's specifications, three copies of the report in the specified format and in a soft copy and a physical or digital / virtual model should be submitted to the department after obtaining the approval of the respective guide/ adviser.

The department shall schedule the final viva-voce a jury consisting of one external, one internal and head of the department or his nominee, at its convenience, only after the receipt of the dissertation submission by a student.

DT 803 SEMINAR / PAPER (PHILOSOPHY)

L/s: 5/Wk, Int: 100, End Exam: --, Total: 100, End Exam: --, Cr: 5

Course Contents:

UNIT I

Philosophy as differentiated from science - definitions of Philosophy, methods.

Major philosophical thinkers of the world and of India and their ideas from Socrates to Mahatma Gandhi and S. Radhakrishna - utopian ideals, values, process, goals, social forces, ethics and management, etc.

UNIT II

Epistemology and its ideas - doctrine of innate ideas, empiricism, rationalism, critical theory of knowledge, skepticism, evolutionary theory of knowledge, genetic theory of knowledge, intuitionism, logical empiricism, the dialectic method.

UNIT III

Tests of truth - realism, pragmatism and idealism - causation - idea of causality and finality – contingency.

Naturalism, mechanism, organism views - teleology - creationism and other theories.

Ontology - materialism and dialectic materialism, Theories of the mind, self and freedom of the will, Theories of value and reality

UNIT IV

Review of the basic tenets of the various schools of Indian philosophy and isms - the Vedas, Brahmanas, Upanishads, Sankya, Yoga, Nyaya, Vyseshika, Mimamsa, Saiva Siddhanta, Tantra, Vedanta, Buddhism, Jainism, etc. Gandhi‘s philosophy of Ahimsa, Satyagraha, Swarajya and rural development - as alternative paradigms to planning in India.

DEPARTMENT OF B.TECH DTDP

ER.D.SRINIVASA REDDY	CO-ORDINATOR
ER.V.RAJENDRA PRASAD	LECTURER
AR.LAVANYA DAS	LECTURER
AR.A.RAVI KUMAR	LECTURER
RAMYA TEJA PENJALA	LECTURER
AR.G.VIKRAM	LECTURER
ER.B.RAMA KRISHNAIAH	LECTURER
ER.B.VENKATA RAMANA	LECTURER
AR.B.CHANDRA SEKHAR	LECTURER
ER.P.S.S.NAGALAKSHMI	LECTURER
ER.WAHEEDUDDIN	LECTURER
ER.B.RAGHURAM	LECTURER
AR.M.V.JANARDHAN RAO	LECTURER
AR.B.SWAPNA	LECTURER
ASS.ANDREWS	SR. ASSISTANT
M.CHAITNYA	LAB ASSISTANT
AVINASH PAUL	COMP.OPERATOR
M.SHALINI	ATTENDER
S.DHANRAJ	ATTENDER

Describing design as a sequence of steps cannot convey the complexity of social interactions that it embodies.

Design is not merely a process, but a co-evolution of efforts and events in various places and times both synchronous and asynchronous.

Designers share their values, effort and expertise within design settings via artifacts that further the design process. Increasingly, these design settings in academia, research, and professional practice combine physical and virtual modalities such as immersion, projection, and a range of interaction technologies.

Peter Anders has described such spaces as cybrids: hybrids that integrate virtual and physical space. In these settings, designers use overlapping physical and virtual artifacts and tools to arrive at a co-operative design resolution. Within collaborative design, these artifacts take on an additional role. As embodiments of design ideas and actions, they become media for communication.

Donald Schon asserts that design should be considered a form of making, rather than primarily a form of problem solving, information processing or research. Indeed the line separating creation from design is becoming increasingly blurred.

For the design artifact itself may become a part of the design proposal its virtual presence incorporated within a cybrid structure or object.

We may in the future see a proliferation of cybrid settings that support collaborative, digital design. The technologies for this already exist in collaborative tools, networked computing, scanning and immersive media. However, it will take a creative vision to see how these disparate tools and devices can integrate within the ideal design setting.

– Peter Anders & Wassim Jabi

B.DESIGN (INTERIOR DESIGN)
ACADEMIC REGULATIONS,
COURSE STRUCTURE AND SYLLABUS
(Effective from the Academic year 2011-12)

COURSE OUTLINE

INTERIOR DESIGN

JNAFAU

School of Planning and Architecture

Mahavir Marg,Masab Tank, Hyderabad-500028, A.P, India

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BACHELOR OF DESIGN
(INTERIOR DESIGN)

ACADEMIC REGULATIONS, COURSE STRUCTURE & SYLLABUS

JNAFAU SCHOOL OF PLANNING &ARCHITECTURE

MASAB TANK, HYDERABAD – 500 028

Jawaharlal Nehru Architecture and Fine Arts University

JAWAHARLAL NEHRU ARCHITECTURE AND FINE ARTS UNIVERSITY

Mahaveer Marg, Masab Tank, Hyderabad – 500 028.

COMMON ACADEMIC REGULATIONS

For B. ARCH/B. Des. / B. PLAN / B. Tech.
(Effective from the Academic Year 2011-2012)

I. Award of Bachelor of Arch / Bachelor of Planning / Bachelor of Technology / Bachelor of Design Degree:

Students will be declared eligible for the award of aforesaid **respective Degrees** if he/she fulfills the following academic regulations.

i. He/She has to pursue a course of study for not less than 4 academic years for B. Des / B.Tech / B.Plan and 5 years for B.Arch and not more than 8 /10 academic years as the case may be in the JNAFAU, School of Planning and Architecture & JNAFAU, College of Fine Arts and the colleges affiliated to the University.

ii. All courses offered in the University will be Semester pattern.

iii. The orientation of each semester is prescribed in the course structure of their respective disciplines and shall be accordingly followed.

iv. He / She must satisfy the Minimum Academic Requirements in each year as stipulated herein.

v. Students who fail to fulfill all the Academic requirements for the Award of the Degree within eight for B Des / B. Tech. / B.Plan and Ten academic years for B. Arch from the year of their admission, shall forfeit their admission in the said course.

II. Courses of Study:
Bachelor of Design (Interior Design) – 4 yrs degree course

III. Minimum Instruction days:
There shall be a minimum of 90 instruction days for each semester as per UGC Norms excluding the examination and miscellaneous days.

IV. Attendance requirements:

i. A student has to put in a minimum of 75% of the attendance in aggregate of all subjects for becoming eligible to register for the end semester examination.

ii. Condonation of shortage of average attendance up to 10% (i.e. between 75% to 65%) in each semester may be granted by the College Academic Committee (CAC) on genuine and valid grounds with supporting evidence.

iii. A stipulated fee shall be payable towards condonation of shortage of attendance.

iv. Shortage of aggregate attendance below 65% shall in no case be condoned.

v. Candidates detained for shortage of attendance are not eligible to take the end semester examinations. They will have to re-admitted for the Semester or repeat the semester when next available /offered.

V. Weightage of Marks:

i. The performance of the student in each semester shall be evaluated Subject-wise as per the course structure given ahead.

ii. The distribution of marks for the all subjects shall be as follows;
Undergraduate programs:
50% Internal Evaluation and 50% for External Evaluation (End Examination) except other-wise repeated.

VI. Evaluation

i. The performance of each student enrolled in a course will be assessed in the form of Continuous assessment (internal) and End Semester Examination in a ratio of 50:50.

ii. The mode of continuous assessment will be decided by the respective teacher /department concerned.

iii. Examination (Internal):

Shall be of continuous evaluation; with two (2) or more examiners assessing the student's work periodically (for design studio).

iv. A student shall be deemed to have satisfied the minimum academic regulations in each subject or project if he/she secures not less than 45% of marks in the End Examination and a minimum of 50% of

marks in the sum total of the Internal Evaluation and End Evaluation taken together.

VII. Revaluation

No request for re evaluation after the result declared in any course will be entertained

VIII. Valuation for Internal Assessment Marks

No request for re-evaluation of the internal marks after the results are declared in any course will be entertained.

IX. Evaluation of Dissertation / Thesis.

Students are required to present an open seminar on the dissertation. The Internal Assessment for 50% of the total marks should be done on a periodic basis by two or more internal examiners.

For the External Valuation, one Internal Examiner should award 25% of the prescribed marks and 75% marks should be assessed by the appointed External Examiner.

X. Evaluation of Project Work / Internship / Practical Training / apprenticeship.

i. The Project work of the students will be evaluated in phases viz., periodic and final. Each phase of the assessment will carry proportionate percentage of the prescribed marks.

ii. The final evaluation will be done by a Board of examiners and the students have to present the work done by them.

XI. Promotion criteria & Re- registration.

i. A student who fails to fulfill the minimum academic requirements in any subject and secures less than 50% of marks in the internal evaluation, may be permitted the option of re-registering in that subject, which will enable him to improve and resubmit the work for internal evaluation.

II. In such cases of re-registration, the student's previous performance both in the internal evaluation and end evaluation for the particular subject/s shall stand cancelled and he shall be required to appear for his end evaluation again. The candidate who has re-registered and has already put in the requisite attendance in the course need not attend the classes once again.

ii. However, such re-registration shall be limited to any three subjects. Re-registration of any course should be done within 15 days from the date of commencement of class work.

iii. The candidate will be promoted from 3rd year to 4th year only if he/she has no backlogs of 1st year.

iv. The candidate will be promoted from 4rd year to 5th year only if he/she has no backlogs of 2nd year (for B. Arch.).

v. Transfer of candidate from once course to another shall not be permitted, due to legal and administrative constraints.

XII. Supplementary Examinations

1. To enable the students to satisfy the academic requirements, the supplementary examinations shall be arranged at the end of each semester.

2. A candidate who has backlogs can appear either at the regular or supplementary examinations.

XIII. Withholding of results:

The results of any candidate shall be withheld if:

i. He/She has not cleared any dues to the Institution/Hostel.

ii. A case of disciplinary action is pending against him.

XIV. Award of class:

After a student has satisfied the requirements prescribed for the completion of program and is eligible for award of B.Arch./B.Tech./B.Des /BFA degree, he/she shall be placed in one of the following three classes.

First class with Distinction	70% and above	From the aggregate marks secured in the whole program
First class	Below 70% but not less than 60%	
Second class	Below 60% but not less than 50%	

XV. General:

i. The academic regulations should be read as a whole for the purpose of any interpretation.

ii. The marks in internal evaluation and **end** examination shall be shown separately in the marks memo.

iii. Students who have completed the course duration or have not registered for any regular semester and wish to re-register for more than the stipulated limit of the courses, can do so by appealing to the Vice-Chancellor, who may permit the judicious number of subjects in which the candidate can re-register at a given time on case to case basis to enable him /her to earn the degree.

iv. Candidates who have not been able to complete the course on any genuine reason even after the stipulated time, (twice the time period of the duration of the course), may also secure one more chance (special permission) from the Vice-Chancellor for course completion.

v. In case of any doubt or ambiguity in the interpretation of the academic regulations, the decision of the Vice-Chancellor is final.

JAWAHARLAL NEHRU ARCHITECTURE AND FINE ARTS UNIVERSITY
MAHAVIR MARG, HYDERABAD – 500 028
BACHELOR OF DESIGN (INTERIOR DESIGN)

FIRST SEMESTER

S. No.	Course No.	Course Title	* S/L/Th/P (Hrs)		Credits	Marks		
						I	E	T
1	101	Basic Design	S	11	11	100	100	200
2	102	Introduction to Art and Interior Design	S	3	3	50	50	100
3	103	Design Drawing and Graphics - I	S	5	5	50	50	100
4	104	Interior Design Materials & Applications-!	T	5	5	50	50	100
5	105	Communication Skills	T	3	3	100	-	100
6	106	Workshop (ceramics, model making & Photography)	P	3	3	100	-	100
		Total		**30**	**30**	**450**	**250**	**700**

SECOND SEMESTER

S. No.	Course No.	Course Title	S/L/Th/P (Hrs)		Credits	Marks		
						I	E	T
1	201	Space planning	S	11	11	100	100	200
2	202	Creativity and Problem Solving	S/T	3	3	50	50	100
3	203	Design Drawing and Graphics -II	S	5	5	50	50	100
4	204	Interior Design Materials & Applications-II	T	5	5	50	50	100
5	205	Basic Computer Applications	P	3	3	50	50	100
6	206	Workshop –II (wood, metal & textile)	P	3	3	100		100
		Total		**30**	**30**	**400**	**300**	**700**

THIRD SEMESTER

S. No	Course No.	Course Title	S/L/Th/P (Hrs)		Credits	Marks		
						I	E	T
1	301	Interior Design - I	S	11	11	100	100	200
2	302	Furniture Design	S/T	5	5	50	50	100
3	303	Fundamentals of Structures	T	3	3	50	50	100
4	304	Advanced Materials & Applications	T	5	5	50	50	100
5	305	History of Interior Design	T	3	3	50	50	100
6	306	Workshop - III (Furniture Design)	P	3	3	100	-	100
		Total		**30**	**30**	**400**	**300**	**700**

FOURTH SEMESTER

S. No	Course No.	Course Title	S/L/Th/P (Hrs)		Credits	Marks		
						I	E	T
1	401	Interior Design - II	S	12	12	100	100	200
2	402	Lifestyle accessories Design	S	6	6	50	50	100
3	403	Environmental control – I	T	3	3	50	50	100
4	404	Estimation and Project Management	T	3	3	50	50	100
5	405	Advanced Computer Applications	P	3	3	50	50	100
6	406	Integrated Project Work - I	T	3	3	100		100
		Total		**30**	**30**	**400**	**300**	**700**

FIFTH SEMESTER

S. No.	Course No.	Course Title	S/L/Th/P (Hrs)		Credits	Marks		
						I	E	T
1	501	Interior Design - III	S	12	12	100	100	200
2	502	Working Drawings and Details	S	6	6	50	50	100
3	503	Environmental control –II	T	3	3	50	50	100
4	504	Interior Services	T	3	3	50	50	100
5	505	Signage and Graphics	T	3	3	50	50	100
6	506	Integrated Project Work - II	T	3	3	100		100
		Total		**30**	**30**	**400**	**300**	**700**

SIXTH SEMESTER

S. No.	Course No.	Course Title	S/L/Th/P (Hrs)		Credits	Marks		
						I	E	T
1	601	Interior Design - IV	S	12	12	100	100	200
2	602	Seminar	P	6	6	100		100
3	603	Interior landscape	T	3	3	50	50	100
4	604	Professional practice	T	3	3	50	50	100
5	605	Psychology of Space and Behavioral science	T	3	3	50	50	100
6	606	Integrated Project Work - III	T	3	3	100		100
		Total		**30**	**30**	**450**	**250**	**700**

SEVENTH SEMESTER

S. No.	Course No.	Course Title	S/L/Th/P (Hrs)		Credits	Marks		
						I	E	T
1	701	Interim Training	P	-	4	100		100
2	702	Revitalization of Art or craft	P	6	6	100		100
3	703	Design Thesis	P	20	20	200	200	400
		Total		**26**	**30**	**400**	**200**	**600**

EIGHTH SEMESTER

S. No.	Course No.	Course Title	S/L/Th/P (Hrs)		Credits	Marks		
						I	E	T
1	801	Practical Training	P	48	30		200	200
		Total		**48**	**30**		**200**	**200**
		GRAND TOTAL			**240**			**5000**

BACHELOR OF DESIGN (INTERIOR DESIGN)

(Proposed Syllabus Effective from academic Year 2009-2010)

FIRST SEMESTER

BID101 BASIC DESIGN

L/P Hrs: 11/Wk Int: 100 End Exam: 100 Total: 200 Cr: 11

Course Overview:
Basic Design provides the framework for understanding design as a new language by sensitizing students to the conceptual, visual and perceptual issues involved in the design process.

Objectives of the Course:
To impart an understanding of design process and provide knowledge of the principles of design and design elements. Exercises complement the lectures and ensure that the students learn to develop a series of compositions in two and three dimension.

Expected Skills / Knowledge Transferred:
The course prepares ground for the students to gain an understanding into the fundamental issues in interior design and develop the skill to create interior design solutions for simple problems.

Course Contents:

Unit –I

Introduction to Design- definitions and meaning of design, importance of design. Examples of design from nature. Fundamental elements of design in 2-D and their definitions; point, line, shape, form, space, texture, value, color and material. Introduction to the principles of design in 2-D and 3-D - unity, balance, symmetry proportion, scale, hierarchy, rhythm, contrast, harmony, focus, etc; use of grids, creating repetitive patterns.
Assignment: to compose patterns by incorporating the principles of design.

Unit – II

Concepts of geometry- introduction to different 3-D forms and primitive forms, shapes and understand the behavior when combined. Transformations of 2-D to 3-D.
Assignment: to sketch the basic geometric forms and to analyze them based on transformation of simple to complex forms.

Unit – III

Principles of composition using grids, symmetrical/ asymmetrical, rule of thirds, center of interest Gestalts Theory of Visual Composition, etc

Assignment: to compose patterns using grids and to incorporate the principles.

Unit- IV

Introduction – Physics, physiology and psychology of colors – visible spectrum, colored light, color temperature, color interaction, color blindness.

Color Systems: An introduction to Munsell, Ostwald, DIN, CIE, NCS, Color aid system, etc. Color systems in practice, simplified color system, color terminology, special color issues, mixed color effects, effects of texture, using color systems.

Unit – V

Color wheel – primary, secondary, tertiary colors, color wheel, color schemes color value, intensity, and modification of color hues – tints, shades, neutralization. Color charts – types, making and using. Color harmony, use of color harmony.

Unit – VI

Psychological impact of color – warm, cool and neutral colors, impact of specific hues, meanings from color, color and form, color and light, color and surface qualities, color and distances and scales. Problems with color. Use of color in various functional contexts – Residential interiors, Non Residential interiors. Use of color in special situations – out door/indoor spaces, accessories, art works etc.

Assignment: Prepare a color wheel, and compositions based on color theory.

Note: The end exam shall be a combination of theory and drawing .

Reference Books:

Ching, Francis D.K. Architecture Form, space, and Order, 2nd ed. Van Nostrand Reinhold, New York, 1996.

Hanks, A.David. Decorative Designs of Frank Lloyd Wright, Dover Publications, Inc. New York, 1999.

Helper, E.Donald, Wallach, I.Paul. Architecture Drafting and Design, 3rd ed. McGraw-Hill Book Company, New York, 1977.

John.F. Pile, Color in Interior Design, Mc-Graw Hill professional, Ist edition, 1997

Johannes Item, The Art of color, John Wiley & Sons; Revised edition, 1997

Jonathan Pore, Interior Color by Design, Volume 2: A design tool for Home owners, Designers and Architects, Rockport publishers, 2005.

Ethel Rompilla, Color for Interior Design, Harry N. Abrams, 2005.

Itten, Johannes. Design and Form: The basic course at the Bauhaus, Thames and Hudson Ltd., London 1997.

Krier, Rob. Architectural Composition, Academy Editions, London, 1988.

Meiss, pierre Von. Elements of Architecture: Form to place, E and FN Spon, London, 1992.

Pipes, Alan. Drawing for 3-Dimensional Design. Thames and Hudson Ltd., London, 1990.

BID102 INTRODUCTION TO ART AND INTERIOR DESIGN

L/P Hrs: 3/Wk	*Int: 50*	*End Exam: 50*	*Total: 100*	*Cr: 3*

Course Overview:
Provides knowledge on traditional art form, innovations in art and influences on interior design. Creates an awareness of social and cultural dimensions to interior design.

Objectives of the Course:
To analyze various art forms and understand their application in interiors. To analyze the influences of social and cultural aspects on interior design.

Expected Skills / Knowledge Transferred:
Understanding various art forms, appreciation of art along with social and cultural influences on design.

Course Contents:

Unit – I
Purpose and relevance of Art

Unit – II
Development of art: A survey of history of art forms: pre historic times to present times: changing nature of art through time in terms of content: form and material.

Unit - III
Exploration of art forms – study of traditional and contemporary art forms – painting , sculpture, architecture, decorative arts, design arts, digital art. Relationship between art and design from earliest time. Study of famous and influential Artists, Craftsmen and people who pioneered innovations in their own fields and their influence on design and other fields. For egg: Van Gogh, Dali, William Morris, etc.

Unit – IV
Study of ornament & Accessories in Interior Design. Different types of ornamentation in the interiors. Study and evaluation of artifacts and historic examples and their applicability.

Assignment: to document artifacts, historical sites, and to understand them with respect to the surround environment; to incorporate them in the design aspects to present day context or usage

Unit – V

Introduction to Heritage Interiors: Evolution of Interiors in different regions of India with examples. Heritage and identity at different spatial scales. Dimensions and scope of Heritage Interiors. Users and uses of Heritage interiors

Unit – VI

General understanding of Interior Design, difference between interior design & Interior decoration, Interior Design and integration with Architecture. Introduction to Role of Interior Designer in a building project. Scope of Interior Design. Various subjects to be learnt by Interior Design students and their relevance to practice.

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Reference Books:

Alan Barnard & Jonathan Spencer, Encyclopedia of social and cultural anthropology, Taylor & Francis, 1996

Niggel Rapport, Social and Cultural Anthropology: The Key Concepts, Routledge, 2000

Philip Carl Salzman, Understanding Culture: An Introduction to Anthropological Theory, Waveland press, 2001.

Clifford Geertz, The Interpretation of Cultures, Basic Books, 1977.

Charles. V. Stanford, Studies in Indian society, culture and Religion, South Asia Books, 1988.

Elizabeth. D. Hutchinson, Sage publications, Dimensions of Human Behavior, person and Environment, 2007.

Kumar Raj (Ed) Essays on Indian Art and Architecture. Discovery pub., New Delhi, 2003

Fisher E. Robert. Buddhist Art and Architecture. Thames and Hudson, London. 1993.

Ghosh. A (Ed). Jain Art and Architecture Vol 1-3. Bharatiya Jnanpith.New Delhi.

Christine M. Piotrowski, Becoming an Interior Designer, John Wiley and Sons, 2003.

Arnold Friedmann , Forrest Wilson, John F. Pile, Interior Design, Elsevier Publishing company, 3rd edition, 1982.

Henry Wilson, India: Decoration, Interiors, Design, Watson Guptill, First American edition, 2001

Michael Freeman, India Modern, Periplus editions, 2005

Sunil Sethi, Angelika Taschen, Indian Interiors, TASCHEN America Ltd; 25th ed. edition, 2009

BID103 DESIGN DRAWING AND GRAPHICS – I

L/P Hrs: 5/Wk Int: 50 End Exam: 50 Total: 100 Cr: 5

Course Overview:
The course introduces the fundamental techniques of concept sketches, design development sketches, presentation sketches, presentation renderings and architectural drawing and develops the appropriate skills for visualization and representation.

Objectives of the course:
To introduce representation and design drawing techniques and to facilitate effective visual communication.

Expected Skills / Knowledge Transferred:
Freehand drawing of lines and shape, tone and texture, form and structure, space and depth. Scaled drawing skills for design thinking and conventional design representations in drawings and graphics.

Course Contents:
Unit – I
Introduction to pencil exercises – Knowledge about usage of different points of pencils, handling of pencils, practicing lines and tone building exercises.

Unit – II
Simple exercises of object drawings – natural geometric forms with emphasis on depth and dimension, detail & texture, sunlight & shadow.

Unit – III
Introduction – Fundamentals of drawing and its practice, introduction to drawing equipment, familiarization, use and handling.

Unit – IV
Drawing – Drawing sheet sizes, composition, fixing. Simple exercises in drafting, point and line, line types, line weights, straight and curvilinear lines, dimensioning, lettering, borders, title panels, tracing in pencil, ink, use of tracing cloth. Portfolio preparation.

Unit – V
Architectural symbols – representation of building elements, openings, materials, accessories etc., terminology and abbreviations used in architectural presentation.

Unit- VI
Architectural representation of landscape elements such as trees, indoor plants, planters, hedges, foliage, human figures in different postures, vehicles, street furniture etc.; by using different media and techniques and their integration to presentation drawings.

Unit- VI

Architectural representation of landscape elements such as trees, indoor plants, planters, hedges, foliage, human figures in different postures, vehicles, street furniture etc.; by using different media and techniques and their integration to presentation drawings.

Unit – VII

Measuring and drawing to scale – scales and construction of scales, simple objects, furniture, rooms, doors and windows etc. in plan , elevation and section etc. reduction and enlargement of drawings.

Unit – VIII

Interiors and furniture sketching – Interior still life, perspectives, lighting & composition, textures and details, material expressions, individual pieces of furniture, elevations & plans etc. using different media. Drawing from photographs.

Unit – IX

Orthographic projections of planes and solids, sections of solids, development of surfaces of solids and intersections of solids. Use of geometry in building interiors - isometric, axonometric, and oblique views. Working with models to facilitate visualization.

Note: This is a studio subject and students should be made to prepare construction drawings as studio exercises along with the theoretical inputs. The studio work should be supplemented with appropriate site visits.

REFERENCE BOOKS:

Stephen Kliment, Architectural Sketching and Rendering: Techniques for Designers and Artists, Watson Guptill, 1984.

Ivo.D. Drpic, Sketching and Rendering of Interior Space, Watson- Guptill, 1988.

Maureen Mitton, Interior Design Visual Presentation: A Guide to graphics, models and presentation techniques, 3rd edition, wiley publishers, 2007

Mogali Delgade Yanes and Ernest Redondo Dominquez, Freehand drawing for Architects and Interior Designers, ww.Norton & co., 2005

Francis D.Ching, Design Drawing, Wiley publishers

Moris, I.H.Geometrical Drawing for Art Students.

Thoms, E.French. Graphics Science and Design, New York: MC Graw Hill.

Nichols, T.B. and Keep, Norman. Geometry of Construction, 3rd ed. Cleaver – Hume Press Ltd., London, 1959.

Bhatt, N.D. and Panchal V.M.Engineering Drawing: Plane and Solid Geometry, 42nd ed. Charotar Pub., Anand, 2000.

Gill, P.S.T.B. of Geometrical Drawing, 3rd ed. Dewan Suhil Kumar kataria, Ludhiana, 1986.

Shah, M.G., Kale, C.M. and Patki, S.Y. Building Drawing: with an integrated approach to built environment, 7th ed. Tata Mc Graw Hill Pub., Delhi, 2000.

Bies, D.John. Architectural Drafting: Structure and Environment Bobbs – Merril Educational Pub., Indianapolis.
Nelson, A. John. H.B. of Architectural and Civil Drafting, Van Nostrand Reinhold, New York, 1983.
Francis D. Ching – Architectural Graphics , Wiley publishers, 2002

BID104 INTERIOR DESIGN MATERIALS AND APPLICATIONS – I

L/P Hrs: 5/Wk	*Int: 50*	*End Exam: 50*	*Total: 100*	*Cr: 5*

Course Overview:
The course provides information on the properties, management, specifications, use, application and costs of the materials used in the interiors.

Objectives of the course:
To impart knowledge on the various materials while highlighting the current trends and innovations in the usage of interior design materials.

Expected Skills / Knowledge Transferred:
Knowledge required for specifying appropriate materials for various spaces in interiors of buildings.

Course Contents:
Materials to be studied based on –
Physical and behavioral properties, tools and technology of its application in the construction of floors, walls, ceilings, walls, doors, windows, partitions and other interior design components.
Visual quality of materials in terms of finishes through color, texture, modulations and pattern evolution. Material and workmanship, specification etc.

Unit- I
Masonry – bricks, lime, sand, mortars, cement and aggregates, concrete, stone masonry, gypsum based plaster etc.
Unit- II
Timber, cane, bamboo – characteristics of good timber, defects, availability in India & world, types of timber, selection of timber.
Applications of timber : like joinery, doors, windows, floors, flooring, paneling, false ceiling, etc.,
Finishes to timber – types of polish – manual: spirit - French polish, wax, spray - readymade , coatings : melamine, PU, etc
Cane & Bamboo : availability, types, characteristics, applications

Unit- III

Wood Derivatives – Plywood, block boards, particle board, medium density fibre board, agrowood, etc. – their properties, process of manufacture, tools and technology of its application and quality assessment, finishes to reconstituted wood, - lamination, polishing etc. Surface finishes for wood products and derivatives etc., Coatings – clear and pigmented finishes technical or protective coatings etc.

Unit – IV

Paints – Protective coating paints, types of paints – water based paints, distempers, cement based paints, emulsion paints, anti corrosive paints etc. – composition, functions, preparation and application method, painting on different surfaces, defects in painting, etc

Varnishes (oil and spirit) – various types, damp proofing finishes etc. and methods of application

Expected Output – Students should do case studies, market surveys, visual presentations, site visits and detailed drawings of joinery, parts & types of doors, windows, partitions & wall paneling, etc

Note: Market surveys to be conducted to find out the commercial and technical names, sizes, wastages, BIS and codes for materials, testing, fabrication, rates, commercial methods of pricing, billing etc.

REFERENCE BOOKS:

Bindra, S.P. and Arora, S.P. Building Construction: Planning Techniques and Methods of Construction, 19th ed. Dhanpat Rai Pub., New Delhi, 2000.

Moxley, R. Mitchell's Elementary Building Construction, Technical Press Ltd.

Rangwala, S.C. Building Construction 22nd ed. Charota Pub. House Anand, 2004.

Sushil Kumar. T.B. of Building Construction 19th ed. Standard Pub. Delhi, 2003.

Chowdary, K.P. Engineering Materials used in India, 7th ed. Oxford and IBH, New Delhi,1990.

Rangwala, S.C. Building Construction: Materials and types of Construction, 3rd ed. John Wiley and Sons, Inc., New York, 1963.

Francis D. Ching, Building Construction Illustrated, Wiley publishers, 2008.

BID105 COMMUNICATION SKILLS

L/P Hrs: 3/Wk	*Int: 100*	*End Exam:*	*Total: 100*	*Cr: 3*

Course Overview:
Communication skills impart the art of communicating in English in the professional world.

Objectives of the course:
To improve the skills of grammar, punctuation and vocabulary in writing and speech.

Expected Skills / Knowledge Transferred:
Communicating clearly and effectively with the clients and others. Effective presentations and report writing skills.

Course contents:
Unit –I
Introduction – Orientation for improving the skills of grammar, punctuation and vocabulary in English, focused primarily on developing communication and presentation skills.

Unit –II
Written Skills: Writing skills in essay writing précis writing, reviews of articles etc. Types and classification of reports, difference between technical, scientific, legal and other types of communication; Format and elements of reports, structuring of preamble, contents, chapter formation, bibliography, footnotes, appendices and references.

Unit – III
Formal letters and specifications – Business and official letters, styles and format, requests for specifications and other types of business enquirer, conduct of meetings and responsibilities of the chairman and secretaries; agendas and minutes of meeting and official records.

Unit – IV
Literature Survey – Use of libraries, knowledge of indexing and available reference material.
Unit – V
Spoken English – Neutralization of accent, pronunciation, formal and informal communication, importance of voice and body language.

Unit –VI
Listening Comprehension – Role of listening in communication, listening for accent, rhythm and intonation, listening for main idea and specific information.

Expected Outputs and Assignment – Each student shall present a written paper and a seminar at the end of the semester for final assessment on a topic to be finalized in consultation with the concerned faculty. Internal assessment to be in the form of book reviews, exercises in writing comprehensions and group discussions on any relevant topics.

Reference Books:

Geetha Jajivan, Kiranmai: Course in listening and speaking Skills part I, Foundation Books Pvt Ltd.
Lorven: Enrich your communication in English

BID106 WORKSHOP (Ceremics, Model Making & Photography)

L/P Hrs: 3/Wk	*Int: 100*	*End Exam:*	*Total: 100*	*Cr: 3*

Course Overview:

The course provides the foundation and capability to represent the concepts three dimensionally through model making and photography.

It is skill based and practical involving the development of fundamental and technical capabilities necessary for model making & photography. It enables students to see things, analyze them and express them in a strong visual form both in 2D & 3D.

Objectives of the course:

Model Making : To introduce various fabrication skills and techniques necessary to produce scale models and to encourage preparation of models as an essential phase in design development and evaluation.

Photography: To develop a basic sense of visual perception for students through observation of composition, color and light interaction, shades and shadows and positive and negative space relationship. To develop competency in basic photographic techniques required for Interior Design.

Ceramics : To introduce various fabrication skills and techniques necessary to produce scale models and to encourage preparation of models as an essential phase in design development and evaluation.

Expected Skills / Knowledge Transferred:

Dexterity; knowledge of materials used and their properties, craft skills; visualization skills through model making.

The course prepares students to gain an understanding into the basic principles and techniques in using and handling photography necessary for the profession.

Course contents:

Unit –I

Model Making : Introduction to model making: Need; role of scale models in design: general practices: Digital models.

Unit –II

Essentials of model making: understanding of various tools and machines employed, best practices involved in operating the tools and the techniques.

Unit – III

Introduction to the Mount Board, Forex or foam Boards, acrylic boards, etc and other materials used for model making – types and mixtures, properties etc.

Unit – IV

Hand building techniques on different planes - making rigid forms like, cubic, spherical, pyramidal shaped forms, depiction of steps, free forms, sculptures, etc.

Expected Output : With the above knowledge the students should make an useful interior product or sculpture along with a written report for internal assessment.

Unit – V

Photography : Introduction to the basic principles of photography and photographic equipment - Analog and digital photography. Types of camera – Digital cameras (min 10 – 12 Mega pixel), Mobile phone cameras, understanding of the camera & its various parts and controls. Basic information about Accessories - studio equipment, tripod, flashlight, lens filters, hood, adapters, grid screen, memory cards, batteries and rechargeable, etc., use of fixed focal lenses, black and white negative films, etc. An overview of Lenses, sensors, scanners, shutter speeds and movement, focus and aperture, choice of exposure, changing focal length, flash and its control, light conditions, light compensation.

Unit – VI

Techniques: Seeing and photographing, using the view finder, framing up, creating a point of emphasis, picking lighting conditions, pattern, texture and shape, color etc.,

Lighting in photography: quality and quantity - soft and hard, lighting direction, types of lights, tungsten, flash, fluorescent etc., proper accessories - reflectors, filters, daylight, artificial light, mixed light, simple setups for adding light, multiple light sources etc.

Digital photography : introduction to digital photography tools, different aspects of taking images, steps in image processing, editing techniques, sequencing, image manipulation using a computer, storage formats, printing digital files, presentation of photographs.

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Unit – VII

Interior photography :Analysis of subject and content, perspective – vanishing points, distortion, converging verticals, usage of shift lens, camera position, picture format, image frame and composition – stationery surrounding objects, moving objects. Shooting parameters – light sensitivity, exposure, shadows and reflections.

Close-up photography: creatively correct exposure, specific lighting, foreground and background framing, filling the frame horizontal vs. vertical, texture up close, final image.

Expected Output : With the above knowledge the students should make portfolio of photography with their own digital camera - of interiors - in natural light & artificial light, close-ups of sculptures and any art work or details in different materials – wood, metal, glass, pieces of furniture, etc, for internal assessment

Unit VIII

Ceramics – clay/ plaster of Paris : Introduction to model making, Need; role of scale models in design: general practices - The potter's wheel – kneading the clay, function of hands in throwing. Learning basic techniques in making different objects like bowl, plate, cylinder, vase, lids, etc.

Essentials of model making: understanding of various tools and machines employed, best practices involved in operating the tools and the techniques.Introduction to the Ceramic materials used for model making – clay, types and mixtures, properties etc.

Unit – IX

Hand building techniques- making a box with a lid- hollowing out, pinch pots – making a bowl, coiling – making a cylindrical pot, slab- building – making a cube shaped box, hand building with clay strips- making a small sculpture.

Relief work – addition - making a mural, scooping – tile work.

Unit – X

Introduction to moulds with POP – waste mould, press mold – walling up the model, plate etc. Hollow casting – a vase

Unit – XI

Site visit to ceramic product factory to learn about ceramic glazes, types of glazes, commercially sold ceramic pigments, Documentation of the process of application of glazes by dipping, pouring, brush and spray gun.

Expected Output: With the above knowledge the students should make an useful interior product or ceramic sculpture or ceramic mural with moulds along with a written report for internal assessment.

Reference Books:

Magret Jacque. The Asesthetic Experiences: An anthropologist looks at the Visual Art.

Tapert, Annette, Swid Powell: Objects by Architects, Rizzoli, New York, 1990.

Scott Kelby, The Digital Photography Book, peachpit press, 1st edition,2006.

Tom Grimme & Michelle Grimme, The Basic Book of Photography, 5th ed., Plume, 2003.

Eric Roth, Interior Photography: Lighting and Other Professional Techniques with Style, Amphoto Books; illustrated edition , 2005

Julius Shulman & Richard Neutra, Photographing Architecture and Interiors, Balcony Press, 1st edition, 2000.

Maria Dolors Ros Frijola, The Art and craft of ceramics: Techniques, projects, Inspiration , Lark books, 2006

Joagium Chavarria, The big book of ceramics: A guide to the history, materials, Equipment and Techniques of hand building, Throwing, Molding, Kiln firing, and glazing pottery and other ceramic objects. Watson – Guptil, 1994.

Susan Bruce, The Art of hand built ceramics, Crowood Press ,2000

SECOND SEMESTER

BID201 SPACE PLANNING

L/P Hrs: 11/Wk Int: 100 End Exam: 100 Total: 200 Cr: 11*

Course overview:
Space Planning provides a specific design methodology for understanding the nature of spaces, scales and space within a space along with elements and organization.

Objectives of the course:
To impart an understanding of perception of interior space through architectural elements.

Expected skills/ knowledge Transferred:
The course prepares a base for the students to gain an understanding into the fundamental issues in designing spaces and develops the skill to create floor plans considering all the factors affecting spatial composition.

Course Contents:
Unit –I: Basic anthropometrics – average measurements of human body in different postures – its proportion and graphic representation, application in the design of simple household and furniture. Role of mannequins in defining spatial parameter of design. Basic human functions and their implications for spatial planning. Minimum and optimum areas for various functions.

Unit –II
Introduction to design methodology, Detailed study of residential spaces: such as, living, dining, bedrooms, kitchen, toilet etc. including the furniture layout, circulation, clearances, etc. Case study of an existing house and the analysis of the spaces there in, to be taken up. Preparing user profile, bubble and circulation diagrams.

Unit – III
Visual analysis of designed spaces noted for comfort and spatial quality; analysis of solid and void relations, positive and negative spaces. Integration of spaces and function in the design of watchman's cabin for - residence, supermarket, factory, etc., kiosk for - traffic police, inside a shopping mall, stalls - tea stall, flower stall, vegetable vendor's stall in a market place, ice cream stall, booths - telephone booth, milk booth, bus ticketing booth, ATM center, etc.

Note: At least 2 major designs and 4 minor time problem should be given The end exam shall be a design based time problem.

Reference books :

Karlen Mark, Space planning Basics, Van Nostrand Reinhold, New York, 1992.
Joseph D Chiara, Julius Panero, & Martin Zelnick, Time Saver standards for Interior Design & space planning, 2nd edition, Mc-Graw Hill professional, 2001.
Francis.D. Ching & Corky Bingelli, Interior Design Illustrared, 2nd edition, Wiley publishers, 2004.
Julius Panero & Martin Zelnick, Human Dimension & Interior Space : A source book of Design Reference standards, Watson – Guptill, 1979.
Karlen Mark, Kate Ruggeri & Peter Hahn, Space Planning Basics, Wiley publishers, 2003.

BID202 CREATIVITY AND PROBLEM SOLVING

L/P Hrs: 3/Wk	*Int: 50*	*End Exam: 50*	*Total: 100*	*Cr: 3*

Course Overview:
The course introduces the different tools and techniques of creativity as applicable to problem solving in design,

Objectives of the course:
To introduce lateral thinking and facilitate innovative design solutions.

Expected Skills / Knowledge Transferred:
Exploring creativity and challenging assumptions of design and generating alternatives by using tools and techniques of creativity.

Course Contents: Unit – I

Introduction – Definitions of creativity, understanding components of creativity, definitions of problem solving, theories of creativity, goals and objectives, value judgments, defining problems, information gathering, creative incubation, creative thinking and creative process.

Unit- II
Thinking techniques – Principles in generative, convergent, lateral, interactive, graphical thinking, check lists, analysis and synthesis simulation, action ability and implementations of intentions. Blocks in creative thinking. Simple exercises based on thinking techniques.

Unit- III
Tools and techniques of creativity – mind mapping, brain storming with related stimuli and unrelated stimuli, positive techniques for creativity, creative pause, Focus, Challenge, alternatives, concepts, provocation, movement, setting up

provocations, sensitizing techniques, group or individual techniques. Simple design exercises

Unit – IV
Problem statements – Brain writing with unrelated stimuli, idea mapping, random input, story boarding exercises, problem solving techniques – Divide and conquer, hill climbing strategy, means –ends analysis, trial and error, brain storming, morphological analysis, method of focal objects, lateral thinking, steps developed by Polya, Dekker, De Bono and others, research, analogy, reduction (complexity), TRIZ, Halpern's techniques etc. Simple Design exercises

Unit – V
Creative solutions applicable to designs – Design, Invention, opportunity, problems, improvement, planning, projects, conflicts. Simple Design exercises. Creative Design process – conceptual design, embodiment design, detail design, Iterations

Assignments : students are to design & produce at least 12 – 24 minor & 6 major basic products of day to day use and submit conceptual sketches along with a written report for internal and external assessment.

Reference Books:
Geoffrey Broadbent. Design in Architecture, London:D.Fulton
Christopher Alexander. Pattern Language. New York: Oxford University Press
Thomas Mitchell. Redefining Designing: Form to Experience
Edward De Bono, Lateral Thinking
James snyder and Anthony Y catanse, Introduction to Architecture, Mc Graw-Hill Book company, New York, 1979.
Design Basics for Creative Results by Bryan L.Peterson, F&W Publications, Inc.
Noone, Donald.J, Creative Problem solving, Hauppauge, 1993.
De Bono, Edward, Serious Creativity: Using the power of Lateral thinking to create new ideas, Harper Collins publishers, 1992.

BID203 DESIGN DRAWING AND GRAPHICS – II

L/P Hrs: 5/Wk	*Int: 50*	*End Exam: 50*	*Total:100*	*Cr: 5*

Course Overview:
The course introduces the techniques of architectural drawing pertaining to 3D views and perspectives, sciography and rendering.

Objectives of the course:
To impart the techniques of rendering in different media and skills of three dimensional visualization and presentation.

Expected Skills / Knowledge Transferred:
Perspective and three dimensional drawings with rendering in different media for presentation.

Course Contents:

Unit – I
Introduction to pen and brush exercises – Simple exercises of shapes and lines, lines and textures, pen lines, ruling with pen and brush, brush lines etc.

Unit – II
Tones and Rendering – tones in pen drawings, value scales, Gray values, Grading tones etc. Simple exercises of tonal values and textures with pen. Color study, monochrome and wash rendering etc.

Unit – III
Introduction to Sciography – Simple and composite forms, shadows on horizontal, vertical planes and on their own surfaces. Study of shade and shadows of simple geometrical solids of various forms and groups of forms.

Unit –IV
Perspective: Characteristics of perspective drawings, perspectives of simple geometric solids and spaces and complex geometries. Advanced examples in one point or parallel perspective, two point or angular perspective. Introduction to three point perspective. Interior perspectives of rooms.

Unit – V
Rendering of the perspectives in different media through drawing pencil, sketch pen, pencil color, monochrome, wash rendering etc,. Integrating landscape elements, human figures, shadows, foreground etc in the perspectives.

Unit – VI
Drawing from imagination – speculative drawings, diagramming, drawing compositions, concept sketches, design development sketches, presentation sketches , Presentation drawings, Graphical presentations etc.

Reference Books:
Stephen Kliment, Architectural Sketching and Rendering: Techniques for Designers and Artists, Watson Guptill, 1984.
Ivo.D. Drpic, Sketching and Rendering of Interior Space, Watson- Guptill, 1988.
Maureen Mitton, Interior Design Visual Presentation: A Guide to graphics, models and presentation techniques, 3rd edition, wiley publishers, 2007
Mogali Delgade Yanes and Ernest Redondo Dominquez, Freehand drawing for Architects and Interior Designers, ww.Norton & co., 2005
Francis D.Ching, Design Drawing, Wiley publishers

Atkin William W. Corbellent, Raniero and Firore. R. Vincent, Pencil Techniques in Modern Design. 4th ed. Reinhold pub Corporation. New York, 1962.
Bately, Claude. Design Development of India Architecture.
Bellings, Lance Bowen. Perspective space and Design.
Burden, Ernest, Architectural Delineation: A photographic approach to presentation, 2nd ed, McGraw Hill, Inc., New York, 1982.
Conli, Claudius. Drawings by Architects.
John. F. Pile, Perspective for Interior Designers, Watson – Guptill, 1989.
Ernest. R. Norling, Perspective made easy, Dover publications, 1999
Joseph D, Amelio, Perspective Drawing Hand book, Dover publications, 2004

BID204 INTERIOR DESIGN MATERIALS AND APPLICATIONS –II

L/P Hrs: 5/Wk	*Int: 50*	*End Exam: 50*	*Total:100*	*Cr: 5*

Course Overview:
The course provides information on the properties, management, specifications, use, application and rates of the materials used in the interiors.

Objectives of the course:

To impart knowledge on the various materials while highlighting the current trends and innovations in the usage of interior design materials.

Expected Skills / Knowledge Transferred:
Knowledge required for specifying appropriate materials for various spaces in interiors of buildings.

Course Contents:
Materials to be studied based on –
Physical and behavioral properties, tools and technology of its application in the construction of floors, walls, ceilings, walls, doors, windows, staircase, built in furniture, partitions and other interior design components.
Visual quality of materials in terms of finishes through color, texture, modulations and pattern evolution. Material and workmanship, specification etc.

Unit – I
Glass and glass products – Composition and fabrication of glass, classification, all types of glass annealed, float, mirrored, tinted, etc. – including wired glass, fiber glass, laminated glass, glass blocks, etc - their properties and uses in buildings. Commercial forms available – their physical and behavioral properties.
Application of glass : tools and technology of its application in built forms – glass doors, partitions, etc. Material and workmanship, specifications.

Unit- II
Stones : Igenous, metamorphic & sedimentary – classifications, types, properties, availability, applications

Unit – III
Rubber – Natural rubber, latex, coagulation, vulcanizing and synthetic rubber- properties and application.

Unit – IV
Plastics – Types, thermosetting and thermo plastics, resins, common types of moldings, fabrication of plastics, polymerization and condensation. Plastic coatings, reinforced plastic, plastic laminates – properties, uses and applications.

Unit – V

Adhesives – Natural and Synthetic, their varieties, thermoplastic and thermosetting adhesives, epoxy resin. Method of application, bond strength etc.

Unit –VI
Asphalt and Bitumen – Natural and artificial products, forms of asphalt, emulsion, cement mastic bituminous felt, their properties and uses.

Unit –VII

Roofing tiles, terracotta, sheets and fiber boards – properties and application.
Flooring tiles : Various natural as well as artificial flooring materials like, ceramic tiles, full body vitrified tiles, etc. terracotta tiles, glass mosaic tiles, etc, stones tiles, Mosaic, Rubber, Linoleum, PVC and PVA flooring, their Properties, other uses and applications in the interiors.

Expected Output – Students should do case studies, market surveys, visual presentations, site visits and drawings.

Note: Market surveys to be conducted to find out the commercial and technical names, sizes, wastages, BIS and codes for materials, testing, fabrication, commercial methods of pricing, billing etc.

Reference Books:
Bindra, S.P. and Arora, S.P. Building Construction: Planning Techniques and Methods of Construction, 19th ed. Dhanpat Rai Pub., New Delhi, 2000.
Moxley, R. Mitchell's Elementary Building Construction, Technical Press Ltd.
Rangwala, S.C. Building Construction 22nd ed. Charota Pub. House Anand, 2004.
Sushil Kumar. T.B. of Building Construction 19th ed. Standard Pub. Delhi, 2003.
Chowdary, K.P. Engineering Materials used in India, 7th ed. Oxford and IBH, New Delhi,1990.
Rangwala, S.C. Building Construction: Materials and types of Construction, 3rd ed. John Wiley and Sons, Inc., New York, 1963.

Francis D. Ching, Building Construction Illustrated, Wiley publishers, 2008.

BID205 BASIC COMPUTER APPLICATIONS

L/P Hrs: 3/Wk	*Int: 50*	*End Exam: 50*	*Total:100*	*Cr: 3*

Course Overview:
The course imparts basic knowledge on computers to upgrade the general understanding and ability in computing in the realm of Interior Design.

Objectives of the course:

To enable the student to make audio visual presentations, word processing, and other basic computing.

Expected Skills / Knowledge Transferred:
Knowledge on basic hardware and software required for Design applications. MS office, photo editing techniques, use of world wide web.

Course Contents:

Unit – I
Introduction: Brief overview of computer components – ROM, RAM, input devices, output devices, platforms, securities, operating systems, relevant software for interior design
Introduction to word processing package (like MS office), toolbar, creating a new document, formatting text, inserting tables, pictures, page numbers and date / time, spelling and grammar checking, taking print outs.

UNIT – II
Spread Sheets: Introduction to spread sheets. Microsoft Excel, creating formulae, basic operations, borders and shading, inserting charts, taking printouts.

Unit – III
Multi-media Presentations: Introduction to multimedia presentation (like MS Power Point), creating a presentation, opening an existing presentation, creating a blank presentation, different power point views, slide manipulation, slide animation, slide transitions, view slide show, navigating while in slideshow, hyper linking to other applications, scanning in different formats, setting of options, resolution settings, management of file size, integrating partial scans of large documents. Pack up a presentation for use on another computer, taking print outs.

Unit – IV

Exploring Microsoft Access: Introduction, creating new and opening existing databases, creating a database using a wizard, creating a database without using a wizard, tables and their working. Creating table from scratch in design view. Primary keys, switching views, entering data, manipulating data, advanced table feature examples.

Relationships – linking multiple tables together forms – and their workings, creating a form using wizard, reports – and their workings. Creating a report and mail merge, labels using a wizard.

Unit – V

Internet Concepts : Introduction to internet, use of internet, various search engines, searching strategies, saving images and documents from internet in different formats, e-mails, conferencing etc.

Unit – VI

Graphical concepts – I : Photo editing and desktop publishing, application, software introduction, software and system requirements, preferences, workspace, graphics terminology, image depth, resolution and image size, up sampling and down sampling, image sources, straightening an image, cropping an image, basic image correction, printing photo edited documents, selections, choosing foreground and background colors, filling with color, options and preferences revisited, file browser, stepping back in time, use ram efficiently, sharpening images, working with layers, painting in photo editing software, color theory, image modes, channels, more advanced adjustment commands, file format categories.

Unit – VII

Graphical Concepts – II: Photo editing and Desktop publishing (application) – Import and export of photo edited files, objects in photo editing, fills, outlines, total text control, basic toolbox of vector based software (like Corel Draw or Adobe page maker), color management tools, starting your page right etc. Introduction to Flash.

Reference books:

Adobe Creative Team, Adobe Photoshop CS (Class Workbook)
Droblas, Adele Greenberg, Fundamental Photoshop: A Complete Introduction.
Sagman, Microsoft Office for Windows, Indian Addison Wesley, 1999.
Woody Leon Hard, Microsoft Office 2000, Prentice Hall of India, New Delhi.
Adobe Creative Team, 2003
Adele Croblas Greenberg ,Fundamental Photoshop: A complete introduction .

206 WORKSHOP (wood, metal & textile)

L/P Hrs: 3/Wk	*Int: 100*	*End Exam:*	*Total:100*	*Cr: 3*

Course Overview:

The course is intended to provide information on working with Bamboo and wood which are among the major materials used in the interiors. Understanding of wood as building material, finishing material for surfaces and as furniture material.
The course also provides an understanding of comparative analysis of various metals and their design parameters facilitating usage in the interiors.
The course shall also provide scientific understanding of woven fabrics as soft interior element of design as space making element and its various uses as art forms which can be used in the interiors. This course also provides an understanding of scientific base of printing and its relationship with types of fabrics.

Objectives of the course:
To give an exposure to the materials and introduce various tools and techniques in making wooden & cane objects.
To introduce various methods of working with metals with an exposure to fixing, joinery and treatment
To introduce various weaving techniques necessary to produce art forms as an essential phase in design development and evaluation and shall also introduce visual perception of printing principles and their applications in developing soft interior elements.

Expected Skills / Knowledge Transferred:
Dexterity; knowledge of materials used and their properties, craft skills, fabrication & casting skills, & visualization skills of woven & printed fabrics. Ability to make products and elements of various scales for interiors with bamboo, cane, metal, wood.

Course Contents:

Unit – I:

Wood : Working with wood and wood products to understand material parameters. Wooden joinery and its strength, Wood polishes and other finishes – color and surface quality.

Unit – II:
Making of elements of various scales in the built form such as interior space making elements, furniture forms, various products, Art & Artifacts by using wood.

Understanding the material and tools by making objects which allow students to explore the forms, surfaces, textures and patterns. Explore different joinery, support conditions, and woven surfaces.

Unit – III:

Cane & Bamboo : Introduction to cane, bamboo, working with bamboo/cane and their products to understand material parameters. Bamboo and cane joinery and its strength. Polishes and other finishes

Expected Output: With the above knowledge the students should make an useful interior product in wood / cane or bamboo along with a written report for internal assessment.

Unit – IV:

Metal : Types of metals, properties of metals, definitions of terms with reference to properties and uses of metals, various methods of working with metals, fixing and joinery in metals, finishing and treatment of metals., finishes on metals. Standard specifications.

Unit – V

Metals in built form activity – horizontal, vertical and inclined surfaces – in interior environment elements- products and furniture forms - doors, windows, grilles, railing, stair etc. Metals and other materials – form and joinery.

Unit VI

Textiles – Weaving & printing : Introduction to fibers and yarns, table loom and floor loom, preparing warp, setting up loom for weaving. Basic weaves and their variations.

Unit – VII

Variation weaves and design quality, weaves as light controlling device, weaves and its quality for upholstery, curtains and floor coverings, Rugs and durries – motifs design, patterns and color variations.

Unit –V III

Development of textile design in different cultures from primitive art to contemporary designs. Criteria of design of the elements and principles of textile design. Analysis of a motif, developing repeat as a basic unit of design in textile printing.

Unit – IX

Block printing – developing block, understanding the material used, colors, types and their mixing process, various color printing.

Screen printing – design evolution for wall hangings, preparing screen and understanding the technique, printing on paper and printing on fabric.

Assignments: Extensive market survey of available fabrics for interior spaces – product specifications and manufacturers. A portfolio of swatches & techniques to be made.

Reference Books:

Carol Stangler, The crafts and art of Bamboo, Rev. updated edition, Lark books, 2009.

Dr Angelika Taschen, Bamboo style: Exteriors, Interiors, Details, illustrated edition, 2006.

Albert Jackson & David Day, The complete manual of wood working, Knopf publishers, 1996.

Lonnie Bird, Jeff Jewitt, Thomas lie- Nielsen, Taunton's Complete Illustrated Guide to Woodworking, Taunton, 2005.

Peter Korn, Wood working Basics : Mastering the essentials of craftsmanship, Taunton , 2003

John .F. Pile, Interior Design, Harry. N Abrams, Inc. New York . 1995.

Ron Fournier, Metal Fabricator's Handbook, Rev. Illustrated edition, HP Books, 1990.

Stanford Hohauser, Architectural and Interior models, Van Nostrand Reinhold, 1970.

Liz Gibson, Weaving Made Easy: 17 Projects Using a Simple Loom (Paperback), Interweave press, 2008

Deoborah Chandler, Learning to weave, Revised edition, Interweave press, 2009.

Kirsten Glasbrook, Tapestry Weaving, Search Press, 2002.

June Fish, Designing and printing textiles, Crowood press, 2005

R.W.Lee, Printing on Textiles by Direct and Transfer Techniques, Noyes Data Corporation, 1981

Fabrics: A guide for architects and Interior Designers, Marypaul Yates, Norton publishers, 2002.

Materials for Interior Environments, Corky Bingelli, John wiley and sons, 2007

THIRD SEMESTER

301 INTERIOR DESIGN STUDIO – I

L/P Hrs: 11/Wk Int: 100 End Exam: 100 Total: 200 Cr: 11

Course overview:
This course is intended to provide skills for designing single use interior spaces or products etc.

Objectives of the course:
To develop creative conceptual visualization, hand skill building, and the process of design.

Expected skills/ knowledge Transferred:
Use of anthropometry, ergonomics, handling of space and application of knowledge gained from other subjects, in design.

Course Contents:
The primary focus should be on –

- Anthropometry
- Design methodology
- Conceptual exploration and representation.
- Creativity
- Scale/proportion Documenting space
- Graphic design (page layout and composition)
- Concepts sketching
- Application of design principles and elements
- Portfolio development

The list of suggested topics to be covered as design problems:
Single room residence, Doctor's clinic, kindergarten school, Architect's studio, Small cafeteria, Bank extension counter, Departmental store, local police station, local post office, products used by architects in the studio, products for children in kindergarten, wedding venue, Metro Station, waiting lounges for – Hajj House, hospital, corporate, etc.

- **Note**: At least three major exercises and four minor design/time problems should be given.

Internal marking shall be done in stages project wise :

- Schematic layouts
- Final layout

- Sectional elevations
- Typical details
- Complete project with all details

The end exam shall be a design based time problem

Reference Books:

Karlen Mark, Space planning Basics, Van Nostrand Reinhold, New York, 1992.
Joseph D Chiara, Julius Panero, & Martin Zelnick, Time Saver standards for Interior Design & space planning, 2nd edition, Mc-Graw Hill professional, 2001.
Francis.D. Ching & Corky Bingelli, Interior Design Illustrared, 2nd edition, Wiley publishers, 2004.
Julius Panero & Martin Zelnick, Human Dimension & Interior Space : A source book of Design Reference standards, Watson – Guptill, 1979.
Maureen Mitton, Interior Design Visual Presentation: A Guide to Graphics, Models, and Presentation Techniques. John Wiley and Sons, 2003
Mark.W. Lin, Drawing and Designing with Confidence: A step-by-step guide, Wiley and Sons, 1993.
Robert Rengel, Shaping Interior Space, Fairchild Books & Visuals ,2002

302 FURNITURE DESIGN

L/P Hrs: 5/Wk Int: 50 End Exam:50 Total:100 Cr: 5

Course overview:

The course provides a framework to analyze and design furniture forms, specially built in furniture, scientifically and sensitizes the student's visual perception of furniture as a single form and as a system in a given interior space.

Objectives of the course:

Imparts the knowledge of various styles, systems and products available in the market. Enhances the knowledge of ergonomics, materials, design and working parameters in designing furniture. Develops systematic design approach and space planning through furniture as elements of design.

Expected skills/ knowledge Transferred:

The course prepares the student for mass production of furniture for various classes of people with the parameters of economy and culture.

Course Contents:

Unit – I

Furniture categories – role of furniture in interior design, exploration of the idea of furniture as elements of living units, education institutes, health facilities, street elements office, educational institutes, banks, stores, street furniture, etc

Assignment: Measured drawing of a piece of furniture – plan, elevation and sections – suggested :

- Sofa – single & two/three seaters with Side tables, centre tables, end tables & sofa tables
- Bed – single, double – king / Queen size with side tables
- Dining table & chair
- Bar counter with bar stool
- Counters for banks, shops, jewelry stores etc.
- Office work stations with credenza: general office, corporate tables
- Receptionist's table
- School, college tables & benches, etc
- Street furniture – benches, dustbins, etc

Unit – II

Brief overview of the evolution of furniture from Ancient to present: Various stylistic transformations. Furniture designers and movements.

Assignments : Typology of furniture with respect to the different states in India.

Unit - III

Functional and formal issues in design: study and evaluation of popular dictums such as "Form follows function", Form and function are one", "God is in Details" etc.

Evaluation of visual design: study of Gestalt theory of design – law of enclosure, law of proximity, law of continuity etc.

Human factors, engineering and ergonomic considerations: principles of universal design and their application in furniture design.

Unit – IV

Design approaches in furniture design. An introduction of various manufacturing processes most frequently adopted in furniture design such as Injection Molding, investment casting, sheet metal work, die casting, vacuum - forming etc.

Unit – V

Seating Design: Different types of seating with a focus on the following –

- Functionality
- Aesthetics
- Style
- Human factors and ergonomics

The other component to be considered is the cost of the designed furniture piece.

Assignment: Design with wood, metal and combination of materials. Drawings, details. Market survey of available products and economics of products.

Unit – VI

Storage systems: Functional analysis of storage systems and thereby deriving types of cabinets needed for interior spaces – kitchen cabinets, wardrobes closets, book cases, show cases , display systems etc.

Assignment: Exercise to design kitchen cabinets for a given kitchen.

Unit –VII

Modular approach to furniture design – various materials, combination of materials and its application. Cost criteria of furniture design.

Assignments : Survey of several modular systems available for different functions in the market..

Reference Books :

Joseph Aronson, The Encyclopedia of Furniture: Third Edition ,1961
Bradley Quinn, Mid-Century Modern: Interiors, Furniture, Design Details, Conran Octopus Interiors, 2006.
Jim Postell, Furniture Design, Wiley publishers, 2007.
Edward Lucie-Smith , Furniture: A Concise History (World of Art) , Thames and Hudson, 1985
Robbie. G. Blakemore, History of Interior Design and Furniture: From Ancient Egypt to Nineteenth-Century Europe, Wiley publishers, 2005.
John.F. Pile, Interior Design, 2nd edition, illustrated, H.N.Abrams, 1995.

BID303 FUNDAMENTALS OF STRUCTURES

L/P Hrs: 3/Wk	*Int: 50*	*End Exam:50*	*Total:100*	*Cr: 3*

Course Overview:

The course provides an in-depth understanding the concepts associated with framed structures.

Objectives of the course:

To provide knowledge of the different forces, force systems and structural behavior of different members due to applied forces.

Expected Skills / Knowledge Transferred:
Basic principles of mechanics and behavior of elements and ability to analyze the standard members in structures.

Course Contents:

Unit – I:
Introduction to built elements – study of built elements in the interiors with respect to materials used. Basic construction methods and general specifications. General types and classification of different types of buildings: overview of different functional, structural and architectural elements.

Unit – II:
Introduction to basic structural systems, elements of structure, their functions and behavior, beams, slabs, columns, walls, foundations, frame structures, composite structures, load bearing wall systems, trusses, rigid frames, linear and curved elements, : simply supported, cantilever and overhanging beams for various loads, : effect of simple geometric forms in the overall structural behavior. Construction of elements like lintels, sunshades, arches – parts, types, types of columns – RCC, fabricated, built-up brick column, floating column, etc

Unit – III:
Primary and secondary forces acting on the structures – gravitational force, live load, wind, temperature variation, distribution of loads through the elements of the structural system.

Unit – IV:
Characteristic requirements of a structural design – stress and strains, strength, stiffness and stability. Discussion on factors affecting them and the ways of satisfying these requirements. Study of behavior of structures through models and testing them for given loads.

Unit – V:
Structural properties of basic materials like masonry, timber, concrete and steel etc. Light weight space structure, small and large scale surface structure, integrated display system and structural elements.

Unit – VI:
Structural systems and their layout for a small building. Structural systems for elements of interior spaces – false ceilings, false flooring, suspended floors & ceilings, etc. Structural system for urban interior spaces – malls, fair grounds, exhibition spaces, etc. Awnings, space frames, etc

Assignments : Sketches of various types of structures, trusses, arches, lintels, sections of chajjas, awnings, etc

Reference Books:

- Rowland J. Mainstone : Development of Structural Form
- Rangwala : Engineering Materials
- S.P.Bindra, S.P.Arora, Building Construction
- B.C. Punmia : Strength of Materials vol – I

BID 304 ADVANCED MATERIALS AND APPLICATIONS

L/P Hrs: 5/Wk	*Int: 50*	*End Exam:50*	*Total:100*	*Cr: 5*

Course Overview:
The course provides information on the properties, specifications, application and market rate of the materials used in the interiors.

Objectives of the course:
To impart knowledge on the various materials while highlighting the current trends and innovations in the usage of interior design materials.

Expected Skills / Knowledge Transferred:
Knowledge required for specifying appropriate materials for various spaces in interior designs.

Course Contents:
Materials to be studied based on –
physical and behavioral properties, tools and technology of its application in the construction of floors, walls, ceilings, walls, doors, windows, staircase, built in furniture, partitions and other interior design components.
Visual quality of materials in terms of finishes through color, texture, modulations and pattern evolution. Material and workmanship, specification etc.

Unit -I
Metals – Steel, iron, aluminum, bronze, brass, copper – SS, alloys, characteristics, form and uses, properties, definition of terms, methods of working with metals, fixing and joinery in metals, finishing and treatment to metals. Application of metals to built form and interiors - special doors and windows, ventilators, doors – sliding, sliding and folding, revolving, pivoted, rolling, collapsible, dormer, skylights, clerestory etc.

Unit –II
Fabrics and other furnishing materials – fibers – natural – silk, cotton, linen, damask, furs, etc: artificial - polyester, nylon, rayon, etc , textiles, fabric treatments, carpets, durries, tapestries, Drapery, upholstery, wall coverings, etc. – properties, uses and application in the interiors.

Unit – III
Miscellaneous materials such as, foam, cork, leather, leatherite, UPVC, paper, Rexene, water proofing materials, termite treatment chemicals, Insulation materials – various insulating materials & their properties, uses and applications in the interiors.

Unit – IV
Green materials – roofing, flooring, luminaries, water controls, sensors, etc

Unit – V

Hardware & Accessories : all hardware required for residences, offices, other public & private spaces, etc including all types of hinges, drawer slides, handles, locks, wire managers, etc, accessories for toilet, kitchen, office, glass patch fittings, profiles, etc

Reference Books:

Bindra, S.P. and Arora, S.P. Building Construction: Planning Techniques and methods of Construction, 19th ed. Dhanpat Rai Pub., New Delhi, 2000.
Moxley, R. Mitchell's Elementary Building Construction, Technical Press Ltd.
Rangwala, S.C. Building Construction 22nd ed. Charota Pub. House Anand, 2004.
Sushil Kumar. T.B. of Building Construction 19th ed. Standard Pub. Delhi, 2003.
Chowdary, K.P. Engineering Materials used in India, 7th ed. Oxford and IBH, New Delhi,1990.
Rangwala, S.C. Building Construction: Materials and types of Construction, 3rd ed. John Wiley and Sons, Inc., New York, 1963.
Francis D. Ching, Building Construction Illustrated, Wiley publishers, 2008.
S.K.Duggal, Building Materials, Illustrated, A.A.Balkema,1998.

BID 305 HISTORY OF INTERIOR DESIGN

L/P Hrs: 3/Wk	*Int: 50*	*End Exam:50*	*Total:100*	*Cr: 3*

Course Overview:
The course emphasizes on developments of interior elements in response to social, religious, aesthetic and environmental factors. The course focuses on the three dimensional forms, plan forms and ornamentation.

Objectives of the course:
To understand the effect of design movements and various schools of thought on interior environment. This investigation in the historical imperative in relation with design should be used by the students as an aid to the design process.

To understand the historical progression of art and architecture in India and its application to formulate themes and concepts for contemporary designs.

Expected Skills / Knowledge Transferred:

- Acquire the knowledge to identify the common characteristics among the monuments of a particular style.
- Acquire graphic skills to present and analyze the elements and explain its composition.
- Acquire knowledge on good practices of Interior Design in the past.
- Acquire Knowledge related to the use of colours in different Historical period and in different parts of India

Course Contents:

Unit – I:

Elements of style and determinants of Interior environments in Ancient Civilization, Classical world & the Middle ages : emphasis shall be on Architectural elements, furniture, decorative arts, colours & materials.

- Egyptian
- The ancient Near East - Samarians, Babylonians, Assyrians, Persians
- The Classical World – Greek, Roman
- The Middle Ages - Early Christian and Byzantine, Romanesque and Gothic , Renaissance in Italy, Spain, France and England, Baroque, Rococo, Neoclassicism.
- Eastern influences - China and Japan

Unit – II:

- Reviewing Industrialisation :- Industrial revolution and its influence on social, economic conditions of that period, Scientific and technological progress, invention of new materials. An overview of Art and Crafts movement in Europe and America
- Art Noveau, Bauhaus, International style, Post Modernism.
- 20 century Birth of modern art, Cubism, Impressionism, Post impressionism and others.

Unit – III:

Indian architecture and interiors-

- Hindu and Islamic, Secular architecture of the princely states like Rajasthan, etc
- Critical Regionalism and the neo-vernacular with examples from Jammu and Kashmir, Southern India, Gujarat, , Himachal Pradesh , states of North & eastern India, Maharastra, Uttar Pradesh, Orissa etc.

Unit – IV:

History of modern movement in interior Design and architecture – developments of modern movements – various fields of design affecting interior ambiences directly – international modernism, regionalism and concerns with vernacular, colour, etc. Introduction to art movement of 1920-modern: abstract art, constructivism action painting, use of modern materials and technique

Unit – V:

Designers and their works with respect to interior architecture and interior elements of design. Contemporary expressions of styles and art forms.

- Theories and projects of F L Wright; Le Corbusier; Gaudi; Gropius; Aalto; Mies; Eisenmann; Zaha Hadid; Soleri; Hasan Fathy; Ando; Bawa; Gehry; Libeskind; Toyo Ito; Louis Khan; Tschumi; Greg Lynn; Assymptote
- Theories and projects of Indian Architects like : B V Doshi; Ananth Raje; Raj Rewal; Laurie Baker; Nari Gandhi; Kanvinde, Shirish Beri, Charles Correa, I M Kadri, etc

Reference Books :

John F. Pile, A history of interior design, 2nd edition, Laurence King Publishing, 2005.

Jeannie Ireland, History of Interior Design, air child publications, illustrated ed., 2009.

Elaine, Michael Dywer, Christopher Mackinnon, Norman A. J. Berisford Denby , A History of Interior Design, Rhodec International, 1983.

Giedion Sigfried, Space, Time and Architecture: The growth of a new tradition, 4th ed. Harvard University Press, Cambridge, 1962.

Tadgell Cristopher, The History of Architecture in India: From the dawn of civilization to the End of the Raj , Om Book Service, New Delhi, 1990.

Rowl Bejamin. Art and Architecture of India.

BID306 WORKSHOP (Furniture Design)

L/P Hrs: 3/Wk	*Int: 100*	*End Exam:*	*Total:100*	*Cr: 3*

Course Overview:

The course is intended to provide hands on working with materials used for the production of a furniture. Understanding the process that are involved from the pre-design to finishing of a furniture.

Objectives of the course:

To give an exposure to the materials and introduce various tools and techniques & processes in making furniture.

Expected Skills / Knowledge Transferred:
Ability to make products and elements of various scales for interiors.

Course Contents:
Unit – I:

Working with wood , wood products, metals & textiles to understand material parameters in design of a furniture piece in terms of finishes – color and surface quality etc

Unit – II:
Making of elements of various scales in the built form such as interior space making elements, furniture forms, evolution of furniture.

Unit – III:
Use of anthropometry, ergonomics, and handling of space and application of knowledge gained from other subjects, and design a piece of furniture

Unit – IV:
Template making and prototype making

Assignment: Individual assignment : To design & execute a piece of furniture with wood or metal or combination of materials. Drawings, details, templates and prototype of the same piece of furniture with detailed study and documentation is required for submission to the jury.

Reference Books:
Laura Slack, What is product Design? Roto Vision publishers, 2006
Treena Crochet and David Vleck, Designer's Guide to Decorative Accessories, Prentice Hall, Ist edition, 2008.
Michael Ashby, Kara Johnson, Materials and Design: The Art and Science of material selection in product design, Butter Worth Heinemann, 1st edition, 2002.
International Design Yearbook, 1995: Furniture, Lighting, Tableware, Textiles and Products, Books Nippan, 1996.
Karl. T. Ulrich, Steven D. Eppinger, Product Design and Development, McGraw-Hill Education Singapore; 4th edition, 2007
William Lidwell, Kritina Holden, Jill Butler ,Universal principles of Design, Rockport publishers, 2003.

FOURTH SEMESTER

BID401 INTERIOR DESIGN STUDIO - II

L/P Hrs: 12/Wk	*Int: 100*	*End Exam: 100*	*Total: 200*	*Cr: 12*

Course overview:
This course is intended to provide skills for designing medium scale interior spaces or products etc.

Objectives of the course:
To develop creative conceptual visualization, hand skill building, and the process of design and emphasis shall be on graphic layout and elevations as a design process.

Expected skills/ knowledge Transferred:
Use of standards, functions of spaces and application of knowledge gained from other subjects, in design.

Course Contents:

The primary focus should be on –

1. Documenting space (sketch and photo documentation)
2. Space planning process (block diagram, concept statement)
3. Concept sketching
4. Application of design principles and elements
5. Creativity /originality
6. Design Process/methodology
7. Structural integration
8. Historic style
9. Rendering
10. Anthropometry and ergonomics
11. Furniture
12. Material selection
13. Color
14. Graphic design (page layout and composition)
15. Portfolio development

The list of suggested topics to be covered as design problems:

- Thematic space making with Art and craft forms of our own culture in India – East, West, North, Central and so on.

- Design of living units of various geographical locations and culture by involving historical periods, styles and use of craft in its inherent quality and form – craft and living environment.
- Applications of art / craft at public level spaces- lounge (hotel), restaurant of specific ethnic characteristics.
- Response to today's situation of urban society – For a given building create contemporary homes of modern society – needs, realities, value system etc.

Note: At least two major exercises and tow minor design/time problems should be given.
Internal marking shall be done in stages and project wise:

- Schematic layouts – 3 minimum
- Final layout
- Sectional elevations
- Full project with all details : false ceiling, paneling, doors, windows, furniture details, etc

Submission & marking of project work shall be done in stages for internals. In the end exam, which is a viva-voce the students have to present the entire semester work for assessment.

Reference Books:

Karlen Mark, Space planning Basics, Van Nostrand Reinhold, New York, 1992.
Joseph D Chiara, Julius Panero, & Martin Zelnick, Time Saver standards for Interior Design & space planning, 2nd edition, Mc-Graw Hill professional, 2001.
Francis.D. Ching & Corky Bingelli, Interior Design Illustrared, 2nd edition, Wiley publishers, 2004.
Julius Panero & Martin Zelnick, Human Dimension & Interior Space : A source book of Design Reference standards, Watson – Guptill, 1979.
Maureen Mitton, Interior Design Visual Presentation: A Guide to Graphics, Models, and Presentation Techniques. John Wiley and Sons, 2003
Mark.W. Lin, Drawing and Designing with Confidence: A step-by-step guide, Wiley and Sons, 1993.
Robert Rengel, Shaping Interior Space, Fairchild Books & Visuals ,2002
Neufert Ernest, Architect's Data, Granada pub. Ltd. London, 2000.
John F. Pile, A history of interior design, Laurence King Publishing, 2005.
Robin D. Jones, Interiors of Empire: Objects, Space and Identity within the Indian Subcontinent, Manchester University Press; illustrated edition, 2008

BID 402 LIFESTYLE ACCESSORIES DESIGN

L/P Hrs: 6/Wk	*Int: 50*	*End Exam:50*	*Total:100*	*Cr: 6*

Course overview:
The course provides a framework in understanding the socio-cultural and historical aspects that influence the design of accessories and products based on their life style.

Objectives of the course:
Imparts the knowledge of various styles, systems and products available in the market. Enhances the aesthetic perception, materials, design and working parameters in designing products and life style accessories. Develops systematic design approach and integration of designed accessories with the interior.

Expected skills/ knowledge Transferred:
The course prepares the student for mass production of decorative accessories and products for various life styles of people with the parameters of economy .

Course Contents:

Unit –I

Insight of various products and lifestyle accessories in the interiors. Role of accessories in interiors. Integration of accessories in interior design. Design approaches in product and lifestyle accessories design with a focus on functionality, ergonomics, aesthetics, multiple usages etc.

Unit – II
Stylistic development of decorative accessories from the past to present with insight into technological advances and the influences of social, economic and political factors on their design. Brief study of period room settings with the context of decorative accessories complementing the architecture and interior design.

Unit – III
Study of materials and processes adopted in accessories design. Basic understanding of construction principles, anthropometrics, principles of sizes and proportions, modeling, rapid prototyping, color, texture etc. with broad orientation to socio-cultural and historical context of the sector. Orientation to Indian as well as global context of interiors, trends and market.

Unit – IV
Design approach with limited constraints inherent in accessory products. Evolving the strategy of design with integration of technical complexities and lifestyle influences. Development of the design of products and accessories to specific interiors and prevailing trends. Broad based approach towards innovative design and application to multi products and multi materials in manufacturing interior products and lifestyle accessories.

Unit – V
A detailed study involving all the design aspects of any of the following lifestyle accessories: luminaire design, glassware, lighting fixtures, textiles, mirrors, clocks, wall & floor coverings etc.

Reference Books:

Laura Slack, What is product Design? Roto Vision publishers, 2006
Treena Crochet and David Vleck, Designer's Guide to Decorative Accessories, Prentice Hall, Ist edition, 2008.
Michael Ashby, Kara Johnson, Materials and Design: The Art and Science of material selection in product design, Butter Worth Heinemann, 1st edition, 2002.
International Design Yearbook, 1995: Furniture, Lighting, Tableware, Textiles and Products, Books Nippan, 1996.
Karl. T. Ulrich, Steven D. Eppinger, Product Design and Development, McGraw-Hill Education Singapore; 4th edition, 2007
William Lidwell, Kritina Holden, Jill Butler ,Universal principles of Design, Rockport publishers, 2003.

BID 403 ENVIRONMENTAL CONTROL – I

L/P Hrs: 3/Wk	*Int: 50*	*End Exam:50*	*Total:100*	*Cr: 3*

Course overview:
The focus of the course is to impart scientific interior design of a built space as related to climate, particularly to tropical climates as found in India by giving importance for human comfort in interior spaces through natural elements.

Objectives of the course:
To equip the students with the basic understanding of climatic types in India and the impact on requirements of Interior design. To introduce them for planning for day lighting, familiarize them with the data, methods, principles, standards and tools for planning and designing of lighting for visual comfort.

Expected skills/ knowledge Transferred:
The student should be able to predict climatic conditions in a given building and redesign for given parameters.

Course Contents:
Unit – I
Introduction – Climate and built form interaction :
Earth and Global Climate: Introduction to climatology

- Movement of earth around sun,
- Elements of climate (Wind, temp, humidity, precipitation, pressure). Implications of climatic forces in nature of spaces and forms.
- Climatic zones of the world
- Ecological balance

Unit - II
Study of the different climatic zones of India (Hot –dry, Hot-Humid, Composite, Cold-dry, Cold-humid) along with data analysis.
Study measurement and analysis of micro climatic elements and its use for a Designer.

Unit- III
Introduction – Lighting and vision, basic units, photometry and measurement. Effects of good lighting, considerations for good lighting, brightness, glare, contrast and diffusion.

Unit - IV
Natural lighting – as a source of light
Day light and its advantages, admitting daylight, controlling daylight – window treatments – soft dressing like draperies, blinds, sun control films, etc
Introduction to GREEN Design :

- Potentials of day lighting as an energy resource.
- Introduction and objectives of solar passive design.
- Introduction to Passive Solar heating system (direct gain, indirect gain, isolated gain)

Unit – V
Artificial lighting - color characteristics of artificial lighting, integration of day lighting with artificial lighting, lighting controls, switches, dimmers, etc
An introduction to intelligent building systems for lighting,

Unit VI
Quality and quantity of different sources of artificial light –incandescent, fluorescent, halogen, electric gas discharge, high discharge, neon, cold cathode, mercury, sodium vapor etc. lighting levels, visual field.

- Survey of lamps available in the market with cost and technical specifications is to be taken up.

Unit VII

Planning lighting – general aims, lighting needs, overview of calculation of lighting levels, intensity levels, energy and installation costs and other factors, selection of fixtures, location and placing of fixtures.

Unit - VIII

Lamps and lighting fixtures –

- Direct lighting : Floor, table and desk, wall mounted, ceiling units, built in lighting, miscellaneous types, decorative lighting, spot lighting, task lighting, underwater lighting etc.
- Indirect lighting **:** cove, backlit, etc

Note: Detailed lighting design should be done for any one type of building.

Reference Books:

John.F. Pile, Interior Design, 2nd edition, illustrated, H.N.Abrams, 1995.
Wanda jankowski, Lighting : In Architecture and Interior Design, pbc intl, 1995.
Moore Fuller, Concepts and practice of Architectural Day lighting, Van Nostrand Reinhold co., New York, 1985.
David Egan. M. Concepts in Architectural lighting Mcgraw Hill Book company, New York, 1983.
Markus, T.A and Morris. E.N. Buildings. Climate and Energy, Pitman Pub Ltd., London, 1980.
Kukreja. C.P. Tropical Architecture. Tata McGraw Hill Pub. Co. Ltd. New Delhi, 1978.

BID404 ESTIMATION AND PROJECT MANAGEMENT

L/P Hrs: 3/Wk	*Int: 50*	*End Exam:50*	*Total:100*	*Cr: 3*

Course overview:

The course deals with –

- Methods for working out quantities and costs to make an estimate of the project with all specifications.
- Management of the projects based on time and budget.

Objectives of the course:

To equip the students with the basic understanding of –

- Working out quantities of different materials and their costs to prepare an estimate of the project before execution.

- Preparation of schedule of charts for time and budget, to have a control over the project.

Expected skills/ knowledge Transferred:
The student should develop techniques of -

- estimating and costing related to the interior projects.
- preparing schedules of time and budget for the projects to execute efficiently.

Course Content:

Unit – I
Types of measurements, modes of measurements : methods of taking out quantities, preparation of schedule or bill of quantities. Data collection for interior works.

Unit – II
Specifications: Defination, purpose & importance of Specifications, general or brief specifications, detailed specifications, writing of specifications for interior works.

Unit – III
Rate analysis of various items of work: preparation of various items of work in the interior works.

Unit – IV
Estimating interior items manually and through spreadsheet programmes, types of estimates, abstract and detailed estimates for interior works.

Unit – V
Introduction to project management for interior works – Definitions and meanings, Importance, Reasons or shortfall in its performance, Planning and control.

- Project organization : matrix organization, task forces, project teams: monitor and control of project.
- Project management strategies: Introduction to Tools and techniques for project management, New techniques of management by objectives (MBO).

Unit – VI
Development of project network. : introduction to PERT and CPM. Difference between PERT & CPM

Unit – VII
Methods of Scheduling - Integrated reporting system, flow diagrams, bar charts, milestone charts, GHANTT chart. An overview of Techniques of monitoring of development works.

Reference Books:
Carol Simpson, Estimating for Interior Designers, Watson Guptill, Rev. Sub edition, 2001.
Carol E Farren, Planning and Managing Interior projects, Robert Snow Means Company, 2000.
Barbori Balboni, Interior Cost Data, R.S. Means company, 2001.
Harold Kerzner, Project Management : A systems approach to planning, scheduling and controlling, 2006

BID405 ADVANCED COMPUTER APPLICATIONS

L/P Hrs: 3/Wk	*Int: 50*	*End Exam:50*	*Total:100*	*Cr: 3*

Course Overview: To orient the student to create two and three dimensional objects in space with special emphasis on presentation and visualization of interiors using rendering techniques using CAD.

Objectives of the course:
To explore computer modeling techniques using CAD.

Expected Skills / Knowledge Transferred:
To learn basic skills of modeling, scripting (rendering) in CAD, and to exercise methods of interface within CAD.

Course Contents:

Unit – I
Starting AutoCAD: Introduction to the menu, starting drawings from scratch. Creating and using templates- starting drawings with setup wizards. Saving and closing a file.

Unit – II
Using co-ordinate systems – The UCS. Working with Cartesian and polar coordinate systems. Using displays with shortcuts.

Unit – III
Setting up the drawing environment – setting the paper size, setting units, grid limits, drawing limits, snap controls. Use of paper space and model space.

Unit – IV
Basic commands dealing with drawing properties: Layer control, change properties, line weight control, etc.

Unit – V
Inquiry methods: Using data base information for objects, calculating distance, angle, areas etc.

Unit – VI
Dimensioning commands and blocks: Dimensioning the objects in linear, angular fashions along with quick time dimensioning etc. Creating and working with blocks, creating symbols, use of blocks in creating a layout, of a residential area- one exercise to be done as lab assignment.

Unit – VII
Orientation towards 3D : 2D to 3D conversion, perspective view, walk through the layout.

Unit – VIII
3D-Max : Understanding 3D, theory behind 3D modeling. Preparing for construction of 3D models. Construction of 3D surface models- extrusion, wire frame, creation of a shell, elaborate surfaces.

Unit –IX
Solid modeling : concepts behind solid modeling, composite solids creation and modification, solids display and inquiry.

Unit – X
Rendering and presentation. Printing and plotting.

BID406 INTEGRATED PROJECT WORK - I

L/P Hrs: 3/Wk	*Int:100*	*End Exam:*	*Total:100*	*Cr: 3*

Course Overview:
The student will be required to produce a project feasibility report for the specific design undertaken in the design studio.

Objectives of the Course:
To sensitize the student to the technical and socio-economic feasibility of the design project.

Expected Skills / Knowledge Transferred:
Analyzing a design project for technical and socio-economic feasibility.

Course contents:
The student has to submit a project feasibility report on the project done in the design studio by integrating the knowledge and skills acquired from all the subjects studied till date.
The report may consist of the following -

- Environmental impact assessment of the project following the standards and specifications
- Socio-economic appraisal of the project and the design considering factors such as behavioral aspects, security considerations, costs for different user groups, aesthetic preferences etc.
- Technical feasibility – through execution and detailing of different spaces and elements of design, checking the feasibility of layout for service systems and specifications
- Costing of the project – bill of quantities, schedule of rates, specifications etc. economic viability and financial viability
- Space planning aspects/ issues – user activity spaces, access to physically challenged, fire safety, other services, green rating etc.

Note : The report has to presented for internal assessment

Reference Books :

- M.P. Birkett, An appraisal of project work as an educational tool within interior design education at tertiary level and its relation to professional practice, Royal College of Art, 1985.
- Griff Boyle, Design Project Management, Ashgate Publishing; illustrated edition, 2003.

FIFTH SEMESTER

BID501 INTERIOR DESIGN STUDIO - III

L/P Hrs: 12/Wk	*Int: 100*	*End Exam: 100*	*Total: 200*	*Cr: 12*

Course overview:
This course is intended to provide skills for designing interior spaces with emphasis on transformation and adaptive re-use as one of the important aspects in interior design.

Objectives of the course:
To develop creative conceptual visualization and the process of design. To understand accessibility and universal design issues.

Expected skills/ knowledge Transferred:
Use of standards, transformation of spaces for reuse and application of knowledge gained from other subjects, in design.

Course Contents:

The primary focus should be on –

- Introduction to building codes
- Way finding, Signage and graphics
- Universal Design
- Accessible design
- Design Disabled
- Materials, furniture and finish selections
- Introduction to construction detailing
- Ergonomics and Human Factors
- Digital representation (3 D modeling)
- Space planning process
- Color
- Interior environmental control issues
- Rendering

The list of suggested topics to be covered as design problems:

- Institutional spaces in urban, semi-urban and rural contexts with an aim to explore and understand transformation and adaptive re-use.

- Historic and abandoned sites provide scope for rejuvenation through multi dimensional programs covering functions like museums, cultural and resource centers, libraries, convention centers, exhibitions etc. that also aim in making a social contribution.
- Recreational spaces such as auditoriums, cinema houses, stage design, multiplexes, etc. Understanding of audio visual communication, color and light interaction, sound control system, design of interior elements, products and furniture forms.

Design issues in addition to the primary focus for the above are statement of institution character through interior environment responses to site and context, integration of interior architectural elements to other interior elements, dialogue between the existing and the newly added insert, interpretation of institutional activities and their spatial correlation.

Note: At least three major exercises and four minor design/time problems should be given.

Internal marking shall be done in stages project wise :

- Schematic layouts
- Final layout
- Sectional elevations
- Full project with all details

In the end exam, which is a viva-voce the students have to present the entire semester work for assessment by the external jury.

Reference Books:

Karlen Mark, Space planning Basics, Van Nostrand Reinhold, New York, 1992.
Joseph D Chiara, Julius Panero, & Martin Zelnick, Time Saver standards for Interior Design & space planning, 2nd edition, Mc-Graw Hill professional, 2001.
Francis.D. Ching & Corky Bingelli, Interior Design Illustrared, 2nd edition, Wiley publishers, 2004.
Julius Panero & Martin Zelnick, Human Dimension & Interior Space : A source book of Design Reference standards, Watson – Guptill, 1979.
Maureen Mitton, Interior Design Visual Presentation: A Guide to Graphics, Models, and Presentation Techniques. John Wiley and Sons, 2003
Mark.W. Lin, Drawing and Designing with Confidence: A step-by-step guide, Wiley and Sons, 1993.
Robert Rengel, Shaping Interior Space, Fairchild Books & Visuals, 2002
Neufert Ernest, Architect's Data, Granada pub. Ltd. London, 2000.
Maryrose McGowan & Kelsey Kruse, Interior Graphic Standards, Wiley and sons, 2004.
Robert F. Erlandson, Universal and Accessible Design for Products, Services, and Processes, CRC; 1st edition, 2007.

BID502 WORKING DRAWINGS AND DETAILS

L/P Hrs:6/Wk	*Int: 50*	*End Exam:50*	*Total:100*	*Cr: 6*

Course overview:
The focus of the course is to impart skills related to the preparation of drawings meant for execution on the site.

Objectives of the course:
To impart training in the preparation of working drawings for interiors with specific reference to code of practice and incorporating specifications as complementary to the working drawings. Knowledge related to drawings being submitted to various Govt Depts in various regions of India & abroad.

Expected skills/ knowledge Transferred:

The course prepares students to generate Technical presentation of Design at built form level, finishing level, product and furniture level.

Course Contents:
Unit – I
Preparation of working drawings – Suitable scales of drawings, methods of giving dimensions and standards on plans, sections, elevations, details etc.

Unit – II
Preparation of plans – Architectural plans, furniture layout floor plans with clearances, different level floor plans, detailed floor plans of each room / space.

Unit – III
Elevations and Sections – Detailed sectional elevations of all the walls in the interior with all the required dimensions and specifications.

Unit - IV
Details of all services – layouts for flooring, ceiling, electrical, plumbing, lighting, fire fighting etc., toilet details, kitchen details, staircase details, furniture details, Interior finishing details, material, color and texture details, fixture and fixing and joinery details.

Unit – V
Specifications writing: Writing detailed clause by clause specifications for materials pre and post execution, mode of measurements, manufacturers details and specifications etc.

Unit – VI

Manufacturer's specifications – Database of manufacturers specifications for the following materials based on surveys

Glass, plywood and laminates, hardware, electrical, wiring, accessories, plumbing fitting and fixtures, flooring, cladding etc.,

Note : Students shall prepare at least 3 working drawing sets, 1 major for a large public space & 2 minor/time problem for a small residence / for a small office / retail store / small restaurant .

The sets of working drawings required shall be:

- All level plans
- 4 side aspects – room wise
- Detail of each item of furniture
- Electrical layout plan
- Sanitary layout plan,
- False ceiling plan
- Floor pattern, etc

One minor set of WD shall be submitted as manual drawings and the rest by Computer Aided Drawings.

In the end exam, which is a viva-voce the students have to present the entire semester work for assessment by the external jury.

Reference Books:

Leibing. W. Ralph, Architectural Working Drawings, 4th edition, John Wiley and sons, New York, 1999.

Macey. W. Frank, Specification in detail, 5th edition, Technical press ltd, London, 1955.

Shah, M.G.; and others, Building Drawing : An integrated approach to build environment, 3rd ed, Tata McGraw Hill Pub. Co. Ltd, New Delhi, 1996.

Fredd Stitt, Working Drawing Manual, McGraw-Hill Professional; 1st edition, 1998.

Kilmer, Working Drawings and Details for Interiors, John Wiley and Sons,

BID503 ENVIRONMENTAL CONTROL – II

L/P Hrs: 3/Wk	*Int: 50*	*End Exam:50*	*Total:100*	*Cr: 3*

Course overview:

The focus of the course is to impart scientific interior design in relation to Acoustics and thermal controls for human comfort in interior spaces.

Objectives of the course:
To equip the students with the basic understanding of tools for application of acoustical Design in interiors. To introduce them for planning for thermal comfort, and natural ventilation, familiarize them with the data, methods, principles, standards and tools for planning and designing for climatic comfort.

Expected skills/ knowledge Transferred:

- The knowledge of specific acoustic and air circulation requirements of different spaces.
- Skills to deal with acoustic and ventilation problems within buildings.
- Knowledge that enables to deal effectively with specialists and consultants in acoustics and thermal controls.

Course Contents:
Unit – I
Thermal comfort and heat flow: Thermal comfort factors, physiological and aspects.

- Body heat balance
- Physiological comfort - indoors,
- heat flow within buildings
- steady state conditions and periodic flow
- Thermal performance of indoor building elements.

Introduction to basics of:

- comfort diagrams
- thermal units
- theory of heat flow
- heat transmission
- thermal properties of materials

Unit –II
Wind Control : Orientation for Wind, path of wind – with special reference to the seasonal wind & prevailing wind pattern in India and its relation to a built space

Unit – III
Solar : Introduction to Passive solar heating & cooling (direct solar radiation, convective cooling, conductive cooling, evaporative cooling system)

Unit –IV
Need to study acoustics, methods used for good acoustics. Basic theory: Generation, propagation, transmission, reception of sound: Frequency, wave length and velocity of sound, sound intensity, inverse square law, and Decibel scale.

Room acoustics: Behavior of sound in enclosed spaces., Sound paths, effect of geometry and shapes, sound absorption, sound absorption coefficients, Sabine's formula, reverberation and resonant panels.

Unit – V

Sound : Human ear & its Loudness perception, subjective effects, Speech privacy and annoyance, background noise. Communication in open plans, electronic sound systems, P A system layout.

Unit –VI

Acoustic Design process in different types of buildings – auditoriums, concert halls, cinema halls, seminar rooms, lecture halls, classroom, open offices, open arena, stadium, function halls, etc

Unit – VII

Noise reduction, sound isolation, transmission loss. TL for walls, sound leaks in doors, noise reduction between rooms, construction details for noise reduction. Overview of Noise reduction from mechanical equipment & material like - Rubber mounts, etc, vibration isolation guidelines, noise in AC ducts, vibration isolation of pumps and generators.

Note: Detailed acoustic design and thermal comfort design should be done for any one type of building.

Reference Books:

Koeinsberger, O.H. and others, Manual of Tropical Housing and Building. Orient Longman, Chennai, 2003.
Konya Allan, Design for Hot Climates.
Kukreja. C.P. Tropical Architecture. Tata McGraw Hill Pub. Co. Ltd. New Delhi, 1978.
Markus, T.A and Morris. E.N. Buildings. Climate and Energy, Pitman Pub Ltd., London, 1980.
Poella . L. Leslie, Environmental Acoustics.
Moore J.E. , Design of good acoustics, The architectural press, London, 1961.
Burris, Harold, Acoustics for Architect.
Lord, Peter and Tempelton, Duncan, The Architecture of sound,. ; Designing places of Assembly , Architectural press ltd, London, 1986.
Egan David, Architectural acoustics, Mc-Graw Hill Book company, New york, 1988.
John.F. Pile, Interior Design, 2nd edition, illustrated, H.N.Abrams, 1995.

BID504 INTERIOR SERVICES

L/P Hrs: 3/Wk	*Int: 50*	*End Exam:50*	*Total:100*	*Cr: 3*

Course overview:
This course is intended for

- understanding the significance of design and functioning of water and sewerage systems as essential components in Interior Design
- understanding the electrical services and utilities generally installed and special types of services and facilities in the interiors and focusing on the principles as well as practical aspects and solutions

Objectives of the course:

- To expose the students to various ways to provide information on the principles of water supply and sanitation.
- To develop the understanding of layout, functioning and application of utilities and services in the interiors

Expected skills/ knowledge Transferred:

- To enable students to design sanitary and water supply systems in the interiors.
- To enable students to understand principles and installations of general and specialized services in the interiors.

Course Content:

Unit - I
General idea of sources of water supply. Standards for quality of water. Domestic water systems, suction and storage tanks and their capacity. Pipes and their sizes and jointing. Consumption of water. Down take supply to various fittings. Types of fittings like taps, ball valves, hot water supply systems, bathtubs, showers, jets, cocks, valves etc. Faucets for kitchens, bathrooms and toilets. Check valves, foot valves, sump pump check valves etc.

Unit – II
Basic principles of sanitations and disposal of waste materials from buildings. Connection to outdoor drainage system, size requirements, types of pipes available in the market. Water carriage systems, standard sanitary fittings, traps, pipes and their jointing. Flushing systems. Bathroom interior layouts, extensive market survey of products available, economies of products available, fixing of the products with other finishing materials.

Unit – III
Waste management : Refuse, different forms of refuse garbage, house refuse , refuse chutes etc.

Unit – IV
Electrical Installations : Building wiring system. Service wires, metering distribution boards, circuits, MCB cutouts. Conductors, wiring methods, switch boards, electrical devices in the buildings, light and power circuits. Indian electricity rules, relevant provisions of NBC. Preparation of electrical layout scheme for a interior using standard electrical symbols.

Unit – V
Heating Ventilation & Air Conditioning (HVAC) systems : Air conditioning, Mechanical ventilation – mechanical inlet and extraction systems. Functions of air conditioning, Principles of AC, capacity of AC, Types of AC systems – window AC, split, ductable, central AC and their details. Air distribution systems – ducts, air inlets.

Unit - VI
Fire – causes and spread of fire. Design considerations for fire safety, Devices for firefighting – portable, built in wet riser system, sprinkler system, fire hydrant. Class of fire and occupancy, study of fire regulations as per NBC

Unit – VII
Services for multi storied buildings - Vertical transportation systems – Introduction – lifts, escalators- vertical & horizontal, definition, location, arrangement, structure, drives, traffic analysis, supervisory control, remote monitoring.

Unit – VIII
Security and safety systems – introduction, designing a security system – burglar alarm, CCTV, central alarm systems, intrusion sensors and space sensors. Other services – cable TV, PABX, computer labs – access flooring, server rooms.

Unit – IX
Building automation and energy management – Introduction, History of development of BAS, typical BAS, criteria for choosing the right BAS, open system architecture. Information technology, communications & artificial intelligence in intelligent buildings. Design in computer age, engineering intelligence through nature.

Reference Books:
Hussain S.K, T.B of water supply and sanitary engineering, 3rd ed, Oxford and IBH pub. Ltd., New Delhi, 1994
Kshirsagar, S. R, Water supply engineering, 6th ed, Roorkee publications, 1980.

Rangwala, S.C. water supply and Sanitary Engineering : Environmental Engineering, 19th ed, Charotar pub house, Anand, 2004.
Electrical wiring and contracting (vol. 1 to vol.4), London. The New era Publishing Company.
Dr Frith Abnwos and others, Electrical Engineering hand book.
William . J. Guinness, Mechanical and Electrical Systems for Buildings, New York : Mc Graw Hill.
Faber, Oscar and Kell, J.R. Heating and Air conditioning of Building. Architectural Press, surrey, 1945.
Prasad Manohar, Refrigeration and air-conditioning. 5th ed, New Age Intl. pub, New Delhi, 1996.
Derek Clements-Croome, Derek J. Croome, Intelligent buildings: Design, Management and Operation, Thomas Telford Books, London, 2004.
Albert Ting-pat So, Wai Lok Chan, Intelligent Building Systems, Kluwer Academic Publishers, 1999.

BID505 SIGNAGE AND GRAPHICS

L/P Hrs: 3/Wk Int: 50 End Exam:50 Total:100 Cr: 3

Course Overview:
Graphics and Signage provides a framework for the development of a systematic, visually cohesive graphic communication system for a given site in the built environment. It sensitizes the students to visual aspects of way finding and shaping the idea of space.

Objectives of the Course:
To impart an understanding of the theory of signs and symbols, gestalt design theory, visual analogy, branding and branded environments and signage and way finding systems.

Expected Skills / Knowledge Transferred:
The course prepares ground for the student to gain an understanding into the practical design problems related to way finding and develop the skill to create various types of signage and wayfinding systems in the built environment.

Course Contents:

Unit – I
Introduction – environmental graphic Design, way finding, Need, importance etc.

Unit – II

Information content system – kinds of sign information, hierarchy of content, developing the sign information content, Navigation – message hierarchy and proximity, Other factors affecting sign information content, pictorial information content, signage master plans.

Unit – III

The Graphic system - Typography overview, choosing a typeface, typographic treatment, typographic considerations in signage for the unsighted and low sighted people, symbols and arrows, other graphic elements, color, layout, overview of signage graphic process.

Unit – IV

The hardware system – shape, connotations of form, sign mounting considerations, sign size considerations, sign lighting overview, sign materials overview, basic sign materials, electronic message displays, stock sign hardware systems, sign materials and codes, overview of coatings and finishes applied to signs.

Unit – V

Signage Design – Eyelevel, light, Fonts, typographical systems and type area, pictograms, arrows, color – contrast, language, systems, tones, Coding, privacy and protection, Room identification.

Unit – VI

Signage Planning – contract, obtaining information, preliminary design, design, construction, work plan and prototypes, tenders, specifications, on-site management, completion.

Unit – VII

Audio visual display – types, locations, types of electronic display, equipments, etc

Reference Books:

Joseph DeChiara, Julius Panero, and Martin Zelnik Time-Saver Standards for Interior Design and Space Planning, 2nd edition, Mc-Graw Hill Professional,2001.

Andreas Uebele, Signage Systems and Information Graphics , Thames and Hudson, 2007

Craig Berger, Wayfinding: Designing and Implementing Graphic Navigational Systems, Rotovision, 2009.

Chris Calori, Signage and Wayfinding Design: A Complete Guide to Creating Environmental Graphic Design Systems, Wiley and sons, 2007.

David Gibson, The Wayfinding Handbook: Information Design for Public Places, Princeton Architectural Press; 1st edition, 2009.

Rayan Abdullah and Roger Hubner, Pictograms, Icons and Signs, Thames and Hudson, illustrated edition, 2006.

BID506 INTEGRATED PROJECT WORK - II

L/P Hrs: 3/Wk	*Int: 100*	*End Exam:*	*Total:100*	*Cr: 3*

Course Overview:
The student will be required to produce a project feasibility report for the specific design undertaken in the design studio.

Objectives of the Course:
To sensitize the student to the technical and socio-economic feasibility of the design project.

Expected Skills / Knowledge Transferred:
Analyzing a design project for technical and socio-economic feasibility.

Course contents:
The student has to submit a project feasibility report on the project done in the design studio by integrating the knowledge and skills acquired from all the subjects studied till date.
The report may consist of the following -

- Environmental impact assessment of the project following the standards and specifications
- Socio-economic appraisal of the project and the design considering factors such as behavioral aspects, security considerations, costs for different user groups, aesthetic preferences etc.
- Technical feasibility – through execution and detailing of different spaces and elements of design, checking the feasibility of layout for service systems and specifications
- Costing of the project – bill of quantities, schedule of rates, specifications etc. economic viability and financial viability
- Space planning aspects/ issues – user activity spaces, access to physically challenged, fire safety, other services, green rating etc.
- ISO 9000:2001 TQM system

Note: The report shall be presented for internal assessment

Reference Books:

- M.P. Birkett, An appraisal of project work as an educational tool within interior design education at tertiary level and its relation to professional practice, Royal College of Art, 1985.
- Griff Boyle, Design Project Management, Ashgate Publishing; illustrated edition, 2003.

SIXTH SEMESTER

BID601 INTERIOR DESIGN STUDIO - IV

L/P Hrs: 12/Wk	*Int: 100*	*End Exam: 100*	*Total: 200*	*Cr: 12*

Course overview:
This course is intended to provide skills for designing larger scale institutional and commercial projects with emphasis on detailing, custom designs, specification writing etc.

Objectives of the course:
To develop skills for a comprehensive design approach and to integrate dimensions of functions to interior spaces and interior elements of space making.

Expected skills/ knowledge Transferred:
To develop the skill of design vocabulary, enhancement and sensitization of student in design preparation and its relation to tradition, culture, behavior patterns, use of space etc.

Course Contents:
The primary focus should be on –

- Interior Construction Detailing
- Way finding/signage and graphic identification
- Decorative Accessories
- Building Codes.
- Rendering (computer generated).
- Custom designed furniture and cabinetry
- Specification Writing
- Cost estimating / analysis
- Selection of sustainable/green materials

The list of suggested topics to be covered as design problems:

- Hospitality Design - of hotels, coffee house, restaurant, pub & bars, lounge bars, hookah bar, banquette halls, marriage venues
- Retail Design - Shopping malls, Fair grounds, etc
- Healthcare Design – hospitals, facility for the mentally challenged, poly clinic, multi-specialty nursing homes, crèches, etc.
- Office systems
- Urban Interiors –Town squares, wedding venues, sports arena, jails, borstals, correctional centres, etc

- Educational institutes – kindergartens, schools, colleges, schools for special children – unsighted, spastics, etc, school for performing arts, fashion design institute, etc.
- Interior Ports – air ports, Bus stops, Railway stations,
- Exhibition displays – urban level and National level.
- Mobile units – buses, cars, railway coaches, boats, metro rail, etc.
- Aquatic interiors

Note: One major design in detail and 3 minor design/time problems should be given.

Reference Books:

Karlen Mark, Space planning Basics, Van Nostrand Reinhold, New York, 1992.
Joseph D Chiara, Julius Panero, & Martin Zelnick, Time Saver standards for Interior Design & space planning, 2nd edition, Mc-Graw Hill professional, 2001.Francis.D. Ching & Corky Bingelli, Interior Design Illustrared, 2nd edition, Wiley publishers, 2004.
Julius Panero & Martin Zelnick, Human Dimension & Interior Space : A source book of Design Reference standards, Watson – Guptill, 1979.
Maureen Mitton, Interior Design Visual Presentation: A Guide to Graphics, Models, and Presentation Techniques. John Wiley and Sons, 2003
Mark.W. Lin, Drawing and Designing with Confidence: A step-by-step guide, Wiley and Sons, 1993.
Robert Rengel, Shaping Interior Space, Fairchild Books & Visuals, 2002
Neufert Ernest, Architect's Data, Granada pub. Ltd. London, 2000.
Maryrose McGowan & Kelsey Kruse, Interior Graphic Standards, Wiley and sons, 2004.
Mary Jo Peterson, Universal Kitchen and Bathroom Planning: Design That Adapts to People, McGraw-Hill Professional Publishing, 1998.
David Kent Ballast, Interior Construction & Detailing for Designers and Architects, Professional Publications, Inc.; Fourth Edition, 2007.

BID602 SEMINAR

L/P Hrs: 6/Wk	*Int: 100*	*End Exam:*	*Total:100*	*Cr: 6*

Course Overview:
The course provides a research orientation to the subjects related to interior design.

Objectives of the course:
To develop the capacity of students to undertake research of subjects related to interior design.

Expected Skills / Knowledge Transferred:
To present seminars supported by graphical presentation and documentation of research done.

Course Contents:
Some of the possible topics are –

- History of Interior design
- Theory of Interior space
- Interior Design language of various cultures
- Art and craft form and its relevance in interior spaces.
- Mass production of various interior elements
- Material techniques search to evolve alternatives
- Graphics and space transformation
- Color and light interaction to change space
- Eco friendly materials
- User participation in Design
- Relation of an interior designer with other consultants.

Note: Each student is required to select one of the above topics and present a written paper and a seminar. This should be supported by literature reviews, case studies, interviews, market surveys, if applicable.

BID603 INTERIOR LANDSCAPE

L/P Hrs: 3/Wk	*Int: 50*	*End Exam:50*	*Total:100*	*Cr: 3*

Course overview:
This course introduces students to the knowledge of landscaping design parameters, landscape elements, plant materials etc. to use in the interiors effectively for aesthetic enhancement and visual comfort.

Objectives of the course:

- To develop a conceptual understanding of landscaping design parameters for various built forms.
- To develop skills in integrating landscape design with built environments.

Expected skills/ knowledge Transferred:
To develop the skill of using and integrating landscape elements and plant materials to transform different interior spaces through interior landscaping.

Course Content:
Unit – I
Introduction to landscape architecture. And role of landscaping design in the built environment. Types of natural elements – stones, rocks, pebbles, water forms, plants and vegetation. Elements of interior landscape.

Unit – II
Introduction to study of plants in relation to landscape design and interiors. Types of indoor plants, plant characteristics: i.e., biology, soil, moisture, light nutrient, atmospheric conditions, growing medium, pests & diseases. Botanical nomenclature, anatomy and physiology of plant growth. Indoor plants in Indian context. Market survey and costs.

Unit – III
Design with plants – Basic principles of designs. The physical attribute of plants and relation to design. Appearance, functional and visual effects of plants in landscape design and built environment**.** Selection and management of plant material in relation to the built environment. Design concepts related to use of sculpture , lightings, garden furniture , architectural feature and grouping them into meaningful composition s for visual and functional effects.

Unit – IV
Landscaping design parameters for various types of built forms- indoor and outdoor linkage to spaces. Landscaping of courtyards- residential and commercial forms. Indoor plants and their visual characteristics- color, texture, foliage. Science of maintaining and growing greenery. Flowers- its colors, texture and its visual perception in various indoor spaces and science of flower arrangement. Automatic irrigation costing and installation of micro irrigation systems.

Reference Books :

Laurie, Michael, An Introduction to Landscape. 2nd edition, Prentice Hall, New Jersey, 1986.
Trivedi. P.Prathiba. Beautiful Shrubs. Indian council of Agricultural Research. New Delhi, 1990.
Hacheat, Blan. Plant Design.
Gerald Robert Vizenor , A Guide to Interior Landscapes, Univ of Minnesota Press, 1990.
Nelson Hammer and Mel Green, Interior Landscape Design, Mc Graw Hill, 1991.

BID604 PROFESSIONAL PRACTICE

L/P Hrs: 3/Wk	*Int: 50*	*End Exam:50*	*Total:100*	*Cr: 3*

Course overview:
This course provides an overview of rules and regulations in Interior Design practice.

Objectives of the course:
To impart awareness and technicalities of code of conduct in professional practice as per the Institute of Indian Interior Designers.

Expected skills/ knowledge Transferred:
Legal, technical and financial aspects of Interior Design practice and management skills for professional practice.

Course Content:

Unit – I
Role of Interior Designer in society: Interior Design Profession as compared to other professions. Difference between profession and business. IIID and other organizations related to interior design profession.
Interior Designers approach to works, ways of getting works: types of works, works partly executed by other Interior Designers: various precautions to be taken before taking up the work, conditions of engagement between interior Designer and client: commencement of work.

Unit – II

Interior Designer's duties : drawings to be prepared : Interior Designer's relation with other parties connected with works such as client, contractor, sub contractors, consultants and authorities. IIID Code of professional conduct: scale of charges. Inspection of work, certificate of payment to contractor.
Preliminary knowledge of Consumer protection Act and other related acts on Interior Designers

Unit – III
Issues of professional practice: Professional behavior, Ethics, Types of clients, Career opportunities, styles of interior design practice, relationship between client and professional, type of fees, process of fees negotiations, billing methods, tax liabilities – Service Tax, Professional tax, VAT, duties,

Unit – IV
Contracts, Tenders, Arbitration: as defined in terms of Interior Design field and current day context. Work contracts – types of contracts – item rate, labour, lumpsum, cost plus percentage etc.

Clerk of work and his duties, bill of quantities, schedule of rates, tenders, public, limited and negotiated tender documents and allied formalities.

Unit – V
Types of offices for interior design practice: staff structure, filing of records, correspondence and drawings, maintenance of accounts, pres entations in meetings, recording minutes of meeting.

Note : a report to be prepared by each student after visiting an interior designer's office.

Knowledge of role of consultants and coordination between different consultants on a big project.

Reference Books:.

Indian Institute of Architects. H.B. Professional Practice , The Architects pub. Bombay.
Namavati. H. Roshan. Professional Practice. 8th ed, Lakshani Book Depot, Bombay, 2001.
Christine .M. Piotrowski , Professional practice for Interior Designers, 3rd edition, Wiley and sons, 2001.
Cindy Coleman,Interior Design Handbook practice, Mc Graw Hill professional, ist ed, 2001
Ronald Veitch, Professional practice for Interior Designers, Penguins Publishers, Limited, 1987.

BID605 PSYCHOLOGY OF SPACE AND BEHAVIORAL SCIENCE

L/P Hrs: 3/Wk	*Int: 50*	*End Exam:50*	*Total:100*	*Cr: 3*

Course overview:
This course provides an overview of the relationship between man and space and behavior patterns of human beings in space planning.

Objectives of the course:
To acquire the knowledge to design a space for the user based on his perception and behavior to the space.

Expected skills/ knowledge Transferred:
Integration of psychology and user behavior in space planning.

Course content:
Unit – I
Perception of space through understanding associative aspects relating to space. Understanding cognitive theories and Gestalt principles of psychology related in the field of space making to develop an understanding of place making.

Unit – II
Relationship of spatial elements like floor, column, wall, window, door, stair, roof, light, color, textures to the psychology and perception of space.

Unit – III
Kinesthetic – Understanding perception while in movement and space organization around such a phenomena.

Unit – IV
Analysis of human mind and his/her image of the world - social behavior patterns, traditional thinking and behavior and reflection of social world into physical environment. Perception of our society and culture – scientific knowledge of what is sociology, anthropology, culture etc. Major role of these aspects in Interior Design and how they create design bound dimensions.

Unit – V

Various human elements of society – modernization and change in society, change in thought process and behavior patterns. Role of communication media in change patterns. Behavior patterns and its correlation to design elements. Perception of Indian value systems and assimilation of 'East & West'.

Unit - VI
Human being and his behavior in various public and private areas – change of patterns in various cultures. Human behavior in a group. Activities and its relationship with grouping of people

Assignment : Conceptual Space planning for public areas - restaurant, café, theatre lounge, waiting rooms, hotel foyer etc based on analysis of human behavior and perception of space.

Reference Books:

Bryan Lawson, Language of Space, Architectural Press, 2001.
Yi- Fu Tuan, Steven Hoelscher, Space and Place : The perspective of experience, University of Minnesota Press, 2001.
Setha . M. Low, Denise Lawrence – Zunigias, Anthropology of Space and place : Locating Culture, Wiley – Blackwell publishers, 2003.
Irwin Altman & Erwin . H. Zube, Public spaces and places, (Human Behavior and environment), Springer link, 1989.
Roger Downs, David Stea, Kenneth . E. Boulding, Image and environment, Transaction Publishers, 2005.

BID606 INTEGRATED PROJECT WORK - III

L/P Hrs: 3/Wk	*Int: 100*	*End Exam:*	*Total:100*	*Cr: 3*

Course Overview:
The student will be required to produce a project feasibility report for the specific design undertaken in the design studio.

Objectives of the Course:
To sensitize the student to the technical and socio-economic feasibility of the design project.

Expected Skills / Knowledge Transferred:
Analyzing a design project for technical and socio-economic feasibility.

Course contents:
The student has to submit a project feasibility report on the project done in the design studio by integrating the knowledge and skills acquired from all the subjects studied till date.

The report may consist of the following -

- Environmental impact assessment of the project following the standards and specifications
- Socio-economic appraisal of the project and the design considering factors such as behavioral aspects, security considerations, costs for different user groups, aesthetic preferences etc.
- Technical feasibility – through execution and detailing of different spaces and elements of design, checking the feasibility of layout for service systems and specifications
- Costing of the project – bill of quantities, schedule of rates, specifications etc. economic viability and financial viability

- Space planning aspects/ issues – user activity spaces, access to physically challenged, fire safety, other services, green rating etc.

Note : The report shall be presented for internal assessment

Reference Books:

M.P. Birkett, An appraisal of project work as an educational tool within interior design education at tertiary level and its relation to professional practice, Royal College of Art, 1985.
Griff Boyle, Design Project Management, Ashgate Publishing; illustrated edition, 2003.

SEVENTH SEMESTER

BID701 INTERIM TRAINING

L/P Hrs: /Wk	*Int:100*	*End Exam:*	*Total: 100*	*Cr: 4*

Course Overview:
Internship for a period of 4 weeks at the end of sixth semester with carpenters, artisans, fabricators, interior furnishers, painters, plumbers, electricians and flooring layers and false ceiling, lighting, Acoustics, Air conditioning, Fire safety and security system consultants.

Objectives of the course:
To observe, document and work with hand to gain experience of materials, tools, technology, process and management and understand the integration among all the consultants involved in the field of interior design.

Expected Skills / Knowledge Transferred:
The skills required for an interior designer to grow into a complete professional.

Course Contents:
Every student must work with carpenters, artisans, fabricators, interior furnishers, painters, plumbers, electricians and flooring layers and false ceiling, lighting, Acoustics, Air conditioning, Fire safety and security system consultants involved in the project. Eight weeks can be split for working with different people accordingly, after identification of the consultants and discussion with the concerned faculty. The student should involve in the work of these people and observe and document the materials, tools, techniques and process used by them in

the projects. They should understand the coordination of the work of the consultants in the project.
After the summer vacation, every student will have to submit a detailed report with drawings, photographs of the work in which the student was involved with the consultants. After submission of the report the department at its convenience will arrange for the conduct of the viva- voce examination.

BID702 REVITALISATION OF ARTS & CRAFTS

L/P Hrs: 6/Wk	*Int: 50*	*End Exam: 50*	*Total: 100*	*Cr: 6*

Course Overview:
The course provides an understanding of the role of revitalization of Art/craft form in interior spaces.

Objectives of the course:

- Understanding of Art/craft forms as design elements and its relevant application in the modern society.
- Modernization of old craft technology for better forms for interior use.

Expected Skills / Knowledge Transferred:
Dexterity; knowledge of materials, process, technology and products of craft forms- production of craft forms and technology.

Course Content:
Identification of private and public craft activity around the nation – various crafts and its perception in the society - design issues in transforming old craft forms into modern context by keeping its original spirits.

Assignment: Select one of the art/ craft form with the consultation of the faculty. Visit to the craft pockets. Document people, life, culture and craft and understand the materials, tools, technology, processes and forms. Suggest suitable changes in technology to improve the products so as to make it acceptable in today's context. Design and produce a product related to interiors in contemporary design.

Note: The work will be periodically reviewed. The study has to be presented in the form of a report with illustrations and photographs, as a seminar for final assessment, along with the final product to the external jury.

BID703 DESIGN THESIS

L/P Hrs: 20/Wk	*Int:200*	*End Exam: 200*	*Total: 400*	*Cr: 20*

Course Overview:
Thesis should reflect the knowledge gained from all the courses undertaken by the student in all the previous semesters.

Objectives of the course:
To develop assimilation, synthesis and application of research in Interior Design.

Expected Skills / Knowledge Transferred:
Student should be in a position to comprehend the design philosophy, theories, data analysis and application in a chosen area of study.

Course Contents:
Each student is expected to prepare a design thesis based on the preliminary work undertaken in the Interior design studio under an approved guide.
Thesis should reflect the knowledge gained from all the courses undertaken by the student in all the previous semesters.
The particulars of the schedule, content, presentation, format etc is to be decided by the department from time to time and shall be strictly followed.

At the end of the semester a student shall be expected to submit original drawings, theory content, analysis, etc prepared as per the department specifications. Three copies of the report in the specified format should be submitted to the department after the approval of the respective guides for final viva-voce to the external examiner in the documented format.

The department shall schedule the viva voce at its convenience only after the receipt of the thesis by the guide. The performance sheet submitted by the guide and thesis committee should be the basis for allowing the student to appear for the final viva voce.

The final viva-voce shall be conducted by a jury comprising of an external examiner, guide and head of the department or his nominee.

EIGHTH SEMESTER

BID801 PRACTICAL TRAINING

L/P Hrs: 48/Wk	*Int:*	*End Exam: 200*	*Total: 200*	*Cr: 30*

Course Overview:
Internship for a period of not less than 20 weeks or 120 days.

Objectives of the course:
To provide experience in Interior Design.

Expected Skills / Knowledge Transferred:
The skills required for an interior designer to grow into a complete professional.

Course contents:
Every student shall work in an interior designer's office as a full time trainee for a period of 20 calendar weeks (excluding viva – voce) from the date of commencement of training. The chief Interior Designer in the firm should preferably be an architect, having a minimum of 10 - 15 years of practical/ professional experience after his /her graduation and should be an associated member of IIID.
The student should involve herself /himself in various aspects of work in an office like working drawings, presentation drawings, quantity estimation, site supervision etc. Students should understand professional practice methods of various interior designers, design process from client contacts to production documents, tender documents, production drawings for various works, site supervision etc. for various types of works. They should also learn the Coordination of various agencies – client, members of design team, consultants, contractors, craftsmen and construction supervisors.

Detailed instructions regarding the training, the frequency of reporting to the department etc shall be issued at the end of Seventh semester, which the student shall strictly follow.

After completion of the practical training, every student will have to submit a detailed report with a set of drawings on at least two projects in which he / she has worked during the hundred and twenty calendar days of the practical training period. This report will be evaluated at viva – voce by a jury consisting of one external, one internal and head of the department or his nominee. After submission of the report the department at its convenience will arrange for the conduct of the viva – voce examination.

There is one fundamental fact about lighting: Where there is no light, there is no beauty.

Billy Baldwin, Ruby Ross Wood

The Drab Age is over. Color is coming into its own again. Until very recently people were literally scared out of their wits by color. Perhaps this was a hangover from our Puritan ancestors. But whatever the reason, brown, grays and neutrals were the only shades considered Osafe.O Now we know that lovely, clear colors have a vital effect on our mental happiness. Modern doctors and psychiatrists are convinced of this!

Never look back, except for an occasional glance, look ahead and plan for the future. Success is not built on past laurels, but rather on a continuous activity. Keep busy searching out new ideas and, experimentally, keep ahead of the times, or at least up with them.

Dorothy Draper

WeOre all collectors by nature. But if youOre talking about an orderly life, there has to be a stop sign somewhere. Building a collection requires a strong constitution and the ability to resist.

Albert Hadley

Do not be afraid of large patterns, if properly designed they are more restful to the eye than small ones: on the whole, a pattern where the structure is large and the details much broken up is the most useful...very small rooms, as well as very large ones, look better ornamented with large patterns.

William Morris

B.TECH (FACILITIES & SERVICES PLANNING)
COURSE OUACADEMIC REGULATIONS,
COURSE STRUCTURE AND SYLLABUS
(Effective from the Academic year 2011-12)

COURSE OUTLINE

FACILITIES & SERVICES PLANNING

JNAFAU

School of Planning and Architecture

Mahavir Marg,Masab Tank, Hyderabad-500028, A.P, India

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JAWAHARLAL NEHRU ARCHITECTURE AND FINE ARTS UNIVERSITY

Mahavir Marg, Hyderabad - 500 028.

(As Approved by the Board of Studies on 30-06-2011)

Academic Regulations for B. Tech (Facilities and Services Planning)
(Effective *for all the students* from the Academic Year 2011-12)

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1. Award of the B. Tech (Facilities and Services Planning) Degree:

A student will be declared eligible for the award of the "B. Tech (Facilities and Services Planning)" Degree if he fulfills the following academic regulations:

i. He has to pursue a course of study for not less than four academic years and not more than eight academic years.

ii. B. Tech. Facilities and Services Planning is a four year Course and is offered in Semester pattern.

iii. The orientation of each semester is prescribed in the course structure shall be accordingly followed.

iv. He has registered for and studied all the subjects for a total of 240 credits and secured all the 240 credits.

v. Students, who fail to fulfill all the Academic requirements for the Award of the Degree within eight academic years from the year of their admission, shall forfeit their admission in the said course and their seat shall stand cancelled.

2. Courses of Study:

The Subjects offered are prescribed in the Course Structure.

3. Minimum Instruction days:

There shall be a minimum of 90 instruction days for each semester as per UGC Norms excluding the examination and miscellaneous days.

Practical training in the 8th semester shall be for the duration of ten calendar weeks respectively from the date of

commencement of actual training including summer vacation and excluding the Viva voce examination.

4. Attendance requirements:

i. A student has to put in a minimum of 75% of the attendance in aggregate of all subjects for becoming eligible to register for the end semester examinations and for acquiring credits in each semester.

ii. Condonation of shortage of average attendance up to 10% (i.e. between 75% to 65%) in each semester may be granted by the College Academic Committee (CAC) on genuine and valid grounds with supporting evidence.

iii. A stipulated fee shall be payable towards condonation of shortage of attendance.

iv. Shortage of aggregate attendance below 65% shall in no case be condoned.

v. Students detained for shortage of attendance are not eligible to take the end semester examinations. They will have to seek re-admission for that semester or repeat the semester when next available /offered.

5. Weight age and Distribution of the marks:

i. The performance of the student in each semester shall be evaluated Subject-wise as per the course structure given ahead.

ii. The distribution of marks for the all subjects in general shall be as follows;
50% Internal Evaluation and 50% for External Evaluation (End Examination) except other-wise specified.

iii. The performance of the student in each semester shall be evaluated subject -wise with a maximum of 200 marks in Graphics, Facilities Planning Studio and 100 marks in other subjects and practicals. The Planning project in the eighth semester shall be evaluated for 300 marks.

6. Evaluation

i. The performance of each student enrolled in a course will be assessed in the form of Continuous assessment (internal) and End Semester Examination in a ratio of 50:50.

ii. The mode of continuous assessment will be decided by the respective teacher /department concerned.

iii. Internal Evaluation for all studios shall be of continuous evaluation with two (2) or more examiners assessing the student's works periodically.

iv. The evaluation for the subjects Introduction to Communication skills, Seminar, Workshop shall be 100 % Internal Evaluation.

7. Revaluation for External Examination:

No request for re evaluation after the result declared in any course will be entertained.

8. Valuation for Internal Assessment Marks

No request for re-evaluation of the internal marks after the results are declared in any course will be entertained.

9. Evaluation of Project.

Students are required to present an open seminar/Viva-voce on the Project work. The Internal Assessment for 50% of the total marks should be done on a periodic basis by the guide and two or more internal examiners as decided by the department.

Out of a total of 300 marks for the project work in the eighth semester, 150 marks shall be for Internal Evaluation and 150 marks for the End Evaluation, which shall be an external jury and viva- voce. The End Evaluation shall be conducted by a board of examiners consisting of the thesis coordinator/ Head of the Department or their nominee and an external examiner.

For the External Evaluation, one Internal Examiner should award 25% of the prescribed marks and 75% marks should be assessed by the appointed External Examiner.

10. Evaluation of Practical Lab/Practical Training

i. For the internal Examination of the Lab/Practical Lab work of the students will be evaluated in phases viz., periodic and final. Each phase of the assessment will carry proportionate percentage of the prescribed marks.

ii. For External evaluation for Practical Lab, there would be a practical exam and External jury and Viva-Voce.

iii. The End Evaluation for Practical Training shall be by external Jury and will be a Viva-voce for 100 marks.

Minimum Academic Requirements (Promotion criteria & Re- registration).

The following academic requirements have to be satisfied in addition to the attendance requirements mentioned in item No.4:

i. A student shall be deemed to have satisfied the minimum academic requirements in each subject or project if he secures not less than 45% of marks in the End Evaluation and a minimum of 50 % of marks in the sum total of the internal evaluation and End Evaluation taken together.

ii. The candidate will be promoted from 3rd year to 4th year only if he/she has no backlogs of 1st year.

iii. A student who fails to fulfill the minimum academic requirements in any subject and secures less than 50% of marks in the internal evaluation, may be permitted the option of re-registering in that subject, which will enable him to improve and resubmit the work for internal evaluation

iv. In such cases of re-registration, the student's previous performance both in the internal evaluation and end evaluation for the particular subject/s shall stand cancelled and he shall be required to appear for his end evaluation (end examination or external jury as the case may be), again. The candidate who has re-registered and has already put in the requisite attendance in the course need not attend the classes once again.

v. However, such re-registration shall be subject to a limit of only three theory subjects or two theory subjects and one studio/seminar/practical subject at any given time. Re-registration of any course should be done within 15 days from the date of commencement of class work. A stipulated fee shall be payable towards re-registration for each subject re registered.

vi. Transfer of candidate from one course to another shall not be permitted, due to legal and administrative constraints.

Supplementary Examinations

1. To enable the students to satisfy the academic requirements, the supplementary examinations shall be arranged at the end of each semester.

2. A candidate who has backlogs can appear either at the regular or supplementary examinations.

11. Withholding of the results:

The results of a student are withheld if:

i. He has not cleared any dues to the Institution/Hostel.

ii. A case of disciplinary action is pending against him.

12. Award of Class:

After a student has satisfied the requirements prescribed for the completion of the program is eligible for the award of the B.Tech. (Facilities and Services Planning) Degree he shall be placed in one of the following three classes:

First Class with Distinction	70% and above	From the aggregate marks secured for 240 credits/in the whole program
First Class	Below 70% but not less than 60%	
Second Class	Below 60% but not less than 50%	

13. General:

i. The academic regulations should be read as a whole for the purpose of any interpretation.

ii. The marks in internal evaluation and end examination

shall be shown separately in the marks memo.

iii. Students who have completed the course duration or have not registered for any regular semester and wish to re-register for more than the stipulated limit of the courses, can do so by appealing to the Vice-Chancellor, who may permit the judicious number of subjects in which the candidate can re-register at a given time on case to case basis to enable him to earn the degree.

iv. Candidates who have not been able to complete the course on any genuine reason even after the stipulated time, (twice the time period of the duration of the course), may also secure one more chance (special permission) from the Vice-Chancellor for course completion.

v. In case of any doubt or ambiguity in the interpretation of the academic regulations, the decision of the Vice-Chancellor is final.

vi. The University may change or amend the academic regulations or syllabi at any time and the change or amendments made shall be applicable to all the students with effect from the dates notified by the University.

vii. Where the words "he", "him", "his", occur in the regulations, they include "she", “her", "hers".

viii. A good understanding of the academic regulations and a strict adherence to the proposed schedules will enable the students to complete the B.Tech.Facilities and Services Planning programme successfully within the stipulated time.

Jawaharlal Nehru Architecture And Fine Arts University

Mahaveer Marg, Hyderabad - 500 028.

(Approved by the Board of Studies on 20th February 2009)

Course Structure

FACILITIES & SERVICES PLANNING

(Bachelor of Technology)

(Effective *for all the students* from the Academic Year 2008-09)

FIRST SEMESTER

Course No.	Course Title	L/ Stp /wk	Marks			Credits
			Int	End	Total	
FSP101	Graphics and Presentation Techniques -1	12	100	100*	200	8
FSP102	Introduction to facilities Planning	4	50	50	100	4
FSP103	Engineering Mathematics	4	50	50	100	4
FSP104	Engineering Physics	4	50	50	100	4
FSP105	Engineering Chemistry	4	50	50	100	4
FSP106	Computer Applications	4	50	50**	100	3
FSP107	Introduction to Communication skills	3	100	0	100	3
		35	450	350	800	30

Note: * 100 marks for External Jury and Viva-voce.
** End Examination shall be a practical exam with Viva-voce.

SECOND SEMESTER

Course No.	*Course Title*	*L/ Stp/ wk*	*Marks*			*Credits*
			Int	End	Total	
FSP201	Graphics and Presentation techniques –II	12	100	100*	200	8
FSP202	Materials & Construction Technologies	4	50	50	100	4
FSP203	Quantitative Methods	4	50	50	100	4
FSP204	Elements of geology and settlement geography	4	50	50	100	4
FSP205	Climatology for built Environment	4	50	50	100	4
FSP206	Computer Programming	4	50	50**	100	3
FSP207	Workshop (Building Trades)	3	100	0	100	3
		35	450	350	800	30

Note: * 100 marks for External Jury and Viva-voce.
** End Examination shall be a practical exam with Viva-voce.

THIRD SEMESTER

Course No.	*Course Title*	*L/ Stp/ wk*	*Marks*			*Credits*
			Int.	End	Total	
FSP301	Facilities Planning Studio- I	12	100	100*	200	8
FSP302	Mathematical Methods	4	50	50	100	4
FSP303	Basics of Electrical Engineering	4	50	50	100	4
FSP304	Thermodynamics	4	50	50	100	4
FSP305	Fluid Mechanics & Hydraulics	4	50	50	100	4
FSP306	Structural Systems	3	50	50	100	3
FSP307	CAD & Fundamentals of 3D Modelling	4	50	50**	100	3
		35	400	400	800	30

Note: * 100 marks for External Jury and Viva-voce
** End Examination shall be a practical exam with Viva-voce.

FOURTH SEMESTER

Course No.	*Course Title*	*L/ Stp/ wk*	*Marks*			*Credits*
			Int	End	Total	
FSP401	Facilities Planning Studio - II	12	100	100*	200	8
FSP402	Environmental Studies	4	50	50	100	4
FSP403	Electrical systems	4	50	50	100	3
FSP404	HVAC Systems	4	50	50	100	4
FSP405	Water supply systems	4	50	50	100	4
FSP406	Economics & Sociology	4	50	50	100	4
FSP407	GIS	3	50	50**	100	3
		35	450	350	800	30

Note: * 100 marks for External Jury and Viva-voce.
** End Examination shall be a practical exam with Viva-voce.

FIFTH SEMESTER

Course No.	*Course Title*	*L/ Stp/ wk*	*Marks*			*Credits*
			Int	End	Total	
FSP501	Facilities Planning Studio-III	12	100	100*	200	8
FSP502	Safety, Health & Environment Management	4	50	50	100	3
FSP503	Illumination Engineering	4	50	50	100	4
FSP504	Building Automation & Controls	4	50	50	100	4
FSP505	Waste Water systems	4	50	50	100	4
FSP506	Human Behaviour Aspects in Facilities Planning	4	50	50	100	3
FSP507	Workshop(MEP)	3	50	50**	100	4
		35	400	400	800	30

Note: * 100 marks for External Jury and Viva-voce.
** End Examination shall be a practical exam with Viva-voce.

SIXTH SEMESTER

Course No.	*Course Title*	*L/ Stp /w k*	*Marks*			*Credits*
			Int	End	Total	
FSP601	Facilities Planning Studio-IV	12	100	100*	200	8
FSP602	Contract and procurement management	4	50	50	100	4
FSP603	Traffic & Transportation systems	4	50	50	100	4
FSP604	Fire Engineering and Science.	4	50	50	100	4
FSP605	Operation & maintainability of facilities	4	50	50	100	4
FSP606	Management Science	3	50	50	100	3
FSP607	Building Information Modeling (BIM)	4	50	50**	100	3
		35	400	400	800	30

Note: * 100 marks for External Jury and Viva-voce.
** End Examination shall be a practical exam with Viva-voce.

SEVENTH SEMESTER

Course No.	*Course Title*	*L/ Stp/ wk*	*Marks*			*Credits*
			Int	End	Total	
FSP701	Facilities Planning Studio-V	12	100	100*	200	8
FSP702	Energy Management & green buildings	4	50	50	100	4
FSP703	Finance for Facilities & Services Planning	4	50	50	100	4
FSP704	Planning for Disaster Management	4	50	50	100	4
FSP705	Advanced services and Intelligent facilities	4	50	50	100	4
FSP706	Computer Applications in MEP	4	50	50	100	3
FSP707	Facilities Planning & Development Seminar	3	100	0	100	3
		35	450	350	800	30

Note: * 100 marks for External Jury and Viva-voce.
** End Examination shall be a practical exam with Viva-voce.

EIGHTH SEMESTER

Course No.	*Course Title*	*L/ Stp/ wk*	*Marks*			*Credits*
			Int.	End	Total	
FSP801	Project	30	150	150*	300	15
FSP802	Seminar/Paper (Philosophy)	5	100	0	100	5
FSP803	Practical training	-	0	100**	100	10
		35	250	250	500	30

Note: * 150 marks for External Jury and Viva-voce.
** End Examination shall be a Jury and Viva-voce.

FIRST SEMESTER

FSP101 GRAPHICS AND PRESENTATION TECHNIQUES I

L/s: 12/Wk	*Int: 100*	*End Exam:100*	*Total: 200*	*End Exam: Viva-voce*	*Cr: 8*

Course Overview:
The course introduces the fundamental techniques of architectural drawing and develops the appropriate skills for visualization and representation**.**

Objectives of the Course:
To introduce architectural drawing techniques and to facilitate effective visual communication

Expected Skills / Knowledge Transferred: *Freehand, scale drawing, conventional architectural representations in drawings and graphics.*

Course Contents:

UNIT I

Fundamentals of drawing and its practice
Introduction to drawing equipment, familiarization, use and handling simple exercises in drafting, points, types of lines, line thickness and intensities, polygons, texture, colour and tone in materials.

UNIT II
Concepts of Scales & Proportions**Graphic and numerical scales, dimensioning of lines and planes, enlargement and reduction of drawings, anthropometrics and the scale of man to function, lettering for titles and annotations, freehand lettering, measuring and drawing to scale different objects, rooms etc.**

UNIT III

Freehand Drawing & Rendering Techniques

Graphical representations of trees, hedges, foliage, vehicles, human figures etc in pen and ink, observation recordings through different mediums, still life drawings of simple objects, study of rendering

techniques and media, shades and shading techniques, sketching exercises.

UNIT IV

Architectural Symbols

Representation of building elements, openings, materials, accessories etc., terminology and abbreviations used in architectural presentation.

UNIT V

Measuring and Drawing to Scale: Scales and construction of scales, simple objects, furniture, rooms, doors and windows etc., in plan, elevation and section.

Note: This is a studio subject and students should be made to prepare construction drawings as studio exercises along with the theoretical inputs. The studio work should be supplemented with appropriate side visits.

Reference books:

1. Moris, I.H. Geometrical Drawing for Art Students.
2. Thoms, E. French. Graphic Science and Design, New York: MC Graw Hill.
3. Nichols, T.B. and Keep, Norman. Geometry of Construction, 3rd ed. Cleaver – Hume Press Ltd., London, 1959.
4. Bhatt, N.D. and Panchal V.M. Engineering Drawing: Plane and Solid Geometry, 42nd ed. Charotar Pub., Anand, 2000.
5. Gill, P.S. T.B. of Geometrical Drawing, 3rd ed. Dewan Suhil Kumar Kataria, Ludhiana, 1986.
6. Shah, M.G., Kale, C.M. and Patki, S.Y. Building Drawing: with an integrated approach to built environment, 7th ed. Tata McGraw Hill Pub., Delhi, 2000.
7. Bies, D. John. Architectural Drafting: Structure and Environment. Bobbs – Merrill Educational Pub., Indianapolis.
8. Nelson, A. John. H.B. of Architectural and Civil Drafting, Van Nostrand Reinhold, New York, 1983.

FSP 102 INTRODUCTION TO FACILITIES PLANNING

L/s: 4/Wk	*Int: 50*	*End Exam:50*	*Total: 100*	*End Exam: 3 hrs*	*Cr: 4*

Course Overview:
The course introduces the fundamentals of Facilities and Services Planning and space planning**.**

Course Contents:

UNIT I
Introduction to Facilities Planning
Define facilities; Defining facilities planning; significance of facilities planning; objectives of facilities planning; fundamental principles of facilities planning; facilities planning process; strategic facilities planning; developing facilities planning strategies.

UNIT II
Facilities Planning and Maintenance Cycle
An introduction to basic methods, concepts and procedures of facility planning: programming, budgeting, project management, office productivity measurements, and operations & management.

UNIT III
Facilities Management
Defining Facilities management; facility management as an emerging discipline; Modern trends in Facility management; Scope of Facilities management. Importance of legal aspects in facilities management.

UNIT IV
Space Planning
Introduction to space planning concepts, buildings and business of the space, codes and regulatory uses, ergonomics, uses of ergonomics, furniture design management.

Reference books:
1. James. A. Tompskin, Facilities planning.
2. Frank Booty, Facilities Management Handbook
3. Rick Best, Workplace Strategies and facilities Management

FSP 103 ENGINEERING MATHEMATICS

L/s: 4/Wk	*Int: 50*	*End Exam: 50*	*Total: 100*	*End Exam: 3 hrs*	*Cr: 4*

Course Contents:

UNIT I
Differential equations of first order and first degree - exact, linear and Bernoulli.

UNIT II
Non-homogeneous linear differential equations of second and higher order with constant coefficients with RHS term of the type e^{ax}, Sin ax, cos ax, polynomials in x, $e^{ax}V(x)$, $xV(x)$, method of variation of parameters.

UNIT III
Rolle's Theorem - Lagrange's Mean Value Theorem - Cauchy's mean value Theorem - (all theorems without proof)

UNIT IV
Radius, Centre and Circle of Curvature - Evolutes

UNIT V
Applications of integration to lengths, volumes and surface areas in Cartesian and polar coordinates

UNIT VI
Vector Calculus: Gradient- Divergence- Curl and their related properties of sums- products- Laplacian and second order operators.

UNIT VII
Vector Integration - Line integral - work done - Potential function - area- surface and volume integrals

UNIT VIII
Laplace transform of standard functions - Inverse transform - first shifting Theorem, Transforms of derivatives and integrals - Unit step function - second shifting theorem.

Reference Books:

1. A text Book of Engineering Mathematics, Vol-1 , T. K. V. Iyengar, B. Krishna Gandhi and Others, S. Chand & Company.
2. A text Book of Engineering Mathematics, C. Sankaraiah, V. G. S. Book Links.
3. A text Book of Engineering Mathematics, Shahnaz Bathul, Right Publishers.
4. A text Book of Engineering Mathematics, P. Nageshwara Rao, Y. Narasimhulu & N. Prabhakar Rao, Deepthi Publications.
5. A text Book of Engineering Mathematics, B. V. Raman, Tata Mc Graw Hill.
6. Advanced Engineering Mathematics, Irvin Kreyszig, Wiley India Pvt. Ltd.
7. A text Book of Engineering Mathematics, Thamson Book Collection

FSP 104 ENGINEERING PHYSICS

L/s: 4/Wk	*Int: 50*	*End Exam: 50*	*Total: 100*	*End Exam: 3 hrs*	*Cr: 4*

Course Contents:

UNIT I

Optics:

Interference; Superposition of waves; Young's double slit experiment; Coherence; Interference in thin films by reflection; Newton's rings; Diffraction; Fressnel and Fraunhofer diffractions; Fraunhofer diffraction at a Single slit; Double slit; Diffraction grating; Grating spectrum; Resolving power of a grating; Rayleigh's criterion for resolving power; Polarization; Types of Polarization; Double refraction; Nicol prism.

UNIT II

Ultrasonic:

Introduction; Production of ultrasonic waves; Magnetostriction method; Piezo electric method; Detection of ultrasonic waves; Properties of ultrasonic waves; Use of ultrasonic for nondestructive testing; Applications of ultrasonic.

UNIT III

Acoustics of Buildings:

Basic requirement of acoustically good hall; Reverberation and time of reverberation; Sabine's formula for reverberation time;

Measurement of absorption coefficient of a material; Factors affecting the architectural acoustics and their remedy.

UNIT IV

Magnetic Properties:

Permeability; Magnetization; Origin of magnetic moment; Classification of magnetic materials; Dia, para and ferro magnetism; Hysteresis curve; Soft and hard magnetic materials.

UNIT V

Lasers:

Introduction; Characteristics of lasers; Spontaneous and stimulated emission of radiation; Einstein's coefficients; Population inversion; Ruby laser; Helium; Neon laser; CO2 laser; Semiconductor laser; Applications of lasers in industry, scientific and medical fields.

UNIT VI

Thermal Properties:

Introduction; Specific Heat of Solids; Einstein Model; Debye Model; Lattice Vibrations; Phonons; Thermal Conductivity.

UNIT VII

Science & Technology of Nanomaterial:

Introduction to Nanomaterials; Basic principles of Nanoscience & Technology; Fabrication of nanomaterials; Physical & chemical properties of nanomaterials; Carbon nanotubes; Applications of nanotechnology.

Reference Books:

1. Physics Volume 2 by Halliday, Resnick and Krane; John Wiley & Son.
2. Applied Physics by Dr. M. Chandra Shekar & Dr. P. Appala Naidu; V.G.S. Book links.
3. Engineering Physics by R.K.Gaur & S.L. Gupta; Dhanpat Rai and Sons.
4. Nanotechnology by Mark Ratner and Daniel Ratner, Pearson Education.
5. Introduction to solid state physics by C. Kittel; Wiley Eastern Ltd.
6. Materials Science and Engineering by V. Raghavan; Prentice-Hall India.
7. Engineering Physics by Dr. M. Arumugam; Anuradha Agencies.

8. Nanomaterials by A.K. Bandyopadhyay; New Age International Publishers.
9. Engineering Physics by M.N. Avadhanulu & P.G. Kshirasagar; S. Chand & Company Ltd.

105 ENGINEERING CHEMISTRY

L/s: 4/Wk	*Int: 50*	*End Exam: 50*	*Total: 100*	*End Exam: 3 hrs*	*Cr: 4*

Course Contents:

UNIT I

Water Technology-I:

Introduction, effect of water on rocks and minerals, types of impurities in water, hardness of water – temporary and permanent hardness. Units and inter conversions of units. Estimation of hardness by EDTA methods. Problems on temporary and permanent hardness. Analysis of water - alkalinity; chlorides and dissolved oxygen. Disadvantages of hard water. Methods of treatment of water for domestic purposes-sedimentation, coagulation, filtration, disinfection - sterilization, chlorination, break – point chlorination, ozonization.

UNIT II

Water Technology-II:

Water for industrial purposes; water for steam making; boiler troubles; carry over; priming and foaming, boiler corrosion, scales and sludges, caustic embrittlement. Water treatment: internal treatment; colloidal, phosphate, calgon, carbonate, sodium aluminate conditioning of water. External treatment; lime-soda process, zeolite process, ion-exchange process; numerical problems.

UNIT III

Science of Corrosion:

Definition, examples; types of corrosion: theories of corrosion and mechanism; dry corrosion, (direct chemical attack), wet corrosion, (electro chemical theory) principles of corrosion, galvanic series, galvanic corrosion, concentration cell corrosion, mechanism of wet corrosion; hydrogen evolution type, oxygen absorption type. Factors influencing corrosion, control of corrosion; proper design, use of pure metal and metal alloys, passivity, cathodic protection – sacrificial anode and impressed current. Modifying the environment, use of inhibitors.

UNIT IV

Protective Coatings and their applications:

Surface preparation: (1)solvent cleaning (2)alkali cleaning (3)pickling and etching (4)sand blasting (5)mechanical cleaning. Types of protective coatings: metallic coatings – anodic coatings, galvanization; cathodic coatings – tinning, metal cladding, electroplating ex: chromium plating, metal spraying, cementation – sheradizing, colourizing, chromizing, chemical conversion coatings: (1) phosphate (2) chromate (3) anodized coatings; organic coatings: paints – constituents and their functions

UNIT V

Polymer Science and Technology:

Polymerization reactions: basic concepts. Types of polymerization: addition and condensation polymerizations. Plastics: thermosetting and thermoplastics and differences. Compounding and moulding of plastics: compression, injection, transfer, and extrusion moulding methods. Preparation, properties and engineering uses of the following: polyethylene, PVC, Teflon, Bakelite, nylon, polyester, polyurethanes and silicone resins. Rubber: processing of natural rubber, vulcanization and compounding. Elastomers: Buna S, Buna N, Thiokol.

Reference Books:

1. A text book of Engineering Chemistry by Jain & Jain, Dhanpat Rai Publishing Company, New Delhi(15 Ediction) (2006).
2. Chemistry of Engineering Materials by C.P. Murthy, C.V. Agarwal and A. Naidu BS Publication Hyd. 2007.
3. A text book of Engineering Chemistry by S.S. Dara, S.Chand & Co, New Delhi (2004)
4. Engineering Chemistry by J C Kuriacose and J. Rajaram, Tata McGraw-Hill Co, New Delhi (2004)
5. Text book of Engineering Chemistry by Shashi Chawala, Dhanpat Rai Publishing Company, 15th edition New Delhi (2004).
6. Laboratory Manual on Engineering Chemistry by S.K. Bhasin and Sudha Rani, Dhanpat Rai Publishing Company, New Delhi (2004).
7. Engineering Chemistry by R. Gopalan, D. Venkappaya and S.Nagarajan, Vikas Publishing House, New Delhi (2004).
8. Engineering Chemistry by R.V. Gadag A.N. Tyanand Shortly IK. International Publishing house Pvt. Ltd. New Delhi.

FSP106 COMPUTER APPLICATIONS

L/s: 4/Wk	*Int: 50*	*End Exam: 50***	*Total: 100*	*End Exam: Practical & Viva-voce*	*Cr: 3*

Course Contents:

UNIT I

Introduction:

Introduction and history of computer, software & hardware concepts - bits, bytes - types of languages – Operating systems (windows, DOS, Linux).

UNIT II

MS Office:

Introduction to Word Processing Package (like MS office), toolbar, creating a new document, formatting text, inserting tables, pictures, page numbers and date/time, spelling and grammar checking, taking print outs.

UNIT III

Spread Sheets:

Introduction to spread sheets (like MS Excel), creating formulae, order of operations, borders and shading, inserting chart, taking print outs.

UNIT IV

Multi-media Presentations:

Introduction to multi-media presentation (like MS Power Point), creating a presentation, opening an existing presentation, creating a blank presentation, different Power Point views, slide manipulation, slide animation, slide transitions, view slide show, navigating while in slideshow, hyper linking to various other media/ application outputs, scanning of different media in different formats, setting of options, resolution settings, management of file size, integrating partial scans of large documents, pack up a presentation for use on another computer, taking print outs.

UNIT V

Exploring Microsoft Access:

Introduction, creating new and opening existing databases, creating a database using a wizard, creating a database without using a wizard, tables - what they are and how they work, create a table

from scratch in design view, primary keys, switching views, entering data, manipulating data, advanced table feature examples.
Relationships - how to link multiple tables together, forms - what they are and how they work, creating a form using a wizard, reports - what they are & how they work, creating report & mail merge labels using a wizard.

UNIT VI
Photo Editing and Desktop Publishing (application):
Import and export of photo edited files, objects in photo editing, fills, outlines, basic toolbox of photo editing software (like Coral Draw), color management tools, starting your page right, introduction to Flash multimedia software.

Introduction, software & system requirements, preferences, workspace, graphics terminology, image depth, resolution and image size, up sampling and down sampling, image sources, straightening an image, cropping an image, basic image correction, printing photo edited documents, selections, choosing foreground and background colors, filling with color, options & preferences revisited, file browser, stepping back in time, use ram efficiently, sharpening images, working with layers, painting in photo editing software, color theory, image modes, channels, more advanced adjustment commands, file format categories.

Unit VII
Internet concepts
Introduction to Internet, Hyper Text Markup Language - introduction to basic features and creating a web page design.

Expected Outputs & Assignment
The internal assessment to be carried out through practicals and periodic tests on the mentioned topics.
The internal assessment to be in the form of term papers and practicals on above mentioned topics.

Reference Books:

1. Microsoft Office 2000- Leon Hard Woody, New Delhi, Prentice hall of India.
2. Microsoft Office for Windows –Sagman India Addison Wesley, 1999.
3. Adobe Photoshop CS Classroom in a Book (Classroom in a Book) by Adobe Creative Team (Paperback - December 1, 2003).

4. Fundamental Photoshop: A Complete Introduction by Adele Droblas-Greenberg.

FSP107 INTRODUCTION TO COMMUNICATION SKILLS

L/s: 3/Wk	*Int: 100*	*End Exam:Nil*	*Total: 100*	*End Exam: Nil*	*Cr: 3*

Course Contents:

UNIT I
Introduction:
Orientation for improving the skills of grammar, punctuation, and vocabulary in English focused primarily on developing communication and presentation skills.

UNIT II
Written Skills:
Types & classification of reports, difference between technical, scientific, legal and other types of communication; Format and elements of reports, structuring of preamble, contents, chapterization, bibliography, footnotes, appendices and references.

UNIT III
Formal Letters & Specifications:
Business and official letters, styles and format, requests for specifications and other types of business enquirer, conduct of meetings responsibilities of the chairman and secretaries; agendas and minutes of meeting official records.

UNIT IV
Literature Survey:
Use of libraries, knowledge of indexing and available reference material.

UNIT V
Spoken English:
Neutralization of accent, pronunciation, formal and informal communication, importance of voice and body language.

UNIT VI
Listening Comprehension:
Role of listening in communication, listening for accent, rhythm and intonation, listening for main idea and specific information.

UNIT VII

Use of Multimedia in Communication:

Computer adaptive presentations slide shows, using the overhead projector, etc. Style and format for the presentation of the seminar papers, technical reports, and dissertations.

Expected Outputs & Assignment

Each student shall present a written paper and a seminar at the end of the semester for final assessment on a topic to be finalized in consultation with the concerned faculty. Internal assessment to be in the form of book reviews, exercises in writing comprehensions and group discussions on any relevant topics.

Reference Books:

1. *Geetha Rajivan, Kiranmai: Course in Listening and Speaking Skills Part I, Foundation Books Pvt Ltd.*
2. *Lorven: Enrich your Communication in English.*

SECOND SEMESTER

FSP201 GRAPHICS AND PRESENTATION TECHNIQUES -II

L/s: 12/Wk Int: 100 End Exam: 100 Total: 200 End Exam: Viva-voce Cr: 8*

Course Overview:
The course introduces the fundamental techniques of architectural drawing and develops the appropriate skills for visualization and representation**.**

Objectives of the Course:
To introduce architectural drawing techniques and to facilitate effective visual communication

Expected Skills / Knowledge Transferred: *Freehand, scale drawing, conventional architectural representations in drawings and graphics.*

Course Contents:

UNIT I
Building Geometry:
Study of points, lines, and planes leading to simple and complex solid geometrical forms; Use of geometry in buildings, isometric, axonometric and oblique views; Exercises on Ionic volute, Entasis of column etc., working with models to facilitate visualization.

UNIT II
Isometric, Orthographic, Perspective projections
Principles of isometric projection – Isometric scale-Isometric views of lines, plane figures, simple and compound solids. Projection of objects having non-isometric lines, isometric projection of spherical Parts.
Orthographic projections of point, lines, planes and solids, section of solids, study of Parallel and angular perspective of simple objects,

UNIT III
Sciography
Sciography of simple objects, Principles of Shades and shadows, Shades & Shadows of typical building on Plan & Elevation. Techniques of drawing shades and shadows of lines, planes, solids and Architectural Building Elements. Colouring of shades and

shadows using transparent colours. Study of drawing shadows in isometrics. Shades and Shadows in perspective.

UNIT IV
Colour Theory
Colours theory and use of colours in presentation. Medium of presentation -
pencil, pastel colours, and transparent water colours. Advanced Presentation Techniques.

UNIT V
Basic Mechanical, Electrical and plumbing drawings
Interpretation of existing mechanical, electrical and plumbing drawings and introduction to drafting of MEP drawings. Application of graphic skills to projects, including building construction trades.

Expected Outputs & Assignments

- *Problems in perspective drawings*
- *Sciography on horizontal and vertical planes*
- *Simple problems in mechanical, electrical and plumbing drawings.*

Reference Books:
1. Lanse Bowen Bellings: Perspective- Space and Design
2. H. Prauchlay: Perspective

FSP 202 MATERIALS & CONSTRUCTION TECHNOLOGIES

L/s: 4/Wk	*Int: 50*	*End Exam: 50*	*Total: 100*	*End Exam: 3 hrs*	*Cr: 4*

Course Overview:
The course provides information on the properties, use, installation and costs of basic building materials.

Objectives of the Course:
To impart knowledge on the various building materials, while highlighting the current trends and innovations in the usage of building materials

Expected Skills / Knowledge Transferred: *Knowledge required for specifying appropriate materials for various spaces in buildings.*

Course Contents:

UNIT I

Stones:

Classification of stones: granite, laterite, quartzite, marble and slates -properties and uses; stone units - khandki, rubble, black stones, stone metal, flag stones., quarrying of building stones, quarry dressing, tool used, Preservation of stone work.

Bricks:

Selection of clay, constituents, harmful constituents, requirements and tests for good bricks. Fire clay bricks - varieties; sand lime bricks; paving bricks; Terra-cotta-its varieties: ordinary, glazed, porous, polished and fine; uses and properties. Building Tiles: Roof, floor and wall tiles.

UNIT II

Sand:

Sources, classification, functions, properties, tests for silt and organic contents, size of sand and grading.

Mortars:

Types, proportioning, mixing and grinding, mortar mills, cement mortar, lime mortar, methods of preparing, handling and uses of mortars, Surkhi-mortar, light weight mortars i.e. cinder, sawdust and fibrous plaster, gypsum plaster, Plaster of Paris.

UNIT III

Portland cement:

Raw materials, functions of cement ingredients, setting action of cement, tests for strength and setting time.

Lime:

Raw materials, Preparation of lime and hydrated lime.

Concrete:

Concrete and its constituents, aggregate: coarse and fine, properties of concrete, strength, durability, etc. Effect of age on strength.

Grading: importance, fineness modulus, combined aggregate, water cement ratio. Mixing and Curing.

UNIT IV

Timber:

Advantages of timber construction, exogenous and endogenous trees, hard wood and soft wood, growth of tree, its structure: heart wood and sap wood, felling of trees, conversion of felled logs, storage, sawing of timber, shrinkage and distortion, wastage,

methods of sawing. Drying and seasoning, moisture contents, purpose of seasoning, natural and artificial.

Defects in timber:
Natural defects, seasoning defects and defects due to fungal action. Causes of decay, factors affecting decay, preservation of timber by applying preservatives like tar, oil, water soluble and organic solvents.

UNIT V
Construction Technologies:
Elementary and simple construction methods explaining basic principles and considerations in the construction of one roomed rectilinear buildings with verandah: Foundations and footings using CRS, cement concrete, mortar (cement, line surkhi) brick footing. Walls-stone (in walling, rubble work, joints, plinths, lintels) clay bricks (brickwork-English and Flemish brick bonds, stopped ends, quoins, piers, jambs, mortar joints)

UNIT VI
Lintels and Arches:
Lintels of wood, stone, brick; arches: terms defined forms of arches, i.e., segmental, semi-circular elliptical, three-centered, flat and relieving arch, etc rough and gauged arch.

Carpentry and Joinery:
Terms defined, mitring, ploughing, grooving, rebating, veneering, various forms of joints in wood work, such as lengthening joints bearing joints, halving, dovetailing, housing, notching, tusk and tenon. etc.,

UNIT VII
Openings:
Wooden doors and windows (ledged and braced) with simplest and basic hardware roofs- RCC roof (simply supported single way reinforced).
Doors: Definition of terms, types of doors: Wooden, ledged, ledged and braced, paneled, flush doors. Hinged single and double shutters sliding folding, revolving pivoted.
Windows: Ordinary Casement, top and bottom hung, pivoted and sliding sash. Hardware: fixtures, locks, hinges, fastenings etc.

Expected Outputs & Assignments

The class and assignment work should include appropriate site visits by the students. Student will have to maintain field observations / record books. Three to four exercises to be done in the construction yard.

Reference Books:

1. Moxley .R.Mitchell's Elementary Building Construction
2. Chowdary : K P Engg. Materials
3. Elementary Building Construction – Mitchell
4. Building Construction – Rangawala
5. The construction of Buildings – Barry
6. Brickwork and Associated studies – Hailey and D W Hancock
7. Engineering Materials as used in India – K P Chowdary
8. A text book of Building Construction – Sushil Kumar

FSP203 QUANTITATIVE METHODS

L/s: 4/Wk	*Int: 50*	*End Exam: 50*	*Total: 100*	*End Exam: 3 hrs*	*Cr: 4*

Course Contents:

UNIT I

Planning Surveys:

Types of surveys at various planning levels, methods and sources of data collection; primary and secondary sources, their limitations, collection of data and guidelines for preparation of questionnaire, schedules, case study method, difference between survey and experiment.

UNIT II

Sampling design:

Fundamental definitions, need for sampling, census and sample survey, criteria for selecting a sample, sample size and its determinant, types of sampling methods. Simple random sampling, stratified random sampling and cluster sampling.

UNIT III

Data Processing and Presentation Data:

Classification, tabulation, diagrammatic methods and graphic methods of representation of data. Presentation of data diagrams related to planning problem like population, landuse, housing, economic base of cities.

UNIT IV

Analysis of Data:
Statistical Methods: Raw data frequency distribution, measures of central tendency and dispersion, correlation, regression, partial correlation.

UNIT V
Probability:
Definition of probability, conditional probability, mutually exclusive and mutually independent events, additional rule and multiplication rule, Baye's theorem and examples based on Baye's theorem.

Nature of sampling distribution, binomial distribution, poisson distribution and normal distribution, fitting of binomial, Poisson & normal distributions.

Testing of hypothesis -Tests of hypotheses; one sample and two-sample Z tests, one sample and two sample t-tests, paired t-test.

Expected Outputs & Assignment
The students will formulate sample survey formats for at least two aspects and conduct surveys at respective unit level and end with brief presentation with analysis of the same. Internal assessment also to be in the form of term papers and tests on above mentioned topics.

Reference Books:

1. SP Gupta: Statistical Methods
2. Ram Ahuja: Research Methods
3. Philip I. Good: A practical Guide to Data Analysis
4. G.Nageswara Rao :Statistics for Agricultural Sciences

FSP204 ELEMENTS OF GEOLOGY & SETTLEMENT GEOGRAPHY

L/s: 4/Wk	*Int: 50*	*End Exam: 50*	*Total: 100*	*End Exam: 3 hrs*	*Cr: 4*

Course Contents:

UNIT I
Introduction:
Types of geological structure, landforms, types of regions, concepts of spatial organization and region (in India), geological structures

suitable for buildings with relevance to selection of site and foundations, types of foundations, nature and preparation of foundation for road, bridge, building and other geo-technical structures.

UNIT II

Study of Land Forms and Indian Stratigraphy:

General considerations and overview of preliminary geological data particularly related to Indian Stratigraphy, basic understanding of landforms- erosional, depositional, fluvial, glacial, delta and marine with relevance to landuse planning.

UNIT III

Natural calamities & disasters:

Volcanic eruptions, landslides in hilly regions, earthquake, tsunami, zones and classification based on disaster proneness in India, planning approaches and measures,

UNIT IV

Ground Water:

Concept and role in town planning for different types of terrain, vertical distribution of groundwater in India, water table and isometric surface, surface water reservoirs and springs, artificial recharge and ground water mound hydrographs, geological structure and underground passage for water supply.

UNIT V

Thematic Mapping:

Types of thematic maps, interpretation of SOI topographic sheets, conventional signs, Indian physiographic maps, Andhra Pradesh physiographic maps, district maps etc.

UNIT VI

Introduction to Settlement Geography:

Nature and scope of settlement geography, origin, setting evolution and structure of human settlements, man, environment and society; social economic and political consequences of geographical conditions; physical features and its effect on urban and rural communities.

UNIT VII

Urban & Rural Settlements:

City structure, Theories of urban structure - concentric zone theory, sector theory, multiple nuclei theory, gradient analysis,

form of the pre-industrial city, dual structure of the colonial city, modern city forms, new towns and cities, environmental impact of planned and unplanned growth, rural-urban fringe.

Rural Settlements:

Types, patterns, morphology, house types, comparative study of origin and growth of settlements in ancient and modern times rural housing problems and policies.

UNIT VIII

Settlements as a System (Settlement System) and Role of Urban Areas:

Rural and urban continuum, city region relationships; growth pole theory, settlement systems in a developing economy, structure of city regions, area of influences, dominance; rural-urban fringes; its structure, stages of growth, its role in urban growth; urbanization, industrialization and urban development; push and pull factors; migration trends and impacts on urban and rural development.

Expected Outputs & Assignment

Students to make a brief recording of the geological studies at local or regional level in terms of the factors mentioned above. Internal assessment also to be in the form of term papers and tests on above mentioned topics.

Reference Books:

1. Das Gupta: Physical Geography
2. Harold Carten: Urban Geography
3. Truman & Hartshone: Interpreting Cities – An Urban Geography
4. R Y Singh: Geography of settlements

FSP205 CLIMATOLOGY FOR BUILT ENVIRONMENT

L/s: 4/Wk	*Int: 50*	*End Exam: 50*	*Total: 100*	*End Exam: 3 hrs*	*Cr: 4*

Course Overview:

The basic science relating to projects in the context of sustainable development, with a focus on the elements of the scientific principles relevant to buildings. The major topics include external and climatic effects such as various forms of pollution, humidity and condensation, heat transfer, comfort conditions, air movement,.

Course Contents:

UNIT I
Introduction to Building Climatology:
Climate and built form interaction. Global Climatic factors, elements of climate, graphic representation of climatic data, Mahoney's Tables, macro and micro climate; challenge of rapid, extreme environmental change

UNIT II
Tropical Climates:
Definition, classification of tropical climates, characteristics of different climatic zones, Design considerations for warm-humid, hot-dry, composite and upland climates.

UNIT III
Thermal Comfort:
Thermal comfort factors, Physiological aspects, Body heat balance, Heat flow through Buildings: Basic principles of heat transfer through buildings, performance of different materials, Periodic heat flow.

UNIT IV
Sun and the Design process:
Solar geometry, Solar charts, Sun angles and shadow angles, orientation for sun, shading devices, building form and heat gain, basic principles of day lighting, sunlight and glare.

UNIT V
Natural Ventilation:
Air movement around and through buildings, Orientation for wind, stack effect, Induced ventilation.

UNIT VI
Passive Cooling:
Passive methods of Cooling, roof pond, desiccant cooling, evaporative Cooling, and earth sheltered buildings etc. Site Planning (including landscaping) and building planning and design considering climate factors. Detailed appraisal/analysis of climatological performance of an existing residence and or a workplace; followed by redesigning or the same to improve climatological performance.

Note: The topics here to be dealt with keeping in mind Indian climatic conditions. NBC and BIS guidelines / standards have to be introduced at all relevant contexts.

Reference books:

1. Koenigsberger, O.H. and Others. Manual of Tropical Housing and Building. Orient Longman, Chennai, 2003.
2. Konya, Allan. Design for Hot Climates.
3. Kukreja, C.P. Tropical Architecture. Tata McGraw-Hill Pub. Co. Ltd., New Delhi, 1978.
4. Markus, T.A. and Morris. E.N. Buildings, Climate and Energy. Pitman Pub. Ltd., London, 1980.
5. Olgyay and Olgyay. Solar Control and Shading Devices.

FSP206 COMPUTER PROGRAMMING

L/s: 4/Wk	*Int: 50*	*End Exam: 50*	*Total: 100*	*End Exam: 3 hrs*	*Cr: 4*

Objectives of the course:

- To make the student learn a programming language.
- To teach the student to write programs in C solve the problems
- To introduce the student to simple linear and non linear data structures such as lists, stacks, queues, trees and graphs.

Recommended Systems/Software Requirements:

- Intel based desktop PC
- ANSI C Compiler with Supporting Editors

Course Contents:

UNIT I

Introduction:

Algorithms: Algorithm / pseudo code, flowchart, C language introduction: program development steps, structure of C program, A Simple C program, Data types, Constants, variables, identifiers: C character set, basic data types and sizes, Constants, variables, Keywords, storage classes.

UNIT II

Operators, expressions, assignment statements:

Arithmetic, relational and logical operators, increment and decrement operators, conditional operator, bit-wise operators,

assignment operators, expressions, type conversions, conditional expressions, precedence and order of evaluation. Console input and output functions:, Input and output – concept of a file, text files and binary files, streams, standard I/o, Formatted I/o, file I/o operations, error handling, C program examples. Control statements: Input-output statements, statements and blocks, if and switch statements, loops- while, do-while and for statements, break, continue, go to and labels, programming examples.

UNIT III

Arrays:

Concepts, declaration, definition, accessing elements, storing elements, arrays and functions, two-dimensional and multi-dimensional arrays, applications of arrays. Functions: introduction, function types, user defined functions, system defined functions. Character strings functions: introduction, string types, character strings, string handling functions.

UNIT IV

Pointers:

Concepts, initialization of pointer variables, pointers and function arguments, address arithmetic, Character pointers and functions, pointers to pointers, pointers and multidimensional arrays, dynamic memory management's functions, command line arguments, c program examples.

Structures and unions: introduction, structures, unions, program examples

File management: introduction, file types, file management in C, file programs.

Reference Books:

1. Computer science, A structured programming approach using C, B.A. Forouzan and R.F. Gilbert, Third edition, Thomson.
2. Data Structures Using C – A.S.Tanenbaum, Y. Langsam, and M.J. Augenstein, PHI/Pearson education.
3. C & Data structures – P. Padmanabham, B.S. Publications.
4. The C Programming Language, B.W. Kernighan, Dennis M.Ritchie, PHI/Pearson Education
5. C Programming with problem solving, J.A. Jones & K. Harrow, dreamtech Press
6. Programming in C – Stephen G. Kochan, III Edition, Pearson Eductaion.
7. Data Structures and Program Design in C, R.Kruse, C.L. Tondo, BP Leung, Shashi M, Second Edition, Pearson Education.

FSP207 WORKSHOP (BUILDING TRADES)

L/s: 3/Wk	*Int: 100*	*End Exam: Nil*	*Total: 100*	*End Exam: 3 hrs*	*Cr: 3*

Objective of the course:
The main objective of this course is to enhance learning through practical exercise sessions.

Course Contents:

UNIT I
Introduction:
Introduction to the use of different type of tools and methods relating to masonry, carpentry, tile laying for floors and pavements, painting and welding

UNIT II
Masonry:
Using instrument. Brick laying for English Bond: Lay straight wall in English Bond (a) 4.5" , (b) 13.5", Lay corner wall in English Bond (a) 9", (b) 13.5" , Lay Tee joint in English Bond (a) 13.5" , (b) 18", Lay cross wall in English Bond (a)9", (b) 13.5". Brick laying for Flemish Bond: Lay straight wall in Flemish Bond (a) 9", (b) 13.5". Brick footing: Lay straight wall with footing (a) 9", (b)13.5"; Lay corner joint wall with footing (a) 4.5", (b)13.5"; Lay Tee joint wall with footing (a) 4.5", (b) 9"; Lay cross wall with footing (a) 13.5".

UNIT III
Masonry:
Building walls with plinth projections and corbelling in straight length and at corners. Building wall with cornices in straight length and at corners. Building wall with attached piers and post footings in straight length and at corners. Brick wall with different kind of jambs and fixing of door chowkets. Brick wall with different kind of jambs and fixing of window chowkets. Construction of arches over door opening. Construction of arches over window opening. Practice of plastering and pointing. Construction of squint quoins.

UNIT IV
Carpentry and Joinery:
Using instruments, Halving joints: Tee joint; Cross Joint; Dove tail joint. Wood working for doors, windows and chowket: Door and Window; Chowket according to given specifications. Joint with

keys: Make table using joint with key according to specifications; Make scarfts using joint with key according to specifications. Construction of rafter and beam joints.Elementary roof framing to half scale models. Stair framing of half scale models.

UNIT V

Flooring:

Introduction to the laying of tile flooring, different types of stone flooring, different types of wooden flooring for floors, pavements, combination of different materials, integration of lighting services and communication network , plumbing services etc

UNIT VI

Welding:

Welding (Gas): safety, introduction to the tools and equipment, exercises involving autogenous, butt and fillet welds. Welding (Electrical): safety, introduction to the tools and equipment, exercises involving, butt, fillet and pipe welds.

Machining: safety, facing and rough turning to size ± 1.0 mm using rule and calipers, finish turning to size ± 0.05 mm using micrometer, tapping and screw cutting using taps and dies.

Sheet metal: safety, introduction to the tools and equipment, exercises involving the production of rivet joints, safe edge (lap and wire), groove joint and hinge piece.

THIRD SEMESTER

FSP301 FACILITIES PLANNING STUDIO– I

L/s: 12/Wk	*Int: 100*	*End 100**	*Exam:*	*Total: 200*	*End voce*	*Exam:*	*Viva-*	*Cr:8*

Course Contents:

UNIT I

Introduction

Definitions; Basic Principles of Surveying; Classification of Survey; Uses of Survey: Scales and Symbols; Sources of errors in Survey; Linear Measurement: accurate and approximate methods, duties of Surveyor.

UNIT II

Site Studies:

Plot, site, land and regions, size and shape of site, Analysis of accessibility, Topography, Climate, land forms, Surface Drainage, Soil, Water, Vegetation, Ecology and Visual aspects.

UNIT III

Site Planning:

Site Planning process - site analysis and user analysis including environment and the quality of life, - program, schematic plan, detailed plan and contract documents.

Site analysis:

Inventory, topography - understanding contours, cut and fill vs. geomorphic approach to site development, principles of geomorphic layout and development, soils, slopes, natural drainage systems - implications for planning and development of the site.

UNIT IV

Landscape Aspects in Site Planning:

Principles of understanding and evaluating and existing landscape; development as a response to constraints and opportunities offered by the site; the landscape concept and open space structures as a basic component of the site plan. Grading in relation to existing contours, plinth levels, road alignment and storm water drainage.

Expected Outcomes & Assignment

- *Study & analysis of given site involving parameters like Orientation, Building Placement, Pathways, contours,*

Topography etc. Submission in the form of drawings and documentation.

- *Measure drawings for design/ re-design of above study (any one)*
- *Site inventories & analysis for a given site and broad zoning for the same*
- *The distribution of marks in the studio subject may be as follows: 40% for individual assignment 60% for group work*

Reference Books:

1. R Gene Brook: Site planning, environment, process and development - TSS, NBC
2. Kevin Lynch: Site Planning - Premier on Problem Seeking
3. Michael Laurie: An introduction to landscape architecture
4. Tom Turner: Landscape Planning
5. S. K. Bhattarcharjee: Landscape Gardening & Design with Plants

FSP302 MATHEMATICAL METHODS

L/s: 4/Wk	*Int: 50*	*End Exam:50*	*Total: 100*	*End Exam: 3hrs*	*Cr: 4*

Course Contents:

UNIT I

Matrices and Linear systems of equations:

Elementary row transformations-Rank-Echelon form, Normal form – Solution of Linear Systems – Direct Methods- LU Decomposition-LU Decomposition from Gauss Elimination –Solution of Tridiagonal Systems-Solution of Linear Systems

UNIT II

Eigen values, eigen vectors – properties – Cayley-Hamilton Theorem - Inverse and powers of a matrix by Cayley-Hamilton theorem – Diagonolization of matrix. Calculation of powers of matrix – Modal and spectral matrices**.**

UNIT III

Real matrices - Symmetric, skew symmetric, orthogonal; Linear Transformation – Orthogonal Transformation. Complex matrices: Hermitian, Skew-Hermitian and Unitary – Eigen values and Eigen vectors of complex matrices and their properties. Quadratic forms-Reduction of quadratic form to canonical form – Rank - Positive, negative definite - semi definite - index - signature - Sylvester law.

UNIT IV

Solution of Algebraic and Transcendental Equations:

Introduction – The Bisection Method – The Method of False Position – The Iteration Method – Newton-Raphson Method.

Interpolation:

Introduction- Errors in Polynomial Interpolation – Finite differences- Forward Differences- Backward differences –Central differences – Symbolic relations and separation of symbols- Differences of a polynomial-Newton's formulae for interpolation – Central difference interpolation Formulae – Gauss Central Difference Formulae –Interpolation with unevenly spaced points- Lagrange's Interpolation formula.

UNIT V

Curve fitting:

Fitting a straight line –Second degree curve-exponentional curve-power curve by method of least squares. Numerical Differentiation and Integration– Trapezoidal rule – Simpson's 1/3 Rule –Simpson's 3/8 Rule.

UNIT VI

Numerical solution of Ordinary Differential equations:

Solution by Taylor's series-Picard's Method of successive Approximations-Euler's Method-Runge-Kutta Methods –Predictor-Corrector Methods- Adams- Moulton Method –Milne's Method.

UNIT VII

Fourier Series:

Determination of Fourier coefficients – Fourier series – even and odd functions – Fourier series in an arbitrary interval – even and odd periodic continuation – Half-range Fourier sine and cosine expansions. Fourier integral theorem (only statement) – Fourier sine and cosine integrals. Fourier transform – Fourier sine and cosine transforms – properties – inverse transforms – Finite Fourier transforms.

UNIT VIII

Formation of partial differential equations by elimination of arbitrary constants and arbitrary functions –solutions of first order linear (Lagrange) equation and nonlinear (standard type) equations. Method of separation of variables. z-transform – inverse z-transform - properties – Damping rule – Shifting rule – Initial and final value theorems. Convolution theorem – Solution of difference equation by z-transforms.

Reference Books:

1. Mathematical Methods, T. K. V. Iyengar, B. Krishna Gandhi and Others, S. Chand & Company.
2. Mathematical Methods, C. Sankaraiah, V. G. S. Book Links.
3. A text book of Mathematical Methods, V. Ravindranath, A. Vijayalaxmi, Himalaya Publishers.
4. A text book of Mathematical Methods, Shahnaz Bathul, Right Publisshers.
5. A text Book of Engineering Mathematics, B. V. Raman, Tata Mc Graw Hill.
6. Advanced Engineering Mathematics, Irvin Kreyszig, Wiley India Pvt. Ltd.
7. Numerical Methods for Scientific and Engineering Computation, M. K. Jain, S. R. K. Iyengar & R. K. Jain, New Age International Publishers.
8. Elementary Numerical Analysis, Aitkinson & Han, Wiely India, 3rd Edition, 2006

FSP303 BASICS OF ELECTRICAL ENGINEERING

L/s: 4/Wk	*Int: 50*	*End Exam: 50*	*Total: 100*	*End Exam: 3 hrs*	*Cr: 4*

Course Contents:

UNIT I

Introduction to Electrical Engineering:

Essence of electricity, Conductors, semiconductors and insulators (elementary treatment only); Electric field; electric current, potential and potential difference, electromotive force, electric power, ohm's law, basic circuit components, electromagnetism related laws, Magnetic field due to electric current flow, force on a current carrying conductor placed in a magnetic field, Faradays laws of electromagnetic induction. Types of induced EMF's, Kirchhoff's laws, Simple problems.

UNIT II

Network Analysis:

Basic definitions, types of elements , types of sources, resistive networks, inductive networks, capacitive networks, series parallel circuits, star delta and delta star transformation , Network theorems- Superposition , Thevenins's, Maximum power transfer theorems and simple problems.

UNIT III

Magnetic Circuits:

Basic definitions, analogy between electric and magnetic circuits, magnetization characteristics of Ferro magnetic materials, self inductance and mutual inductance, energy in linear magnetic systems, coils connected in series, attracting force of electromagnets.

UNIT IV

Alternating Currents:

Principle of ac voltages, waveforms and basic definitions, relationship between frequency, speed and number of poles, root mean square and average values of alternating currents and voltage, form factor and peak factor, phasor representation of alternating quantities, the J operator and phasor algebra, analysis of ac circuits with single basic network element, single phase series circuits, single phase parallel circuits, single phase series parallel circuits, power in ac circuits.

UNIT V

Transformers:

Principles of operation, Constructional Details, Ideal Transformer and Practical Transformer, Losses, Transformer Test, Efficiency and Regulation Calculations (All the above topics are only elementary treatment and simple problems).

UNIT VI

A.C Machines:

Three phase induction motor, principle of operation, slip and rotor frequency, torque (simple problems).

Synchronous Machines:

Principle of operation, EMF equation (Simple problems on EMF). Synchronous motor principle and operation (Elementary treatment only).

UNIT VII

Basic Instruments:

Introduction, classification of instruments, operating principles, essential features of measuring instruments, Moving coil permanent magnet (PMMC) instruments, Moving Iron of Ammeters and Voltmeters (elementary Treatment only)

Reference Books:

1. Basic Electrical Engineering - By M.S.Naidu and S. Kamakshiah – TMH.
2. Basic Electrical Engineering –By T.K.Nagasarkar and M.S. Sukhija Oxford University Press.
3. Theory and Problems of Basic Electrical Engineering by D.P.Kothari & I.J. Nagrath PHI.
4. Principles of Electrical Engineering by V.K Mehta, S.Chand Publications.
5. Essentials of Electrical and Computer Engineering by David V. Kerns, JR. J. David Irwin Pearson.

FSP304 THERMODYNAMICS

L/s: 4/Wk	*Int: 50*	*End Exam:50*	*Total: 100*	*End Exam: 3hrs*	*Cr: 4*

Course Contents:

UNIT I

Fundamental Concepts & Definitions:

Thermodynamics: Terminology; definition and scope, microscopic and macroscopic approaches. Engineering Thermodynamics: Definition, some practical applications of engineering thermodynamics. System (closed system) and Control Volume (open system); Characteristics of system boundary and control surface; surroundings; fixed, moving and imaginary boundaries, examples. Thermodynamic state, state point, identification of a state through properties; definition and units, intensive and extensive various property diagrams, path and process, quasi-static process, cyclic and non-cyclic processes; Restrained and unrestrained processes; Thermodynamic equilibrium; definition, mechanical equilibrium; diathermic wall, thermal equilibrium, chemical equilibrium. Zeroth law of thermodynamics. Temperature as an important property.

UNIT II

Work and Heat:

Mechanics - definition of work and its limitations. Thermodynamic - definition of work and heat, examples, sign convention. Displacement works at part of a system boundary and at whole of a system boundary, expressions for displacement works in various processes through p-v diagrams. Shaft work and Electrical work. Other types of work. Examples and practical applications.

UNIT III

First Law of Thermodynamics:

Statement of the First law of thermodynamics for a cycle, derivation of the First law of processes, energy, internal energy as a property, components of energy, thermodynamic distinction between energy and work; concept of enthalpy, definitions of specific heats at constant volume and at constant pressure. Extension of the First law to control volume; steady state-steady flow energy equation, important applications such as flow in a nozzle, throttling, adiabatic mixing etc., analysis of unsteady processes, case studies.

UNIT IV

Pure Substances & Steam Tables and Ideal & Real Gases:

Ideal and perfect gases: Differences between perfect, ideal and real gases, equation of state, evaluation of properties of perfect and ideal gases. Real Gases: Introduction. Vander Waal's Equation of state, Vander Waal's constants in terms of critical properties, law of corresponding states, compressibility factor; compressibility chart, and other equations of state (cubic and higher orders). Pure Substances: Definition of a pure substance, phase of a substance, triple point and critical points, sub-cooled liquid, saturated liquid, vapor pressure, two-phase mixture of liquid and vapor, saturated vapor and superheated vapor states of a pure substance with water as example. Representation of pure substance properties on p-T and p-V diagrams, detailed treatment of properties of steam for industrial and scientific use (IAPWS-97, 95)

UNIT V

Basics of Energy conversion cycles:

Devices converting heat to work and vice versa in a thermodynamic cycle Thermal reservoirs. Heat engine and a heat pump; schematic representation and efficiency and coefficient of performance. Carnot cycle.

UNIT VI

Second Law of Thermodynamics:

Identifications of directions of occurrences of natural processes, Offshoot of II law from the I. Kelvin-Planck statement of the Second law of Thermodynamic; Clasius's statement of Second law of Thermodynamic; Equivalence of the two statements; Definition of Reversibility, examples of reversible and irreversible processes; factors that make a process irreversible, reversible heat engines; Evolution of Thermodynamic temperature scale.

UNIT VII

Entropy:

Clasius inequality; statement, proof, application to a reversible cycle. $\oint (\delta QR/T)$ as independent of the path. Entropy; definition, a property, principle of increase of entropy, entropy as a quantitative test for irreversibility, calculation of entropy, role of T-s diagrams, representation of heat, Tds relations, Available and unavailable energy.

UNIT VIII

Availability and Irreversibility:

Maximum useful work for a system and a control volume, availability of a system and a steadily flowing stream, irreversibility. Second law of efficiency.

Reference Books:

1. Heat Engineering by Dr Vasandani and Dr Kumar; Metropolitan Book Co. Pvt. Ltd., Delhi.
2. Thermal Engineering by PL Ballaney; Khanna Publishers, Delhi.
3. Engineering Thermodynamics: Work and Hest Transfer By Rogers and Mayhew; ELBS Publications.
4. Thermodynamics and Heat Engines Vol. I and II by R Yadav; Central Publishers, Allahabad.
5. Steam Turbine Theory and Pratice by WAJ Keartan, ELBS Series
6. Applied Thermodynamics by TD Eastop & A Mc Conkey, ELBS Publications PTU/BOS/ME/101/10-06-2005/BATCH-2003

FSP305 FLUID MECHANICS AND HYDRAULICS

L/s: 4/Wk	*Int: 50*	*End Exam: 50*	*Total: 100*	*End Exam: 3 hrs*	*Cr: 4*

Course Contents:

UNIT I

Fluid statics:

Dimensions and units: physical properties of fluids- specific gravity, viscosity surface tension- vapor pressure and their influence on fluid motion- atmospheric gauge and vacuum pressure – measurement of pressure- Piezometer, U-tube and differential manometers.

UNIT II

Fluid kinematics:

Stream line, path line and streak lines and stream tube, classification of flows-steady & unsteady, uniform, non uniform, laminar, turbulent, rotational, and irrotational flows-equation of continuity for one dimensional flow.

Fluid dynamics:

Surface and body forces –Euler's and Bernoulli's equations for flow along a stream line, momentum equation and its application on force on pipe bend.

UNIT III

Closed conduit flow:

Reynold's experiment- Darcy Weisbach equation- Minor losses in pipes- pipes in series and pipes in parallel- total energy line-hydraulic gradient line.

Measurement of flow:

Pilot tube, venturimeter, and orifice meter, Flow nozzle, Turbine flow meter (Ref.4)

UNIT IV

Basics of turbo machinery:

Hydrodynamic force of jets on stationary and moving flat, inclined, and curved vanes, jet striking centrally and at tip, velocity diagrams, work don and efficiency, flow over radial vanes.

UNIT V

Hydroelectric power stations:

Elements of hydro electric power station-types-concept of pumped storage plants-storage requirements, mass curve (explanation only)

estimation of power developed from a given catchment area; heads and efficiencies.

UNIT VI

Hydraulic Turbines:

Classification of turbines, impulse and reaction turbines, Pelton wheel, Francis turbine and Kaplan turbine-working proportions, work done, efficiencies , hydraulic design –draft tube theory-functions and efficiency.

UNIT VII

Performance of hydraulic turbines:

Geometric similarity, Unit and specific quantities, characteristic curves, governing of turbines, selection of type of turbine, cavitations, surge tank, water hammer.

UNIT VIII

Centrifugal pumps:

Classification, working, work done – manometer head- losses and efficiencies specific speed- pumps in series and parallel-performance characteristic curves, NPSH.

Reciprocating pumps:

Working, Discharge, slip, indicator diagrams.

Reference Books:

1. Hydraulics, fluid mechanics and Hydraulic machinery MODI and SETH.
2. Fluid Mechanics and Hydraulic Machines by Rajput.
3. Fluid Mechanics and Fluid Power Engineering by D.S. Kumar, Kotaria & Sons.
4. Fluid Mechanics and Machinery by D. Rama Durgaiah, New Age International.
5. Hydraulic Machines by Banga & Sharma, Khanna Publishers.
6. Instrumentation for Engineering Measurements by James W. Dally, William E. Riley, John Wiley & Sons Inc. 2004 (Chapter 12 – Fluid Flow Measurements).

FSP306 STRUCTURAL SYSTEMS

L/s: 4/Wk	*Int: 50*	*End Exam: 50*	*Total: 100*	*End Exam: 3 hrs*	*Cr: 4*

Course Overview:
The course supplements the previous courses on theory of structures, while introducing the advanced development in structural form. The students are expected to understand the theory behind these structural forms.

Objectives of the Course:
To inform the students about the recent developments in structural forms. To increase the student's ability to identify the structural forms suitable for architectural expression.

Expected Skills / Knowledge Transferred:
The students are expected to gain knowledge about the recent developments and advanced concepts in the structural forms.
The students are expected to analyze and understand the nature of stresses that are developed in the major elements of advanced types of structures.

Course Contents:

UNIT I
Fundamentals of Structures
Construction and form, Structure and Form. Geometry of form and structural function. Introduction to basic structural systems, elements of structure, their functions & behaviour, beams, slabs, columns, walls, foundations, bearing wall systems, trusses, rigid frames, linear and curved elements; simply supported, cantilever and overhanging beams for various loads; effect of simple geometric forms on the overall structural behaviour.

UNIT II

Fundamentals of Forces

Primary and secondary forces acting on structures - dead loads, live load, wind, seismic forces, distribution of loads through the elements of the system.

Structural Systems:
Single and double layer grids; braced domes, ribbed domes, plate type domes, Network domes, Lamella domes, Geodesic domes, Grid domes. Braced and folded structures.

Strength of materials

UNIT III

Mechanical properties:

Concept of direct and shear stresses and strains, stress-strain relationship, Biaxial and triaxial loading. Elastic constants and their relationship, stress-strain diagrams and their characteristics for mild steel other metal and concrete. Factors of safety.

Uniaxial problems: Stresses and strains in compound bars in uniaxial tension and compression, temperature stresses in simple restrained bars and compound bars of 2 types only.

UNIT IV

Axial force, shear force & Bending Moment Diagrams.

Beams, Loading and support conditions, Bending moment, Shear force and axial load diagrams for all types of loadings for simply supported beams, cantilevers and beams with overhangs, Relation between shear force, bending moment and loading intensity.

UNIT V

Stresses in beams (Bending, Shear)

i. Bending; Theory of simple bending, Determination of moment of inertia of cross sections of various shapes, section modulus, Moment of resistance, bending stresses in solid, hollow and built up section.

ii. Shear: Distribution of shear stresses on beam cross sections,

iii. Strain energy under uniaxial tension and compression shear bending and torsion impact loads and instantaneous stresses.

UNIT VI

Slope & Deflection of beams :

Theory of long columns, Euler, Rankine formula, slope & deflection in statically determinate beams subjected to point loads, u. d. loads, Moments by a) Macauley's Method b) Moment Area Method c) Conjugate Beam method.

Expected Outputs & Assignment

Students to make documentation of different built elements and their aspects mentioned above. Structural/ study models of different structures such as arches, truss etc. shall be made along with short notes on the same.

Reference Books:

1. Rowland J. Mainstone: Development of Structural Form
2. Rangwala: Engineering Materials

3. S. P. Bindra, S. P. Arora: Building Construction
4. B.C. Punmia: Strength of Materials vol – I
5. Mechanics of Materials: E.P.Popov. (Prentice Hall of India, New Delhi)
6. Elements of Strength of materials: S. Timoshenko and O.H.Young, East West press private Ltd., New Delhi.
7. Strength of Materials: Ferdinand L.Singer (Hayper and Row, New York)
8. Strength of materials: Mahadeo Appa

FSP307 CAD AND FUNDEMENTALS OF 3D MODELLING

L/s: 4/Wk	*Int: 50*	*End Exam: 50***	*Total: 100*	*End Exam: Practical & Viva-voce*	*Cr: 3*

Course Overview:
To orient the student to create two and three-dimensional objects in space with special emphasis on presentation and visualization of interiors and exteriors of building through different rendering techniques using CAD.

Objectives of the Course:
To explore computer modeling techniques using CAD

Expected Skills / Knowledge Transferred:
To learn basic skills of modeling, scripting (rendering) in CAD, and to exercise methods of interface within CAD.

Course Contents:

UNIT I
Starting AutoCAD:
Introduction to the menu, starting drawings from scratch, Creating and using templates-starting drawings with setup wizards. Saving and closing a file.

UNIT II

Using co-ordinate system:

The UCS, Working with Cartesian and polar co-ordinate systems, using displays with key shortcuts.

Setting up the drawing environment:

Setting the paper size, Setting units, setting grid limits, drawing limits, Snap controls, Use of paper space and model space.

UNIT III

Basic commands dealing with drawing properties:

Layer control, change properties, line weight control, etc.

Inquiry methods:

Using database information for objects, calculating distance and angle, areas etc.

UNIT IV

Dimensioning commands and Blocks:

Dimensioning the objects in linear, angular fashions along with quick time dimensioning etc. Creating and working with blocks, creating symbols, use of blocks in creating a layout of a residential area- one exercise to be done as lab assignment.

UNIT V

3d – Modelling:

Parameters, Modifiers, Viewport Navigation Control, Objects and Sub-objects

Modelling, Parametric object creation, Polygon tools and techniques for modeling, Spline tools and techniques for modeling, Modelling organic / inorganic objects.

UNIT VI

Texturing:

UV space, Applying 2D images onto 3D geometry Materials, Using the Material Editor, Materials and Maps Lighting, Lighting tools and techniques, Shadows: Depth-Map and Raytraced Animation, The Graph Editor, Controllers.

UNIT VII

Rendering - Output considerations:

Modules and advanced specialist areas, Advanced UV mapping for complex models. Applying UV coordinates to organic objects, Applying UV coordinates to inorganic objects. Advanced Materials for complex models, Multi / Sub-Object, Composite Matte / Shadow, Photorealism' with mental ray Materials and Lighting,

Ready-made libraries, Secondary diffuse lighting techniques, Caustics

UNIT VIII

Particles:

Particle Flow - The sophisticated, event-driven particle toolset that lets the user design the behaviour of a particle based on a series of defined events. Rigid-body dynamics – Reactor, Realistic, high-speed simulations of multiple rigid objects. Character animation – biped, Character animation toolset. Skin and Physique modifiers

Reference books:

1. Teyapoovan, T. Engineering Drawing with Auto CAD 2000. Vikas Pub. House Pvt. Ltd., New Delhi, 2000.
2. Parker, Daniel and Rice, Habert. Inside Auto CAD Daniel. 1987.
3. Georgeomura, Auto CAD Release 2000.
4. Boardman, Ted #DS MAX Fundamentals, Person Custom Publishig, 2006
   a. Includes CD-ROM materials and lab files
5. Bonney, Sean Inside 3D MAX, Pearson Custom Publishing, 2006
   a. Includes CD-ROM materials and lab files

FOURTH SEMESTER

FSP401 FACILITIES PLANNING STUDIO– II

L/s: 12/Wk Int: 100 End Exam: 100 Total: 200 End Exam: Viva-voce Cr:8*

Course Contents:

UNIT I

Building Byelaws and Regulations:
Introduction – Terminology – Objectives of building byelaws – Floor area ratio (FAR) – Floor space Index (FSI) – Principles underlying building byelaws – classification of bye buildings – Open space requirements – built up area limitations – Height of Buildings – Wall thickness – lighting and ventilation requirement.

UNIT II

Residential Buildings:
Minimum standards for various parts of buildings – requirements of different rooms and their grouping – characteristics of various types of residential buildings.

Public Buildings:
Planning of Educational institutions, hospitals, dispensaries, Office buildings, banks, industrial buildings, hotels and motels, buildings for recreation.

UNIT III

Introduction to Building Design Concepts and Issues:
Design as a problem solving & multivariate activity, value judgment in design, Form; Introduction to basic physical factors, orientation, ventilation, protection from excessive sun, rain, dust, insects etc. site characteristics, landform, visual elements, behavioral factors, space utilization, anthropometrics, furniture layout, form and function

UNIT IV

Doors windows, ventilators and roofs:
Paneled Door – paneled and glazed door, glazed windows – paneled windows – Swing ventilator – Fixed ventilator-Couple roof – Collar roof – Kind Post truss – Queen post truss.

UNIT V

Case study:

Preparation of design brief, detail study of various rooms (living, dining, kitchen, bed room, toilets etc) including furniture layout. (Exercise in redesigning above studied rooms).

Introduction to architectural space standards, building bye laws, design of single use, small span, single storey building. (Residence, kinder garden, village post office, primary health center, restaurant etc.).

Expected Outcomes & Assignment

- *Study & analysis of given buildings involving parameters like Orientation, Circulation, Space Utilization, Functional Efficiency and Building Elements. Submission in the form of drawings and documentation.*
- *Measure drawings for design/ re-design of above study (any one)*
- *Appreciation studies of residential, commercial, recreational and industrial areas.*
- *Site inventories & analysis for a given site and broad zoning for the same*
- *The distribution of marks in the studio subject may be as follows: 40% for individual assignment 60% for group work*

Reference Books:

1. Chiara Joseph de and others. Time Saver Standards of building Types. McGraw – Hill, 1980
2. Neufert, Ernst Architects Data, Granda Pub.Ltd, London, 1970.

FSP402 ENVIRONMENTAL STUDIES

L/s: 4/Wk	*Int: 50*	*End Exam: 50*	*Total: 100*	*End Exam: 3 hrs*	*Cr: 4*

Course Contents:

UNIT I

Introduction: Definition, scope and importance, Measuring and defining environmental development indicators.

Environmental and Natural Resources: Renewable and non-renewable resources - Natural resources and associated problems - Forest resources - Use and over exploitation, deforestation, case studies - Timber extraction - Mining, dams and other effects on forest and tribal people - Water resources - Use and over utilization of surface and ground water - Floods, drought, conflicts over water,

dams - benefits and problems - Mineral resources: Use and exploitation, environmental effects of extracting and using mineral resources, case studies. - Food resources: World food problems, changes caused by agriculture and overgrazing, effects of modern agriculture, fertilizer-pesticide problems, water logging, salinity, case studies.

UNIT II

Energy resources:

Growing energy needs, renewable and non-renewable energy sources use of alternate energy sources. Case studies. Land resources: Land as a resource, land degradation, man induced landslides, soil erosion and desertification. Role of an individual in conservation of natural resources. Equitable use of resources for sustainable lifestyles.

UNIT III

Basic Principles of Ecosystems Functioning:

Concept of an ecosystem. - Structure and function of an ecosystem. - Producers, consumers and decomposers. - Energy flow in the ecosystem Ecological succession. - Food chains, food webs and ecological pyramids. Introduction, types, characteristic features, structure and function of the following ecosystem: a. Forest ecosystem b. Grassland ecosystem c. Desert ecosystem d. Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries).

UNIT IV

Biodiversity and its conservation:

Introduction - Definition: genetic, species and ecosystem diversity. Bio-geographical classification of India - Value of biodiversity: consumptive use, productive use, social, ethical, aesthetic and option values Biodiversity at global, National and local levels. - India as a mega-diversity nation - Hot-sports of biodiversity –

Threats to biodiversity:

Habitat loss, poaching of wildlife, man-wildlife conflicts. Endangered and endemic species of India - Conservation of biodiversity: In-situ and Ex-situ conservation of biodiversity.

UNIT V

Environmental Pollution:

Definition, Cause, effects and control measures of: a. Air pollution b. Water pollution c. Soil pollution d. Marine pollution e. Noise pollution f. Thermal pollution g. nuclear hazards

Social Issues and the Environment:

From unsustainable to sustainable development -Urban problems

related to energy -Water conservation, rain water harvesting, watershed management -Resettlement and rehabilitation of people; its problems and concerns. Case Studies -Environmental ethics: Issues and possible solutions. -Climate change, global warming, acid rain, ozone layer depletion, nuclear accidents and holocaust. Case Studies. -Wasteland reclamation. -Consumerism and waste products. -Environment Protection Act. -Air (Prevention and Control of Pollution) Act. -Water (Prevention and control of Pollution) Act -Wildlife Protection Act -Forest Conservation Act -Issues involved in enforcement of environmental legislation. -Public awareness.

UNIT V

Solid waste Management:

Introduction, Types of wastes, Sound Material-Cycle Society, Systems approach to waste management problems. Planning for solid waste management, Recycling system and treatment system of solid waste, Formulating recycling as systems (input recycling materials, using conversion apparatus, systematize. Output, and discuss ways to improve recycling). Recycling biomass (discuss theory of organic waste recycling) Illegal dumping problems and restoration of contamination, Illegal dumping problems (introduce examples of prevention and reclamation measures), Restoration methods for contamination (discuss adopting principles for restoration methods for Contamination)

UNIT VI

Human Population and the Environment:

Population growth, variation among nations. Population explosion -Family Welfare Programme. Environment and human health. Human Rights. -Value Education. -HIV/AIDS. -Women and Child Welfare. -Role of information Technology in Environment and human health. -Case Studies.

Reference Books:

1. Erach Bharucha, A Text Book of Environmental Studies for Undergraduate Courses, University Grants Commission

FSP403 ELECTRICAL SYSTEMS

L/s: 4/Wk	Int: 50	End Exam:50	Total: 100	End Exam: 3 hrs	Cr: 4

Course Overview:
Study of Building Services and Utilities generally installed in buildings and their role in enhancing utilitarian value of the buildings. The study to focus on understanding the principles as well as practical aspects and solutions.

Objectives of the Course:
To develop the understanding of layout of utilities and services in building envelope, definitions and terms used, functioning and their applications in building.

Course Contents:

UNIT I
Electrical Energy System:
Fundamental principles of Electricity, Voltage, Amperage, wattage. Generation and distribution of power, HT and LT consumers. Types of Generators, Indian Electricity Act.
Building Wiring System:
Service wires, metering distribution boards circuits. MCB's cut outs. Conductors, wiring methods switch boards, electrical devices in general building. Light and power circuits. ISI Codes and standard material.

UNIT II
Safety aspects in Electrical Systems:
Fire fighting systems for Electrical Equipment, Lightning Protection for Hi-rise buildings, Grounding: system grounding and equipment grounding, Earthing Methods, Standards for Earthing, ELCB, pipe earthing, plate earthing, Factors that affect the Earth Resistance, Earth Resistvity Measurements, Earthfault detection and sensing

UNIT III
Utilization of Electricity, Electrical Switchgear (High Voltage and Low Voltage), Distribution Transformers:
Types and their application, Onload Tapchangers for Transformers, Power Factor Correction Capacitors, Cabling, Electric Layouts, Bus-ducts and cables based distribution, Maintenance of Electrical Installations; Generation of Electric Power, Standby DG Sets and their hookup to the Mains Distribution, Multiple DG Sets

Synchronization and Load sharing, Optimization of DG Set operation with respect to load, Underground Diesel Storage and associated facilities.

UNIT IV

Electric layouts:

Electrical symbols, NBC, 3 phase connection, preparation of layouts for residences, offices etc., Domestic appliances: Types of electric motors and electro mechanical devices. Construction and working of at least six domestic appliances and location in buildings.

Substation layouts:

Transformers, Switch gear Panels and capacitor Bank. Distribution of electricity. Cabling- mains and sub mains. Electrical Installation in large Buildings. Service Ducts. Internal Electrical wiring and controls. Maintenance of electrical installations. Safety Precautions in Handling Electrical Systems.

FSP404 HVAC SYSTEMS

L/s:4/Wk Int:50 End Exam: 50 Total: 100 End Exam: 3 hrs Cr: 3

Course overview:

This module covers the mechanical and electrical systems in modern facilities, with special focus on a building. It considers the principles and design of major systems such as: Mechanical heating, ventilation and air conditioning systems.

Course Contents:

UNIT I

Introduction:

Requirements of human comfort and concept of effective temperature- Comfort chart –Comfort Air conditioning – Requirements of Industrial air conditioning, Air conditioning Load Calculations.

UNIT II

Air Conditioning systems:

Classification of equipment, cooling, heating humidification and dehumidification, filters, grills and registers, fans and blowers. Heat Pump – Heat sources – different heat pump circuits.

UNIT III

HVAC System Design:

Principles of HVAC system design and analysis; component and system selection criteria including room air distribution, fans and air circulation, humidifying and dehumidifying processes, piping and ducting design. Air quality standards. Control systems and techniques; operational economics. The engineering principles and key factors influencing the thermal environments and quantification of these factors, functional requirements of utilities, and the design of systems to local codes.

UNIT IV

Air conditioning systems:

Ventilation Systems; Space Heating Systems; Automatic control; Commissioning, operation and maintenance; Introduction to HVAC & R analysis. Thermal equipment performance; Direct contact heat and mass transfer; Component modeling and simulation; Performance analysis and optimization of environmental plant systems. Part-load and year-round operation, system performance and operational problems; Ventilation systems: outdoor air control, ventilation effectiveness, ADPI, fan-duct network; Chilled water

UNIT V

Indoor air movement:

Air flow in confined and unconfined spaces, filtration systems; Instrumentation and measurement techniques.

UNIT VI

Systems:

Primary and secondary water loops, constant and variable flow; System control: air side control, water side control; Energy requirement: cooling load profile, fan and pump power, system operation for energy effectiveness and heat recovery, chiller optimization. Thermal environment; Air quality; Energy conservation measures; Energy codes; Noise and vibration control

FSP405 WATER SUPPLY SYSTEMS

L/s: 4/Wk Int: 50 End Exam: 50 Total: 100 End Exam: 3 hrs Cr: 4

Course Overview:
Understanding the significance, design and functioning of water systems as essential components in building design and site planning.

Course Contents:

UNIT I
Introduction to water supply:
Traditional sources of water supply Classification of water based on its usage. Elements of public / private water supply system, Different sources of water supply such as wells, reservoirs, etc. Water and its qualities, pumping and Distribution.

UNIT II
Fittings:
Types of fittings like taps, bathtubs, showers, jets, cocks, valves, electrical fixtures, etc. Faucets for kitchens, bathrooms and toilets. Check valves, foot valves, sump pump check valves, and pressure test gauges.

UNIT III
Building service connections:
Cold and hot water distribution systems in buildings and their design, materials, joints, fittings and valves (gate, flap, ball, flush valves etc.). Direct and indirect systems, individual water supply, special installation in multistoried buildings. Special emphasis on city level water distribution. Water supply layout in buildings.

UNIT IV

Surface and ground water sources:

Quality and quantity, location of sources and water intakes, area requirements of the components of water intakes; water requirement for different land uses, factors affecting water demand, per capita requirement and its relationship with population sizes, variation of water consumption; seasonal & hourly, peak factor; demand of water for fire fighting.

UNIT V

Water treatment system:

Location and space requirements; Components of water distribution systems, water storage location, capacity, fire fighting components, fire hydrants location, spacing, pressure requirement in pipe; Planning of water supply system, organizations and their jurisdictions, basic design guideline and layout of water supply distribution system; Financing water supply system, public and private partnership of providing water; Legal aspects and government policy for urban and rural water supply. Water conservation techniques.

Reference Books:

1. Husain, S.K. T.B. of Water Supply and Sanitary Engineering, 3rd ed. Oxford and IBH Pub. Ltd., New Delhi, 1994.
2. Kshirsagar, S.R. Water Supply Engineering, 6th ed. Roorkee Pub., Roorkee, 1980.
3. Rangwala, S.C. Water Supply and Sanitary Engineering: Environmental Engineering, 19th ed. Charotar Pub. House, Anand, 2004

FSP406 ECONOMICS AND SOCIOLOGY

L/s: 4/Wk	*Int: 50*	*End Exam: 50*	*Total: 100*	*End Exam: 3 hrs*	*Cr: 4*

Objectives of the course:

To familiarizes students with the basic concepts of sociology and economics and their influence on facilities and service planning.

Course Contents:

Economics

UNIT I

Introduction:

Definition and scope of economics, the central problems of economics, microeconomics and macroeconomic decisions, economic laws, economic goods, utility, value, price and wealth. Economic organization of society. Consumption, wants their characteristics and laws based upon them. Standard of living, market value, opportunity cost, the law of diminishing, increasing and constant returns.

UNIT II

Economic Theories:

Theory of production, factors of production, scale of production – internal external economics, division of labour. Theory of Demand supply and demand, the market mechanism, imperfection of competition and economic role of Government. Theory of income, employment and money, indicators of economic development used by World Bank and UNDP and their interpretations. Problems of economic growth and development, characteristics of underdeveloped economics, balanced growth and industrialization, population problems, technological change and innovations long-term economic plans.

UNIT III

Introduction to Urban and Regional Economics:

Classical and modern approaches, growth and development indicators; measures of national income, defining development and under development.

Use of economic concepts in urban planning, housing, transport, taxes, land use, location, etc; use of economic concepts in regional planning; location, disparities in development, input-output techniques, sectoral development etc.

UNIT IV

Land Economics:

Economic concept of land; economic principles of land use; basic principles of land economics - relevance for spatial planning, economic rent - market mechanism, land use pattern and land values; location economics. Land and real estate market, private ownership and social control of land, Economics of Town Planning decisions, effects of legislation on land development and urban land economics. Land development charges and betterment levy; land use restriction, compensation and requisition, taxation of capital gain on land versus public ownership's, economic aspects of land policies at various levels of decision making. Economics of Town Planning decisions; effects of legislation on land development and urban land economics.

Sociology

UNIT V

Sociology of India:

Culture, language, religion, caste, rural community and its relationship with urban community, social division of urban and rural poor. Definition and scope of sociology; Utility of sociology, relation between sociology and society. Essential elements of society, Bio-social and socio-cultural systems. Rural and Urban communities and their characteristics. Origin, growth and influence of cities.

UNIT VI

Introduction:

Introduction to the sociological concepts of Marx, Talcot Parsons, Weber, Durkheim, Riesman, Jane Jacobs, Gans, Castells, David Harvey, etc.

Definition of Urbanisation:

Patterns of life and influence of urbanization on rural life, urbanization process in India. Migration and its impact on urbanization, social problems of urbanization- problem relating to public health, public transport and public housing, sociological understanding of slums.

UNIT VII

World Urbanization and Urbanization in India:

Urban revolution; its preconditions brief history of urbanization in the world leading to the industrial cities, related problems, concepts of urbanism and urbanization; brief history of urbanization in India; Mughal and British influences of Indian cities; post-independence urbanization; urbanization process as influences by socio-cultural, political, economic and administrative factors.

UNIT VIII

Urban and Industrial Sociology:

Urbanization and urbanism; social aspects of urban-rural migration; concepts of industrial society; social aspects of industrialization; social problems of urban community crime delinquency and violence. The Chicago school of sociological thought, sociation, social organization and space in the city - urban space and segregation, labour markets and housing markets, suburbanization and gentrification, changing inequalities.

UNIT IX

Perspectives on Urban Culture

Louis Wirth and the urban way of life, Simmel and metropolitan culture, the culture of modernity, the social construction of urban meaning, urban culture and post modernity. Neighborhood Concept. Implications and limitations in India context.

Reference Books:

1. Urban economics: Irwin McGraw Hill
2. Urban economics: Mill &Hamilton
3. Urban economics: Evans
4. An Introduction to Sociology- D R Sachdeva &Didya Bhushan
5. Fundamentals of Sociology – Anand Sirohi
6. The meaning of Sociology – Joel M.Charan
7. Principles of Sociology – CN Shankar Rao

FSP407 GIS

L/s: 3/Wk	*Int: 50*	*End Exam: 50***	*Total: 100*	*End Exam: Practical & Viva-voce*	*Cr: 3*

Course contents:

UNIT I

Planning Information Systems:

Definition of systems, systems approach to planning as basis for planning information systems; systems hierarchy, types; data and information, value of information, information security and sharing; information systems, types, limitations; planning information systems; human settlement information needs, scales and levels, preconditions for using planning information systems; introduction to various planning information systems – municipal information systems, land information systems, cadastre systems; applications and limitations; tools for spatial data handling.

UNIT II

Introduction to Remote Sensing

Limitations of Traditional Surveys for Planning; Remote Sensing – Definition, Aerial and Satellite Remote Sensing, Aerial Remote Sensing; Aerial Photo Interpretation, Qualitative and Quantitative; Elements of Photo – Interpretation; Introduction to Digital Image Processing; Applications in Planning.

UNIT III

Introduction to GIS

Geographic Information Systems, Introduction, Components, Benefits; Computerized GIS, Input and Output Devices; Spatial Data Entry into GIS, Spatial Information Security and Sharing; Data Structure for GIS, Vector and Raster Data Structures, Comparative Advantages and Disadvantages; Maps, Base maps and Thematic maps, Mapping and Spatial Analysis Software, Linking of Attribute Data, Spatial Data, Aggregation Data Generalization; Limitations of GIS, Laboratory Exercises.

Expected Outputs & Assignment

Satellite data interpretation, Interpretation of Survey of India toposheets of the district Theme-wise map preparation through satellite data, Theme-wise map preparation from toposheets, Identification of secondary data, Mapping of other developed/ undeveloped villages in district, Identification of resource utilization and future scenario.

Reference Books:

1. Roger Tomlinson: Thinking about GIS; Stephen Wise: GIS Basics
2. Tor Bernhardsen: Geographic Information Systems (An Introduction)
3. Keith C. Clarke: Getting Started with Geographic Information Systems

FSP501 FACILITIES PLANNING STUDIO- III

L/s: 12/Wk Int: 100 End Exam: 100 Total: 200 End Exam: Viva-voce Cr: 8*

Course Overview:
This course focuses on existing and new Campuses for effective and efficient planning of facilities and services.

Objectives of the Course:
To enable the student to survey and analyze the existing conditions of the facilities and services within the campus.
To establish correspondence between constraints and ideas in the planning of facilities and services involving intermediate to large campuses and campus expansions.

Expected Skills / Knowledge Transferred:
Understanding the problems and issues of facility planning with respect to site factors, socio-economic factors, environmental factors and technological factors and the skills related to facility and services planning of campuses.

Detailing skills required for the re-arrangement of the scenario on the campus with relocating of Facilities and services in urban contexts.

Course Contents:
This module uses the case study approach to integrate the various elements of facility planning covered on the program. A variety of cases in India and the region are used to illustrate different campus project problems and challenges.

Students are required to undertake a case study of a campus and do detailed critical study of the various aspects. This shall be presented through drawings, photographs, write ups etc in the studio. The students will also prepare a report on the case study for the viva voce.
The issues to be addressed for the facility planning studio problem shall include site planning, climate, landscaping, urban infrastructure, function, structure, building materials & finishes, construction technologies, services, bye-laws, user behavior etc.

Students have to correlate and synthesize the abilities developed in parallel streams of humanities, technology, science etc during the course, until this semester.

Use of CAD and other digital techniques may be encouraged**.**

The topics to be covered may include campuses of learning, health, training, administration, industry etc.

At least one major exercise and two minor problems should be given (one of the problems to be on interiors).

Note: In the end exam, which is a viva-voce, the students have to present the entire semester work for assessment.
Necessary theoretical inputs to be given highlighting the norms and campus planning issues.

Reference Books:

1. Campus Design by Richard P. Dober
2. Richard.D.Dober. Camous Architecture:Building in the groves of Academy. McGraw Hill,New York, 1996.
3. Designing a Campus for the Twenty-First Century - Hardcover (April 1, 2007) by William J. Mitchell

FSP502 SAFETY, HEALTH AND ENVIRONMENT MANAGEMENT

L/s :4/Wk	*Int: 50*	*End Exam: 50*	*Total: 100*	*End Exam :3hrs*	*Cr: 4*

Course Overview:
This course focuses on effective and efficient planning of facilities and services from the view point of occupational safety, health and environment.

Objectives of the Course:
This course will enable the students to know about the industry related health hazards and deceases and various methods and process implementation to avoid and eliminate health hazards. Also gives a good theoretical and practical understanding on various safety measures in construction industry. The students can have a thorough knowledge about various hazards involved in the construction industry and hazard control methods, their engineering and management.

Expected Skills / Knowledge Transferred:
Understanding of safety management system, environmental health, pollution control and the economics and management of sustainable development in the context of projects. Policy issues at the national and corporate levels on safety, health and environmental management are also covered.

Course Contents:

This module covers aspects protecting the safety, health and welfare of people engaged in work or employment.. The issues to be addressed for the facility planning studio problem shall include examining the facilities for security and protection and identification of the interchanges of a facility with the external environment, and where potential threats may occur. Emergency Management. Health care management. Employee safety and First Aid.

UNIT I
Introduction:
Safety, Health and Environment, Occupational Health Hazards, Control of occupational deceases. OSHA, ILO, Ergonomics – Introduction, Definition, Objectives and Advantages

UNIT II
Principles of Environmental Engineering:
Pollution Prevention, Waste treatment, Disposal of waste, Standards of Environmental Management System. Engineering Control Health Hazards, Material handling safety, Personal protective Equipments, Electrical Hazards and safety.

UNIT III
Introduction of construction industry ,Construction Safety Organization, Work permit system - Hot permit, Electrical permit, Vessel entry permit, Excavation permit ,Confined space entry permit, Acid area entry permit, Safety at work
Machine guarding, Ventilation, Lighting

UNIT IV
Safety at construction site, Hazards, Scaffolding and working platform, Welding and cutting, Rigging and hoisting, Handling and storage of compressed gas, Excavation work, Concreting and cementing work, Transportation of men and material, Lock out and tag out, Shoring, Waste control disposal

UNIT V

Building construction, TAC and NBC rules. Inspection of site, high rise building. Fire protection introduction to TAC norms, Earth quake, Lightning and electrical hazard protection, Building construction, Building materials, Plan reading and method, Standard, symbols, designation, Personal hazards, Fire escape structural precaution, Floor openings, staircase, escalators etc ., Fire hazard in a building, Building collapse and symptoms, Fire tower/fire escape

Reference Books:

1. Fire Equipment David L. Bever
2. Fire Technology R.S. Gupta

FSP503 ILLUMINATION ENGINEERING

L/s: 4/Wk	*Int: 50*	*End Exam: 50*	*Total: 100*	*End Exam: 3 hrs*	*Cr: 4*

Course Contents:

UNIT I

Introduction to light:

Light and vision, Light and color, Light and health, Photometry

UNIT II

Lamps:

Lamp families, Incandescent lamps, Cold cathode lamps, Fluorescent lamps, High intensity discharge lamps, Electrodeless lamps

UNIT III

Luminaries:

Lighting hardware, Luminaire construction, Luminaire appearance, Luminaire photometry

UNIT IV

Controls:

Switches (on/off operation), Switches (on/dimming/off operation), Networked switching, Preset switching, Time clocks, Motion sensors, Photocells

UNIT V
Design tools:
Qualitative design tools - Mood shots, Field trips, Light rendering by hand, Light rendering by computer, Models, Mockups.
Quantitative design tools – Templates, Lumen method, Point method, Computer calculations, Spread sheets.

UNIT VI
Day lighting:
Defining day lighting, Assessing daylight, Daylight media, Daylight analysis, Daylight and electric light integration

Reference books:

1. Architectural Lighting Design- Gary Steffy,LC,IES,FIALD Electrical wiring and Contracting (Vol.1 to Vol.4), London The New era Publishing Company.
2. Dr. Frith Abnwos and others, Electrical Engineering hand Book
3. William. J. Guinnesss, Mechanicla and electrical Eqipment for Buildings, New York: Willey Bovay. H.E., Handbook of Mechanical and Electrical Systems for BuildingsNew York: MC Graw Hill

FSP504 BUILDING AUTOMATION AND CONTROLS

L/s :4/Wk	*Int: 50*	*End Exam: 50*	*Total: 100*	*End Exam: 3hrs*	*Cr: 4*

Course Contents:

UNIT I
Introduction:
Need for building controls, Defining building automation, Introduction of various concepts like Automation in acoustical design, illumination, water supply, fire-fighting, HVAC, emergency systems, etc. Effect on indoor environment and the global environment, Energy conservation benefits, Advantage of a BMS

UNIT II
Components:
Sensors, Actuators, Controllers

UNIT III

Protocols and industry standards in building automation:

ZigBee, BACnet, LonTalk, Modbus, DALI, C Bus, oBIX, DSI

UNIT IV

Control theory:

Simple proportional control, Proportional and differential controller (PD), Proportional Integral and Differential controller (PID).

UNIT V

Building Management system- BMS:

Light control, Transportation, Lifts and elevators, Air conditioning, Assess controlling, Fire systems .

Reference Books:

1. Intelligent Buildings and Building Automation by Shengwei Wang
2. Understanding Building Automation Systems by Reinhold A. Carlson (Author), Robert A. Di Giandomenico (Author)
3. A guide for building and facility automation systems by John P. Cilia;
4. Instrumentation & mech. Measurements by A. K. Tayal ,Galgotia Publications
5. Instrumentation, measurement & analysis by B. C. Nakra & K. K. Choudhary, TMH

FSP505 WASTE WATER SYSTEMS

L/s: 4/Wk	*Int: 50*	*End Exam: 50*	*Total: 100*	*End Exam: 3 hrs*	*Cr: 4*

Course Contents:

UNIT I

Design of drainage and vent pipes, system for low-rise and high-rise buildings, building drains, sewers, gullies, inspection chambers, manholes, connection to public sewer, cross connections, ferrule, water meters, stopcocks, bib cocks etc.

UNIT II

Types of fixtures and materials- wash basins, water closets, urinals, bidets, sinks etc. Conditions of flow in building drainage pipes, traps, vents and their material specifications. Over-head and under-ground reservoirs

UNIT III

Waste -water disposal systems, septic tank and its design, soil absorption system, alternatives, solid wastes collection and removal from buildings. On-site processing and disposal methods. Aerobic and Anaerobic decomposition, purifying capacity of water bodies. Biochemical Oxygen Demand. Building drainage, Sewerage and storm water disposal. Drainage of roads, sub-drains, culverts, ditches and gutters.

UNIT IV

Roads and Pavements – Different types, water bound macadam, tar bitumen, asphalt and Cement concrete roads, soil stabilization, types of paving-murram, brick, and stone paving.

UNIT V

Conventional water treatment – sedimentation, coagulation, filtration and disinfection. Distribution system, sanitary, storm and combined sewerage system. Design of sewerage systems, Location of sewage systems, conventional wastewater treatment, activated sludge, trickling filters etc.

UNIT VI

Rainwater harvesting – Recharge, rainwater disposal, sub soil drainage

Reference Books:

1. Husain, S.K. T.B. of Water Supply and Sanitary Engineering, 3rd ed. Oxford and IBH Pub. Ltd., New Delhi, 1994.
2. Kshirsagar, S.R. Water Supply Engineering, 6th ed. Roorkee Pub., Roorkee, 1980.
3. Rangwala, S.C. Water Supply and Sanitary Engineering: Environmental Engineering, 19th ed. Charotar Pub. House, Anand, 2004.

FSP506 HUMAN BEHAVIOR ASPECTS IN FACILITIES PLANNING

L/s: 4/Wk Int: 50 End Exam: 50 Total: 100 End Exam: 3 hrs Cr: 3

Course Contents:

UNIT I

Introduction:

Human needs and influence of Facilities planning on human needs. Maslow's hierarchy of needs. Environmental behaviour in facilities planning. Behaviour of users in different settings. Study of proxemics, clustrophobhia, crowding. Intimate, personal, social and public distances. Densities and their standards. Privacy, levels of privacy, audio and visual privacy. Concepts of barrier, territoriality, security. Life style, attitudes, values and tools to measure them.

UNIT II

Safety, security and control:

Energy control. Setting up and preparing for work. Closing Down. Effective Communication. Waste Management. Handling of Employee/ Associate Complaints. Caring For an associate / Employee. Importance of using employee related Language.

UNIT III

Hospitality management:

Learning objectives, Top ten Global Issues and challenges in the hospitality industry. Coping with Global Issues and trends. Hospitality Information Systems. Hotel and rooms Division Operation. Application of FM in Hospitality Services.

UNIT IV

Personality development:

Listening. Voice and Language. Telephone Etiquette. Presentation skills. E-mail Writing. Attitude .Speaking. Inter Personal Communication. Human resource development – Leadership and Motivation. Team Work and team Building. Conflict Resolution. Decision Making

UNIT V

Organizational Behavior:

The human behavior in organizational settings. The major elements of managerial and supervisory functions in business organizations and the dynamics of human behavior in organizational settings.

Motivation, leadership, job and organizational design, creative communication, problem solving, and conflict resolution. Contemporary issues (cultural diversity, globalization, etc) to be discussed.

Reference Books:

1. Human Behaviour in Design: Individuals, Teams, Tools by Udo Lindemann U$Å”
2. Dimensions of Human Behavior: Person and Environment (Series in Social Work) by Elizabeth D. Hutchison

FSP507 WORKSHOP (MEP)

L/s: 3/Wk	*Int:100*	*End Exam: Nil*	*Total: 100*	*End Exam: Nil*	*Cr: 4*

Course Contents:

UNIT I

Plumbing workshop:

Pipe cutting : Use of pipe cutters; Thread of pipes; Connection of fitting such as to pipes; Use of valves and unions; Function of pipes fitting: Use of hand tools; Pipe wrench; Chain wrench; Caulking tools; etc. Threading of PVC pipes. Connection of PVC pipes by connecting materials and by threaded pipes fitting. Bending of PVC pipes. Minor repairs in plumbing.

UNIT II

Electrical Workshop:

Study of symbol, specification and approximate cost of common electrical accessories, tools and worse & cables required for domestic installation. Study of a) Basic electricity rules for a domestic consumer b) Safety precaution & use of Fire fighting equipments.

Use of series of phase tester, series test lamp tong test and measure in testing of electrical installation. a) Prepare of potential divider and measure resistance of a filament lamp using voltmeter and meter. b) Measurement of power and energy consumption by and electric heater using wattmeter and energy meter.

Preparation of wiring diagram, wiring testing, fault finding& costing for a) Control of one lamp by one switch (using batten and tumbler switch b) Control the staircase wiring (using batten and tumbler switch) c) Control of one bell buzzer indenter by one switch (using conduit and flush type switch). Prepare one Switchboard as per

institutional requirement (using flush type switches. Sockets, MCB, ELCB, etc.)
Study Connecting testing and fault finding of a) Fluorescent rube and its necessaries b) Ceiling fan with resistance type and electronic regulator
Study Connecting testing and fault finding of a) Automatic electric Iron. b) Air Cooler c) Electric water pump
Design Draw and estimate the material required for installation for A small residential Building/ Office/ hall

UNIT III

Mechanical workshop:

Air refrigeration systems, air craft air-conditioning systems and their performance. Vapour compression cycles - simple, multi-pressure and cascade systems. Vapour absorption systems - Aqua-ammonia, water-lithium bromide and electrolux systems. Refrigerants and their uses, primary and secondary refrigerants, designation and properties, Ozone Depletion Potentiality (ODP) and Global Warming Potentiality (GWP) of refrigerants.

Refrigeration equipment. Air conditioning processes, cooling load calculations, air conditioning systems and equipment. Concept of effective temperature and effective sensible heat factor (ESHF), requirement of comfort air conditioning.
Solar refrigeration and air conditioning systems. Household refrigeration, water cooler, window air conditioner and desert coolers.
Mechanism of operation of lifts and escalators

SIXTH SEMESTER

FSP601 FACILITIES PLANNING STUDIO-IV

L/s: 12/Wk Int: 100 End Exam: 100 Total: 100 End Exam: Viva-voce Cr:8*

Course Overview:
This module provides an understanding of how knowledge of Facilities and services planning is applied in the case of high rise buildings.

Objectives of the Course:
To familiarize the student with the tools and techniques those are necessary for the facilities and services planning of high rise buildings.
To enable the student to survey and analyze the existing conditions of the facilities and services within the High Rise Building.

Expected Skills / Knowledge Transferred:
Understanding the problems and issues of facility planning with respect to site factors, socio-economic factors, environmental factors and technological factors and the skills related to facility and services planning of High rise buildings.
Detailing skills required for Facilities and services planning of High Rise Buildings in urban contexts.

Course Contents:
Relevant case studies on exemplary facilities and contemporary issues in facilities planning of high rise buildings are considered.
Students are required to undertake a case study of a High rise building and do detailed critical study of the various aspects. This shall be presented through drawings, photographs, write ups etc in the studio.

At least one major exercise in facilities and services planning of high rise buildings and two minor problems (at least one should be on interiors) should be given and the final submission shall necessarily include a report for at least one of the problems.
I. A comprehensive portfolio from brief to tender drawings.
II. Details portfolio, (at least one example each) of:

i) Advanced technologies & construction.
ii) Material planning and selection of finishes.
iii) Advanced facilities and services
iv) Interior designing and landscape

Students would need to undertake and address all of the above issues for the studio exercises.
Use of CAD and other digital techniques may be encouraged**.**

Note: In end exam which is a viva-voce the students have to present the entire semester work for assessment,

Necessary theoretical inputs to be given highlighting the norms and issues. The topics not covered in the case studies may be covered by the studio faculty members through lecture/slide shows.

Reference Books:

1. Multi-purpose High-rise Towers and Tall Buildings by H. Viswanath
2. High-Rise Living by Andrew Weaving

FSP602 CONTRACTS AND PROCUREMENT MANAGEMENT

L/s: 4/Wk	*Int: 50*	*End Exam: 50*	*Total: 100*	*End Exam: 3 hrs*	*Cr: 4*

Course Contents:

UNIT I
The fundamental legal principles relating to disputes on projects in the various stages of preparation of documents, formation of contract, contract administration including documentation and issues of evidence; methods of dispute resolution including contractual mechanism, summary judgment, alternative dispute resolution (ADR), statutory adjudication, arbitration; enforcement and insolvency; and legal approaches to disputes with third parties.

UNIT II
The knowledge of the principles of risk management which include the common analysis techniques, and their application to projects. The major topics are: types and sources of project risks; risks affecting budgeting decisions and cost estimates; risk management cycle; risk analysis techniques; and risk allocation arrangements.

UNIT III
The fundamental principles of administering projects from the client's perspective by developing further, and applying, students' knowledge of project management law. Procurement systems,

valuation of work done based on the Security of Payment Act, valuation of variations and financial control of projects.

UNIT IV

Introduction to materials management, Ware housing and its planning, material planning techniques such as material requirement planning & vendor rating, cost reduction techniques such as value analysis, transportation model & inventory control techniques, Miscellaneous techniques of materials management such as standardization & codification, purchasing strategies and material handling systems.

Reference Books:

1. Contracting for Project Management by J. Rodney Turner
2. Procurement Principles & Management by Peter Baily, David Farmer, Barry Crocker, and David Jessop

FSP603 TRAFFIC AND TRANSPORTATION SYSTEMS

L/s: 4/Wk	*Int: 50*	*End Exam: 50*	*Total: 100*	*End Exam: 3 hrs*	*Cr: 4*

Course Contents:

UNIT I

Transport Development:

Economic, political and social significance and transport development; Characteristics and role of various forms of transport, road, railways, waterways and airways. Transport policies and programs in India before and after independence; Transport co-ordination.

UNIT II

Road Development:

Historical perspective of road development in India; Scope and content of Nagpur, Mumbai and Lucknow road development plans; Current trends in road development; accessibility and priority index in traffic networking Schemes for Road development in Urban and rural areas and industries, Road development Plan by Indian Roads Congress 2021.

UNIT III

Geometric Design:

Components of geometric design – Horizontal and vertical alignment, network alignment planning, sight distance, cross section, alignment check lateral and vertical clearance, control of axis,

Roads Classification – functional and administrative; Design control and criteria; construction – stages of planning; level of service of roads – calculation by floating car methods; factors influencing level of service and capacity - road design, traffic factors, surface conditions, alignment of road, grade; design for safety in Indian conditions; space standards; land acquisition act for roads; Road components; Central median, kerbs, camber, super elevation,

Rotary: Advantages and disadvantages of rotary, design and guidelines for selecting rotaries.

UNIT IV

Vertical Transportation Systems:

Lift technology, types of lifts, Electric Lifts, details of lifts, various lift drives; Energy losses and saving; Controller design; Special lifts and escalators; Artificial intelligence applications. Operation, Maintenance and safety. Elevator technology; Fundamental elevator traffic design, Escalators.

UNIT V

Parking: Types of parking; multilevel car parking; Traffic control of building

Expected Outcome & Assignment

Students are expected to conduct above mentioned surveys for a campus and building and prepare a circulation plan. The class and assignment work to be supplemented with appropriate site visits.

Reference Books:

1. Khanna & Justo: Highway Engineering
2. L.R. Kadiyali: Traffic and Transportation Planning
3. Vazirani and Chandola Transportation Engineering, New Delhi
4. Road Development Plan of India 2021 – Indian Road Congress

FSP604 FIRE ENGINEERING AND SCIENCE

L/s: 4/Wk	*Int: 50*	*End Exam: 50*	*Total: 100*	*End Exam: 3 hrs*	*Cr: 4*

Objectives of the course:
This course teaches the basic fire chemistry, principles of fire, structural approach to various fire fighting equipments, systems and process. The course will also emphasis working principle, operation, maintenance, transportation and safe custody of modern and sophisticated fire fighting appliances and systems Course also targets to understand various fire prevention measures.

Course Contents:

UNIT I
Chemistry of Fire, Oxidation, Slow – rapid – spontaneous combustions, chain reaction, Flash point & Fire point ignition temperature, Classification of Fire, Methods of extinguishment, First aid fire fighting arrangement Types of fire extinguishers

UNIT II
Fixed Installation: External hydrant, Ring mains, Hose reels, wet and dry riser, Automatic sprinkler system Deluging system, Drencher system, Pre-mixed foams solutions, Fire alarm system, and Flooding system.

UNIT III
Hydrostatic: Hydrostatic pressure, Absolute and gauge pressure, Pressure reassurances, hydrostatic forces
Hydro dynamics: Introduction, Basic parameters of flow, Newton's Laws applied to fluids Work, energy and power, Law of conservation. Flow in pipes and fire loses, Hydraulic and energy guide lines. Friction losses in pipes and loses, Rule of hump computations

UNIT IV
Pumps and classification, Discharge and suction head, Pressure and power requirements, Starting and troubleshooting, Pump testing and relay operation. Water hammer, Parallel and series connections, Branching lines, local losses.

UNIT V

Fire streams: Introduction, discharge from a nozzle, range of a good fire stream, Fire loss control: Principles of fire loss prevention, fire protection manual. Fire safety data sheet

UNIT VI

Computational Fire Modeling for Building Design :Zone modeling techniques: modeling of heat release rate, fire plume, ceiling jet; Field modeling techniques: turbulence and turbulent modeling, solution of velocity-pressure coupled equations, boundary conditions and wall functions, use of commercial computational fluid dynamics packages; Application of fire modeling results: simulation of compartmental fire, atrium fire, tunnel fire, sprinkler-plume interaction.

UNIT VII

Basic science of water-based / gas / dry power fire systems; Pedestal fire hydrant system, sprinkler system, water spray/deluge system, drencher system, fixed foam system, dry pipe foam system; Halogen gas system, CO2 system and dry powder system; Computer programmes for system design; Smoke control systems; Fire safety control in HVAC systems; Fire detection systems, fire communication systems and false alarm.

Expected Outcomes & Assignment

The internal assessment to be in the form of term papers and presentations on above mentioned aspects.

Reference Books:

1. Fire Safety, Science and Engineering: A Symposium (Astm Special Technical Publication// Stp) by T. Z. Harmathy
2. Fire Engineering and Emergency Planning: Research and applications by R. Barham

FSP605 OPERATION AND MAINTAINABILITY OF FACILITIES

L/s: 4/Wk	Int: 50	End Exam: 50	Total: 100	End Exam: 3 hrs	Cr: 4

Course Contents:

UNIT I

O & M Management, importance of maintaining buildings and services, Tests and evaluation of Buildings and services, Check lists for handing over and taking over, pre-monsoon and post-monsoon activities, Effects of non-maintenance, Manpower and material planning for O&M, Budgeting for O&M.

UNIT II

Maintenance of Water supply systems, Relationship between water supplies and health, standards for water supplies, quality monitoring of drinking water supply, protection of sources of water supply, O & M of pumping stations, water treatment plants, chlorination practices, maintenance of ground level and elevated tanks, leakage detection survey, O & M of swimming pools, O & M of Kitchen Services

UNIT III

Maintenance of Sewerage Systems, Sewer cleaning equipment and devices, O & M of Sewage pumping stations, Sewage Treatment, Septic Tanks, Stabilisation ponds, Activated Sludge Processes, Filters, Oxidation ditches, Effluent disposal and utilisation

UNIT IV

Maintenance of Electrical installations, substation equipment inspection and preventive maintenance schedules, Earthing System Checks, O & M of DG Sets, Cables, UPS systems, Lifts & Escalators, Motors and Fire Detection systems, O & M of AC and Refrigeration systems, compressors, condensers, pumps, cooling towers, Air Handling Units, Electrical circuits and controls for AC plants, clean rooms, operation and monitoring, Low humidity rooms.

Reference Books:

1. Facility Manager's Operation and Maintenance Handbook by Bernard Lewis
2. Facilities Maintenance Management by Gregory H. Magee
3. Building Maintenance Management by Barrie Chanter and Peter Swallow

FSP606 MANAGEMENT SCIENCE

L/s: 3/Wk	*Int: 50*	*End Exam: 50*	*Total: 100*	*End Exam: 3 hrs*	*Cr: 3*

Course Content:

UNIT I

Introduction to Project Management:

Definitions and meanings; importance of project management, Reasons or shortfall in its performance, scientific management, life cycle of project.

UNIT II

Project Management Frame Work. Project Management Context. Project Integration Management. Project Design and Development. Floor area, classification methods, site and building evaluation. Project Scope management. Project Time Management. Tools & Techniques of Time Management. Project Cost Management. Procurement of Construction Services. The Construction Process. Project Control Using earned value techniques. Project Human Resource Management.

UNIT III

Project Communication Management. Project close-out acceptance and commissioning. Project Management Information System. Causes of Project Failure. Exercises, Tutorials and Case Studies.

UNIT IV

Project Management Strategies: Tools and Techniques for project management, classical persuasive and non-persuasive strategies and techniques. New techniques of management by objectives (MBO). Integrated reporting system, flow diagrams, bar, charts, milestone, charts, CPM and PERT, LOB. Techniques of monitoring of development works-standard oriented costs control, turnkey system, vertical production method, inventory cost control techniques, and unified status, index techniques.

UNIT V

The management of technology relating to development projects to meet regulatory requirements, and prevailing build-ability and quality standards. The topics include preliminary works, substructures, and structural systems, functional elements for reinforced concrete and structural steel buildings, and external works.

UNIT VI
The management of development technology for projects like Building Operations and Works of Engineering Construction. Regulations, Building Control Regulations, Buildable Design Appraisal System, Construction Quality Assessment System and other relevant codes of practice

UNIT VII
Assessment of clients' requirements, selection of projects, formulation of project brief, the role of design as well as the designer in projects, design for value, integrated designs, and design evaluation.

Reference Books:
1. Introduction to Management Science by Bernard W. Taylor
2. Project Management (Management Extra) by Elearn

FSP607 BUILDING INFORMATION MODELLING (BIM)

L/s: 4/Wk	*Int:50*	*End Exam: 50***	*Total: 100*	*End Exam: Practical & Viva-voce*	*Cr: 3*

Course Contents:

UNIT I
Building Information Modelling, background and history, need for BIM. Revit Architecture Basics, Exploring the User Interface, Working with Revit Elements and Families, Starting a Project.

UNIT II
Starting a Design, Creating a Basic Floor Plan, Creating and Modifying Levels, working with Grids, The Basics of the Building Model, Adding and Modifying Walls, Working with Compound and Vertically Compound Walls, Using Editing commands, Working with Doors, Adding and Modifying Windows, Loading Additional Building Components, Adding and Modifying Component Families.

UNIT III

Viewing the Building Model, Managing Views, Controlling Object Visibility, Working with Section and Elevation views, Creating and Modifying 3D Views.

Using Dimensions and constraints, Working with Dimensions, Applying and Removing Constraints.

UNIT IV

Developing the Building Model, Creating and Modifying Floors, Adding and Modifying Ceilings, Adding and Modifying Roofs, Creating curtain walls, Adding Stairs and Railings.

Detailing and Drafting, Creating Callout views, working with Text and Tags, Working with Detail Views, Working with Drafting Views.

UNIT V

Construction Documentation, Creating and Modifying Schedules, Creating Rooms and Room Schedules, Creating Legends and Keynotes.

Presenting the Building Model, Creating and Printing Drawing Sheets, Working with Title Blocks, Managing Revisions.

UNIT VI

Creating Renderings, Using Walkthroughs, Using Sun and Shadow Settings

Reference books:

1. BIM Handbook; A guide to building information Modeling for owners Managers, Designers, Engineers and contractors. – Chuck Eastman
2. Building Information Modelling – Willem Kymmell

FSP701 FACILITIES PLANNING STUDIO -V

L/s: 12/Wk Int: 100 End Exam: 100 Total: 200 End Exam: Viva-voce Cr: 8*

Course Overview:
This module provides an understanding of how knowledge of Facilities & services planning is applied in the industry for green buildings/mega structures. Topics covered include the assessment and management of facilities to enhance operational efficiency including energy management. The tools and techniques which are necessary for these tasks are covered. Relevant case studies on exemplary facilities and contemporary issues in facilities planning of green and large volume/mega structures are also considered.

Objectives of the Course:
To develop the knowledge and skills required for understanding the facilities and services in green buildings and large volume structures.

Expected Skills / Knowledge Transferred:
Skills to deal with the facilities and services planning of mega structures and green buildings.

Course Contents:

A variety of cases in India and the region are used to illustrate different problems and challenges relating to facilities planning of mega structures and green buildings. The topics not covered in case studies may be covered by the studio faculty members through lecture/slide shows. Informal talks by practicing developers, architects, contractors, lawyers, engineers and financiers on topics relating to facility management.

Students are required to undertake case studies of large volume structures and green buildings and do detailed critical study of the various aspects. This shall be presented through drawings, photographs, write ups etc in the studio. The students will also prepare a report on the case study for the viva voce.

At least one major exercise (one problem should be pertinent to large volume structures and to green buildings) and two minor

problems should be given (at least one should be on interiors). The student has to prepare a comprehensive portfolio including details and their integration with the facilities.

Note: In end exam which is a viva-voce the students have to present the entire semester work for assessment

Necessary theoretical inputs to be given highlighting the norms and design issues.

Reference Books:

1. Green Building Fundamentals by Mike Montoya
2. National Green Building Standard by International Code Council and National Association of Home Builders
3. Green Building Through Integrated Design (GreenSource Books) (Mcgraw-Hill's Greensource) by Jerry Yudelson
4. MEGA STRUCTURES: THE LARGEST INDOOR PARKS AND MALLS (EasyRead Large Bold Edition) by Susan K. Mitchell
5. Designing the Exterior Wall: An Architectural Guide to the Vertical Envelope - Hardcover (Jun 20, 2005) by Linda Brock

FSP702 ENERGY MANAGEMENT AND GREEN BUILDINGS

L/s: 4/Wk	*Int: 50*	*End Exam: 50*	*Total: 100*	*End Exam: 3 hrs*	*Cr: 4*

Objectives of the Course:

The emphasis is to understand existing concepts and ideas in the area of environment friendly buildings and architecture and develop understanding regarding infrastructural facilities and requirements.

The course focuses on the environmental issues and concerns in the field of buildings and architecture. It addresses the study of efforts and major solutions employed in solving them

Course Contents:

UNIT I

Buildings & Environment:

Solar radiation, Urban Climatology, Primary building elements and their contribution to the thermo-hygrometric performance of the buildings, Opaque facades, Roofs (flat and pitched), Windows.

UNIT II

Site planning & Landscape design:

Land use planning, Environmental site design, Site assessment and selection, Brownfield redevelopment strategies, Infill development.

UNIT III

Water management:

Water Resources Planning and Management, Water resources sub-system: surface water systems, groundwater system, water distribution system, Water demand forecasting, System thinking, Environmental and social considerations, System approach: water resources system analysis.

Water conservation and management

Metering, Water reuse, Water efficiency, Storm water management methods, Quality control, Quantity control.

UNIT IV

Energy and environment:

Ecological Principles: Ecological principles of nature; Concept of ecosystems; Different types of ecosystems; energy flow in the ecosystems; biodiversity. Energy Systems and Environment: Environmental effects of energy extraction, conversion and use; Causes of global, regional and local climate change; Pollution control methods; Environmental laws on pollution control. Sustainability: Global warming; Green House Gas emissions, impacts, mitigation; Sustainability; Externalities; Future Energy Systems; Clean energy technologies; United Nations Framework Convention on Climate Change (UNFCC); Sustainable development; Kyoto Protocol; Conference of Parties (COP); Clean Development Mechanism (CDM); Prototype Carbon Fund (PCF). Energy Management: Concept of energy management, energy demand and supply, economic analysis; Duties and responsibility of energy managers. Energy Conservation: Basic concepts, Energy conservation in household, transportation, agricultural, service and industrial sectors, Lighting, HVAC systems. Material and Energy balance: Facility as an energy system; Methods for preparing process flow; material and energy balance diagrams.

Indoor air quality & thermal comfort

UNIT V

Indoor air quality:

General concepts; Sick-Building Syndrome; key elements in indoor air pollutants. Methodologies for air quality evaluation: Legal framework and existing regulations; strategies for creating good

IAQ. Thermal Environment: thermal balance of the human body; mechanisms of thermoregulation; evaluation indices of thermal environment; standards for the evaluation of thermal environments; measurements equipment and its requirements. Lighting: spectrum of electromagnetic radiation; lighting quality; tadiometric and photometric units; requirements for indoor lighting. Noise: basic concepts; major descriptors, human perception of sound; noise measurement equipment and requirements; sound frequency analysis; indoor acoustic conditioning; acoustic quality indices. Vibrations: basic concepts; major descriptors; corrective measurements; measurement equipment and its requirements

UNIT VI

Building materials (structural and finishes)/ Design for recyclability

Energy efficient building material, Recycled building material, Effect of building material on energy conservation, Regional materials- sustainability, rapidly renewable material, Reuse of building material.

UNIT VII

Waste management

Categorization of waste, Reduction and reuse, Waste recycling options, Disposal methods of hazardous wastes

Reference books:

1. Green Building Technologies - Godrej Centre CII a Madhapur, Hyderabad.
2. Greening Building – Green Congress, US.(web).
3. HSMI. Sustainable Building Technology – HUDCO, HSMI (Human Settlement Management Institution, New Delhi.
4. Koenigsberger, O.H. and Others. Manual of Tropical Housing and Building. Orient Longman, Chennai, 2003.

FSP703 FINANCE FOR FACILITIES AND SERVICES PLANNING

L/s: 4/Wk	*Int: 50*	*End Exam: 50*	*Total: 100*	*End Exam: 3 hrs*	*Cr: 4*

Course Contents:

UNIT I

The process of developing a project from its inception to its commissioning, and the financing of projects. To provides students

an understanding of the economic and social aspects and implications of how properties and infrastructure are developed and managed.

UNIT II

Land use planning process, property development process, and roles of governments and parties involved in the built environment. The module also covers the fundamental issues relating to capital budgeting, use of projects as investment instruments, project feasibility studies, cash flows, investment criteria, cost of capital, and finance for various types of projects. Other key topics include financial markets and institutions, sources of project finance and financial performance studies.

UNIT III

Facility management as a Business in the world of Corporate Finance. Basic Financial Concepts. Accounting Basics. Financial Accounting – Principles and Procedures. Financial Reporting Applications- Balance sheet, Profit and loss Account, cash Flow Statement. Financial Management – Financial Ratios. Programming and Budgeting. Capital Budgeting- Budget Justification Techniques.

UNIT IV

Preparing approximate estimates for services like water supply, plumbing, electrical work, mechanical equipment and air conditioning. (for residential building).

Valuation – Introduction – state the purposes of valuation of building services, explain the terms, market value, book value, capital cost, capitalized cost, year's of purchase, list out various methods of estimating the depreciation.

FSP704 PLANNING FOR DISASTER MANAGEMENT

L/s: 4/Wk	*Int: 50*	*End Exam: 50*	*Total: 100*	*End Exam: 3 hrs*	*Cr: 4*

Course Contents:

UNIT I

Basic concepts, classification and definitions -Hazard, Risk, Vulnerability, Disaster and Disaster Management. Types of disasters; Hazard and vulnerability profile of India.

UNIT II

Disaster Risk, Vulnerability and Capacity Assessment (concepts and methodology) Relevance of Disaster Risk, Vulnerability & Capacity Assessment in Planning, Concept of Hazard Assessment, Vulnerability Assessment, Risk Assessment and Capacity Assessment, Hazard Identification and Analysis.

UNIT III

Disaster Management and Planning

Four elements of comprehensive disaster management (Preparedness, Response, Recovery and Mitigation), Concept of Mitigation and its importance (Structural and non-structural mitigation measures, identification of mitigation measures relating to different types of hazards and implementing strategies).

Land-use Management tools for disaster risk reduction. (Building codes, GDCR, zoning ordinances, land acquisition, transfer of development rights, recovery and reconstruction plan).

UNIT IV

Introduction to various Hazard Safety Legislations

National Disaster Management Act, Various state Disaster Management Acts (Gujarat, Uttar Pradesh, Uttaranchal, Bihar) and state disaster management policies (e.g. Orissa, Gujarat, Uttaranchal, Tamil Nadu, Delhi, Uttar Pradesh).

Relevance of Rehabilitation and Resettlement Policy in recovery and reconstruction phase of disaster management- planning process.

Coastal zoning regulation notification for construction and reconstruction phase in the coastal areas.

Expected Outputs & Assignment

Students shall carry out case studies in groups from state and undertake

(a) Zonal mapping highlighting the disaster prone/ sensitive areas.

(b)Indicate possibilities of integrating Disaster management and Development planning

(c)Linking up of community development planning with community based disaster management.

(d).Formulation of hazard Mitigation Plan/Disaster management plan.

The internal assessment to be in the form of term papers and presentations on above mentioned aspects focusing on their applications.

Reference Books:

1. Ron Hirst, "Underdowns Practical Fire Precautions", Gower Publishing Company Ltd., England, 1989.
2. Jain V.K., "Fire Safety in Buildings", New Age International (P) Ltd., New Delhi, 1996
3. Clark, W.E., "Fire fighting principles & practices".
4. HMSO: Manual of Firemanship, No. 4 to 7.
5. Kevin Cassidy, "Fire Safety and loss Prevention",
6. N F P A, "Fire Protection Hand Book",
7. Hubert Walker," Preventive maintenance/Apparatus" ,
8. Ervin L.W., "Fire fighting apparatus and procedures",
9. Fire services manual Vol 1 & Vol 2

FSP705 ADVANCED SERVICES AND INTELLIGENT FACILITIES

L/s: 4/Wk	*Int: 50*	*End Exam: 50*	*Total: 100*	*End Exam: 3 hrs*	*Cr: 4*

Course Contents:

UNIT I

Intelligent buildings: concept and implementation strategies; Building management system (BMS); Communication in BMS; BMS function and control optimization; Direct Digital Control; Communication system in buildings; vertical transportation; Electromagnetic compatibility; Power quality issues; Harmonics analysis; System reliability studies.

UNIT II

Smart technologies, sensor technologies, building control and automation systems, and human-systems relationships are explored. Case studies constitute an integral part of the module.

UNIT III

Electronic Systems in Buildings: Telephone and communication, EPABX networks, transmission. Security systems, Burglar alarms, video surveillance, access control. Computer labs, access flooring, server rooms.

Reference books:

1. Faber, Oscar and Kell, J.R. Heating and Air-Conditioning of Building. Architectural Press, Surrey, 1945.
2. Prasad, Manohar. Refrigeration and air-conditioning, 5th ed. New Age Intl. Pub., New Delhi, 1996.
3. Tiwari, Satish. Water and Energy resources.

FSP706 COMPUTER APPLICATIONS IN MEP

L/s: 4/Wk	*Int: 50*	*End Exam: 50***	*Total: 100*	*End Exam: Practical &Viva-voce*	*Cr: 3*

Course Content:

UNIT I
Introduction to computer application programs in MEP, Basics of computers in MEP

UNIT II
Preparing HVAC models for design. Process of analyzing HVACs designs. Process of creating room color fills. Process of exporting GBXML. Guidelines for exporting GBXML; process of using imported GBXML data. Guidelines for using imported GBXML data to color-fill rooms. creating HVAC designs

UNIT III
Process of creating HVAC designs. process of adding mechanical parts. Guidelines for adding mechanical parts. Process of creating a supply system process of inspecting a system. Guidelines for inspecting a mechanical system, process of routing piping. Guidelines for routing piping process of creating duct routing in a return system.

UNIT IV
Creating electrical designs; process of creating electrical designs process of adding electrical devices to your design; guidelines for adding electrical devices; process of creating circuits; guidelines for creating circuits. Process of setting up an electrical distribution. Guidelines for setting up electrical distribution circuits. Process and guidelines of creating a lighting fixture family.

UNIT V
Creating piping system:
Process of creating a piping system; guidelines for creating a piping system. Create a hydraulic supply piping system.

UNIT VI
Creating plumbing systems:
Process of creating a plumbing system; guidelines for creating a plumbing system; create a plumbing sanitary system.

UNIT VII
Creating fire protection systems:
Process of creating a fire protection system; guidelines for creating a fire protection system; create a fire protection system.

FSP707 FACILITIES PLANNING AND DEVELOPMENT SEMINAR

L/s: 3/Wk	*Int: 100*	*End Exam: Nil*		*Total: 100*	*End Exam: Nil*	*Cr: 3*

This subject forms the preliminary work on which the students' project in the next semester would be based. Therefore the objective of seminar in this semester is to encourage students to identify and select topics of interest and explore the theoretical issues based on extensive literature survey, interviews with experts and site visits wherever possible.

Students have the opportunity to explore a topic of their own choice in facility management and to present it at the seminar. The student's final oral presentation is made with visual exhibits, and a typewritten bound report is submitted for final examination.

Note: Each student shall present a formal report and a seminar for final assessments.

EIGHTH SEMESTER

FSP801 PROJECT

L/s: 30/Wk	*Int:150*	*End xam:150**	*Total: 300*	*End Exam: Viva-voce*	*Cr: 15*

Course Contents:

UNIT I

Each student of Bachelor of Facilities and services planning is required to prepare a dissertation / project on a subject concerning Facilities and services planning under a guide/adviser as approved by the Head of the Department. The dissertation / project will provide aid, opportunity to the student to synthesize the knowledge and skills acquired through the learning of various theories and practices during the course. Students are encouraged to select an area of investigation that is a specialization within facilities and services planning which most interests them.

UNIT II

The project work will be submitted periodically during development for review by the faculty. The particulars of schedule, content, presentation, format, etc., as decided by the department from time to time, shall be strictly followed.

UNIT III

At the end of the semester, each student is expected to submit the original investigation and drawings prepared as per the department's specifications; three copies of the report in the specified format and in a soft copy and a physical or digital / virtual model should be submitted to the department after obtaining the approval of the respective guide/ adviser.

Note: The department shall schedule the final viva-voce, at its convenience, only after the receipt of the project submission by a student.

FSP802 SEMINAR/PAPER (PHILOSOPHY)

L/s 5l/Wk	*Int: 100*	*End Exam: Nil*	*Total: 100*	*End Exam: Nil*	*Cr: 5*

Course Contents:

UNIT I
Philosophy as differentiated from science - definitions of Philosophy, methods.
Major philosophical thinkers of the world and of India and their ideas from Socrates to Mahatma Gandhi and S. Radhakrishna - utopian ideals, values, process, goals, social forces, ethics and management, etc.

UNIT II
Epistemology and its ideas doctrine of innate ideas, empiricism, rationalism, critical theory of knowledge, skepticism, evolutionary theory of knowledge, genetic theory of knowledge, intuitionism, logical empiricism, the dialectic method.

UNIT III
Tests of truth: realism, pragmatism and idealism; causation: idea of causality and finality, contingency. Naturalism, mechanism, organism views: teleology, creationism and other theories. Ontology: materialism and dialectic materialism. Theories of the mind, self and freedom of the will. Theories of value and reality.

UNIT IV
Review of the basic tenets of the various schools of Indian philosophy and isms: the Vedas, Brahmanas, Upanishads, Sankya, Yoga, Nyaya, Vyseshika, Mimamsa, Saiva Siddhanta, Tantra, Vedanta, Buddhism, Jainism, etc. Gandhi's philosophy of Ahimsa, Satyagraha, Swarajya and rural development; as alternative paradigms to planning in India.

FSP803 PRACTICAL TRAINING

L/s: Nil/Wk	*Int: 0*	*End: 100***	*Total: 100*	*End Exam: Jury & Viva-voce*	*Cr: 10*

Course Overview: Internship for a period of not less than 10 weeks.

Objectives of the Course: To provide experience in Facilities and services planning Practice.

Expected Skills / Knowledge Transferred: The skills required for a student to grow into a complete professional.

Course Contents:
Every student must work in an Office as a full-time trainee for a period of 10 calendar weeks (excluding Viva-voce) from the date of commencement of training. The Chief in the firm should have a minimum of five years of practical/professional experience after her/his graduation. The student should involve herself/himself in various aspects of work in an office like working drawings for facilities and services, quantity estimation, site supervision, etc. Detailed instructions regarding the training, the frequency of reporting to the department, etc. will be issued at the end of the seventh Semester, which the student must strictly follow.

After completion of training, every student will have to submit a detailed report with a set of drawings on at least two projects on which she/he has worked during the ten weeks of the practical training period. This report will be evaluated at a viva-voce by a jury consisting of one external, one internal and head of the department or his nominee. After submission of the report the department at its convenience will arrange for the conduct of the viva-voce examination.

Faculty

Mr.B.Prasad Rao B.Tech.Civil, MURP	Coordinator
Mrs.G.Trupthi B.Plan.	Lecturer
Mr.K.Suresh B.Tech.Civil,M.E	Lecturer
Mrs.P.Sailaja B.Arch., M.U.R.P	Lecturer

Visiting Faculty

Dr.G.Nageswar Rao
Mrs.P S S Nagalakshmi
Mrs.Kumkuma Devi
Dr.Raja Prasad
Mr.B.Chandrasekhar
Mr.A Dellibabu
Dr.Sameena Aziz
Mr.V.Srinivas
Md.Raza A Khan

Efficiency of facilities planners in this field:

. Facilities planners have knowledge of the fields of electrical engineering, civil engineering, mechanical engineering and architecture thus can install any power conservation system without effecting the other features of the building.

. Due to the knowledge of various aspects of the building the defects of the building can be recognized and be rectified effectively and efficiently.



DEPARTMENT OF ARCHITECTURE
JNAFAU, SCHOOL OF PLANNING & ARCHITECTURE
MAHAVEER MARG, HYDERABAD – 500 028.

Course Structure for
Master Degree in Architecture (Interior Design)

DEPARTMENT OF ARCHITECTURE
JNAFAU, SCHOOL OF PLANNING & ARCHITECTURE
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Course Structure for Master Degree in Architecture (Interior Design)

FIRST SEMESTER_

Course No	Course Title	Periods Per Week			Marks		
		Lectures	Tutorials	Studios	Internal	External	Total
I D 1.1.	Theory of Aesthetics and Design	3	--	--	40	60	100
I D 1.2	Interior Design Materials & Construction – I	2	--	--	40	60	100
I D 1.3	Environmental science for Interiors	2			40	60	100
I D 1.4	CAD and Visualization	1	3	--	40	60♣	100
I D 1.5	Seminar	2	2	--	100	00	100
1 D 1.6	Interior Design Studio – I	--	--	9	80	120•	200
I D 1.7	Workshop – I	1	2	--	100		100
	Total	11	8	11	440	360	800

SECOND SEMESTER

Course No.	Course Title	Periods Per Week			Marks		
		Lectures	Tutorials/Lab	Studios	Internal	External	Total
I D 2.1	Theory and History of Design	3	--	--	40	60	100
I D 2.2	Interior Design Materials & Construction	2	--	--	40	60	100
I D 2.3	Building Service systems for Interiors	3	--	--	40	60	100
I D 2.4	Furniture Design & Detailing	2	--	2	40	60	100
I D 2.5	Critical Research Seminars	2	2	--	100	00	100
I D 2.6	Interior Design Studio – II	--	--	9	80	120•	200
I D 2.7	Workshop – II	1	2		100	00	100

	Total	13	4	13	440	360	800

THIRD SEMESTER

Course No.	Course Title	Periods Per Week Lectures	Tutorials/Lab	Studios	Marks Internal	External	Total
I D 3.1	Practical Training	--	--	--	80	120*	200

FOURTH SEMESTER

Course No.	Course Title	Periods Per Week Lectures	Tutorials/Lab	Studios	Marks Internal	External	Total
I D 4.1	Design Presentation Through multi-media	2	4	--	100		100
I D 4.2	Interior Project Management & practice	4	--	--	40	60	100
I D 4.3	Elective	4	--	--	40	60	100
I D 4.4	Interior Design project	Dissertation	--	16	200	300•	500
	Total	10	4	16	380	420	800

♣ Practical Examination.
• Viva - voce

M.Arch (Interior Design)

FIRST SEMESTER

I D 1.1 Theory of Aesthetics & Design

- Defining design & aesthetics
- The purpose of design, various fields of design
- The nature of good design Discussion on the theoretical basis to all present day design disciplines
- Principles and vocabulary of design – Balance, symmetry, contrast , rhythm, harmony, unity, scale, proportion etc,

Space : elements of space making and their combinative principles
Form : elements of form and the resultant configurations
Scale : Human scale & its manifestations. Qualifiers of space & form: light, colour, material & texture.

Issues of idea & theme as ordering mechanisms – of space, material, form, colour & light. Perception and response to visual phenomena. Gestalts principles.

Design related cognitive learning. Colour theory & application to the interior environment, principal colour systems, methods of colour harmony.
Appreciation of various arts; painting, murals sculpture, architecture etc. Interior Design in the context of other arts.

I D 1.2 Interior Design Materials & Construction

Physical, behavioural and visual properties of the following materials and their use in the construction of floor, walls, ceilings, doors, windows, staircase, built in furniture and other components of interior architecture

Wood – Soft, hard, panelling, plywood, boarding
Metals – Steel, iron, aluminum, bronze, brass, copper
Masonry – Stone, concrete, brick, tiles, gypsum, plaster

Market surveys, case studies and site visits to understand the system of construction & details. Study of material application in the form of a portfolio.

I D 1.3 Environmental Science for Interiors

- **Thermal Comfort:**

Importance of human comfort in interior spaces. Heat flow within buildings. Thermal properties of materials. Climate and material choices for interior spaces Human response to the thermal environment.

- **Lighting**

Lighting in interiors. Lighting levels & criteria. Natural & artificial lighting. Selection of lighting. Lighting devices available in the market and their characteristics. Economic issues. Fixture selection and placement – floor, table, desk, wall & ceiling units.
Psychological impact on human moods & emotions.

- **Acoustics:**

Behaviour of sound in enclosed spaces.
Understanding acoustics and its integration with interior design. Sound absorbents – porous materials, panel or membrane absorbers, resonators.
Absorption coefficient of various acoustical materials.
Human responses to the sensation of sound.

I D 1.4 CAD and Visualization

A brief review of computer hardware and software required for interior architectural applications. Working in AUTOCAD for preparing drawings including plans, elevations and sections. Construction of models: working in 3D to construct wireframe modeling, surface modeling, solid modeling etc.
Introduction to rendering
Hidden surface removal, assigning shades, limited to simple exercises.

I D 1.5 Seminar

This subject is intended to equip the students with some knowledge in areas which are not covered otherwise in the curriculum, but topics which are of interest or currently significant. Some possible subjects are:

- Role of an interior designer in a project
- Relation of an interior designer with other consultants
- Interiors as a response to social and technological forces
- User participation in design
- Decorative accessories in interiors
- Occupant health & safety in interiors
- Signage & Graphics
- Optical Illusions
- Modular Co-ordinations
- Kitchen & bath design
- Storage design
- New materials
- Basic structural systems

Each student would be required to select one or more of the above subjects and present a written paper and a seminar at the end of the semester for final assessment. This should be

based on extensive literature reviews, cast studies (wherever possible), interviews, market surveys etc.
Based on the expertise available in the field, colloquiums will be organized. Student will be required to submit a report based on the inputs received for assessment.

I D 1.6 Interior Design Studio – I

The Design exercise should reflect the inputs from other subjects. The design process may involve literature studies, case studies, site visits, data collections and analysis eventually resulting in a interior scheme where theme based design is emphasized. Two interior schemes of different functional types viz residential, commercial, banks, restaurants, café etc. and institutional (relating to education & health) will form the major design assignments.
The design exercise should address issues such as institution character through interior environment, corporate image, economic factors & behavioural patterns; integration of commercial activity etc.
Design portfolio should include furniture layout, electrical layout, false ceiling plan, partition designs & details, flooring plan, design of doors & windows, colour schemes etc, specifying materials usage and the related technical knowledge.
Two time problems to be included on specialized product display systems, show case windows at street levels, graphic & signage design etc

I D 1.7 Workshop – I

Wood & cane workshop.
Working with wood & wood products to understand material parameters. Wood joinery details, which are commonly used in timber construction in interiors.
Application of veneers / laminates on different types of timber surfaces i.e teak and commercial woods. Engraving and carving. Wood polishing, painting and other finishes.
Types of canes – its properties cane joinery and its strength finishes – colour and surface quality.

SECOND SEMESTER

I D 2.1 Theory and History of Interior Design

Land mark events in the history of International design movement. Historical development of artifact
Overview of the major styles like Regency, colonial, Art & crafts, Romanticism, Art Nouveau, Electicism, Art-Deco, Cubism, Post modernism, Late modernism and Deconstructivism
Industrialisation : changes in technology and production systems. Impact on life style and interiors.
The modern movement and its impact on India.
Shift from historical to modern methods of building spaces, change in the interior elements of design and interior architecture. Various schools of thought and design emphasis. Study of Interior Design in the Indian context, contemporary styles with particular reference to India.
Elements of Interior Design including floors, walls, ceiling, lighting, furniture, furnishings and indoor landscape. Indian elements of space making.

Anthropometrics, Ergonmiscs, Proxemics, and behavioural issues. Metaphor as a tool in the design process. Graphics & signage and its applications.

I D 2. 2 Interior Design Materials & Construction – II

Physical, behavioural and visual properties of the following materials and their use in the construction of floor, walls, ceilings, doors, windows, stairs, built in furniture, fixtures and other components of interior architecture.

Glass – Window, plate, tempered, mirror, block etc.
Plastics – Transparent, laminate, tile etc.
Textiles – Drapery, upholstery, wall covering, carpets, durries etc.
Miscellaneous materials such as linoleum, asphalt, cork, rubber, leather, paper, rexine, paints & finishes.
Market survey, case studies and site visits to understand the system of construction. Study of material application in the form of a portfolio.

I D 2. 3 Building Service Systems for Interiors

- Plumbing and drainage, implications on interior layouts
- Indian electricity rules, relevant provisions of N.B.C. Preparation of electrical layout scheme for a interior using standard electrical symbols
- HVAC – Air-conditioning, methods and equipment. Air distribution systems – ducts, air inlets. Calculation of AC loads, zoning – purpose & advantage Elevators & Escalators; Definition, application, location & arrangement conveyor belts.
- Fine safety; Role of an interior designer in ensuring fine safety. Study of fire safety regulations of NBC
- Provisions made for services like cable TV, PABX, burglar alarm, other security systems

I D 2.4 Furniture Design & Detailing

Analysis of the form, function & technical aspects of existing furniture.
Measured drawing of existing furniture – plan, elevations and details.
History of furniture from early days to industrial resolution. Study of various styles, systems and products available in market. Scientific way of designing any two types of furniture systems based on ergonomics, materials, working parameters and visual perception. Drawings details and models.
Cost criteria of design & mass production of furniture forms. Knowing and understanding of modern furniture designers such as Ward Bennet, Alvar Aalto, Owen Jones, Florence Knoll, Mies van der Rohe, George Nelson, Henri van de velde, Hans Wegner etc.

I D 2.5 Critical Research Seminars

Research Methods:
Introduction to the nature & purpose of research and its role in problem solving and theory in the field of interiors. Discussion of various principles & approaches to research.

Suggested areas for research

1. Studies of Indian art & craft. Influence of location, tradition, culture and socio-economic development on art & craft in rural & urban India. Visit to traditional craft pockets, documenting people, life, culture & craft and understand the materials, tools, technology, processes and forms. Suggest suitable changes in technology to improve the products so as to make it acceptable in today's context.

2. Studies of the work of different interior designers through observation, interview and research. Understanding of the concepts of space, structure, organisation, symbolism, form, colour, modes of presentation etc.

3. The student may chose any other area of interest in consultation with the concerned faculty for research. The study would be presented as a term paper with supporting illustrations. It will be periodically reviewed and presented as a seminar for final assessment.

I D 2.6 Interior Design Studio – II

The design exercise should reflect the assimilation of knowledge of various streams and follows the design process of data collection, analysis, review & study. Two interior schemes of different functional types viz commercial (shopping malls), recreational, (theatres, clubs etc). and public use complexes (airports, bus terminals, railways stations). The design exercise should address issues like design language, visual coordination, culture, traditions and behaviour patterns in the use of space.
Design portfolio should include furniture layout, electrical layout, false ceiling plan, partition design, flooring plans, design of doors & windows, colour schemes, surface treatments etc.
Time problems may be based on exhibition display or special purpose interiors such as barrier free interiors of public areas; interiors for children or the elderly

I D 2.7 Workshop – II

- Ceramic, metal & plastics workshop. Understanding of ceramic products for interior spaces. Processes and techniques of forming & decorating ceramics slab work, throwing, pinching, coil work and firing. Colour figments and design qualities. Making ceramic tiles, plaster slab and carving

- Types of metals, properties, methods of working with metals, fixing and joinery in metals, finishing and treatment of metals. Metal products & furniture forms used in interiors

- Plastic, F.R.P and acrylic products – design process, tools & technology Development of innovative forms for interiors elements with colour variations.

THIRD SEMESTER

I D 3.1 PRACTICAL TRAINING

Periods:20 /Wks, Int:100, Ext:100, Tot:200, End exam: Viva-voce

Every student must work in an Architect's Office as a full-time trainee for a period of 20 calendar weeks (excluding Viva-voce) from the date of commencement of training. The Chief Architect in the firm should be registered with the Council of Architecture and have a minimum of five years of practical/professional experience after her/his graduation. The student should involve herself/himself in various aspects of work in an office like working drawings, presentation drawings, presentation drawings, quantity estimating, site supervision, municipal drawings, etc. Detailed instructions regarding the training will be issued at the end of the Ninth Semester, regarding the frequency of reporting to the department, etc., which the student must strictly follow.

After completion of training, every student will have to submit a detailed report with a set of drawings on at least two projects on which she/he has worked during the twenty two calendar weeks of the practical training period. This report will be evaluated at a viva-voce by a jury. After submission of the report the department at its convenience will arrange for the conduct of the viva-voce examination.

FOURTH SEMESTER

I D 4.1 Design Presentation through Multi-Media

Computers for documentation and presentation including graphic design, 3D modelling, color rendering, lighting effects, animation, image editing, video editing, sound editing, interactive simulation and web design.
Introduction to interactive multi-media technology and its use in interior architecture.
Use of suitable applications such as:-

- 3 D studio, Alias & character studio for modelling, rendering and animation
- Adobe photopshop & Adobe illustrator for graphic design & touch-ups
- Aldus photostyle, Adobe premiere, sound forge, Director & Razor pro for image editing, Audio-Video editing
- Power point for computer stills & slides.
- Alternative software applications such as Accu Render, Artisan, spotlight ray tracer & model view etc may also be used.

References:

1. Hyper realistic Computer Generated Architectural Renderings – Oscar Riera Ojeda Lucastt Guerre
2. Virtual architecture – Giuliano Zampi Conway Lloyd Morgan

I D 4.2 Interior project Management & Practice

Introduction to interior project management, its objectives, resources and team.
Client contacts and relationship issues, Design development stage and co-ordination with various agencies. Execution of work – Planning, scheduling and control. Project monitoring, programming of works. Tools & techniques for project management; bar charts, network techniques.

Project cost analysis – methods of estimating, total budgeting and schedule of payment of various agencies.
Interior Design profession : Survey of various interior designers, working procedures. Fee systems, Professional Interior Design Societies; Licensing and Registering

I D 4. 3 Elective
I D 4.3.1 Interior Landscaping

- Elements of interior landscape
- Types of indoor plants, plant characteristics; size, biology, soil, moisture, light, nutrient, atmospheric conditions, growing medium, pests & diseases. Market survey & costs.
- Flowers, its colours, texture and its visual perception in various indoor spaces. Science of flower arrangement.
- Manual versions automatic irrigation costing and installation of micro irrigation systems.
- Interior landscape application for residential, commercial and other public use spaces.

Ref: Building interiors, Plants and automation

I D 4.3.2 Ergonomics and Product Design
Introduction to ergonomics – its basic theory and relationship with human comfort criteria. Ergonomic principles in design process and product design. Principles of product

design – user centric, theme, metaphor, contemporary trends – Fabrication and proto typing techniques, material & processes employed as per industry standards.

Computer aided product design – scope, areas of application, software available.

Creative engineering design - principle mechanisms & linkages.

Ref: Product Design: Tucker Veimeistu
Product Design & Manufacturing- John R Lindbeck

I D 4.3.3 Psychology & Human Behaviour

Analysis of human mind & his / her image world. Human being and social behaviour patterns in various public and private areas.
Human behaviour in a group of two, three and more. Activities and its relationship with grouping of people. Privacy, Territoriality & defensible space.
Modernization, charge in society, change in thought process and behaviour patterns.
Behaviour patterns and its correlation to design elements.
Reflection of behaviour patterns of human being in space planning for public areas like theatre lounge, waiting rooms, hotel foyer, café and other spaces.

I D 4.4 Interior Design Project

Interior Design project is intended to evaluate the students maturity in the design of interiors and should reflect the knowledge gained from all the courses undertaken by the student in the previous semesters. The student is expected to submit a proposal for a project of his choice for

approval, to the project co-ordinator. The proposal must clearly indicate the scope of work, methodology, objectives and case studies. Live projects should be taken up, wherever possible.
Periodic submissions must be made for review by the guide and a panel of internal examiners as per the schedule given by the co-ordinator. The final portfolio must contain comprehensive proposals for the interior supported by drawings, illustrations and models, which will be evaluated by a panel of external examiners. The client may also participate as an examiner in case of real projects.

I D 4.5 Dissertation

Each student is expected to prepare a dissertation under a department approved guide / adviser. The topic chosen should preferably relate to the design project and may involve the following areas of study:

- An in-depth investigation into any aspect of the chosen area
- Analysis of data, inferences to establish underlying principles
- Evaluation of existing theory in new concepts
- Establishment of a hypothesis and its substantiation.

The particulars of schedule, content presentation, format etc, as decided by the department from time to time, shall be strictly followed. The progress will be periodically reviewed by internal jury memblers.

SYLLABUS FOR M.ARCH. (Environmental Design)

(New Regulations -2010)

FIRST SEMESTER

M. 1.1. Planning Development & Research

Evolution of Human Settlements – Historical Perspective. Development of thought processes in Environmental Planning, Indian heritage in Town Planning and Town Building: Planning in history, Indus valley, Harappa and Mohenja – Daro, Mesopotamia, Egypt, Greece and Rome, Medieval Planning; Renaissance planning. Planning theories and Urban forms postulated by Hippodamus. Patrick Geddes, Ebenezer Howard. Le Corbusier and others – their influence on Contemporary planning thought.

Aims and objectives of Town and Country Planning. Planning at various levels – Local, Regional and National –their role in Development of Human Settlements.

Land and Planning – Development of Residential areas, Analyzing, projecting and presenting land use and socio-economic data for Urban and Regional Planning such as statistical inference, geographical analysis, visual reconnaissance, historical studies.

The Development plan-its objectives, scope and contents, implementation tools and techniques Neighborhood planning and sector theories.

Planning of new Towns expansions, Techniques of Planning research – sources of basic and secondary date required in Urban and Regional Planning. Spatial standards for development and Re-development of residential, commercial, Qualitative and Quantitative aspects.

Aspects of Non-Governmental interests.

Means of study and its role in effecting appropriate improvement in the environmental conditions.

Methods and types of Research : Documentary or Historical Research, Normative or descriptive survey. Experimental survey Research. Casual Comparative Research, Correlation method, Case study method. Generic and other methods, Methods of conducting various types of surveys and presenting survey dated sampling, etc.,

Tools of Research: Questionnaires, Schedule, Check list, Rating scale, score card, Attitude Scale, observation, interview, Social distance scale, Guess who technique, Sociometry.

Technical Report and dissertation/writing Bibliography & references.

M. 1.2 Building Byelaws and legislation for Architecture and planning:

Concept of law – source of law (i.e. custom, legislation, precedents) separation of powers – judiciary, legislation and executives. Meaning of terms of law, legislation, ordinance, bill, act, regulations and bye laws.

Brief introduction to legislation process as per Indian constitution- division of subjects between center and states. Articles 19 (1) (f), 19 (5) and 31. Provisions regarding land, property and planning components of state and central Government to enact town-planning acts. Case of Manikal Chootal vs H.G. Makavana.

Administrative law – Delegation of powers – principles of Natural justice, its bearing on planning laws.

Model Town planning Act-Planning agencies at National, State and local levels, their functions and inter-relationships, Contents and preparation of development plans. Town Planning Act-and its objectives, contents and procedure for implementation of regional plans, maser plans, town planning schemes-development charge-public participation in statutory planning process. Concepts of structure plan and local plan under the English law.

Urban and Metro plan, development board and authority acts – scope overlapping of provisions with other allied acts and provision for prevention of duplicating of authority, urban development authorities Act of A.P. and Establishment of HMDA. VGTM-UDA, VUDA etc.,

Scope of comprehensive housing codes and building bye-laws, contents and critical evaluation of subdivision regulation, building bye-laws, zoning laws and law relating to periphery control. Introduction to law relating to slum clearance. Housing code, National parks system and traffic legislation.

Building estimation Norms for exterior and interior open spaces, setbacks margins, norms for building projections open spaces, FAR norms for vehicular areas, norms for fire protection, building services.

Study of local administrative provisions for obtaining building permissions, regulation for superstructures, building height regulations, regulation for high rise/ structures, large development projects.

M. 1.3 Advanced computer graphics and information system:

Computer systems and languages. Computer organization, computer peripherals, software/Hardware concepts.

Introduction to workstation.

Concepts and working knowledge of application and the usage of software for word-processing, spreadsheets etc.

Introduction to computer aided design (CAAD) and GIS, software like, sketch up, wire frame, modeling photo shop, work things.

Information systems concepts data and information, cost and value of information general system theory systems approach, MIS as a system. MIS for Environmental design.

Estimation of building with computer systems, preparation of structural members, development of frames, loads and loading omalye. Use of software for structural design like staad, build master, etc.

M. 1.4 Advanced Landscape Architecture:

Review of Landscape Elements and principles of Landscape Design of Landscape Architecture as a profession.

Study of various styles of Landscape Design and their relevance to the current pattern of development.

Landscape Design with particular reference to housing and community developments, parks and playgrounds, industrial landscape recreational areas, etc.

Aspect of urban design – creation of elements of spatial interest, vistas, other spatial definitions.

Contemporary attitudes to development and design of open spaces, urban landscape, park, rural landscape etc.,

Introduction to concept of green architecture and micro climate planning. The rock as landscape component in modifying micro climate with respect to temperature, humidity, participatation and percolation.

M. 1.5 Seminar:

Due to changes in the social, economic and technological variables, areas of interest and concerns keep emerging in the field of environmental design. Each student should present a seminar and a term paper at the end of the semester, for the final assessment. This should be based on extensive literature reviews, site visits, and interviews with experts. Topics can be green architecture multistoried development, intelligent architecture, sustainable development etc.

SECOND SEMESTER

M. 2.1 Design and Planning –Lab/Studio:

Concept of Urban space and Urban Design, concept of space in history. The townscape, consideration of density, aesthetics, traffic or circulation, climate and landscape (two weeks).

Scope and objective of master plan, Zonal plans, etc. Surveys and advanced techniques of analysis with case studies. Field study for selected central and fringe areas, Master plan preparation and recommendation (Eight Weeks).

Metropolitan areas planning (Four weeks)

The programme will include studio and field work on one comprehensive problem and other short duration problems covering any one or more aspects mentioned above. The credit for Sessionals will from part of internal evaluation.

M. 2.2 Ecology and Resource Development:

Evaluation of Ecology, Man and Ecosphere, Components of nature and some basic concepts, process of ecology, flow of material, water, energy, invasion, succession, predictim, regulatory forces, adoption, tropic levels, food chain, food web, ecological pyramids.

Eco-system and their relevance to environment, causes and consequences. Impact of advance architectural methods, urbanization and industrialization on nature. Pollution: Types, sources, remedies.

Urban eco-system approach, evolution and significance .

Introduction to quantitative ecology:

Identification of ecological parameters for planning at different levels, site planning, settlement planning, regional planning.

Data needs, formats for data collection. Types of analyses required to evolve ecological parameters.

Environmental impact assessment, Methods and their appraisal.

Environmentally compatible regional development ; An approach.

Ecological awareness in India; traditional, indigenous methods, contemporary trends.

Endowments and resources, definition and classification according to different criteria, renewable, non-renewable energy sources, etc.

Human welfare and development as functions of resources in terms of physical environment, way of living and technology. Space bound and flow resources. Preparation and analysis of inventories and resource materials. Finiteness of resources, examples of transfer from one resources to another in history at different parts of the world, development, utilization and conservation of resources planning, integrated planning approach to resources development management, traditional and contemporary approaches to resource development in India, some selected case studies.

Environmental Planning:

Planning and Environment – Planning, planning contexts, types of planning, planning process and tools, definition of environment, types of environment, population, resources, environmental degradation and pollution, pollutants and their effects and control, environmental planning – types.

Physical Environment

Air Environment – Air resources, Atmospheric systems, climate, Emission standards, global warming, ozone depletion, nuclear wars, problems,

Water Environment – Water resources – types, water resources- renewal, use, Drinking water standard, Health Aspects, water pollution, sanitation, disposal standards of Treated wastewater.

Soil environment – soil types, soil yield, soil pollution.

Energy – Evaluation of Energy Resources, Types of Energy Sources – Renewable, Non-Renewable, Conventional and Non – conventional.

Environmental policies, protocols and regulatory mechanisms – fundamentals of Environmental Acts, Rio Earth Summit, Stockholm conference, Kyoto protocol, Copenhagen conference 2009 and after.

Environmental Technology

Technology options for mitigation of environmental pollution, Environment by "End of pipe Treatment systems". Like effluent treatment plants, use of scrubbers to

minimize air pollution load. Versus combating environmental pollution, through "waste minimization", "Re-use" and "Recycle".

Different aspects of "End of pipe Treatment Options", their environmental and financial implications, need for waste reductions and the concept of waste Minimization at source through case studies, Energy planning and management and conservation issues.

Domestic waste water, industrial waste water, solid and hazardous wastes, Environmental, economic and financial implications of "End of pipe Treatment systems")

Need of "In-Process waste reduction/Minimization (Concept of cleaner production and cleaner Technologies, Environmental benefits environmentally sound Technologies" case study) Concept of End of pipe 3-Rs; "Recycle – Reuse and Recovery". (Towards sustainable Development – Development – concepts of industrial symbiosis and ecology, case study of waste recycling, it's cost effectiveness and options).

Environment Management systems, ISO – 14001 and its planning implications, why do we need ISO. Case study of a ISO certified industry, environmental and financial benefits of ISO.

Principles of Energy (Energy-Environment-Pollution linkages, Energy Demand and supply planning Management, Energy Conservation Issues and Need of Energy Audit.)

Sustainable development

The basic objective of the course is to get through the issues of sustainable development and bio-diversity management. The course aims to give holistic approach for bio-diversity management and also gives broad view of various national and international policies and instruments of bio-diversity. Systems Diversity. Species Concept & Inventory. Habitats & Systems change. Use of Bioresources, Valving Biodiversity, Conservation, National and international policies and instruments. Assistance and Aid. Biodiversity convention, Associated inputs, Biodiversity Planning, costing Targets, Agro and Forestry Systems/Forests Interface. Monitoring Systems, Biosphere World views.

Environmental Impact Assessment (EIA)

Introduction to Environmental Impact Assessment, Defining the role of impact assessment-Rationale for EIA - phases of impact assessment.

Impact Identification Techniques. Various methods used in impact evaluation-detailed techniques of using these techniques- strengths and weaknesses of the various techniques used as impact identification process.

Impact Evaluation Techniques ; Techniques used in impact evaluation-weighting-scaling techniques, ecological rating systems--goals – achievement matrix, priority-trade-off-scanning matrix. Predicting impact on the physical environment; Land --- indicators for land suitability and vulnerability techniques for evaluating alternative land use plans.

Air-calculating pollutant emission---predicting ambient concentration---predicting ecological response to air pollutant--- predicting human health risks.

Water --- categorization of pollutants--- pollutions dispersion--- water quality.

Predicting impact on Biodata; Ecosystem process and impact assessment --- energy fixation and flow.

M. 2.3 Housing and Community planning:

Housing through the ages, problems due to urbanization, problems of congestion, slums and urban renewal.

Housing demands-qualitative and quantitative Housing finance, National Plans resource- mobilization, institutional finances. Housing cooperatives. Housing Polices, situation in developing countries Housing programs-National and local Housing standards- derivation, critical appraisal of existing standards.

Design of Housing areas, housing layouts, site planning techniques, Housing densities, Environmental and climatic aspects, case studies of various types of group housing and other developments Housing techniques – Mass Housing, Prefabrication.

Rural Housing Techniques and approaches. Community facilities, the services and utilities. The observed standards in India, present deficiency and the low effecting

demand. Possible methods of increasing the effective demand particularize for the lower income groups, sociological impact on group dynamics.

The social implications of age and sex differentiation. The primary communities in rural and urban areas. Changes in attitudes, values and behavior patterns from rural to urban way of life. The hierarchy of grouping patterns. The secondary urban communities. The community focal points and their relationship with the housing types and layouts.

M. 2.4 Traffic and Transportation

Objectives

The course strives to give students the basic skills and knowledge base about transportation planning practice. After discussing basic terminologies and concepts, transportation problems etc., the course will focus on the transportation planning methodologies and techniques available to planners. In particular the one step transportation planning models will be discussed in detail. This includes data collection, trip-generation, trip-distribution, model choice and assignment. Students will be required to undertake four exercises designed for the purpose Exposure to relevant policies and programmes will be given.

Evaluation of Urban Structure

Transportation systems infrastructure and management, transportation systems and their types, design and operating characteristics, urban road hierarchy planning, engineering and management; criteria for road and junction improvements, arterial improvement techniques.

Transportation survey and studies

Study area definitions, surveys and their types, sampling methods, survey techniques; designing O-D and other Traffic and transportation surveys, programming and scheduling, processing of travel data, analysis and interpretation of traffic studies.

Management of Transportation system:

Existing organizational and legal framework, traffic and environmental management techniques. Management techniques, review of existing traffic management schemes. Framework for evaluation of system option, plan preparation.

Regional Transport system:

Importance of accessibility in regional transport planning. Role of road, rail, air and water transport systems. Regional transport systems, planning road network, planning for micro regions.

Transport and Environment:

Traffic noise, factors affecting noise, noise abatement measures, standards. Air pollution standards, traffic safety, accident reporting and recording systems. Factors affecting road safety, transport planning for target groups, children, adults handicapped and women. Norms and guidelines for highway landscape, street lighting types, standards and design considerations, transport and environment, EIA of transport project.

Transport policies:

Review of national, state and local level transport policies and their relevance in spatial and economic planning, pricing and funding of transport systems, transport technology, energy and environmental implication in transport planning in developing countries; planning for public transportation; planning for bicyclists and pedestrians.

Regional road network planning, highway project planning and financing Public transportation planning.

Overviews of system technologies, technological options, characteristics choice of technology corridor analysis integrated system plan concept, system selection, legal and institutional provisions, pricing and financing of public transport service.

M 2.5 Construction Management

Principles of construction project management, introduction to human resource management, materials management, financial management, important legal issues like labour welfare, insurance, urban services, company law, etc. project formulation reports.

Prefabrication and mechanization, various systems practiced. Introduction to the concept of organization work-study. Introduction to systems building and

rationalized traditional production.. network analysis (CPM, MPM, PERT) case studies on network analysis process analysis, time scheduling and case studies. Introduction to serial production with building and work units. Site management and case study of multistory housing projects. Industrialized production, visits to traditional and industrialized building works, standardization and modular coordination with various modules such as planning module, basic module, etc. its impact on traditional building and industry in a developing country like India.

Building process design, Company law, estimation, contract process, appraisal of different systems, projecting organization and control.

Building diseases and preservation, preventive and curative methods. Maintenance need, planning and organization, quality control.

THIRD SEMESTER

ED 3.1: Advanced Environmental Design Lab / Studio:

Application of the principles landscape Design, Avenue Plantation, River front Development. Parks and opens space system. Local, district, regional and National Parks, A study of industrial defaced wastelands. Problems of erosion and its control and restoration. The changing needs of industry and structure of future urban environment; problems and prospects.

The programme will include studio work on one comprehensive problem concerning any one or more of the topics mentioned above with seminars. The credits for sessionals will form part of the internal evaluation.

ED 3.2 Geo Information Systems in Environmental Planning:

Objectives

To teach Computer based Geographical Information System as a tool used as decision support system involving integration and co-ordination of natural resources management or urban development planning or disaster management programme which require accurate and timely spatial information on natural resources, urban form or current events..

Introduction – Definition, Components of GIS, Organizational Aspects of GIS

Data Structure For Spatial Data - Nature of Spatial Data, Spatial Data Models and Data Structure, Vector Data Model, Grid Data Model, Irregular Grid Models, Scan Line Models, Hybrid Vector/Grid Models

Database Creation And Organization - Techniques of Database Creation, Steps Involved in Database Creation, Database Organisation and Management, Conventional Techniques of Database Management, Spatial Database Management Requirements, Spatial Database Management in Current Day GIS

Two Dimensional Data Analysis And Manipulation - Techniques of Data Analysis and Manipulation, Generation of Planning Views

Generation Of Map Outputs From Gis - Elements of Cartographic Maps, Making Cartographic Map Layouts in GIS

Making On-Screen Query From Gis Database - Typical Queries in GIS, Modes of Making Queries

Three Dimensional Data in Gis - Inputs of Surface Modeling, Generation of 3-D Model in GIS, Outputs from 3-D Module

Data Quality, Errors and Natural Variation - Obvious Source of Error, Errors Resulting from Natural Variation or from Original Measurements, Errors Arising through Processing

Network Analysis in GIS - Elements and Attributes of Network, Analysis of Networks, Application of Networks in GIS

Customizing GIS - Guiding Factor for Customization, Essential Features of Customization

GIS Application

Various Applications, Applications in India, Issues related to applications, GIS Applications Design and Implementation.

Five topics are selected to undertake group projects. These projects would then use different modules of GIS software. The groups are as follows:

1. Watershed Management
2. District Development Plan
3. Urban Sustenance – Decision Support System
4. Environmental Monitoring
5. Urbanisation Process – A case study of A.P. State.

Preparation of base map, Census information and other data collection, Literature review on GIS and district planning.

ED 3.3 Urban Design and Conservation:

Urban Design:

Role of urban design in the planning process. Principles of structuring urban spaces, locational parameters of activities and urban uses.

Study of evolution of the concepts in Urban Design through history

Imageability of the city.

Determinants of urban patterns and forms: land use density and networks. Energy and urban form; Impact of Technology and construction techniques; Standards and

implications of regulatory control on urban form and design; Design in relation to renewal and re-development of central areas.

Issues related to changing practices of planning human settlements as applied to spatial design. Urban design projects; Identification of scope and relationship with development plan-planning and design parameters for new towns.

Urban Conservation:

Problems of conservation in developing countries. The need for resolving conflicts between development and preservation and to evolve methods which will reduce the costs of preservation by sensitive utilisation.

a) Conservation and urban renewal: Conflicts and compatibility, changing values, obsolescence, land blight.
b) Physical restoration, causes of physical deterioration, selection of construction methods, Materials specification.
c) Role of community in Conservation: Regulation, legislative and revenue aspects. How to minimise costs of preservation and community participation.

Concepts of urban decay social, economic and physical factors affecting urban maintenance. Concept of nature cities-determinants, approaches and strategies for urban regeneration, urban redevelopment and requirements and costs. Potentials and limitations in the Indian context. Urban regeneration as a process for environmental planning and management. Feed back for policy frame work relevant to urban and metropolitan growth.

ED 3.4 **Environmental Infrastructure:**

Objectives

This course is designed to provide a general understanding of various issues and approaches to planning, designing, and maintenance of Infrastructure. The major emphasis in this course will be on water supply, sewerage, storm water drainage, roads and solid water management.

Introduction:

Concepts of basic needs, formation of objectives and standards. Data requirements for programme planning of urban networks and service; feasibility planning studies

for structure the infrastructure systemsGeneral Introduction to Infrastructure and its components and overview of the course contents.

Water Supply:

Planning water supply; resource analysis quality of water system design; technological choices of alternatives – Issues related to the choice of centralized city water supply versus decentralized systems.

Water demand (Context, Need Assessment and Planning requirements) - data to be collected, rate of demand, variations in rate of demand and effects of variations on design. Measurements of water qualities, forecasting demand. Conveyance and distribution system - General considerations, methods of distribution, service reservoirs, systems of supply, methods of lay out distribution pipes, wastage of water and permissible factors. Maintenance of distribution system. Filtration, disinfection, storage and distribution and their building complexes.

Sewerage and Storm Water Drains (Need Assessment in the context of Urbanisation, Planning Considerations and Norms, Basic Design Parameters and Appurtenances). Waste generation process in cities. Waste water disposal systems including storm water drainage, system designs, nodal facilities, technological and environmental considerations. Issues related to hydrological and geographical and development parameters – eutrophication.

Biological concepts in environmental sanitation.

Sanitation technologies, their relevance to incremental growth of urban areas. Low cost sanitation technologies and concepts as related to Indian and third world country contexts

Sewage Treatment Plant and Water Treatment Plant (Components, Planning Considerations, Basic Design Parameters).

Urban Roads (Planning Considerations, Road Categories, Design Parameters/Cross Sections, Transportation).

Solid waste disposal and management:

Resource recovery, technology options and determination of type and choice of systems as related to land use, density, economic levels and location of urban industrial and commercial activity areas.

Quantity of sewage, quantity of storm water, run off, time of concentration, design of sewers, flow diagrams, laying of sewers, sewer appurtenances. Design and layout of sewerage system.

Project Management (Need Assessment, Structure, MIS, Project Management Packages (Brief Introduction to MSPROJ/WINPROJ).

Integrated Infrastructure Planning: Case Studies in India.

Other Infrastructure:

Concepts and theories for design and operation of electricity networks, power generation (conventional and non-conventional) communication networks like telephone facilities, WLL, cable TV, Fiber optic and other broadband communications networks, etc.

ED 3.5 Seminar -II:

The candidates will present two term papers on any of the areas of environmental design to employ effectively the methods of research in environmental design. The subjects of papers may be selected in consultation with the faculty to contribute substantiality to the major area of investigation and candidate opts of the Master Thesis / Dissertation.

FOURTH SEMESTER

ED 4.1 Environmental Impact Assessment and Green concepts:

Introduction to Environmental Impact Assessment: Defining the role of impact assessment --- Rational for EIA --- Phases of impact assessment.

Impact Identification Techniques: Various methods used in impact identification --- detailed techniques of using these techniques --- strengths and weaknesses of the various techniques used as impact identification process.

Impact Evaluation Techniques: Techniques used in impact evaluation --- Weighting-Scaling techniques, ecological rating systems --- Goals-achievement matrix, priority-trade-off-scanning matrix.

Predicting Impact on the Physical Environment: Land --- indicators for land suitability and vulnerability --- Landscape characteristics and indicators of landscape process --- Mapping landscape characteristics --- Techniques for evaluating alternative land use plans.

Air --- calculating pollutant emission --- predicting ambient concentration --- predicting ecological response to air pollutant --- predicting human health risks.

Water --- categorisation of pollutants --- pollution dispersion --- water quality.

Predicting Impact on Biota: Ecosystem process and impact assessment --- energy fixation and flow.

Lead Rating, Griha Rating, (Green Rating for Integrated Habitat Assessment)

Energy Efficient Buildings, intelligent buildings, energy audit, National Mission on sustainable Habitat, Jawaharlal Nehru Urban Renewal Mission, issued in Urban and Environmental conservation.

ED 4.2 Thesis / Project / Dissertation:

Each student is required to prepare a Project on a subject approved by the department. The general format and guidelines shall be as laid down by the department.

The topic should be on current research and professional planning interests and the work contained shall be the students, original work.

Each student has to choose / formulate and work on a Environmental Design project independently. The project may be related to any sector and be of any scale , but it is desirable that the approach be multidisciplinary and preferably relate to 'live' and current contexts.

The main thrust of the project should be to identify an Environmental design project addressing a current or immediately future context, review related theoretical approaches, collect, document and analyze relevant data and formulate proposals to address the problems identified.

The key word is 'project' in terms of definable program of actions, implementation strategy and mechanism, beneficiaries etc. Research may be limited to literature review case studies and analysis of readily available data with limited primary data focused on the immediate demands of the 'project'

Selection of Guide:

Students are suggested to consult internal faculty members based on their own areas of interest. It is also possible for students to consult external faculty actively participating in academic programme. To know the research interests of internal faculty students can meet them individually. Taking up academicians of other Institute/Research Organizations, as External Guide is permitted. However, in that case, a Core Faculty should be chosen as Internal Guide.

COURSE OUTLINE

(ACADEMIC REGULATIONS, COURSE STRUCTURE AND SYLLABUS)

(with effect from academic year 2011 – 12)

(Master of Technology) PLANNING)

DEPARTMENT OF URBAN & REGIONAL PLANNING

J.N.A.F.A.U SCHOOL OF PLANNING AND ARCHITECTURE

MAHAVIR MARG, HYDERABAD - 500 028, INDIA

JAWAHARLAL NEHRU ARCHITECTURE AND FINE ARTS UNIVERSITY

Mahaveer Marg, Masab Tank, Hyderabad

COMMON ACADEMIC REGULATIONS

for 4 semester Masters Degree Programmes

(Effective from the Academic Year 2011 – 2012)

(Approved by the University Adhoc Academic Committee on 09-08-2011)

1.0 **COURSE WORK:**

1.1 A Candidate after securing admission must pursue the prescribed course of study for four semesters.

1.2 Each semester shall be of 90 working days duration excluding preparation holidays and examinations.

1.3 A candidate admitted to a program should complete it within a period equal to twice the prescribed duration of the program.

2.0 **CREDIT STRUCTURE:**

2.1 The program is offered on a unit basis with each subject being considered a unit.

2.2 A candidate shall be deemed to have successfully completed a subject if he has put in at least 75% of attendance; and secured the minimum academic requirement in that subject.

2.3 In order to qualify for the award of the Post-Graduate Degree, the candidate shall have completed the academic requirements in all the subjects, as per the course structure.

3.0 **EVALUATION:**

The performance of the candidate in each semester shall be evaluated subject wise, with a maximum of 100 marks for theory, 100 marks for practicals or as specified in the course structure.

3.1 In all the subjects, except where specifically mentioned, 50% of the marks will be for the End Semester Examination, 50% of the marks will be for Internal Evaluation, based on the assignments, term papers, seminars, debates, etc.

3.2 ***Mode of Internal Evaluation***

Internal evaluation shall be based on assignments / tests / term papers / seminars/general participation of the student in seminars / debates/exhibitions/presentations etc.

However in the case of practical subjects, evaluation may be on the basis of performance based on projects or assignments

3.3 A candidate shall be deemed to have secured the minimum academic requirement in a subject if he /she secures a minimum of 50% of marks in the End Examination and a minimum aggregate of 50 % in the End Examination and Internal Evaluation taken together.

3.4 In case the candidate does not secure the minimum academic requirement in any subject (as specified in 4.3.) he has to reappear for the End Semester Examination, in that subject, or re-register the course when next offered. A candidate shall be permitted to register for a maximum of 2 subjects at a time in addition to the other subjects in the regular semester. In case of such re-registration the new internal evaluation marks shall be taken into account.

3.5 A candidate shall be allowed to take the Viva-Voce Examination of the thesis / dissertation project only if he has no more than 2 backlogs of all semesters.

4.0 EVALUATION OF PROJECT WORKS:

Every candidate shall be required to submit thesis or dissertation after undertaking project work and on a topic approved by the college level committee.

4.1 Each student should be allotted a supervisor and periodic internal review shall be conducted which is evaluated by panel of examiners. In final end evaluation, Internal Examiner shall award 25% of the prescribed marks, and 75% of marks shall be assessed by the appointed External Examiner.

4.2 Three copies of the Thesis / Dissertation, certified in the prescribed form by the supervisor shall be presented to the University.

4.3 The End Examination (Viva-Voce) of the Thesis / Dissertation shall be evaluated by at least two member jury, in which one of the members shall be an External Examiner.

4.4 If the candidate does not perform satisfactorily in the Viva-Voce evaluation he/she shall re-submit and take the Viva-Voce Examination again after three months.

5.0 ATTENDANCE:

The Candidate shall put in a minimum of 75% in aggregate in a semester.

5.1 Condonation of shortage of attendance up to 10% in i.e. from 65% to 74% may be given by the College Academic Committee.

5.2 Condonation of shortage of attendance shall be granted only on genuine and valid reasons on representation by the candidate with supporting evidence.

6.0 AWARD OF DEGREE AND CLASS:

A candidate shall be eligible for the award of respective degree if he satisfies the minimum academic requirements in every subject.

6.1 A candidate who becomes eligible for the award of the respective degree shall be placed in the following three divisions based on the combined aggregated of marks secured by the candidate in the subjects' taker for credit.

First Class with Distinction	:	70% or More
First Class	:	Below 70% but not less than 60%
Second Class	:	Below 60% but not less than 50%

7.0 **WITH-HOLDING OF RESULTS:**

If the candidate has not paid dues to the University or if any case of indiscipline is pending against him the result of the candidate may be withheld and he will not be allowed into the next higher semester.

The issue of degree is liable to be withheld in such cases.

8.0 **TRANSITORY REGULATIONS:**

Candidate who have discontinued or have been detained for want of attendance or who have failed after having undergone the course are eligible for admission to the same or equivalent subjects as and when such subjects are offered.

9.0 **GENERAL:**

The academic regulations should be read as a whole for purpose of any interpretation.

9.1 The University reserves the right of altering the regulations as and when necessary. The regulations altered may be applicable to all the candidates on rolls.

9.2 Wherever the word he, him, his, occur, it will also include she, her, hers.

JAWAHARLAL NEHRU ARCHITECTURE AND FINE ARTS UNIVERSITY

Mahaveer Marg, Masab Tank, Hyderabad

COMMON ACADEMIC REGULATIONS

for 4 semester Masters Degree Programmes

(Effective from the Academic Year 2011 – 2012)

(Approved by the University Adhoc Academic Committee on 09-08-2011)

Course structure corrected on 02-07-2013

S.No.	**Code**	**Subject**	Periods /wk	Marks			End Exam
				Int.	End	Total	Hrs.

FIRST SEMESTER							
1	URP 1.1	Settlement Evolution And Planning Theory	4	50	50	100	3
2	URP 1.2	Planning Analysis & Techniques	4	50	50	100	3
3	URP 1.3	Computer Applications & Information Systems	3	50	50	100	Pract
4	URP 1.4	Housing and Community Planning	4	50	50	100	3
5	URP 1.5	Economics and Sociology for Settlement Planning	4	50	50	100	3

6	URP 1.6	Infrastructure Planning	4	50	50	100	3
7	URP 1.7	Planning Lab – I	12	200	200	400	Viva
			35			**1000**	
8	URP 1.8	Habitat Study - Report	During 2 weeks vacation			pass	Viva
SECOND SEMESTER							
1	URP 2.1	Metropolitan & Regional Planning	4	50	50	100	3
2	URP 2.2	Traffic & Transportation Planning	4	50	50	100	3
3	URP 2.3	Information Technology in Planning	4	50	50	100	Pract.
4	URP 2.4	Ecology and Environmental Planning.	4	50	50	100	3
5	URP 2.5	Planning for Rural Development	4	50	50	100	3
6	URP 2.6	Planning Lab –II	15	250	250	500	Viva
			35			**1000**	
7	URP 2.7	Planning Organization – Appraisal / Training Report	During 6 weeks vacation			pass	Viva
THIRD SEMESTER							
1	URP 3.1	Urban Development Management	4	50	50	100	3
2	URP 3.2	Planning Legislation	4	50	50	100	3
3	URP 3.3	Urban Design, Conservation & Landscape	4	50	50	100	3
4	URP 3.4	Planning Colloquium and Seminar	4	100	Nil	100	Nil
5	URP 3.5	Project Planning, Appraisal & Management	4	50	50	100	3
6	URP 3.6	Planning Lab -III	15	250	250	500	Viva
			35			**1000**	
FOURTH SEMESTER							
1	URP 4.1	Planning Thesis		500	500	**1000**	Viva

FIRST SEMESTER

URP 1.1 SETTLEMENT EVOLUTION AND PLANNNG THEORY
Periods per week : 4 Internal Marks : 50 End Exam marks : 50 End Exam : 3 Hours

SETTLEMENT EVOLUTION :

Objectives:
Achieve an overview and general understanding of the main factors involved in and the many changes during the evolution of settlements around the world during different time periods. The main basis of the course can best be captured in words of Peter Hall;
"As elsewhere in human affairs, we too often fail to realize that our ideas and actions have been thought and done by others, long ago; and that we should be conscious of our roots" (Hall, 1988).

Introduction - Need to study history of planning. Relevance of evolution of human settlements in modern context. Historic determinants of settlement evolution: - mobility, souci-cultural, benefits, climate, technology, political power, geographical location etc.
Cities in History - Settlement types and patterns in the ancient, medieval, renaissance, industrial, colonial eras. Historical background of planning
The Post-industrial City -Changes in society and settlements following industrial revolution. - Political and ideological basis of planning in different contexts. Contribution of Ebenezer Howard, Geddes, Mumford, Corbusier, Doxiadis and others to city plannning -Garden City idea and new towns , Regional Planning – ideas and practices
Settlements in India : Pre-colonial Town and Cities in India - Ancient texts and treatises on settlements and area planning in India.- Pre-colonial Planning - **The Colonial City** - Effects of colonization on the third-world urban pattern and city structure - Planning under the colonial rule. **Garden – Regional City in India** -New Towns and IDSMT, Regional contexts of metropolitan plans, Proposals of National Commission on Urbanization
The City of Neighbourhoods and Communities - Neighbourhoods in planning, Birth and development of the neighbourhood idea, The Indian neighbourhood, Urban renewal and its aftermath
Advocacy Planning and NGOs in Planning - Rise of advocacy planning, Changing role of NGOs in India, Urban social movement - India
Post-war Developments in Britain, America and India - Master plan to structure plan and beyond, Urban modelling and empiricism, Political influences and planning
International Agencies and Privatisation - Nature of urban programmes by World Bank,UNCHS, etc. Concept of privatization and its relevance
Informal City of the Poor - Concept of the informal sector, Concern for urban poverty
Other Emerging Issues - Gender issues in planning, Human rights and empowerment, Vulnerable groups – pavement dwellers, street kids, Social and communal conflicts in urban area, Environmental issues in planning

PLANNING THEORY

Objectives
The basic objective of this course is to introduce to the students of planning the various theories of planning and city design along with necessary details in terms formulation of activity structure, formulation of goals and objectives for any planning work to be carried out. The course also tries to expose the students to the importance of transportation planning and its interface with land use planning. This course is also aimed at students getting enough theoretical background to carry concurrent laboratory exercise in area planning and city planning.

Theories And Concepts : An Overview – Introduction, Definition of planning; the necessity and rationale of planning; the characteristics of planning., The planning process; Normative planning, positive planning and ameliorative planning.
Aims and objectives of physical planning. Levels of planning in India and their broad inter-relationships, components of settlements.
Urban/RuralSettlements and their classification, Theories of Urban Structure, Urban Sub-systems
Concepts of land Location attributes and land uses, Determinants of Land use and relationship to the Planning Process, Demand and supply of land for urban use - means and mechanisms - impact on urban structure. General goals of land policy.

Rationales for land use planning, Approach to land use planning. Land use and transportation planning. Transport Network classification and standards, elements, etc., planning principles Land use planning information system. Activity systems and choice of space qualities; Systems approach and physical planning.
Urban Planning in India – An Overview. Development plan - types, scope and objectives, local/area, city and regional levels, **-** Overview of Town Planning Process - Case studies in Urban Planning And Design Practice **-**
Other alternative approaches to planning - disjointed incremental; structure planning; blue print planning; process or adaptive planning; rational - comprehensive planning; mixed scanning approach; Choice theory and advocacy planning and their relevance. Action planning and its applications in Indian context.
Brief overview of techniques **-** Urban Economics Analysis (Economic base, input-output, shift share, etc.) - Population studies and forecasting, Land use allocation models, (Lowry/gravity/LP), Planning norms and standards..

URP 1.2 PLANNING ANALYSIS & TECHNQUIES
Periods per week : 4 Internal Marks : 50 End Exam Marks : 50 End Exam Hours : 3

Objectives

The primary objective of this course is to provide understanding of the application of quantitative research methods and techniques to analysis of planning problems.

Introduction and Overview - An overview of planning practice in India, scope and methods of analysis and techniques and their application to spatial planning.
Data Collection - Primary and Secondary sources of data, Survey design, Observational methods; Triangulation, Types of observation, controlled observation. Mail questionnaire, personal and telephone interview.
Qualitative research., Secondary data, limitations and search process; Census - A brief introduction and nature of organization., Sampling; sample designs, size, types., Sources of various data in India
Data Presentation – Tabulation, Classification, Graphical methods
Data Analysis and Interpretation - Coding and its construction..
Simple Descriptive Statistics – Measurement, Univariate analysis - Frequency tables and graphs, Central Tendency, Dispersion, Distribution, Bivariate analysis - concepts of relationship; Nominal, ordinal and interval measures of relationship
Correlation and Regression - Linear and nonlinear
Multiple Regression and Correlation - Linear and nonlinear, Partial correlation and regression
Probability and Sampling - Types of probability, Why Sample?, The Population, Sampling Unit and Frame
Sample Size, Sample Design, Non-response errors Probability and normal distribution - binomial and Poisson distribution
Time Series Data Analysis - Time-series analysis; trend, variation, business cycles.
Index Numbers - Price index, Quantitative index, construction, tests, types, problems and specific uses
Linear Programming - General introduction to Linear programming Methods for maximizing, Methods for minimizing, Transport problem
Measures of Association and Hypothesis Testing - Percentage difference, Nominal (λ) and ordinal (γ) measure, The Chi (χ^2) Test, The Z-Score Test, The T-Test, Test for Proportion
Demographic Analysis : **Population Projection** - Simplex population forecasting models - The linear model, Exponential curves., modified exponential, Gompertz growth curve, comparative method, ratio method.
Composite population forecasting models - The cohort- survival model, Migration model.
Economic Analysis :- Multipliers, Input-Output Analysis, Brief introduction to projection techniques like ratio and econometric methods, .Analysis of labour force; sectoral shifts and employment.
Spatial Analysis : Comparative analysis techniques - Specialization, Concentration and Independence association Gini coefficients and Lorenz curves., Spatial distribution analysis using centrography techniques, Rent and Gradient models., Location equilibrium of the firm - transport and labour orientation., Market and supply area analysis and thresholds, Pure gravity model, Reilly's law and mapping of trade areas - constrained and unconstrained gravity model - methods for parameter estimation.
Land Use and Transportation Models : General approaches to land use and transportation forecasting.

Basic sector land use models., Residential distribution models, Retail and local service activity location models.
Decision making Models : General introduction to various decisions making models.

URP 1.3 COMPUTER APPLICATIONS & INFORMATION SYSTEMS
Periods per week : 3 Internal Marks : 50 End Exam Marks : 50 (Practical and Viva-voce)

Review of computer systems, networks and languages, computer peripherals, software/hardware. Principles of digital computer, machine languages, higher level language and its advantages – flow charts and algorithm writing.
Brief introduction to programming languages like C, C+, VISUAL BASIC, JAVA, SQL, ORACLE, etc. Concepts and general knowledge of currently popular and widely used application software for word processing, spread sheets, database, presentation etc. (for example – MS OFFICE) with particular application in planning tasks
Introduction to drawing and drafting packages like AUTOCAD particularly to AUTOCAD MAP and to GIS enabling software like ARCINFO. Simple exercises in updating / preparing base maps by scanning / vectorizing Survey of India Topo sheets or existing Aerial photo based city maps.
Information systems:- Introductory concepts for information systems – data and information, cost and value of information, general system theory. System approach, MIS as a system, MIS for land use planning and development control.

URP 1.4 HOUSING & COMMUNITY PLANNING
Periods per week : 4 Internal Marks : 50 End Exam Marks : 50 End Exam Hours : 3

Objectives
Objective of this course is to provide theoretical understanding and relevant techniques for formulating urban housing strategies

Housing as a basic need. Role of Housing in social and economic development. Housing in relation to stages of development, particularly in relation to developing economy. Introduction to the subject of housing in Planning Programme - relevance and scope of the subject. Essential components and issues in Housing situation in India quantitative and qualitative terms, housing statistics. Micro and macro economic views of housing sector. Role of private, co-operative and public sectors in housing. Problems and issues of housing in India and emerging priorities in Urban and Rural housing. Housing finance-institutions, constraints and merging trends. Housing programmes in Five Year Plans of India, Social Housing programme, National Housing Policy, Housing in informal sector.
Housing stress areas. Slums and squatter settlement in urban areas. Process of settling in urban slums and in low income settlements --- case studies – planning and design issues in slum upgrading and slum reconstruction projects. Participatory design process (The concept of planner builder. Peoples involvement in layout and building design and construction., Merits over conventional housing development.)
Methods of assessing housing stress conditions in an urban area. Building construction, nature of utility services, tenureship of land and other social amenities, Housing the poor. Strategies and programs tried at various metropolitan cities
Quantification of housing needs. Estimating and forecasting housing requirements.
Financial aspect of housing. Concept of household affordability --- production cost of housing --- economic rent in housing --- amortisation and equated monthly instalments.

Land development process. Land development control and regulation and housing question
Housing standards, and housing designs in relation to economic, social and climate aspects.
Housing form as shaped by physical technological, socio-economic, demographic and political factors.
Housing and its relation to non-residential components of the settlement. Mixed residential development.
Socio-cultural perspective of housing, housing and family life, Community organisation, Social aspects of residential satisfaction.
Urban Housing Strategy. A methodology for formulating urban housing strategy
Housing policy and perspective at the national level. Review of past policies and the new National Housing Bill.

Brief review of the historical development of housing typologies in various contexts - The pre-urban house., Transient dwellings., Temporary dwellings., Semi-permanent and permanent dwellings., The oriental urban house.(Mesopotamia., The Indus., Egypt., China., The Greek and the Romans.))
Evolution of Housing - The urban house - history of modern housing typologies. (The age of the Renaissance., The industrial revolution., Current practices various design approaches
Issues in rural housing, housing technology and landscape design.
Sire planning for residential lay outs. Review of different types of residential lay outs.
Lay out of various services in residential lay outs (for a maximum of 5000 population).

Code for humane habitat - issues in habitat planning and design. (Goals and objectives., Performance criteria., Quantity versus quality., Issues at various scales of planning and design .) Project formulation - requirements, standards, costs and affordability - introduction to site planning software like Bertaud's model, Design guidelines for housing layouts and for house extensions., neighbourhood streets., small shops, trees, landscape elements and public spaces. Infrastructure design for housing.

URP 1.5 ECONOMICS AND SOCIOLOGY FOR SETTLEMENT PLANNING
Periods per week : 4 Internal Marks: 50 End Exam Marks : 50 End Exam Hours : 3

Development Theory

Concepts and definition of development. Indicators of development. Factors influencing development. Efficiency versus equality. Theories of development (Trickle down, Bottoms up) Settlements systems / secondary cities.
Broad introduction to main stream, classical and market theories of development and under development.
Dependency, imperialism as an hegemonic influence of developed over the under developed
Dichotomy of North-South, Rich-Poor in relation to development. Regional disparities in development.
Surplus generation of primary sector and its influence on development. Investment, public policy and development. Development as defined and implied in Indian planning and related development programmes. Development planning as distinct from other types of planning.

Economics:
The economy of urban areas; urban resources, activities- types and extent – and factors governing them. Economic base of cities and regions, Basic concepts of economic resources and resource economic. Basic concepts in macro-economic and economic analysis. Economics of scale, external economics.
National and State five year plans – brief appraisal. Economic development in relation to regional plans – balanced regional development.
Fiscal programming and budgeting. National and regional accounts; Income and Product Account; economics of Central, State and Local Governments.
Introductory concepts of macro economics – supply, demand and equilibrium conditions.
Economic concept of land; economic principles of land use; economic rent – land use pattern and land values; location economics.
Development of land and real property in India and its trend.; financial balance sheet of land development; land and real estate market; Different kind of land and its uses - Nature of land - contract purchase and transaction of land - registration of land and land record procedure. Concepts and factors of land value and its prices, Assessment and prediction of land value and its prices. Real estate business set up - market and demand analysis. (Field based assignments are for generating case studies on land and real estate business.) Private ownership and social of land.
Economics of Town Planning decisions; effects of legislation on land development and urban land economics.

Environmental Economics
Objectives
The intent of the course is at understanding the interrelation of economic processes and the environment. that economic process take place in the physical world and are subject to the same physical laws that operate on or constrain other physical, chemical and biotic processes, is to be accepted, though late, in the mainstream of economic theories.

Evolution of environmental economics. Environmental economics as a sub-discipline of mainstream economics. The body of environmental economics today.
Economics, Environment Interrelationship - .Economics and Ecology, Material/ Energy Balance, Application of Physical Principles to Economics (The Laws of Thermodynamics), Technology and Negantropy, v.Emerging Issues).
Environmental Externalities : .Definition, conditions for externalities, Significant types, .Externalities and property rights, The case of small and large numbers, Nature of pollution (securing optimum levels?)).
The Question of Allocative Efficiency : Neoclassical Approach (.Marginal utility, consumer surplus and indeifference map, Pareto optimality, Compensation tests (Hicks-Kaldor), iv.Pigouvian Taxes).
Environmental Valuation : Approaches to Pricing (Prices and decision-making, Valuation methods) (.Based on Demand and WTP, * Contingent valuation, *Travel-cost method, *Game theory models, *Hedonic prices, *Isoquants involving EQ) (.Based on opportunity cost - *Direct OCS, *Replacement costs, *Cost savings)
Environmental Policy : Some Issues - .Perfections and priorities in environmental policy, Standards for environmental policy .
The Range of Policy Instruments, Administrative mechanisms, .Direct control versus the pricing system, -- Pricing techniques).

Sociology:

Introduction - Definition and scope of sociology; relationship between sociology and town planning Relative significance of social, geographical, biological and economic factors in shaping the total environment.
Basic Concepts of Society - Basic concepts, social groups, social institutions, social stratification's, orders and changes and changes and social control
Introduction to the sociological concepts of Marx, Talcot Parsons, Weber, Durkheim, Riesman, Jane Jacobs, Gans, Castells, David Harvey, etc.
Sociology of India - Culture, language, religion, caste, rural community and its relationship with urban community, social division of urban and rural poor. Rural-Urban continuum and dichotomy – physical and social setting, peasant society and industrial, post industrial society.
World Urbanization and Urbanization in India - Urban revolution; its preconditions brief history of urbanization in the world leading to the industrial cities, related problems, concepts of urbanism and urbanization; brief history of urbanization in India; Mughal and British influences of Indian cities; post-independence urbanization; urbanization process as influences by socio-cultural, political, economic and administrative factors;.
Spatial and social aspects of village community. Urbanization in India-trends and social characteristics. Urban social structure and stratification, dynamics of growth and change.
Migration, population growth and its impact on policies of Urban development.
Urban and Industrial Sociology - Urbanization and urbanism ; social aspects of urban-rural migration; concepts of industrial society; social aspects of industrialization; social problems of urban community crime delinquency and violence. The Chicago school of sociological thought, sociation, social organization and space in the city – urban space and segregation, labour markets and housing markets, suburnaizationand gentrification, changing inequalities.
Perspectives on Urban Culture – Louis Wirth and the urban way of life, Simmel and metropolitan culture, the culture of modernity, the social construction of urban meaning, urban culture and post modernity.
Social problems of urban community – crime, delinquency, blight and obsolescence; old age incompatibility and disabilities etc.
Personal space, territoriality; the influence of environment on behavior; perception; attitudes and behavior; preferences and satisfactions.
Neighborhood Concept - Implications and limitations in India context.

URP 1.6 INFRASTRUCTURE PLANNING
Periods per week : 4 Internal Marks : 50 End Exam Marks : 50 End Exam Hours : 3

Objectives

This course is designed to provide a general understanding of various issues and approaches to planning, designing, and maintenance of Infrastructure. The major emphasis in this course will be on water supply, sewerage, storm water drainage, roads and solid water management.

Introduction:
Concepts of basic needs, formation of objectives and standards. Data requirements for programme planning of urban networks and service; feasibility planning studies for structure the infrastructure systemsGeneral Introduction to Infrastructure and its components and overview of the course contents.
Water Supply:
Planning water supply; resource analysis quality of water system design; technological choices of alternatives – Issues related to the choice of centralized city water supply versus decentralized systems.
Water demand (Context, Need Assessment and Planning requirements) - data to be collected, rate of demand, variations in rate of demand and effects of variations on design. Measurements of water qualities, forecasting demand. Conveyance and distribution system - General considerations, methods of distribution, service reservoirs, systems of supply, methods of lay out distribution pipes, wastage of water and permissible factors. Maintenance of distribution system. Filtration, disinfection, storage and distribution and their building complexes.
Sewerage and Storm Water Drains (Need Assessent in the context of Urbanisation, Planning Considerations and Norms, Basic Design Parameters and Appurtenances). Waste generation process in cities. Waste water disposal systems including storm water drainage, system designs, nodal facilities, technological and environmental considerations. Issues related to hydrological and geographical and development parameters – eutrophication.
Biological concepts in environmental sanitation.
Sanitation technologies, their relevance to incremental growth of urban areas. Low cost sanitation technologies and concepts as related to Indian and third world country contexts
Sewage Treatment Plant and Water Treatment Plant (Components, Planning Considerations, Basic Design Parameters).
Urban Roads (Planning Considerations, Road Categories, Design Parameters/Cross Sections, Transportation).
Solid waste disposal and management:
Resource recovery, technology options and determination of type and choice of systems as related to land use, density, economic levels and location of urban industrial and commercial activity areas.
Quantity of sewage, quantity of storm water, run off, time of concentration, design of sewers, flow diagrams, laying of sewers, sewer appurtenances. Design and lay out of sewerage system.
Project Management (Need Assessment, Structure, MIS, Project Management Packages (Brief Introduction to MSPROJ/WINPROJ).
Integrated Infrastructure Planning: Case Studies in India..
Fire Fighting:
Planning for fire protection, services and space standards. Prevention fire requirements, fire classification of construction, fire fighting, fittings and fixtures and design for tall building and neighbourhood lay out fire hazards, water demand calculations.
Other Infrastructure:
Concepts and theories for design and operation of electricity networks, power generation (conventional and non-conventional) communication networks like telephone facilities, WLL, cable TV, Fibre optic and other broadband communications networks, etc.
Critical Issues in Infrastructure planning:
Economics of urban services and networks. Socio-cultural aspects, community participation in the delivery of services and networks, problems of operation and maintenance; Environmental issues related to quality and level of network and services, impacts of choice of technology, system design, costs benefits to the urban community. Effects of land use and density.

URP 1.7 PLANNING LAB - I

Periods per week : 12 Internal Marks : 200 End Evaluation & Viva-Voce Exam : 200

Planning surveys and analysis at the neighborhood level. Understanding local problems through planning surveys and analysis, Area planning exercise for different areas; residential lay outs; commercial areas; recreational areas; industrial estates; mixed use development; old city cores etc. Including detailed site planning for part of the areas. Use of physical standards and socio-economic surveys; Application of widely used software packages for the processing and presentation of the data, maps and reports.

Area Planning

Introduction

Exercises to build awareness of design issues related to planning of small areas within a city, - to understand the implication of socio-economic and demographic characteristics of the population on the physical plan. Issues related to provision of infrastructure services, its costing, financing and implementation strategies especially defining the role of various agencies in realising the plan need to be addressed.

Stage-1: Perception Studies (One and half weeks to two weeks)

In this stage students will work in very small groups of only two to three students or individually, and undertake quick perception studies of various components of existing urban areas (eg, housing typology and layouts, building and population densities, streets, junctions, open spaces and its hierarchy, heritage buildings, etc). After field visits, the students will be required to present the status of the existing situation in form of sketches, photographs, drawings, small write-ups, flow charts, etc. Based on the analyses, this study would terminate with identification of problems and possible solutions. Undertaking this stage of the lab exercise, the students will get exposed to urban areas in a technical manner and the experience of the perception study would equip them better in understanding and analyzing various design issues in urban areas while dealing with subsequent stage-2 of the lab exercise. Two assignments would be given to each group.

Stage-2: Area Planning Problem (eight to ten weeks)

In stage-2 of the lab exercise students would be divided into multidisciplinary group of not more than five students in each group to facilitate better interaction. A study area from any of the urban areas in the Hyderabad Metropolitan Region would be identified for each group. After the study area for each group is announced, stage-2 would proceed as per the following phases.

[a] Data Collection (one to two weeks)

In this phase, each group would have to undertake a field visit of the study area over one week. Various data such as demographic and socio, status of physical and social infrastructure, economic activity, etc would have to be collected. On return form the field visits, each group would make a presentation.

[b]Analysis, Identification of Problems and Design Issues (one to two weeks)

Each group after thorough analysis of data collected would be required to describe the existing situation. In addition, after describing the existing situations, the problems therein would be identified and based on which design issues would be identified that would need to be addressed in planning for the area. This phase will terminate in a presentation by each group to a small group of faculty members.

[c] Conceptual Plan (one to two weeks)

Each group after through analysis of data, identification of the problems and design issues would start work on the conceptual plan for their study area. The proposed concept plan for the study area should contain the following components:

- Objectives and design parameters of the proposed development
- Site analysis
- Linkages of the study area with the city
- Physical layout plan indicating the broad land use (residential, commercial, open spaces, industrial, institutional, etc)
- Circulation plan
- Major infrastructure services
- Supporting data tables and charts for arriving at various decisions

The conceptual plan would be presented by each group and will be evaluated an all faculty jury.

[d] Master Plan (one to two weeks)
After receiving feedback on the conceptual plan each group would start working towards a master plan for the study area and further refine and substantiate each development proposal with appropriate numbers. The master plan would include the following components:

- Detailed land use
- Detailed circulation plan with all levels of roads
- Detailed infrastructure plan
- Block cost estimates
- Options of implementation strategy

This phase will terminate in a presentation by each group to a small group of faculty members.

[e] Final Plan (one to two weeks)
During this phase, the master plan would be further refined in all aspects governing the physical character of the plan followed by the organisational arrangements for development. A phasing plan for the proposed development with supporting financial analysis is required. The lab exercise will terminate in a submission of the report and presentation to faculty members and external experts. To the external jury members, each groups will submit an executive summary of their proposal three days prior to the date of final presentation will be given to the invited external jury member to facilitate better understanding. Each group along with the final drawings is required to submit a brief report (minimum 30 pages) on their proposals. The chapter outline would mostly follow the phases of stage-2 of the lab exercise.

Rural Area Planning
Introduction:
The academic objective of this exercise is to get a first hand experience about the life and living of rural people. Students will undertake study of a particular village for a group of five students and conduct a detailed primary survey. The primary survey is also expected to give them an exposure to research methodology and techniques of data collection.

The main objective is to identify the problems of rural life and evolve a strategy for the overall short and long term development of the village.

Life and living of the rural people will be explained in terms of:
Demography - Population, literacy, sex ratio, etc., for the year 1981, 1991, 2001.
Employment and Asset Structure - Nature of employment, land ownership, tenancy.
Agriculture and Allied Activities - Total area, landuse, Cropping pattern, irrigation, finance, marketing, Agriculture-labour, etc.
Social and Cultural Issues - Caste system, stratification, housing, settlement pattern, location of facilities, etc.
Institutions - Panchayat, Mahila Mandal, Credit Co-operative, Bank, Schools, Medical, NGOs, etc.
Government Programmes - Rural Development programmes like IRDP, JRY, rural housing schemes, road and drinking water related schemes. Peoples perception about different schemes and its impacts.
Village Level Amenities and Linkage - List of existing amenities, distance for non-available amenities, transportation and related issues.
Energy utilization pattern - Source of energy, future prospect.
Recent changes and development in the village and surrounding area.

Data Collection:
Village level information will be collected from the Panchayat Office, Census handbook and other secondary sources. Primary survey will be conducted by taking about 50 households for detailed study. Household selection will be done either by using the caste group, settlement pattern or land holding. A detailed interview schedule will be prepared for this purpose.
Time:
The total exercise will be for five weeks.

Week One and Two	- Literature survey, collection of secondary data, preparation of the interview schedule.
Week Three	- Field visit for primary survey.
Week Four and Five	- Data processing and data analysis, preparation for the final jury.

URP 1.8 HABITAT STUDY REPORT

Periods per week : Nil (to be done during the two week vacation) Internal Marks : Nil End Exam Marks : Nil (Only pass / satisfactory result) End Exam : Viva

Each student has to visit a town or city as identified by the faculty in charge of the studio. The students will have to submit a report on the urban settlement that they have visited and this should be based on a review of published literature, discussion with the development authorities, town planning officers, municipal officers, and other planning and development agencies. The actual format and content of the report has to comply with the guidelines formulated by the faculty in charge.

SECOND SEMESTER

URP 2.1 METROPOLITAN & REGIONAL PLANNING

Periods per week : 4 Internal Marks : 50 End Exam Marks : 50 End Exam Hours : 3

Metropolitan Growth: Scale and Complexity and its impact on national development.
Past and future of metropolitan growth and related characteristics problems and issues in India and the world. Primary and polarisation as process of metropolitan growth: case of India.
National settlement policies.
Structure of a metroplitan, socio-economic and political issues in metropolitan growth.
Unintended growth in metropolitan areas, multi-nuclei development and functional inter-linkages; Dynapolis, Megalopolis and Ecumenopolis; concepts and their applicability to India cities.
Issues in metropolitan management; institution development/financing and land management.
Inner city problems and approach to development. Urban redevelopment and renewal; Goals and objectives; costs and benefits, methods of plan preparation implementation, Administration, legal and fiscal framework. Alternative strategies to metropolitan growth planning for new towns- type design criteria, development process and issues.

Urban informal sector

Dimensions of urban poverty. Magnitude of the problems and major characteristics of spontaneous growth.
Basic need and their provision for various target groups and informal sectors.
Concepts and causes of spontaneous growth: Regional inadequacies and the settlements systems.
Identification of migratory impulses, characteristics of migrants and their significance in development socio-economic deprivation and informal sector. Development of informal sector concept.
Consequences of spontaneous growth: study of major aspects-spontaneous living and working, their characteristics and function in urban context. Actions for improvement: Appraisal of the role of government, private and voluntary organisation. Existing management and organisational set up, their limitations. Possible approaches such as labour recognition and integration into organised market structure, resource generation. Provisions of buildings and equipment, infrastructure development, appropriate regulatory control and standards for basic needs, flexibility in bye-laws and organisation through self-help and community development. Policies for assistance and implications for promotion.
Planning and development of urban settlement in terms of employment, shelter services and management for the informal sector at all levels.

Regional Development

Objectives
The Regional Planning course attempts to understand the theoretical basis for various concepts and analytical tools borrowed from social science and regional science and learn the practice of regional planning in the Indian context.
The course tries to provide an in-depth understanding of the issues of regional disparity and the need for balanced regional development in the country. The spatio economic basis of regional planning is supplemented by detailed discussion of sectoral issues like agriculture, industry, etc. Regional policies and sectoral policies are also discussed. Effort is made to focus on macro economic policies and its impact of regional development process and the issues of decentralization, multi-level planing in the context of current debate on Centre State relation . The political economic perspective is also highlighted. Besides theories, and issues,the tools and techniques of regional analysis is also discussed. The Regional Planning machinery and plan implementation is discussed through case studies.

Definition, scope and content of Regional Planning. (Need for Regional Planning and basis for Regional Planning. Concepts of spatial organisation and region. Types of region.)
Methods and purpose of regionalisation.(Delineation of regions in India.)
Concept of regional growth processes : (Some approaches of Rostow, Hirschman, Myrdal, Concept of core and periphery.)
Concept of growth centres, growth pole, service centre and agropolitan district district concept and their approaches in India and other countries.
Spatial growth process.(Settlement structure and distribution. Theories - Christaller, Losch - Rank size rule, primacy spatial innovation diffusion, etc.)

Introduction to regional/economic industrial location theories.(Weber, Isard, Alomso., Changing trends in location analysis., Methods of analysing regional industrial structure - regional cycle and multiplier analysis and economic base analysis, co-efficient of localisation, shift share analysis.)
Spatial theory and market areas inter-regional and regional accounting methods including preliminaries of input output analysis.
Regional imbalances and inequalities in India. (Policies - its impact on regional imbalances and planning imperatives, industrial location policies, agricultural development policies and structural adjustment policies., Urbanisation and urban systems in India. ,Spatial variation - reasons, factors and implications for planning., IDSMT and metro regional planning approaches.)

Population growth, distribution and regional development in India. (Population distribution and resource base. Migration in India, causes, flows and impacts.)
Backward area development. (Identification and development policies and approaches in India., Regional basis of decentralised and multi-level planning in India., Decentralised planning approaches, district planning, and block level planning., Sectoral basis of decentralised planning - a case of integrated rural energy planning in India., Decentralised resource management planning - a case of watershed management planning, with respect to concepts of common property resources, community based resource management systems, traditional knowledge and institutional systems.)

Institutional framework for regional planning - case of Maharashtra and North-east. (Centre, state, regional planning authorities and the issue of resource transfers in India., Case studies, Damodar Valley Corporation, National Capital Region, Narmada Command Area Development Plan, Regional Planning in Rihand, etc.)

URP 2.2 TRAFFIC AND TRANSPORTATION PLANNING

Periods per week : 4 Internal Marks : 50 End Exam Marks : 50 End Exam Hours : 3

Objectives
The course strives to give students the basic skills and knowledge base about transportation planning practice. After discussing basic terminologies and concepts, transportation problems etc., the course will focus on the transportation planning methodologies and techniques available to planners. In particular, the four step transportation planning models will be discussed in detail. This includes data collection, trip-generation, trip-distribution, Modal Choice and assignment. Students will be required to undertake four exercises designed for the purpose. Exposure to relevant policies and programmes will be given.

Evaluation of Urban Structure:
Transportation systems Infrastructure and management . Transportation systems and their types, design and operating characteristics, urban road hierarchy planning, engineering and management; criteria for road and junction improvements arterial improvement techniques.
Transportation Survey and studies:
Study area definitions surveys and their types, sampling methods, survey techniques; Designing O-D & other Traffic & Transportation surveys.programming and scheduling processing of travel data, analysis and interpretation of traffic studies.
Analytical Techniques:
Techniques for urban structure analysis; urban travel characteristics, urban transport planning process, land use transport inter-relationship and models, Travel Demand Analysis (overview). Introduction to TRIPS., Trip Generation models, Trip distribution models, Study Models, Modal Split Models, Trip Assignment Models.
Assessment of Model Choices, aggregation and other issues, Application using TRIPS, Developing Transport Plans/Options, scenario building and their analysis. Network Based Models :-Concept of optimisation, system versus individual optimisation , Graph theoretic concepts, Shortest-path algorithm, Transportation Problem.
Management of Transport System:
Existing organisational and legal framework, traffic and environmental management techniques. Management techniques review of existing traffic management schemes. Framework for Evaluation of System Options/Plan Preparation
Regional Transport System:
Importance of accessibility in regional transport planning. Role of road, rail, air and water transport systems. Regional Transport Systems planning, road network planning for micro regions.

Transport and Environment:
Traffic noise, factors affecting noise, noise abatement measures, standards. Air pollution standards, traffic safety, accident reporting and recording systems, factors affecting road safety, transport planning for target groups; children, adults, handicapped and women. Norms and guidelines for highway landscape; street lighting types, standards and design considerations. Transport & Environment, EIA of Transport Project

Economic Evaluation:
Pricing and funding of transport service and systems, economic appraisal of highway and transport projects. Techniques for estimating direct and indirect road user costs and benefits value of time.

Transport Policies:
Review of national, state and local level transport policies and their relevance in spatial and economic planning, pricing and funding of transport systems, transport technology energy and environmental implication in transport planning in developing countries; planning for public transportation; planning for bicyclists and pedestrians.
Regional road network planning, Highway Project Planning & Financing

Public transportation planning :
Overviews of system technologies, Technological options, characteristics. Choice of technology, Corridor Analysis, Integrated System Plan Concept, System selection, Legal & Institutional Provisions, Pricing & Financing of Public Transport Service

URP 2.3 INFORMATION TECHNOLOGY IN PLANNING

Periods per week : 4 Internal Marks : 50 End Exam Marks : 50 (Practical exam and Viva-voce)

GIS (Geographic Information Systems)

Objectives
To teach Computer based Geographical Information System as a tool used as decision support system involving integration and co-ordination of natural resources management or urban development planning or disaster management programme which require accurate and timely spatial information on natural resources, urban form or current events..

Introduction – Definition, Components of GIS, Organizational Aspects of GIS
Data Structure For Spatial Data - Nature of Spatial Data, Spatial Data Models and Data Structure, Vector Data Model, Grid Data Model, Irregular Grid Models, Scan Line Models, Hybrid Vector/Grid Models
Database Creation And Organization - Techniques of Database Creation, Steps Involved in Database Creation, Database Organisation and Management, Conventional Techniques of Database Management, Spatial Database Management Requirements, Spatial Database Management in Current Day GIS
Two Dimensional Data Analysis And Manipulation - Techniques of Data Analysis and Manipulation, Generation of Planning Views
Generation Of Map Outputs From Gis - Elements of Cartographic Maps, Making Cartographic Map Layouts in GIS
Making On-Screen Query From Gis Database - Typical Querries in GIS, Modes of Making Querries
Three Dimensional Data In Gis - Inputs of Surface Modelling, Generation of 3-D Model in GIS, Outputs from 3-D Module
Data Quality, Errors And Natural Variation - Obvious Source of Error, Errors Resulting from Natural Variation or from Original Measurements, Errors Arising through Processing
Network Analysis In GIS - Elements and Attributes of Network, Analysis of Networks, Application of Networks in GIS
Customizing GIS - Guiding Factor for Customization, Essential Features of Customization

GIS Application
Various Applications, Applications in India, Issues related to applications, GIS Applications Design and Implementation

Five topics are selected to undertake group projects. These projects would then use different modules of GIS software. The groups are as follows:

1. Watershed Management
2. District Development Plan
3. Urban Sustenance – Decision Support System

4. Environmental Monitoring
5. Urbanisation Process – A case study of A.P. State.

Preparation of base map, Census information and other data collection, Literature review on GIS and district planning.
Finalisation of base map and copies made thereof, Compilation of statistical data and analysis, Write up on literature review.
Satellite data interpretation, Interpretation of Survey of India toposheets of the district, Evaluation of Government policies and programmes through interaction and discussions.
Theme-wise map preparation through satellite data, Theme-wise map preparation from toposheets, Write-up on above.
Identification of secondary data, Mapping of other developed/undeveloped villages in district., Identification of resource utilisation and future scenario.
Preparation of GRID map, Matrix preparation and assignment of weightages, Principle component analysis.
Report

URP 2.4 ECOLOGY AND ENVIRONMENTAL PLANNING
Periods per week : 4 Internal Marks : 50 End Exam Marks : 50 End Exam Hours : 3

Evolution of ecology. Man and Ecosphere, Components of nature and some basic concepts, process of ecology; flow of material, water, energy, invasion, succession, perdition, regulatory forces, adoption, tropic levels, food chain, food web, ecological pyramids.
Eco-system and their relevance to environment, causes and consequences. Impact of advance agricultural methods, urbanisation and industrialisation on nature.
Pollution: Types, sources, remedies.
Urban eco-system approach, evolution and significance.
Introduction to quantitative ecology:
Identification of ecological parameters for planning at different levels; Site planning, Settlement planning, regional planning.
Data needs, formats for data collection. Types of analyses required to evolve ecological parameters.
Environmental Impact Assessment: Methods and their appraisal.
Environmentally compatible regional development: An approach.
Ecological awareness in India: traditional, indigenous methods, contemporary trends.
Endowments and resources, definition and classification according to different criteria ends, renewable, non-renewable etc.
Human Welfare and development as functions of resources in terms of physical environment , way of living and technology. Space bound and flow resources. Preparation and analysis of inventories and resource matrices. Finiteness of resources, examples of transfer from one resources to another in history at different parts of the world development, utilisation and conservation of resources planning, integrated resources planning approach resources management, traditional and contemporary approaches, Resource development in India some selected Case studies.

Environmental Planning

Planning and Environment - Planning, Planning Contexts, Types of Planning, Planning Process and Tools, Definition of Environment, Types of Environment, Population, Resources, Environmental Degradation and Pollution, Pollutants and their effects and control, Environmental Planning – Type

Ecosystem- Types and Components of Ecosystem, Bio-diversity, Energy Flow in Ecosystems, Matter Recycling, Interactions in Ecosystem

Physical Environment

Air Environment - Air Resources, Atmospheric systems, Climate, Emission standards, Global warning, Ozone depletion, Nuclear Wars, Problems
Water Environment - Water Resources – Types, Water Resources – Renewal, Use, Drinking Water Standards, Health Aspects, Water Pollution, Sanitation, Disposal Standards of Treated Wastewater
Soil Environment - Soil Types, Soil Yield, Soil Pollution
Energy - Evaluation of Energy Resources , Types of Energy Sources – Renewable, Non-Renewable, Conventional and Non-conventional
Environmental Policies, Protocols and Regulatory Mechanisms - Fundamentals of Environmental Acts, Rio Earth Summit, Stockholm Conference, Kyoto Protocol

Environmental Technology

Technology options for mitigation of environmental pollution Environment by "End of Pipe Treatment Systems", like Effluent Treatment Plants, Use of Scrubbers to minimise air pollution load. Versus combating environmental pollution, through "Waste Minimisation", "Re-use" and "Recycle".

Different aspects of "End of Pipe Treatment Options, their environmental and financial implications, need for waste reductions and the concept of Waste Minimisation at Source through case studies, Energy Planning and Management and Conservation issues.
End of Pipe Treatment System/Pollution Control Measures for: (Air Pollutants (SPM/Sox/Nox), Domestic Waste Water, Industrial Waste Water, Solid and Hazardous Wastes., Environmental, Economic and Financial Implications of "End-of-Pipe Treatment Systems")
Need of "In-Process Waste Reduction/ Minimisation (Concept of Cleaner Production and Cleaner Technologies, Environmental benefits of "Environmentally Sound Technologies", Case Study)
Concept of End of Pipe 3-Rs: "Recycle-Reuse and Recovery". (Towards Sustainable Development - Concepts of Industrial Symbiosis and Ecology, Case Study of Waste Recycling, it's cost effectiveness and options.)
Environment Management Systems (ISO-14001 and its Planning Implications, Why do we need ISO ?, Case Study of a ISO certified industry, Environmental and Financial Benefits of ISO.)
Principles of Energy, (Energy-Environment-Pollution Linkages., Energy Demand and Supply Planning Management, Energy Conservation Issues and Need of Energy Audit.,)

Sustainable development

The basic objective of the course is to get through the issues of sustainable development and bio-diversity management. The course aims to give holistic approach for bio-diversity management and also gives broad view of various national and international policies and instruments of bio-diversity. Systems Diversity. Species Concept & Inventory. Habitats & Systems Change. Use Of Bioresources. Valving Biodiversity. Conservation. National & International Policies & Instruments. Assistance & Aid. Biodiversity Convention., Associated Inputs, Biodiversity Planning, Costing Targets, Agro & Forestry Systems/Forests Interface, Monitoring Systems, Biosphere World Views.

EIA
Introduction to Environmental Impact Assessment: Defining the role of impact assessment --- Rational for EIA --- Phases of impact assessment.
Impact Identification Techniques: Various methods used in impact identification --- detailed techniques of using these techniques --- strengths and weaknesses of the various techniques used as impact identification process.
Impact Evaluation Techniques: Techniques used in impact evaluation --- Weighting-Scaling techniques, ecological rating systems --- Goals-achievement matrix, priority-trade-off-scanning matrix.
Predicting Impact on the Physical Environment: Land --- indicators for land suitability and vulnerability --- Landscape characteristics and indicators of landscape process --- Mapping landscape characteristics --- Techniques for evaluating alternative land use plans.
Air --- calculating pollutant emission --- predicting ambient concentration --- predicting ecological response to air pollutant --- predicting human health risks.
Water --- categorisation of pollutants --- pollution dispersion --- water quality.
Predicting Impact on Biota: Ecosystem process and impact assessment --- energy fixation and flow.

URP 2.5 PLANNING FOR RURAL DEVELOPMENT
Periods per week : 4 Internal Marks: 50 End Exam Marks: 50 End Exam duration : 3 Hours

Objectives
To help students to understand rural society within the context of rural development and change In the post-independence period and be able to contribute positively in planning for overall development of the social institutions, human behaviour and economy of the rural population.

Rural Situation in India, Indian Village from the Pre-British Period to 1947, Social Stratification Changes and Modernisation
National Planning and rural development. Concepts of planning for rural settlements.
Regional Development and urban rural partnerships, related inputs and infrastructure development.

Agricultural development allied activities, Agriculture Under Five Year Plans, Marketable Surplus and Cropping Pattern. Patterns of rural linkages, communication and marketing facilities, community development, institutions and delivery of social services.
Rural settlements, typology, structure, Spatial significance in metro regions and interior areas. Planning principles of village planning and community norms.
Area, district and block level development planning and implementations, public participation in rural development process, role of voluntary organisations.
Rural energy issues, renewable and alternative sources of energy.
Ecological and environmental considerations in rural development and village planning.
Land Reforms in India: Need and Scope of Reforms, Tenancy Reforms., Rural Credit.
Community Development and Panchayati Raj, Area Development and Target Group Based Development.
Green Revolution, Rural Poverty and Poverty Studies., Anti-poverty Programmes and Their Performances.
Non-government Experimentation of Rural Development, Milk Co-operative in India.

URP 2.6 PLANNING LAB –II
Periods per week : 15 Internal Marks : 250 End –Exam (Viva-Voce) Marks : 250

Development Plan for a town / city (ten to twelve weeks)
Elaboration of principles and techniques adopted in planning projects. Application of theories and techniques of urban regional planning in the preparation of development plans for new towns, metropolitan areas and various types of development, settlement structure , environmental protection and institutional development . Evaluation techniques in the choice of strategies.

Background
The rate of urbanisation has been rapid. Basic problems such as poverty, inequality, unemployment, migration, industrialization and associated effects, rapid rate of urbanization, unregulated development, widening infrastructure gaps, inadequate and inelastic resource base of the local governments, environmental deterioration, etc., continue to predominate the action agenda of planners.

Due to rapid change, these problems have grown in intensity and complexity. In the past, growth and its impacts were not as severe as observed in the present day context. If, planners, as 'Managers of change' have to succeed, they need to keep pace with this rapid change. Four relevant manifestations of recent changes have significantly altered the ground rules of the profession. They are Liberalisation/ Macro Economic Reforms, Information Technology Revolution, the Democratisation and Decentralisation, initiatives and the emergence of Environment as major area of concern.

Incorporating these dimensions within the planning framework made available by the urban development legislation is the challenge, present day urban planers are faced with.

Objective
The proposed laboratory exercise attempts to enable the planners to understand the complex nature of urban development, legislative tools available for achieving sustainable development, methods and models of planning through hands on experience.

Framework
The plan process used should be a strategic planning framework - the process adopted *"general goals / specific objectives / actions"* approach
The plan process may be evolved in terms of following stages.

Understanding Legal Framework - Review of legal framework (Urban Development Acts), Review of Development Plans

Identification of Urban Developmental Planning Issues - Review of literature

Methodology for data collection is to be evolved.

Town assessment:- A ten day visit to the town to prepare existing land use (Broad), collect necessary secondary information, discuss/survey public about the problems, vision etc.,

Setting Goals, Objectives

1. Broad, long-term goals, meant to be very general, that speak to the basic human and environmental needs that are to be addressed.
2. Long-term objectives to achieve a sustainable development
3. Objectives for the year 2011, describing the proposed state of the City within 10 years. These objectives are quantified and meant to be feasible within two five-year time-frame.
4. Specific actions to be taken to achieve the objectives.
5. Converting actions into physical plan

Studies to cover topics that span many issues such as *Economy and Economic Development, Population trends, land use, infrastructure status, Municipal Expenditure, regional factors, etc.,*

Regional Plan (four to six weeks)

Formulation of a Regional Plan for a region within the state – may be as small as a mandal or as large as an entire district or a resource region.

Efforts should be taken to look into the region holistically. For example, people engaged in agriculture, horticulture, industries, construction activities are not concerned about water availability and environmental quality. What will be the impact of such activities on existing water resources, environment and human resources? What is the nature and extent of effect on the local economy and livelihood of the people? How to democratize the development process? What are the constraints and the opportunities to address long-standing development issues of the region ? The impact of resources (or lack of) or some predominant activity on all the different sectors of the district should be viewed as a whole in order to bring about a holistic development to the region. The plan should be based on a study of the ecological and environmental features of the region, in order to assist in the development activities. - a study of the demographic and economic characteristics of the population and plan for the economic revival of the region, both short term and long term. - an analysis of the existing settlement patterns and identification of locations for siting various activities in the wake of the potentials and the constraints and threats.

URP 2.7 PLANNING ORGANIZATION - APPRAISAL/ TRAINING REPORT

Periods per week : Nil (to be done during the six week vacation) Internal Marks : Nil End Exam Marks : Nil (Only pass / satisfactory result) End Exam : Viva

Each student has to select a planning organization and has to undergo training in that organization during the 6 week summer vacation. The students will have to submit a report of the work done during their training and also which should include an appraisal of the planning organization, based on discussion with the development authorities, town planning officers, municipal officers, and other planning and development agencies. The actual format and content of the report has to comply with the guidelines formulated by the faculty in charge

THIRD SESMESTER

URP 3.1 URBAN DEVELOPMENT MANAGEMENT

Periods per week : 4 Internal Marks : 50 End Exam Marks : 50 End Exam duration : 3 Hours

Objectives

To understand the administration, planning and implementation process of urban local government; the basic concepts of, and actual practises of public finance, issues related to sustainability of urban local bodies and also equip the students with key management techniques.

Introduction to Urban Management - concepts, planning and management of urban government.
Issues in Urban Management, Need for urban local government.
Evolution of ULBs., organisational structure, functions and management practices of urban local bodies in India.
An overview of Municipal Act- its Structure, Functions and Delegation of Powers to administrators and executives.
Decentralisation of Work System: Departmental procedures, Authority and Responsibilities, Departmental Communications and co-ordinations. Need for decentralisation strategy. Case study on Town Development Department, Health and Education Department.
Metropolitan government system in India: A review of major development authorities and a few small development authorities in terms of institutional and legal framework (Functions, Responsibilities, Funding and Planning).
Financial Planning and techniques. Public finance and resource mobilization: Some basic principles.
Review of State Local Financial relationship, policies and procedures, functions and financial relationships in urban local government, Issues in financing urban government, local finances, management and scheme sectioning: A case in Experiences of Ahmedabad Municipal Corporation.
Review of accounting practises, budgetary procedures for capital works and maintenance methods of funds allocation for services: Existing practices prevailing in urban local government.
Budgeting Techniques: A tool for better financial planning for urban governmen
Municipal tax structure for resource mobilization, main sources of revenue for local authorities: Property tax, issues and imperatives.
Emergence of New Financial System: A review of Calcutta Revised Grant Structure and cases of other local governments.
Policies and procedure for raising financial resources and commercial accounting system, capital financing debt management.
Organizational management techniques.
Application of management techniques used in urban local bodies for improvement of organizational capabilities.
Management by objectives, MIS, PPBS, Zero Base Budgeting.

Development Management

Development management aspects. Nation goals and political economic system effecting development management and development process. Planning administration: Systems of local Government in India, Development administration at National, State, District and local level, and the process of decision making in development and management. Functions, powers, structure and resources of local government, possibilities of qualitative improvement in plan administration Public relations and citizen participation in development, personnel management, man power
planning, performance appraisal, motivation and morale.. Organisational behaviour- organisation theory, authority and conflict, administration communication, leadership in administration, organisational changes. Organisational structure and plan implementing agencies.

Development Financing:

Local financial system in India- local taxation and fees, state and local fiscal relations, financing local services, local expenditure, capital budgeting and performance budgeting. Financial resource mobilisation. Policies and programmes of related institutions, administrative aspects of investment. Land management practices and policies.
Strategies: Tools and Techniques for development management, classical persuasive and non-persuasive strategies and techniques. New techniques of management by objectives (MBO). Integrated reporting system, flow diagrams, bar, charts, milestone charts, CPM and PERT, LOB.. Techniques of monitoring of development works-standard oriented costs control, turnkey system, vertical production method, inventory cost control techniques, and unified status, index techniques..

Seminar Topics

Urban Governance – Evolutionary Study
Urban Administration – Cross country and across States Comparison
Urban Finance – Budget
Urban Infrastructure – An Evolutionary Study
Urban Sustainability: Issues against urban Governance
'High rate of Urbanisation is a problem for Urban Government to govern' discuss.
Constitutional Changes in Urban Governance
Impact of Liberalisation on Urban Governance
Participatory Government – Evaluation
Professional Ethics in Urban Administration is a key for the success for Urban Government
Privatisation is a tool to achieve administrative Efficiency
A debate on Private Public and People's Participation
Evaluation of BOO, BOT etc.
Crisil Rating for Local Government – Reality or Illusion? Is there a need to change the approach?
Municipal Bond – a tool for Resource Mobilisation
Alternate Mechanism for Financial Resource Mobilisation.
Narrate Difference between Public Enterprises and Urban Government
Best Practices for Urban Governance – a feasible solution
Urban Poverty- a detailed and quantative analysis
Multi agency and multiple window approach with respect to urban government programmes and policy
Role of Urban Development Authority in Urban Governance
Public Finance Approach for evaluation of criteria for financial allocation under urban development programmes

URP 3.2 PLANNING LEGISLATION

Periods per week : 4 Internal Marks : 50 End Exam Marks : 50 End Exam duration : 3 Hours

Objectives

The main objectives of this course are to familiarize the students with both the use of legislation as a planning tool in general as well as the details of important planning, housing and environment related legislation.

Legislation

Introduction to laws, concepts - sources of law (i.e. custom, legislation and precedent), meaning of terms of law, legislation, ordinance bill, act, regulations and bye-laws.
Doctrine of separation of powers. Judiciary, legislature and executive – rule of law - significance of law and its relationship to urban planning. Provisions regarding property rights. Legislative competence of state and central governments to enact town planning legislation.
History, Indian constitution and its main features articles 14,21,31.– legislative process – division of subjects between center and states.Legislation, sub-ordinate legislation, precedents. Power to legislate and issues ordinated judicial systems in India. History of legislation in U.K. and India.

Legislation related to use and control of land. Concept of eminent domain LAND ACQUISITION ACT of 1894. Its use in planning, implementation and limitations. Betterment charges and compensation provisions in various planning laws; and judicial precedents.
Valuation of real estate - approach to value, concept of ownership - bundle of rights - possession, rent premium, depreciation and easement rights.
Legislation controlling use of land parcels like non-agricultural permissions, NOC, building permission, building bye-laws and use of permissions, etc.
Significance of land development control – objectives and legal tools , critical evaluation of zoning, subdivision regulations, building regulations and bye-laws. Development code. Zoning law relating to slum clearance, housing, landscape and traffic. Approach for formulating rules and bye-laws
Policies, laws, acts pertaining to urban land, ceiling on urban land and property, Urban land (ceiling and regulations) act, 1976: objectives, contents and planning implications,.etc.
Rent control legislation - variations over the states and important provision, problems.
Housing co-operatives related legislation and other forms like non-trading corporations.
Slums related legislation - variations over the states, important sections, their implications, etc., problems with actual use.
Legislation on related to property transactions (Transfer of Property Act, Income Tax related, etc.).
Model bills on town and country planning, urban development corporations, etc., status of the Institute of Town Planners, India and overview of framework of rules and provisions made in the ITPI chapter.

Evolution of planning legislation. An overview of legal tools connected with urban planning and development, Town and country planning act. Improvement Trusts Act, Urban Planning and Development Authorities Acts – objectives, contents, procedures for preparation and implementation of regional plans. Master plans and town planning schemes. Concepts of arbitration, betterment levy, development charges and public participation in Statutory planning process. Concept of structure plan, local plan under the English law.Review of selected town and country planning Acts in India and abroad including recent trends in planning legislation and tracing the common roots inherent therein - town planning legislation in India - problems and prospects.

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Planning law and the poor.

State-Central and local institutions in relation to planning laws.

Legislation relating to urban conservation and restoration, historical movements, archaeological sites and remains of National importance.

Environmental Law

Introduction to Law (Indian Constitution., Evolution of Environmental Laws in India.)

Law of Torts, the first Environmental Law.

National Environmental Policy Act – Pollution Control Acts - Air, Water and EP Acts. (A critical appraisal.)

Seminar on Forest and Wildlife Act.

PILs and Writs as a tool of pollution control.

Some important international environmental laws.

From Stockholm to Rio - History of environmental policy in world and in India.

Environment versus Development (Different approaches and analysis.)

Alternative development paradigms for environment friendly and sustainable growth.

URP 3.3 URBAN DESIGN CONSERVATION AND LANDSCAPE

Periods per week : 4 Internal Marks : 50 End Exam Marks : 50 End Exam : 3 Hours

Urban Design:

Role of urban design in the planning process. Principles of structuring urban spaces, locational parameters of activities and urban uses.

Study of evolution of the concepts in Urban Design through history

Imageability of the city.

Determinants of urban patterns and forms: land use density and networks. Energy and urban form; Impact of Technology and construction techniques; Standards and implications of regulatory control on urban form and design; Design in relation to renewal and re-development of central areas.

Issues related to changing practices of planning human settlements as applied to spatial design. Urban design projects; Identification of scope and relationship with development plan-planning and design parameters for new towns.

Urban Conservation:

Problems of conservation in developing countries. The need for resolving conflicts between development and preservation and to evolve methods which will reduce the costs of preservation by sensitive utilisation.

a) Conservation and urban renewal: Conflicts and compatibility, changing values, obsolescence, land blight.
b) Physical restoration, causes of physical deterioration, selection of construction methods, Materials specification.
c) Role of community in Conservation: Regulation, legislative and revenue aspects. How to minimise costs of preservation and community participation.

Concepts of urban decay social, economic and physical factors affecting urban maintenance.

Concept of nature cities-determinants, approaches and strategies for urban regeneration, urban redevelopment and requirements and costs. Potentials and limitations in the Indian context. Urban regeneration as a process for environmental planning and management. Feed back for policy frame work relevant to urban and metropolitan growth.

Urban Landscape:

Man and his surrounding , Co-ordination between Architecture, Town planning and Landscape planning.

Study of Landscape design in history with particular emphasis to India and its contribution.

Elements of Landscape design.

Plants in relation to urban ecology and planning design and their types-tropical related conditions.

Theories and principles of landscape planning.

Organisation of open spaces, recreational areas and water front development.
Introduction to Environmental Impact Assessment. of urban projects
Case studies of selected examples.

URP 3.4 PLANNING COLLOQUIUM AND SEMINAR
Periods per week : 4 Internal Marks : 100 End Exam : Nil

Essentially aims to introduce the students to the issues in / of planning or related to planning as seen colloquially by the stake holders, decision makers, urban managers and advocates – all of whom may not necessarily be professionally trained in planning.
The students will be exposed to colloquial arguments and issues raised by politicians, bureaucrats, NGO's, citizens, user groups, advocates, other technocrats, urbanists, etc.. Each student has to compile a report on his perception of the arguments and issues, not only reporting the arguments offered by the participants in the colloquium, but also extending the same or relating them to form an overall, comprehensive picture drawing from all the sessions through the semester.
The colloquium will be organized on a fortnightly basis with the intervening week to be used for a debate / seminar by the students to clarify and extend the arguments and stances raised in the previous colloquium and also by making use of related press reports / articles.
The students shall participate in organizing the colloquiums, organizing background material, identifying potential participants and recording the minutes. Evaluation will be wholly based on internal marks given on the basis of the participation of the students in the colloquiums and in the internal seminars / debates and the reports submitted by the students on the colloquiums.

URP 3.5 PROJECT PLANNING, APPRAISAL AND MANAGEMENT
Periods per week : 4 Internal Marks : 50 End Exam Marks :50 End Exam : 3 hours

Objectives
To introduce various principles, methods and techniques of undertaking project appraisal, and project management principles going through financial and economic analysis of the project, from the stage of inception to implementing the project.

Project Objectives And Components - Project Life Cycle, 4 Stages In Project Development – Identification, Approval, Implementation, Operation, Evaluation
Project Appraisal Techniques - Technical/Financial/Organisational criteria, Appraisal Criteria (NPV/B/C. Ratio/I.R.R. - Financial Analysis - Capital Costs, Financing plans, Operation costs, Projections of costs and revenues, Financial viability, Debt servicing, Tariff and revenues, Income and expenditure statements, Project balance sheets, Rate of returns
Social Cost Benefits Analysis - Rationale for SCBA, UNIDO Approach
Project Management - Planning and control, Human aspects, Development of project network, Critical path, PERT & CPM, Project organisation, Contracting, Procurement And Recruitment budget and fund flow statement, Stabilisation and finish
Project Monitoring -Management information systems, Environmental care, Safety

URP 3.6 PLANNING LABORATORY - III
Periods per week : 15 Internal Marks : 250 End Exam (Viva-voce) marks : 250

Each student has to choose / formulate and work on a planning project independently. The project may be related to any sector and be of any scale , but it is desirable that the approach be multidisciplinary and preferably relate to 'live' and current contexts.
The main thrust of the project should be to identify a planning project addressing a current or immedeatly future context, review related theoretical approaches, collect, document and analyze relevant data and formulate proposals to address the problems identified.
The key word is 'project' in terms of definable program of actions, budgets. Implementation strategy and mechanism, beneficiaries, etc. Research may be limited to literature review and analysis of readily available data with limited primary data focused on the immediate demands of the 'project'

FOURTH SESMESTER

URP 4.1 PLANNING THESIS

No coursework *Internal Marks : 500 End Exam (Viva-voce) 500 marks*

Each student is required to prepare a thesis on a subject approved by the department.
The general format and guidelines shall be as laid down by the department .
The topics should be on current research and professional planning interests and the work contained shall be the students, original work.

Objectives Of The Dissertation Programme

To enable the students to select and handle relevant research topic on an individual basis from the conception of the idea through conduct of the research to the preparation of a final report and presentation;
To enable the student to develop abilities in different techniques of communication inclusive of both written reports and visual-oral presentations.

Structure Of The Dissertation Programme

The dissertation programme includes the following three major stages in view of the objectives listed above. These stages may be overlapping to a certain extent as the entire exercise is to be viewed as a process.

Stage-1 Development of a Research Proposal
Stage-2 The process of conducting the Research
Stage-3 The documentation and presentation of the research, its findings and their implementation.

Criteria For Evaluation

The criteria for evaluation of the Dissertation need to be evolved matching with the individual stages identified above and the objectives of the programme stated earlier.

Development for Evaluation

- Level of understanding and awareness of the conceptual development and the literature in the broad area of study chosen;
- Coverage and synthesis of available and accessible research in the area;
- Clarity and precision in the statement of the problem;
- Ability to focus the research and a proper definition of the objectives, scope of study and the conceptual framework of the research;
- Appropriate development of the research design and the analytical framework;
- Level of originality of ideas and approaches.

Process of Conducting the Research

- Appropriateness and efficiency of the methodology ion the process of data collection and analysis;
- Judgement in data use – relevance and reliability;
- Ability to modify and adapt the research objectives and the scope in situations of practical limitations in data;
- Degree of analytical consistency including appropriate use of techniques;
- Ability to modify and adapt the research objectives, scope and analytical frame in response to feedbacks received through review;
- Overall consistency in the understanding and applications of the concepts, methodology and analysis;
- Extent of efforts put to accomplish good quality research.

Documentation and Presentation of the Research, its Findings and Implications

- Organization of the report in terms of logical continuity and consistency;
- Ability to present the findings and implications with both precision and punch;
- Quality of the report in terms of language, style, editing, referencing;
- Articulation in visual-oral presentation including precision in presenting findings – implications and the defence of the work.

Selection Of Guide

Students are suggested to consult internal faculty members based on their own areas of interest. It is also possible for students to consult external faculty actively participating in academic programme. To know the research interests of internal faculty students can meet them individually. Taking up academicians of other Institute/Research Organizations, as External Guide is permitted. However, in that case, a a Core Faculty should be chosen as Internal Guide.

Received on
01.12.2009

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BACHELOR OF FINE ARTS
IN
APPLIED ART
(2009-2010)

2011-2012

Academic Regulations
Course Structure
Syllabus

College of Fine Arts
Jawaharlal Nehru Architecture & Fine Arts University
Mahaveer Marg, Masab Tank, Hyderabad -- 500 028.

Academic Regulations

For 4 years Degree Course Program BFA with effect from 2009-2010 batch

1. **Award of Bachelor of Fine Arts Degree**:
   Students will be declared eligible for the award of BFA Degree if he/she fulfills the following academic regulations.
   i. He/She has to persue a course of study for not less than 4 academic years and not more than 8 academic years in the JNAFAU, College of Fine Arts.
   ii. The first year, 2nd year, 3rd year & 4th year are on a semester pattern.
   iii. The first year 1st & 2nd Sem. Will be common for Painting, Sculpture and Applied Art.
   iv. He/She must have satisfied the minimum academic requirements in each year as here in after stipulated.
   v. Students, who fail to fulfill all the academic requirements for the award of the degree within eight academic years from the year of their admission, shall forfeit their seat in the course and their seat shall stand cancelled.

2. **Course of Study**:
   The following courses of study are offered for specializing for BFA degree.
   1. Applied Art and Visual Communication
   2. Painting and Visual Communication
   3. Sculpture and Visual Communication
   4. Photography and Visual Communication
   5. Animation

3. **Weightage of Marks**:
   i. The performance of the student in each semester/year shall be evaluated subject-wise as per the course structure given ahead.
   ii. The distribution of marks for the subjects shall be for theory and practical's: 40% internal evaluation and 60% for End Examination (External evaluation)

4. **Attendance requirements**:
   i. A student has to put in minimum of 75% of the attendance in aggregate of all subjects for becoming eligible to register for the end examination and with a minimum of 50% physical attendance in each subject.
   ii. Condonation of shortage of average attendance up to 10% (i.e. between: 75% to 65%) in each semester may be granted by the college academic committee (CAC) on payment of Condonation fee and production of satisfactory evidence of the shortage of attendance.
   iii. Shortage of aggregate attendance below 65% shall in no case be condoned.

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shortage of attendance below 50% in one or more subjects shall not be condoned. Candidates whose shortage of attendance is not condoned either in aggregate are not eligible to sit for the end examinations. They will have to repeat the semester in all respects when next offered.

imum Academic Requirements:

A student shall be deemed to have satisfied the minimum academic requirements in each subject (Theory/Practical) or project if he secures not less than 35% (out of 60) of marks (i.e. 21 out of 60) in the end evaluation and a minimum of 40% of marks in the sum total of internal evaluation and end evaluation taken together.

The candidate can be conditionally promoted from 1st year to 2nd year if he/she has backlog of not more than 3 subjects.

The candidate can be conditionally promoted from 2nd year to 3rd year if he/she has backlog of not more than 2 subjects.

The candidate can be conditionally promoted from 3rd year to 4th year if he/she has backlog of not more than 2 subjects.

The candidate will be promoted from 3rd year to 4th year only if he/she has no backlogs of 1st year.

. The student can have total backlog of 8 subjects as a whole in the total duration of 4 year course.

i. In all other cases student will be detained and he/she has to repeat the year/semester whenever offered.

iii. A student has to complete all the academic requirements of all the 1st year subjects in 3 academic years after his admission. Failing to do so the student shall forfeit his/her seat in BFA Course and shall not be eligible for admission again.

x. The result of the candidate will be declared only when the student has cleared all the backlogs under the above said rules.

Withholding of results:

The results of any candidate shall be withheld if

i. He/She has not cleared any dues to the Institution/Hostel.
ii. A case of disciplinary action is pending against him/her.

Award of Class:

After a student has satisfied the requirements prescribed for the completion of program and is eligible for award of BFA degree, he/she shall be placed in one of the following three classes.

First Class with Distinction	75% and above	From the aggregate marks secured in the whole program.
First Class	Below 75% but not less than 60%	
Second Class	Below 60% but not less than 50%	

8. **Minimum Instruction days**:

The minimum instruction days for each semester shall be 90 days and classes will be 6 hours duration to be held every day excluding the examination days.

9. **General**:

i. The academic regulations should be read as a whole for the purpose of any interpretation.
ii. The marks in internal evaluation and end examination shall be shown separately in the grade sheet.
iii. To enable the students to satisfy the academic requirements and examinations shall be arranged at the end of each year/semester.
iv. A candidate who has backlogs can appear either at the regular or supplementary examinations.

B.F.A. APPLIED ART AND VISUAL COMMUNICATION
(4-Year Degree Programme)

COURSE STRUCTURE

I YEAR - I SEMESTER

Code	Name of the subject	Periods in 4 weeks	Duration of examination	Internal Evaluation	End Examination	Total Marks
	THEORY					
A1.1	History of Visual Art and Aesthetics-I	12	3 Hrs.	50	50	100
A1.2	English-I	12	3 Hrs.	50	50	100
	PRACTICALS					
A1.1.3	Drawing-I	24	5 Hrs.	50	50	100
A1.1.4	Color Design-I	24	5 Hrs.	50	50	100
A1.1.5	Applied Art-I	24	5 Hrs.	50	50	100
A1.1.6	Painting-I	24	5 Hrs.	50	50	100
A1.1.7	Sculpture-I	24	5 Hrs.	50	50	100
	Total	144				700

I YEAR - II SEMESTER

Code	Name of the subject	Periods in 4 weeks	Duration of examination	Internal Evaluation	End Examination	Total Marks
	THEORY					
A1.2.1	History of Visual Art and Aesthetics-II	12	3 Hrs.	50	50	100
A1.2.2	English-II	12	3 Hrs.	50	50	100
	PRACTICALS					
A1.2.3	Drawing-I	24	5 Hrs.	50	50	100
A1.2.4	Color Design-II	24	5 Hrs.	50	50	100
A1.2.5	Applied Art-II	24	5 Hrs.	50	50	100
A1.2.6	Painting-II	24	5 Hrs.	50	50	100
A1.2.7	Sculpture-II	24	5 Hrs.	50	50	100
	Total	144				700

changes
Drawing - II

II YEAR - I SEMESTER

Code	Name of the subject	Periods in 4 weeks	Duration of examination	Internal Evaluation	End Examination	Total Marks
	THEORY					
A2.1.1	Visual Communication-I	24	3 Hrs.	50	50	100
	PRACTICALS					
A2.1.2	Drawing from Life	30	10 Hrs.	50	50	100
A2.1.3	Computer Basics	30	10 Hrs.	50	50	100
A2.1.4	Graphic Design-I	30	10 Hrs.	50	50	100
A2.1.5	Typography-I	30	10 Hrs.	50	50	100
	Total	144				500

II YEAR - II SEMESTER

Code	Name of the subject	Periods in 4 weeks	Duration of examination	Internal Evaluation	End Examination	Total Marks
	THEORY					
A2.2.1	Visual Communication-II	24	3 Hrs.	50	50	100
A2.2.2	Environmental Studies	16	3 Hrs.	50	50	100
	PRACTICALS					
A2.2.3	Drawing & Illustration	26	10 Hrs.	50	50	100
A2.2.4	Digital Page Layout	26	10 Hrs.	50	50	100
A2.2.5	Graphic Design-II	26	15 Hrs.	50	50	100
A2.2.6	Typography-II	26	10 Hrs.	50	50	100
	Total	144				600

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III YEAR - I SEMESTER

Name of the subject	Periods in 4 weeks	Duration of examination	Internal Evaluation	End Examination	Total Marks
THEORY					
Reproduction Techniques	24	3 Hrs.	50	50	100
PRACTICALS					
Technical Illustration	30	15 Hrs.	50	50	100
Computer Drawing	30	15 Hrs.	50	50	100
Graphic Design-III	30	15 Hrs.	50	50	100
Basic Photography	30	15 Hrs.	50	50	100
Total	144				500

III YEAR - II SEMESTER

	Name of the subject	Periods in 4 weeks	Duration of examination	Internal Evaluation	End Examination	Total Marks
	THEORY					
1	Advertising Operations	24	3 Hrs.	50	50	100
	PRACTICALS					
2	Creative Illustration	30	15 Hrs.	50	50	100
3	Computer Image Editing	30	15 Hrs.	50	50	100
4	Advertising Photography	30	15 Hrs.	50	50	100
5	Mini Project	30	Submission	50	50	100
	Total	144				500

IV YEAR - I SEMESTER

Code	Name of the subject	Periods in 4 weeks	Duration of examination	Internal Evaluation	End Examination	Total Marks
	THEORY					
A4.1.1	Campaign Planning	24	3 Hrs.	50	50	100
	PRACTICALS					
A4.1.2	Advance Illustration	30	15 Hrs.	50	50	100
A4.1.3	Digital Photography	30	15 Hrs.	50	50	100
A4.1.4	Advance Typography	30	15 Hrs.	50	50	100
A4.1.5	Ad-Film Design	30	25 Hrs.	50	50	100
	Total	144				500

IV YEAR - II SEMESTER

Code	Name of the subject	Periods in 4 weeks	Duration of examination	Internal Evaluation	End Examination	Total Marks
	PRACTICALS			50		
A4.2.1	Internship	Viva-Voce	8 Weeks	40	60	100
A4.2.2	Project Work	Submission	4 Weeks	100	200	300
A4.2.3	Thesis	Submission	4 Weeks	40	60	100
	Total		20 Weeks			500

50 - 23
100 - 40
200 - 80

changes

16 weeks

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HYDERABAD - 28, ANDHRA PRADESH

SYLLABUS

I YEAR - I SEMESTER

HISTORY OF VISUAL ART AND AESTHETICS-I:

Introduction to the visual elements: line, colour, shape, space and texture.

Pre-historic art in Europe: Paleolithic, Mesolithic and Neolithic periods.

Pre-historic art in India: Art of Bimbetka.

Art of ancient world: Mesopotomian, Egyptian and Greco-Roman art

Art of ancient India: Indus valley civilization.
Home Assignments: Submission of assignments on any four topics

Reference books:

1) The History of Art – H.A.Janson
2) A Visual History of Art – Hugh Honour of John Fleming.
3) Indian Painting – Douglas Barett, Basil Gray

ENGLISH – I

I
gl Grammar: Parts of Speech – Prepositions – articles – tenses – degree of comparison.

- II
: speech and indirect speech - Simple sentences - complex sentences and compound ıces.

– III
're voice and passive voice, question tags.
ons from "Learning English" - A communicative speech.

Lesson No.1 - Astronomy : Rearrange each group of jumbled sentences below so as to leave well-written paragraphs etc.

t – IV
Lesson No.2 - Humour : The gold frame, rewrite the sentences so that they begin with the underlined words etc.

Lesson No.3 - Health and Medicine: "Save your lives" read the sentences below and Identify etc.

Unit – V
Lesson No.4 - Travel and Transport: The tenses of the underlined verbs (past continuous - simple past - past perfect or present past) etc.

Lesson No.5 - Environment : Mark the meanings – Synonyms of the words etc. Writing e-mail letters.

Books recommended:

1. Learning English – A Communicative Approach - by Dr. A. Ramakrishna Rao
2. English Grammar – Cambridge University

A 1.1.3 DRAWING - I

Unit 1 Nature drawing – various rendering media and techniques, various light conditions study from any kind of forms in nature ponds, birds, animals, rocks, trees, flowers, fruits, plants, butterflies, insects, etc. (pencil study, pen and ink).

Unit 2 Drawing from objects – drawing from cubes, cones, cylindrical objects, casts, still life groups etc. (pencil study).

A 1.1.4 COLOUR DESIGN - I:

Unit 1 Definition of Light and Colour.

Unit 2 Opaque colours and transparent colours-colour wheel, relationship of primary, secondary, tertiary colours.

Unit 3 Physical properties – Understanding of tonal values in colour and black and white in relation to grays (tints & shades).

A 1.1.5 APPLIED ART - I:

Unit 1 Basic principles of beautiful writing – Calligraphy. Sense of letter form, judgment of composition of letters-spacing-intuitive and logical planning of writing, development of style.

Unit 2 Basic study of letter forms, Principles of letter forms, Study of "Gothic" style letter forms in small and capitals, suitability & legibility of printed matter.

PAINTING - I:

Study of two-dimensional space and its compositional values from objects and nature.

Elements of pictorial expressions, pictorial expression related to concepts of space and forms. Pictorial elements such as point, line, shape volume, texture, light, colour.
Transformation of images and collage techniques. Study of various types of objects (Natural and man made) with view to transform them into flat pictorial images. With special attention to character, rhythm, harmony, balance, repletion, spacing and proportion.

SCULPTURE - I:

Introduction of sculptural elements and materials to develop the sense of the 3 dimensional designs with Cube, prism, sphere, cylinder.

Study of natural and man made objects in round. Detail drawings of the objects to be modeled in clay.

Introduction to pottery and terracotta coil work or slab work.

Introduction to various materials (Mount board, wire, ply wood etc.) in round.

I YEAR - II SEMESTER

A 1.2.1 HISTORY OF VISUAL ART AND AESTHETICS - II:

Unit 1 Indian Sculpture-I: brief study of early sculptural traditions under the dynastic rule of Mouryan, Shunga and Satavahana periods.

Unit 2 Indian Sculpture-II: brief study of sculptural traditions under the dynastic rule of Kushana and Gupta period.

Unit 3 Indian Mural Painting-I: brief study of Ajanta and Bagh murals.

Unit 4 Indian Mural Painting-II: brief study of Ellora, Badami and Vijayanagara murals.

Unit 5 Introduction to the modern Indian Art: brief study of company painting, Bengal school, art and life of Raja Ravi Varma.

Home Assignments: Submission of assignments on any four topics.

Reference Books:

1) History of Art in India and West by – Edit Tomoory
2) Indian Painting – Douglas Barett, Basil Gray
3) A Flamed Mosaic of Contemporary Indian Painting – Nevelli Tuli

A 1.2.2 ENGLISH - II:

Unit - I Lessons from "Learning English" – A communicative approach.

Lesson No.6 - Information Technology: Language games, connect with punctuation marks and use capital letters etc.
Lesson No.7 - Inspiration : Match the words in column-A with the meanings in column-B etc.

Lesson No.8 - Human Interest : (A) Choose the correct answer etc.

Unit – II

Lesson No.9 - Media : Take only the misspell word in each group etc.

Correction of sentences - dialogue writing - role of listening – listening for accent - rhythm-tic - listening for movie ideas specific information

...ion - precise writing - essay writing - Spoken English
...tion of accent
...ons
...nd informal communication

...y
...riting - report writing - comprehension
...letter
...s & Official Letter

...y
...er presentations
...ation of the dissertation
...style and formats - elocution

...recommended:
...arning English – A Communicative Approach by Dr. A. Ramakrishna Rao
...nglish Grammar – Cambridge University

...3 DRAWING - II:

...1 Information to elements of perspective – study of basic solids plan and elevation, main aspects as parallel and Z angular perspective.

...2 Head study – Study of head from cast (various age groups)

...3 Outdoor sketching – rapid sketching from any objects from busy streets, markets, stations etc. sketching from zoo and museum. Exposure to drawings made by masters, articles of different times (colour pencils, dry pastels, oil pastels etc.)

.2.4 COLOUR DESIGN - II:

...it 1 Colour experience – (pigment and light theory) High key, middle key and low key, high key tone with and low contrast, Chromatic expression on different backgrounds, depiction of seasons etc.

...nit 2 Colour experience – Colour harmonies, Complementary, split complementary, double split complementary analogous and receding colours. Visual mixing, creative designs through simple motifs from nature* and man made objects.

Unit 3 Elementary knowledge of design (golden rules of art) design based on the fundaments such as line, from, colour, texture, proportion and rhythm tonal values in 3 dimensions exercise with cube prism, sphere, cylinder etc. (eg. for* Nature: Mountain, clouds, butterfly, flowers, fish and water plants, birds, animals etc.)

Unit 4 Overlapping of motifs & colour combinations to be given from tertiary colours with tints and shades. Eg. For objects: distorted in given space (golden rules of art) exercises – nature and object combination to be given related to colours theory.

A 1.2.5 APPLIED ART-II:

Unit 1 Press layout: Introduction to press layout, elements of press layout, functions of a press layout, designing a press layout for rational products (consumer items) in a given size of 1 column by 15 cms in B/W.

Unit 2 Poster Design: Introduction to poster design, elements of a poster, functions of a poster, designing a poster for outdoor publicity in a given size of 10" x 15" using 3 colours for consumer items (rational products).

Unit 3 Book Cover Design: Designing of a book cover in a size: 6" x 8" colours (Presentation of Title and suggestive pictorial to be emphasized and to be executed with excellent composition)

A 1.2.6 PAINTING-II:

Unit 1 Developing an awareness of inter-relationship of different shapes and forms relative values. Activation of space though form and color-optical illusions. Handling various materials for pictorial expressions such as pencil, pen, poster colours, pastel crayon with inks, water colours etc.

Unit 2 Print Making: Observation in intrinsic texture of various surfaces and the textures of natural and man made things surface painting in relief media i.e., cardboards techniques using various texture to understand and develop the design concept in black and white.

A 1.2.7 SCULPTURE-II:

Unit 1 Introduction to Relief composition with found objects from the surrounding. Round composition from the sketches of the surroundings.

of the parts of human body Nose, Mouth, Ears. Eyes, Hands, Legs, etc.

of animals and birds drawing and modeling in clay or plaster or any rial.

rative motive from history of sculpture.

II YEAR - I SEMESTER

A 2.1.1 VISUAL COMMUNICATION – I

Unit 1 Definition of Visual Communication – The evolution of visual communications from prehistoric times-gestures, Pictographs and Ideographs. Script of Mesopotamia and Greek.

Unit 2 The invention of writing, The invention of alphabet-Phoenician alphabet, Greek alphabet and Roman alphabet.

Unit 3 Verbal and non-verbal communication, symbology-importance of pictures in Advertising-functions of pictures-analyzing picture subjects-picture versus words, its place in society.

Unit 4 Principles of Design – History of Advertising – Introduction to media and kinds of media.

A 2.1.2 DRAWING FROM LIFE

Unit 1 Study of full human figure of male and female from model. Study of parts of human body i of proportion and character.

Unit 2 Of human figure of male and female in different postures from model – quick sketches on pa

Unit 3 Detailed head study in line drawing, study of figure in action, Study from local scene. Sk various public places (outdoors)

Unit 4 Study of animals and birds.

A2.1.3 COMPUTER BASICS

Unit 1 Introduction to Operating System, Types of Operating System. Input Devises, Specialized Terminals and Output Devises. Storage Devises.

Unit 2 Introduction to Windows, Desktop and Desktop Icons, Starting and Closing Programs, Launching Programs, Control Panel, Task Bar, Creating, Creating files and folders.

Unit 3 Introduction to Scanner and Printers, Types of Scanners and Printers, Evaluating Scanners and Printers, System Requirements.

Introduction to basic office software such as MS Word and MS Power Point.
Working and doing exercises using MS Word and MS Power Point.

GRAPHIC DESIGN-I

Introduction to Corporate Identity-monograms, logo, trade mark and symbol, designing logos, trade marks, monograms and symbols

Stationary Design, Designing of letterhead visiting cards, file covers, labels, and envelops final art work for reproduction purpose

Definition of Layout, Element of layout, Importance of elements, various type of layouts for day-to-day consumer products.

Design of press advertisements – advertisements in various sizes includes final Art work in Black & White 2col x 25cms and 3col x 20 cms

5 TYPOGRAPHY-I

1 Study of principles of letter from-Upper case and Lower case, Relevance of Upper case and Lower case, Sanserif and Serif.

2 Roman letterforms – proportion of letterforms, letter and word spacing, composing the given word/words in Roman style

3 Finished artwork of the given wording with proper arrangement within the given space in black & white only within a maximum paper size of 10 inches x 15 inches

4 Understanding Text, Study of various alignments.

II YEAR - II SEMESTER

A 2.2.1 VISUAL COMMUNICATION - II

Unit 1 Creative advertising – planning and execution. Product/services analysis, Unique selling (prepositions) points of a Product/service, Applications of USPs.

Unit 2 Copy writing – functions of Advertising copy, Basic ingredients of copy, writing copy such as the Headline, Text and Baseline.

Unit 3 Visualization – Conceptualization of advertising ideas, Perception, various Headlines Classification of Advertising.

Unit 4 Graphic design – Principles of Graphic design, the Law of Rhythm, Emphasis, Unity, Simplicity

A 2.2.2 ENVIRONMENTAL STUDIES

Unit 1 The multidisciplinary nature of environmental studies, Definition. Scope and Importance, Need for public awareness.

Unit 2 Natural Resource
Renewable and non renewable, Natural resources and associated problems

a. Forest resources: Use and over exploitation, deforestation case studies. Timber extraction, mining, dams and their effects on forest and tribal people.

b. Water resources: Use and over-utilization of surface and ground water, floods, drought, conflicts over water, dams-benefits and problems.

c. Mineral Resources: Use and exploitation, environmental effects of extracting and using mineral resources, case studies.

d. Food resources: World food problems, changes caused by agriculture and overgrazing, effects of modern agriculture, fertilizer-pesticide problems, water logging, salinity, case studies.

Energy resources: Growing energy needs, renewable and non renewable energy sources. use of alternate energy sources. Case studies.

Land resources: Land as a resources, and degradation, man induced landslides, soil erosion and desertification. Role of an individual in conservation of natural resources. Equitable use of resources for sustainable lifestyles.

systems
cept of an ecosystem., structure and function of an ecosystem., Producers, sumers and decomposers, Energy floe in the ecosystem, Ecological cession, Food chains, Food webs and ecological pyramid, introduction, es, characteristic features, structure and function of the following systems:-
Forest ecosystem B) Grassland ecosystem C) Desert ecosystem
Aquatic ecosystem (ponds, streams, lakes, rivers, oceans, Estuaries)
(6 lectures)

iodiversity and its conversation
troduction:- Definition: genetic, species and ecosystem diversity, ogeographically classification of India, Value of biodiversity: consumptive e, productive use social. ethical, aesthetic and option values. Biodiversity at lobal, National and local levels. Hot-spots of biodiversity. Threats to iodiversity: habit loss, poaching of wildlife conflicts. Endangered and demic species of India. Conservation of biodiversity: In-situ and Ex-situ onservation of biodiversity.

(8 lectures)

Environmental Pollution Definition:
Cases, effects and control measures of Air pollution, Water pollution, Soil pollution, Marine pollution, Noise pollution, Thermal pollution, nuclear hazard, Solid waste Management: causes, effects and control measures of urban and industrial waste, Role of individual in prevention of pollution, pollution case studies, Disaster management: flood, earthquake, cyclone and landslides.
(8 lectures)

Social issues and the Environment
From Unsustainable to sustainable development-Urban problems related to energy. Water conservation, Rain water harvesting, watershed management-Resettlement and rehabilitation of people: its problems and concern case studies-Environmental ethics: Issues and possible solutions - Climate change, global warming, acid rain, ozone layer depilation – nuclear accidents and holocaust. Case studies:- wasteland reclamation- Consumerism and waste products – Environmental Protection Act - Air (Prevention and control of pollution) Act – Water (Prevention and control of pollution) Act - Wildlife Protection Act – Forest Conservation Act issue involved in enforcement of Environmental legislation – Public awareness. (7 lectures)

Unit 7 Human Population and the Environment
Population growth, variation among nations – Population explosion - Family welfare programme Environment and Human Health – Human Rights- Value Education - HIV / AIDS – Women and child welfare – Role of Information Technology and Human Health – Case studies. (6 lectures)

Unit 8 Field Work
Visit to a local area to document environmental assets –river /forest /grassland/ hill/mountain-visit to local polluted site: Urban/rural/industrial/agriculture-study of common plants, insects, birds – study of simple ecosystems: pond, river, hill slopes, etc. (Field work equal to 5 lecture hours)

A 2.2.3 DRAWING & ILLUSTRATION

Unit 1 Study of full human figure of male and female model. Study of parts of human body in detail – observation of proportion and character.

Unit 2 Depicting the different age groups in various poses with the help of live models (male / female) – outdoor sketching.

Unit 3 Memory drawing of the given subject, converting the text into visuals, is rendering in pencil, ink and color.

Unit 4 Sketching from products-consumer products-product illustration using various techniques black and white and color-enlarging the existing product.

A 2.2.4 DIGITAL PAGE LAYOUT

Unit 1 Introduction to Multi–Media. Forms of Multi–Media, Application of Multi–Media and their uses.

Unit 2 Introduction to Desktop Publishing. Computer Packages involved in Desktop Publishing, Planning and working with page layout, Using Typefaces and sizes, Alignments, Preparing Art Work

Grids – Page grids, Column grids, Design of grids as per formats. Rules and boxes, Symmetry and asymmetry, Use rules and boxes in layout, Planning preliminary pages. Using colour, Hue and tone, Colour and Monochrome, Colour theory, inserting Pictures, Colour separation etc.

Importing and Exporting Artworks, Enlarging and reduction, understanding and designing various print formats.

GRAPHIC DESIGN – II

Designing Poster – Its elements, 5 essentials of Poster for Long range, Medium range and Short range, posters in the sizes of 10 inch x 15 inch, 15 inch x 20 inch, 20 inch x 30 inch.

Design of Hoarding – Understanding the importance, exploring various sizes and techniques hoarding for social causes.

Designing of book jacket – title of the book-name of the author, publisher and pictorial suggestions.

Book design – Variations of treatments with typography, illustration, descriptive, Suggestive and symbolic interpretation to suit the subject and contents of the book.
For all the units the final execution may be done using computer.

TYPOGRAPHY - II

1 Introduction to typography, anatomy of type, composition of type, typeface, Type Measurement – Point System, Em scale.
2 Classification of Typeface. Weight and proportions of typeface.
3 Studies of type families like Helvetica, Universe, times – mechanical and optical balance.
4 Application of typography for various media like press advertisement poster, exhibition and display – characteristic lettering to suit the message.

III YEAR - I SEMESTER

A 3.1.1 REPRODUCTION TECHNIQUES

Unit 1 Planning, study of the Formats like folder, poster, book, cards etc. for reproduction, kinds of paper sizes, study of papers, kinds of Art works, Binding etc.

Unit 2 Kinds of printing – Letter press, Lithography and offset, Gravure and silk screen.

Unit 3 Colour reproduction. Colour separation, understanding RGB and CMYK.

Unit 4 Demonstration of offset printing, field trips to a printing house.

A 3.1.2 TECHNICAL ILLUSTRATION

Unit 1 Exploring various techniques of Illustration. Descriptive/ Thematic and illustration series of illustrations to product utility manuals, tags etc.

Unit 2 Illustration using Airbrush, Retouching photos using Airbrush, exploring various techniques of Airbrush.

Unit 3 Converting a Photograph into line drawing Exercises to convert text into visuals for the purpose of Advertising.

Unit 4 Illustration on computer using various tools.

A 3.1.3 COMPUTER DRAWING

Unit 1 Digital drawing – Introduction to drawing software, Surfing the Interface, Exploring the Tool Box, Browsing the Menus, Working with Objects, Understanding Fills and Outlines, Using Fills and Outlines, Transformations, Curves and Lines.

Unit 2 Working and manipulation of text, Advanced Text features. Adding One-Point and Two-Point perspective, Three Dimensional Objects, Shaping text to objects.

Unit 3 Working with shapes, Use of Lenses, Creating Envelope, Blending Objects and Blend controls.

Unit 4 Exporting and Importing files and formats, Vector to Bitmap, Understanding Colour, Creating and applying styles and Layers, etc.

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APHIC DESIGN – III

oduction to package design-varieties of package designs for different products as wrappers/covers, cartons etc. appropriate printing techniques according to given packing materials with creasing punching.

ign of package designs for fruit juice, biscuits, jams, jelly, grinders, toys, metics, chocolates and articles of daily use and gift items.

nt of sale and its objectives-point of sale materials-designing of signs, door ns, window displays, show cards, danglers and other 2D & 3D designs-art rks for multi-colour printing.

signing of outer-inner cover for magazine journals-Elements of book design – signing the inner pages as per the contents.

r all the units the final execution may be done using computer.

ASIC PHOTOGRAPHY

troduction to photography, parts of camera and their function, types of Cameras, cessories, types of lenses – Meaning of focal length, aperture shutter speed and cusing handling a camera.

nderstanding various lighting effects and techniques, negative and positive ages, Black & White and color images, learning to capture the image using a gital camera, Conversion of captures images into computer.

epia toning using computer, line drawing of photographs, scanning and copying artwork, enlargement and reduction using computer.

nderstanding a good photograph and criticism in terms of originality, subject, int quality, competition, lighting and presentation. Printing of captured and odified images using laser printer.

III YEAR - II SEMESTER

A 3.2.1 ADVERTISING OPERATIONS

Unit 1 The advertisement department – the market – the marketing policy – marketing department – public relations department – advertising budget & planning.

Unit 2 The advertising agency and operations – how agency works, the account executive, securing the client – selling agency services.

Unit 3 Kinds of advertising – public relations – marketing – media planning – client servicing – data collection and research.

Unit 4 Advertising plan – Creative department and creative advertising – production department.

A 3.2.2 CREATIVE ILLUSTRATION

Unit 1 Illustration of stories – cartoons/realistic/photography – illustration for books, magazines and allied publication – sequences of sketches and finished artwork from stories of Epics.

Unit 2 Planning and visualizing an Ad-film for a given product or service, planning of sequential frames for storyboard.

A 3.2.3 COMPUTER IMAGE EDITING

Unit 1 Digital Imaging: Introduction to Image Editing Application, Bitmap and Vector Images, Creating, Opening and Closing Files, Changing Canvas Size, Colour Mode and Resolution. Understanding layers, Printing, Selecting Areas, Picking and Selecting Colour.

Unit 2 Painting and Drawing, Creating Text, Applying Gradient, Resizing and Reshaping Images, Manipulating Focus with Blur, Sharpen and Smudge, Adjusting Tone with Dodge, Burn and Sponge, Cloning and Pattern Creation with Rubber Stamp.

Unit 3 Creating Paths, Using Masks, Working with layers, Using channels, Applying Filters, Creating Special Image Effects and Type Effects, Correcting Image Colour, Colouring Images.

2.4 Using Light and Shadows, Creating Vignettes, borders and Backgrounds, Retouching and repairing, Working with brushes, using action palette.

2.4 ADVERTISING PHOTOGRAPHY

2.4.1 Creative effects in darkroom – Photo touching and Photo finishing techniques – Study of Large format cameras.

2.4.2 Effects represent Motion – Blur – Panning – Zooming – Multiple exposing.

2.4.3 Indoor and Outdoor photography, Photography Products, Portraits, Models, etc.

2.4.4 Planning and execution of Advertising Photography.

2.5 MINI PROJECT

2.5.1 Detailed study of the selected Social Cause (Social Adg.) such as Population Control, Blood Donation, Eye Donation, Eradicating Child Labour, Adult Education, etc.

Collecting relevant data, planning and design of atleast 3 formats for indoor media and 3 formats for outdoor media.

Planning the strategy, Identifying the target audience, Visualizing various concepts. Identifying the USPs writing the required copy.

Execution of the final design must be done with the prior approval of the guide and assessment is through a presentation.

IV YEAR - I SEMESTER

A 4.1.1 CAMPAIGN PLANNING

Unit 1 What is Campaign? What is Campaign Planning? Campaign Objectives – Factors influencing the planning of an Advertising Campaign.

Unit 2 The purpose of the campaign. Three main decisions in campaign plan.

Unit 3 Planning – basic principles of planning – Importance of target audience – financial aspects of campaign.

Unit 4 Media – various media available, Selection appropriate media – media plan, Dynamism of Media, Major Media analysis, Building Brand Image.

A 4.1.2 ADVANCE ILLUSTRATION

Unit 1 Story based for advertisements film – Series for Animation – Technical Illustration.

Unit 2 Perspective illustration in different media and different techniques – product finishing – background and other special effects.

Unit 3 Illustration for transparent views of products and machinery (including Airbrush Techniques).

Unit 4 Illustrations for Comics – Creating Caricatures – Illustration for Fashion.

A 4.1.3 DIGITAL PHOTOGRAPHY

Unit 1 Understanding Digital Photography – Equipment required for Digital Photography, Digital Camera and its parts – Camera controls.

Unit 2 Digital shooting – Digital advantages – Resolution – File Compression – Controlling colour and tone.

Unit 3 Digitizing an Image – Mixing Images – Applying layer effects and filters to an image. Converting Black and white image into colour – Retouching the photograph.

Unit 4 Digital Photo printing.

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DVANCE TYPOGRAPHY

matic Typography – Typographic Posters – Three-dimensional Types – Type **nipulation** using computer.

pe Design – Designing grid for a new typeface – Various considerations – **perimenting** with various styles and sizes.

D FILM DESIGN

derstanding AD films, study of Ad-film equipment, Ad-film design techniques.

nning of a story boarding, making of story board for day-to-day products.

rking and shooting with video cameras, shooting and basics of editing.

siting and live demonstrations of professional Ad-film studios.

IV YEAR - II SEMESTER

A 4.2.1 INTERNSHIP

Unit 1 Students have to undergo practical training for a period of 8 weeks in any of the reputed Advertising agencies, IT firms or Studios in any where in India of their own choice.

The student has to submit the copy of the designs done during the Practical Training to the department for assessment.

One staff member must visit the place where the student has trained and assess the student's sincerity.

A 4.2.2 PROJECT WORK

Unit 1 Preparing a complete Advertising campaign for an entirely new product to be introduced in a specified market.

The student must take guidance of an Internal Guide and an External guide. The student should select an external guide from any reputed Ad. Agency or Firm.

The student must strictly follow the procedure of Campaign planning. The ideas and visuals must be his/her own. All the necessary formats must be attempted.

During assessment the student must present his/her project.

A 4.2.3 THESIS

Unit 1 Submission of a report on any topic with data collection and analysis under the guidance of a guide.

The presentation should have interesting visuals with necessary data.

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BACHELOR OF FINE ARTS

PAINTING

~~(2009-2010)~~

2011 – 2012

Academic Regulations
Course Structure
Syllabus

College of Fine Arts
Jawaharlal Nehru Architecture & Fine Arts University
Mahaveer Marg, Masab Tank, Hyderabad – 500 028.

Academic Regulations

For 4 years Degree Course Program BFA with effect from 2009-2010 batch

1. **Award of Bachelor of Fine Arts Degree:**
   Students will be declared eligible for the award of BFA Degree if he/she fulfills the following academic regulations.
   i. He/She has to persue a course of study for not less than 4 academic years and not more than 8 academic years in the JNA & FAU, College of Fine Arts.
   ii. The first year, 2nd year, 3rd year & 4th year are on a semester pattern.
   iii. The first year 1st & 2nd Sem. Will be common for Painting, Sculpture and Applied Art.
   iv. He/She must have satisfied the minimum academic requirements in each year as here in after stipulated.
   v. Students, who fail to fulfill all the academic requirements for the award of the degree within eight academic years from the year of their admission, shall forfeit their seat in the course and their seat shall stand cancelled.

2. **Course of Study:**
   The following courses of study are offered for specializing for BFA degree.
   1. Applied Art and Visual Communication
   2. Painting and Visual Communication
   3. Sculpture and Visual Communication
   4. Photography and Visual Communication

3. **Weightage of Marks:**
   i. The performance of the student in each semester/year shall be evaluated subject-wise as per the course structure given ahead.
   ii. The distribution of marks for the subjects shall be for theory and practical's: 40% internal evaluation and 60% for End Examination (External evaluation)

4. **Attendance requirements:**
   i. A student has to put in minimum of 75% of the attendance in aggregate of all subjects for becoming eligible to register for the end examination and with a minimum of 50% physical attendance in each subject.
   ii. Condonation of shortage of average attendance up to 10% (i.e. between: 75% to 65%) in each semester may be granted by the college academic committee (CAC) on payment of Condonation fee and production of satisfactory evidence of the shortage of attendance.
   iii. Shortage of aggregate attendance below 65% shall in no case be condoned.
   iv. Shortage of attendance below 50% in one or more subjects shall not be condoned.
   v. Candidates whose shortage of attendance is not condoned either in aggregate are not eligible to sit for the end examinations. They will have to repeat the semester in all respects when next offered.

PR

5. **Minimum Academic Requirements:**

i. A student shall be deemed to have satisfied the minimum academic requirements in each subject (Theory/Practical) or project if he secures not less than 35% (out of 60) of marks (i.e. 21 out of 60) in the end evaluation and a minimum of 40% of marks in the sum total of internal evaluation and end evaluation taken together.

ii. The candidate can be conditionally promoted from 1st year to 2nd year if he/she has backlog of not more than 3 subjects.

iii. The candidate can be conditionally promoted from 2nd year to 3rd year if he/she has backlog of not more than 2 subjects.

iv. The candidate can be conditionally promoted from 3rd year to 4th year if he/she has backlog of not more than 2 subjects.

v. The candidate will be promoted from 3rd year to 4th year only if he/she has no backlogs of 1st year.

vi. The student can have total backlog of 8 subjects as a whole in the total duration of 4 year course.

vii. In all other cases student will be detained and he/she has to repeat the year/semester whenever offered.

viii. A student has to complete all the academic requirements of all the 1st year subjects in 3 academic years after his admission. Failing to do so the student shall forfeit his/her seat in BFA Course and shall not be eligible for admission again.

ix. The result of the candidate will be declared only when the student has cleared all the backlogs under the above said rules.

6. **Withholding of results:**

The results of any candidate shall be withheld if

i. He/She has not cleared any dues to the Institution/Hostel.

ii. A case of disciplinary action is pending against him/her.

7. **Award of Class:**

After a student has satisfied the requirements prescribed for the completion of program and is eligible for award of BFA degree, he/she shall be placed in one of the following three classes.

First Class with Distinction	75% and above	From the aggregate marks secured in the whole program.
First Class	Below 75% but not less than 60%	
Second Class	Below 60% but not less than 50%	

8. **Minimum Instruction days:**

The minimum instruction days for each semester shall be 90 days and classes wil 6 hours duration to be held every day excluding the examination days.

9. **General:**

i. The academic regulations should be read as a whole for the purpose of any interpretation.

ii. The marks in internal evaluation and end examination shall be shown separate in the grade sheet.

iii. To enable the students to satisfy the academic requirements and examination shall be arranged at the end of each year/semester.

iv. A candidate who has backlogs can appear either at the regular or supplementa examinations.

B.F.A PAINTING
COURSE STRUCTURE

1st Year 1st Semester

Code	Name of the Subject	Periods in 4 Weeks	Duration of examination	Int. Marks	End Examination	Total Marks
	Theory					
F1 1.1	History of Visual Art and Aesthetics. Introduction to Indian Art	12	3 hrs.	50	50	100
F1 1.2	English -I	12	3 hrs.	50	50	100
	Practicals					
F1 1.3	Drawing -I	24	5 hrs.	50	50	100
F1 1.4	Color Design -I	24	5 hrs.	50	50	100
F1 1.5	Applied Art -I	24	5 hrs.	50	50	100
F1 1.6	Painting -I	24	5 hrs.	50	50	100
F1 1.7	Sculpture -I	24	5 hrs.	50	50	100
	Total	144				700

1st Year 2nd Semester

Code	Name of the Subject	Periods in 4 Weeks	Duration of examination	Int. Marks	End Examination	Total Marks
	Theory					
F1 2.1	History of Visual Art and Aesthetics. Introduction to Western Art	12	3 hrs.	50	50	100
F1 2.2	English -II	12	3 hrs.	50	50	100
	Practicals					
F1 2.3	Drawing -II	24	5 hrs.	50	50	100
F1 2.4	Color Design -II	24	5 hrs.	50	50	100
F1 2.5	Applied Art -II	24	5 hrs.	50	50	100
F1 2.6	Painting -II	24	5 hrs.	50	50	100
F1 2.7	Sculpture -II	24	5 hrs.	50	50	100
	Total	144				700

B.F.A – II[nd] Year I[st] SEM

Code	Name of the Subject	Periods in 4 Weeks	Duration of examination	Internal Evaluation	End Examination	Total Marks
	Theory					
P2 1.1T	History of Visual Art and Aesthetics –I History of Indian Art	8	3 hrs.	50	50	100
	Practicals					
P2 1.2	Drawing -I	36	10 hrs.	50	50	100
P2 1.3	Pictorial Composition –I	36	20 hrs.	50	50	100
P2 1.4	Portrait Painting –I	36	10 hrs.	50	50	100
P2 1.5	Print Making (graphics) –I	28	10 hrs.	50	50	100
	Total	144				500

B.F.A – II[nd] Year II[nd] SEM

Code	Name of the Subject	Periods in 4 Weeks	Duration of examination	Internal Evaluation	End Examination	Total marks
	Theory					
P2 2.1T	History of Visual Art and Aesthetics –II History of **Western** Art	8	3 hrs.	50	50	100
P2 2.2	Environmental Studies	8	3 hrs.	50	50	100
	Practicals					
P2 2.3	Drawing -II	30	10 hrs.	50	50	100
P2 2.4	Portrait Painting -II	34	15 hrs.	50	50	100
P2 2.5	Pictorial Composition -II	34	20 hrs.	50	50	100
P2 2.6	Print Making (graphics) -II	30	20 hrs.	50	50	100
	Total	144				600

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B.F.A – III[rd] Year I[st] SEM

Code	Name of the Subject	Periods in 4 Weeks	Duration of examination	Internal Evaluation	End Examination	Total marks
	Theory					
P3 1.1T	History of Visual Art and Aesthetics –III Modern **Western** Art	8	3 hrs.	50	50	100
	Practicals					
P3 1.2	Life Study –I	34	20 hrs.	50	50	100
P3 1.3	Landscape	34	5 hrs.	50	50	100
P3 1.4	Pictorial Composition – III	34	20 hrs.	50	50	100
P3 1.5	Print Making (graphics) – III	34	20 hrs.	50	50	100
	Total	144				500

B.F.A – III[rd] Year II[nd] SEM

Code	Name of the Subject	Periods in 4 Weeks	Duration of examination	Internal Evaluation	End Examination	Total marks
	Theory					
P3 2.1T	History of Visual Art and Aesthetics –IV Modern **Indian** Art	8	3 hrs.	50	50	100
	Practicals					
P3 2.2	Life Study –II	36	20 hrs.	50	50	100
P3 2.3	~~Pictorial~~ Composition -IV	36	20 hrs.	50	50	100
P3 2.4	Print Making (graphics) -IV	36	20 hrs.	50	50	100
P3 2.5	Mural Design -I	28	Submission	50	50	100
	Total	144				500

B.F.A – IV[th] Year I[st] SEM

Code	Name of the Subject	Periods in 4 Weeks	Duration of examination	Internal Evaluation	End Examination	Tot mar
	Theory					
P4 1.1 T	History of Visual Art and Aesthetics –V Contemporary Art in **West**	8	3 hrs.	50	50	10
	Practicals					
P4 1.2	Portrait Painting -III	34	15 hrs.	50	50	10
P4 1.3	Print Making (graphics) -V	36	20 hrs.	50	50	10
P4 1.4	Composition ~~Pictorial~~ -V	36	25 hrs.	50	50	10
P4 1.5	Mural Design -II	30	Submission	50	50	10
	Total	144				50

B.F.A – IV[th] Year II[nd] SEM

Code	Name of the Subject	Periods in 4 Weeks	Duration of examination	Internal Evaluation	End Examination	Total mark
	Theory					
P4 2.1 T	History of Visual Art and Aesthetics –VI Contemporary Art in INDIA	8	3 hrs.	50	50	100
	Practicals					
P4 2.2	~~Pictorial~~ Composition -VI	34	15 hrs.	50	50	100
P4 2.3	Life Study -III	34	20 hrs.	50	50	100
P4 2.4	Print Making (graphics) -VI	34	25 hrs.	50	50	100
P4 2.5	Dissertation - VIVA-VOCE	34	Submission	50	50	100
	Total	144				500

SYLLABUS – PAINTING

1st YEAR 1st SEMESTER

P1. 1.1T - HISTORY OF VISUAL ART AND AESTHETICS
INTRODUCTION TO INDIAN ART

Unit-I what is Art and Aesthetics? How it has be seen, discussed, and practiced in India

Unit-II Pre-historic art in India. Art of Indus valley Civilization. Early sculptural Traditions of Maurya, Sunga and Kushana periods. Gupta sculpture

Unit-III Ajanta murals and subsequent continuation at Bagh, Badami, Ellora and Vijayanagara.
Miniature painting of Mughal, Rajastani and pahari.

Unit IV Company painting and British art school.
Raja Ravi Varma and Bengal School.

Note : In this semester students are supposed to know in brief about Indian art, with a general introduction to every topic, by studying their distinct formal and thematic contents. Stress would be on the descriptive formal study.

P1. 1.2T - ENGLISH-I:

Unit - I
General Grammar: Parts of Speech – Prepositions – articles – tenses – degree of comparison.

Unit – II
Direct speech and indirect speech - Simple sentences - complex sentences and compound sentences.

Unit – III
Active voice and passive voice, question tags.
Lessons from "Learning English" - A communicative speech.

Lesson No.1 - Astronomy : Rearrange each group of jumbled sentences below so as to leave well-written paragraphs etc.

Unit – IV
Lesson No.2 - Humour : The gold frame, rewrite the sentences so that they begin with the underlined words etc.

Lesson No.3 - Health and Medicine : "Save your lives" read the sentences below and Identify etc.

Unit – V
Lesson No.4 - Travel and Transport: The tenses of the underlined verbs (past continuous - simple past - past perfect or present past) etc.

Lesson No.5 - Environment : Mark the meanings – Synonyms of the words etc. Writing e-mail letters.

Books recommended:
1. Learning English – A Communicative Approach - by Dr. A. Ramakrishna Rao
2. English Grammar – Cambridge University

P1. 1.3P DRAWING-I: PRACTICLE:

Unit-I: Nature drawing — various rendering media and techniques various light conditions study from any kind of forms in nature ponds, birds, animals, rocks, trees, flowers, fruits, plants, butterflies, insects, etc. (pencil study, pen and ink)

Unit-II: Drawing from objects — drawing from cubes, cones, cylindrical objects, casts, still life groups etc. (pencil study)

P1. 1.4 P COLOUR DESIGN-I PRACTICLE:

Unit-I: Definition of Light and Colour.

Unit-II: Opaque colours and transparent colours-colour wheel, relationship of primary, secondary, tertiary colours

Unit-III: Physical properties-understanding of tonal values in colour and black and white in relation to grays (tints & shades).

P1.1.5 P APPLIED ART-I PRACTICLE:

Unit-I: Basic principles of beautiful writing - Calligraphy. Sense of letter form, judgment of composition of letters-spacing-intuitive and logical planning of writing, development of style.

Unit-II: Basic study of letter forms. Principles of letter forms, Study of "Gothic" Style letter forms in small and capitals, Suitability & legibility of printed matter.

P1.1.6 P PAINTING-I PRACTICLE:

Unit-I: Study of two-dimensional space and its compositional values from objects and nature.

Unit-II: Elements of pictorial expressions, Pictorial expression related to concepts of space and forms. Pictorial elements such as point, line, shape, volume, texture, light, colour.

Unit-III: Transformation of images and collage techniques. Study of various types of objects (Natural and manmade) with view to transform them into flat pictorial

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images, with special attention to character. Rhythm, harmony, balance, repletion, spacing and proportion.)

P1.1.7 P SCULPTURE-I PRACTICLE:

Unit-I Introduction of sculptural elements and materials to develop the sense of the 3 dimensional Design with Cube, prism, sphere, cylinder.

Unit-2 Study of natural and manmade objects in round. Detail drawings of the objects to be modeled in clay.

Unit-3 Introduction to pottery and terracotta Coil work or slab work.

Unit-4 Introduction to various materials (Mount board, wire, ply wood, and etc.) in round

1st YEAR 2nd SEMESTER

P1.2.1T. INTRODUCTION TO WESTERN ART

Unit-I Why do we study western art? What is Western Aesthetics?

Unit-II Pre-Historic and Ancient Art in Europe.
Art of Mesopotamia, Egyptian and Greco-roman art. Art of Early Christian and Byzantine.
Art of Romanesque and Gothic.

Unit-III Art of Renaissance and Mannerism.
Art of Baroque and Rococo.

Unit-IV Neo-Classicism and Romanticism.
Realism and Impressionism.

Note : In this semester students are supposed to know in brief about western art, wit general introduction to every topic, by studying their distinct formal thematic contents. Stress would be on the descriptive and formal study.

P 1.2.2T. ENGLISH - II:

Unit - I Lessons from "Learning English" – A communicative approach.
Lesson No.6 - Information Technology: Language games, connect w punctuation marks and use capital letters e
Lesson No.7 - Inspiration : Match the words in column-A with t meanings in column-B etc.
Lesson No.8 - Human Interest : (A) Choose the correct answer etc.

Unit – II
Lesson No.9 - Media : Take only the misspell word in each group e

Correction of sentences - dialogue writing - role of listening – listening for accent - rhythm-tic - listening for movie ideas specific information

Unit – III
Composition - precise writing - essay writing - Spoken English
Neutralization of accent
Punctuations
Formal and informal communication

Unit – IV
Letter Writing - report writing - comprehension
Formal letter
Business & Official Letter

Unit – V
Computer presentations
Presentation of the dissertation
Script style and formats - elocution

Books recommended:
1. Learning English – A Communicative Approach by Dr. A. Ramakrishna Rao
2. English Grammar – Cambridge University

P1.2.3 P DRAWING-II: PRACTICLE:

Unit-I: Information to elements of perspective — studies of basic solids plan and elevation, main aspects as parallel and Z angular perspective.

Unit-II: Head study — study of head from cast (various age groups)

Unit-III: Out door sketching — rapid sketching from any objects from busy streets, markets, stations etc. sketching from zoo and museum. Exposure to drawings made by masters, articles of different times (colour pencils, dry pastels, oil pastels etc.)

P1.2.4 P COLOUR DESIGN-II PRACTICLE:

Unit-I: Colour experience (pigment and light theory) High key, middle key, and low key, high key tone with and low contrast. Chromatic expression on different backgrounds, depiction of seasons etc.

Unit-II: Colour experience-colour harmonies. Complementary, split complementary, double split complementary analogous and receding colours. Visual mixing, creative designs through simple motifs from nature and manmade objects,

Unit-III: Elementary knowledge of design (golden rules of art) design based on the fundaments such as line, from, colour, texture, proportion and rhythm tonal values in 3 dimensions exercise with cube prism, sphere, cylinder etc. (E.g. for* Nature: Mountain. Clouds, butterfly, flowers, fish & water plants, birds, animals etc).

Unit-IV: Overlapping of motifs & colour combinations to be given from tertiary colours with tints and shades. E.g. For objects: distorted in given space (golden rules of art) exercises — nature and object combination to be given related to colors theory

P1.2.5 P APPLIED ART-II PRACTICLE:

Unit-I: Press Layout: Introduction to press layout, elements of press layout, functions of a press layout, designing a press layout for rational products (consumer items) in a given size of 1 column by 15 cms in B/W

Unit-II: Poster Design: Introduction to Poster design, elements of a poster, functions of a poster Designing a poster for Outdoor publicity in a given size of 10"x15" using 3 colours for consumer items (rational products)

Unit-III: Book Cover Design: Designing of a book cover in a size of 6" x 8" in 3 colours. (Presentation of Title and suggestive pictorial to be emphasized and to be executed with excellent composition)

P1.2.6 P PAINTING-II PRACTICLE:

Unit-I: Developing an awareness of inter-relationship of different shapes and forms relative values. Activation of space though form and color-optical illusions. Handling various materials for pictorial expressions such as pencil, pen poster colours, pastel crayon with inks, water colours etc.

Unit-II: Print making: observation in intrinsic texture of various surfaces and the textures of natural and manmade things surface painting in relief media i.e. cardboards techniques using various texture to understand and develop the design concept in black and white.

P1.2.7 P SCULPTURE-II PRACTICLE:

Unit I Introduction to Relief composition with found objects from the surroundings. Round composition from the sketches of the surroundings.

Unit II Study of the parts of human body Nose, mouth, ears, eyes, hands, legs etc.

Unit III Study of animals and birds Drawing and modeling in clay or plaster or any material.

Unit IV Decorative motive from history of Sculpture

2nd YEAR 1st SEMESTER

P2 1.1T- HISTORY OF INDIAN ART

Unit-I Early sculptural traditions of Maurya, Sunga and Kushana periods.Sculptural tradition of Gupta, Rashtrakuta, Pallava, Chola and Vijayanagara.

Unit-II Ajanta mural tradition.
Continuation of mural tradition at Bagh, Badami, Ellora and Vijayanagara.

Unit-III Illustrated manuscripts of eastern and western India(Pala and Jain manuscripts)
Miniature painting of Mughal, Rajastani
Miniature painting of Deccani & Pahari.

Unit-IV Indian Aesthetics: a brief introduction to the Indian aesthetics, discuss on Bharatha's natya sastra, concept of Rasa theory, Abhinava Gupta and Jayadeva.

Note: In this semester, students are supposed to study each topic in detail, emphasizing on historical evaluation of sculpture and painting in each period, and their significance and stylistic evolution would be focused.

PRACTICALS

P 2 1.2 DRAWING -I

Unit-I: Theory of Drawing.

Unit-II: Study from Life.

Unit-III: Study from manmade objects.

Unit-IV: Nature of Study

Unit: V: Creative drawing.

Group discussion
Assignments: 200 drawings.
Examination: Pencil or Charcoal-Pencil.

P 2 1.3 PICTORIAL COMPOSITION -I

Unit-I: Space organization. (Line, Colour, form, Texture, Rhythm, Tonal Value-Balance)

Unit-II: Use of Representational form

Unit-III: Creative and Pictorial composition

Unit-IV: Introduction of Indian Traditional Painting

UnitV: Group discussion

Assignments: 4 finished compositions
Examinations will be in water colors — Transparent or Opaque technique.

P 2 1.4 PORTRAIT PAINTING -I

Unit-I: Study of Human-Head in monochrome.

Unit-II: Study of Human - Head in colour.

Unit-III: Study of character and expression.

UNIT-IV Use of different technique to develop 3 dimensional effects.

UNIT-V Use of various mediums of portraiture like pastels, water colour-pencil & oil colour.

UNIT-VI Group discussion

Assignments: 4 finished portraits.
Examinations will be in Monochrome in oil-medium.

P 2 1.5 PRINT MAKING (GRAPHICS) -I

UNIT-I Introduction to theory of Print Making.

UNIT-II Relief printing process.

UNIT-III Lino-cut.

UNIT-IV Collography.

UNIT-V Group discussion

Assignments : 4 final prints in single colour.
Examinations will be in Black and white / single colour linocut

2nd YEAR 2nd SEMESTER

P 2 2.1 T-HISTORY OF WESTERN ART

Unit-I Art of Early Christian and Byzantine: rise of Christianity and significant changes in representation of images are to be discussed.

Art of Romanesque and Gothic: The significant stylistic changes in both periods would be discussed.

Unit-II Art of Renaissance and Mannerism: Introduction to Renaissance art and study with reference to works of Leonardo Da-Vinci, Raphael and Michelangelo.

And discuss the basic difference between renaissance and mannerist art analyze with works of Tintoretto, El Greco and Cellini.

Art of Baroque and Rococo: study of significance of the Baroque art would be discussed with works of Rembrandt, Vermeer, Caravaggio and Bernini.
The significance of the rococo painting would be studied.

Unit-III Neo-Classicism: study of neo classical art, with the important paintings and sculptures of Jacques Louis David, August Dominique Ingres and Antonio Canova

Romanticism: study of romanticism in arts, with the painting of Fancisco de Goya, John Constable and J.W.N Turner...

Realism: discuss realism in art with reference to works of Courbet, Corot and Daumier.

Unit IV Western Aesthetics: discuss the aesthetic views of Plato, Aristotle and Immanuel Kant.

PRACTICALS

P2 2.2 Drawing -II

UNIT-I Comparative study of masters drawing

UNIT-II Study of Human figure

UNIT-III Postures and gestures. Indian

UNIT-IV Thematic Drawing.

UNIT-V Drawing from Nature.

UNIT-VI Drawing from Manmade objects. Group discussion
Assignments: **200 Drawings**
Examination will be in pencil / crayons

P2 2.3 PORTRAIT PAINTING -II

Unit-I Study from life, Male and female figures.

UNIT-II Study of Human-head in colour.

UNIT-III Study of character and, expression.

UNIT-IV Use of different techniques to develop 3 dimensional effects.

UNIT-V Use of different medium.
Group discussion

Assignments: **6** completed life studies in different mediums.
Examination in oil colour on oil sketching paper.

P2 2.4 PICTORIAL COMPOSTION-II

Unit-I Elements of composition figure ground relationship.

UNIT-II Study of Representational and Non-representational forms.

UNIT-III Traditional and Non-Traditional approaches.

UNIT-IV Theme based on day-to-day subjects.

Unit-V Creative Composition.
Group discussion

Assignments: **4** completed works.
Examination will be in water colour, opaque technique.

P2 2.5 PRINT MAKING (Graphics) -II

UNIT-I Advance study of relief printing.

UNIT-II Lino-cut medium with 3 colours.

UNIT-III Collography

UNIT-IV Registration and overlapping techniques of Print making based on

UNIT-V Use of Various textures for tonal values

UNIT-VI Group discussion

Assignments: **4** final prints in single colour.
Examinations will be in Black and white / single colour linocut.

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3rd YEAR 1st SEMESTER

P 3 1.1 T-MODERN WESTERN ART

Unit-I Impressionism: discuss the coinage of the term, impressionism and study the paintings of Monet, Manet and Renior

Post-Impressionism: study of post impressionism with reference to the important paintings of Paul Cezanne, Vincent Vangogh, Georges Seurat and Paul Gaugin.

Unit-II Fauvism and Cubism. Discuss coinage of the term fauvism and the important works of Henry Matisse and his fellow artists Andre Derain, Mauric De Vlaminck, George Rouault are to be analyzed.

Define cubism and analyze the works of Picasso and Braque in to various phases of cubism.

Unit III Expressionism and Futurism: study expressionism, through works of two groups "The Bridge" and "The Blue Rider".

Discuss the significance of futurism in art. With the works of Carlo Carra, Giacoma Balla and Umbreto Boccioni.

Unit- IV Dadaism: discuss the impact of first world war and emergence of anti art or anti aesthetics in art practice, study the works of Marcel Duchamp, Francis Picabia and Man Ray.

Surrealism: study the works of Salvender Dali, Joan Miro, Rene Magritte.

PRACTICALS

P3 1.2 **Life study-I**

Unit-I Analytical study of Human form.

Unit-II Exploration of the possibilities of Tonal Variation, texture, colour.

Unit-III Stress on evolving individual style and techniques.

Unit-IV Use of water colour, oil and other mediums like Tempra acrylic etc.

Unit-V Study of Drapery.

Group discussion

Assignments: 20 pencil Drawing and 4 completed life study works

Examination will be in oil medium

P 3 1.3 LANDSCAPE PAINTING

UNIT-I Out door study of Natural and Man-made environment.

UNIT-II Study of trees, rocks, water, buildings avenues etc.'

UNIT-III Use of different mediums like water colour, oil, Tempera etc., Group discussion

Assignments: 4 studies of Landscape in any medium
Examination will be in water colour.

P 3 1.4 PICTORIAL COMPOSTION –III

Unit-I Study of Composition using traditional styles.

UNIT-II Study of Composition in western styles.

UNIT-III Thematic approach in composition

UNIT-IV Developing individual style

Group discussion

Assignments: 4 works submission
Examination will be in oil medium.

P 3 1.5 PRINT MAKING (GRAPHICS) -III

Unit-I Study of Planography - Lithography.

UNIT-II Introduction to tools and materials of Litho-graphy.

UNIT-III Use of Litho ink and Crayons

UNIT-IV Preparation of design transfers techniques.

UNIT-V Stone grinding - polishing image transfer and image fixation - Litho inks - Single colour and Multi-colour printing

Group discussion

Assignments: 4 final completed prints.
Examination will be in single colour.

3rd YEAR 2nd SEMESTER

P 3 2.1T- MODERN INDIAN ART

Unit-I Company Painting: discuss the role/place of company painting in India art.

British Art Schools: establishment of art schools in India. (try to discuss the establishment of art schools by British through the process and politics of colonialism

Raja Ravi Varma: study the art of Raja Ravi Varma, about his style and "Indian ness" in his paintings

Unit-II Bengal School – Abanindranath Tagore and his disciples Shantiniketan – Nandalal Bose

-Binod Bihari Mukarjee
-Ramkinkar Braij.

Unit-III Art and life of Amritha Sherghill
Art and life of Jamini Roy

Unit-IV Indian art (1940s)
Calcutta Group
Bombay Progressive Artist Group (PAG)
Delhi Shilpi Chakra
Trends in South India

PRACTICALS

P 3 2.2 LIFE STUDY-II

UNIT-I Advanced study from life, male & female figures.

UNIT-II Study of anatomy.

UNIT-III Study of individual character.

UNIT-IV Tonal variations, texture, color and Juxta position.

UNIT-V Use of Oil color, tempera & acrylic color.

Group discussion

Assignments: **20** drawings, **4** works in any medium.

Examination will be in Oil medium.

P 3 2.3 PICTORIAL COMPOSITION -IV

UNIT-I Advanced study of composition - various thematic approaches - Organization of Human form and nature.

UNIT-II Exploitation of various traditional and modern concepts of composition.

UNIT-III Technical experimentation with tonal values, textures, color Juxtaposition

UNIT-IV Use of colors, Acrylic - Oil - Mixed medium

Group Discussion.

Assignments: **4** compositions in any medium.
Examination will be in Oil color.

P 3 2.4 PRINT MAKING (GRAPHICS) -IV

UNIT-I Introduction to DRY-POINT technique.

UNIT-II DRY POINT - Experimentation on different Types of Acrylic sheets.

UNIT-III Overlapping Techniques - various textural effects.

UNIT-IV Transformation of the Images Aqurate registration etc.

Group Discussion

Assignments: **4** prints in different techniques.
Examination will be in single color (mono-chrome)

P 3 2.5 MURAL DESIGN - I

UNIT-I Introduction to Mural Design.

UNIT-II Various Techniques of Mural.

UNIT-III Mosaic Mural design

UNIT-IV Wall paintings.

Group Discussions

Assignments: **1** Mural design completed
No Examination (only display)

4th YEAR 1st SEMESTER

P 4 1.1 T-CONTEMPORARY ART IN WEST

Unit-I American Painting (1920's): discuss the art scene during 1920s, with important works.

Abstract Expressionism: discuss the ideas of Clement Greenberg in relation to abstract expressionism, study the Paintings of Mark Rothko, William de Kooning, Jackson Pollock and Barnett Newman.

Unit-II British Pop Art
American Pop Art
Op Art

Unit-III Minimal Art
Conceptual Art

Unit IV Feminist art in Europe.

PRACTICALS

P 4 1.2 PORTRAIT PAINTING -III

UNIT-I Study of Human form from *life*, Head study.

UNIT-II Half and full Length figure.

UNIT-III Exercises in organization of human form in relation to the model

UNIT-IV Study of individual character - expression gesture and posture.

UNIT-V Efforts to achieve individual style and techniques in different media like oil color, acrylic and water color

Group discussion

Assignments: 4 portraits Painting in any media.
Examination will be in oil Colour.

P 4 1.3 PICTORIAL COMPOSITON -V

Unit-I Experimental approach to thematic composition.

UNIT-II Development of individual style.

UNIT-III Exploitation and modern concepts of composition.

UNIT-IV Technical experiment with tonal values, texture, color, Juxta-position.
Group discussion

Assignments: 4 creative compositions.
Examination will be in Oil color.

P 4 1.4 PRINT MAKING/GRAPHICS) -V

UNIT-I Introduction to Etching process.
Material preparation of **hard** and **soft** grounds

UNIT-II Design preparation- image transfer

UNIT-III Single color and multi-color print

UNIT-IV Registration and deep bites- acids developments-line tone -texture.

UNIT-V Aqua tint, Zinc and printing Inks.

Group discussion

Assignments: six completed prints.
Examination will be in single color.

P 4 1.5 MURAL DESIGN- II

UNIT-I Introduction to mural Design

UNIT-II Various Techniques of Mural

UNIT-III Mosaic Mural.

UNIT-IV Wall Painting

Group discussion

Assignments: one mural design completed.
No Examination will be conducted

4th YEAR 2nd SEMESTER

P4 2.1 T-CONTEMPORARY ART IN INDIA

Unit-I Indigenism in Indian Art:
Baroda Initiative (K.G. Subramanian)
The Southern Initiative (K.C.S. Pannikar)
Works of (J. Swaminathan)

Unit II Radical Painters and Sculptors Associations

Unit III Indian Women artists: Discuss the works of Meera Mukharjee, Nasreen Mohamadi, Nelima Sheik and Rekha Rodiwitya

Unit-IV Conceptiual art in India: Study of Instalation art, site specific, performance based, video, kinetic art

PRACTICALS

P 4 2.2 PICTORIAL COMPOSITON -VI

Unit-I Advance study of the subject.

UNIT-II Developing individual style and techniques.

UNIT-III Creative awareness by attempting themes and subjects related ~~to mythology~~ To present day issues and History

UNIT-IV Experimental approach to thematic composition.

Group discussion

Assignments: 4 creative compositions
Examination will be in oil Colors.

P 4 2.3 LIFE STUDY -III

UNIT-V Advance study of the subject.

UNIT-II Half and full length Figure study.

UNIT-III Emphasis on individual character- Expression - experimentation to achieve individual style.

UNIT-IV Development of rendering and finishing techniques in oil, Tempera and Acrylic media.
Group discussion

Assignments: 4 portraits studies.
Examination will be in oil Colours.

P4 2.4 PRINTMAKING (GRAPHICS) -VI

UNIT-I Experimentation with advance techniques in Etching - intaglio media.

UNIT-II Stress on the development of individual techniques and style.

UNIT-III methods of Mezzotint - Engraving
UNIT-IV Advance techniques of Aquatint.

Group discussion

Assignments: 4 Colour Prints.
Examination will be in multi-Colour

P4 2.5 DISSERTATION & VIVA VOCE

At the end of academic completion every student will have to submit a Dissertation Containing a minimum of three thousand words with sufficient number of illustrations Or Photograph on a specific topic relevant to the painting selected mutual students and guide.

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I Year, I Semester BFA SYLLABUS Changes to be incorporate

21.1.3P

DRAWING-I:

PRACTICLE: 24 periods/4weeks | Marks Internal: 40 | Marks External: 60 | Marks Total: 100

DRAWING – I

UNIT – 1) Understanding line, exercises based on line, eg:-straight lines, curved Lines, Straight lines, curved lines, Zigzag lines etc in Pencil (Black and white), Ink

UNIT – 2) Drawing from Nature, example- leaves, flowers, Fruits, bushes, bush, plants, branches and trees in black and white and colour pencils.

UNIT – 3) Object drawing of man-made Objects, in detail study of light and shade, Create an effect of 3 dimensional objects, in black and white & colour Pencils

UNIT – 4) Detail drawing and over lapping of three dimensional forms like cube, cone, cylinder, pyramid and sphere in black and white (5 solid shapes)

UNIT – 5) Creative drawing based on lines, forms, textures and objects both Natural and Man-made etc. To stimulate creativity and ability to narrate.

- Examination will be object drawing, in pencil study only.

COLOUR DESIGN – I

UNIT – 1) Primary and secondary colours. colour wheel

UNIT – 2) Opaque colour, Transparent colour, relationship of primary, secondary and Tertiary colours.

UNIT – 3) Shade wheel. Tints and shades,

UNIT – 4) Understanding of Tonal values in black and white and colour. Introduction to Design by exercises created from motifs derived From Nature

UNIT – 5) Exercises based on colour and design, introducing the golden rules Division of space

- Examination will be in poster colour medium only

PAINTING - I

UNIT – 1) Understanding mediums of painting, Techniques of paintings (Opaque, Transparent, impastc, wet on wet, wax resist collage etc.)

UNIT – 2) Exercises based on nature, example, trees, flowers, bushes, rocks sky and Water

UNIT – 3) Exercises based on manmade objects (Still life of Artificial/Natural objects like flower - Fruits, vegetables etc.

UNIT – 4) Outdoor study from Nature, introduction to landscape painting in water Colours.

UNIT – 5 Painting practice of individual bird or animal from zoo or natural Surroundings

~~UNIT – 6~~) Examination will be in water colour medium only

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1 year 1 semester

ENGLISH

TEXT BOOK : Enjoying everyday English"

By A.RAMAKRISHNA RAO

Publications: Sangam books

UNIT - 1 : Travel

Reading : Heaven' gate

Listening : Listening for sounds

Speaking : Greeting taking ~~have~~ leave & introduction.

Grammar : Naming words.

Vocabulary : Homonyms, homophones, homographs

syonoyms & antonyons.

UNIT – 2 : BIOGRAPHY

Reading : sir C V Raman

Writing : work related correspondence

Listening : Listening for words

Speaking : making requests

Grammar : making ~~requests~~ naming words specific (part - 1)

Vocabulary : word formation.

UNIT – 3	:	HUMAN INTEREST
Reading	:	The connoisseur
Writing	:	Summarizing
Listening	:	Listening for word stress
Speaking	:	Apologizing & Inviting
Grammar	:	making naming words specific (part -2)

Applied art BFA Iyear Isem

Unit-I: Letter form – sense of letter form, principle of letter form, composing letters.

Unit-II: Gothic lettering – construction of Gothic letter forms in grid system, capitals A to Z, small A to Z.

Unit-III: Composing small words, letter spacing using Gothic letter style in different sizes and judgment.

Unit-IV: Calligraphy – definition. Calligraphy using different materials like pen, nib, brush etc. Round flat style calligraphy.

1st YEAR 1st SEMESTER SYLLABUS

HISTORY OF VISUAL ART AND AESTHETICS (APPLIED ARTS, PAINTING, SCULPTURE – FOUNDATION COURSE)

S1.1.1T -INTRODUCTION TO INDIAN ART

THEORY: 12 periods/4weeks | Marks Internal: 40 | Marks External: 60 | Marks Total: 100

Unit-I What is Art and Aesthetics? How it has be seen, discussed, practiced in India

Unit-II Pre-historic art in India. Art of Indus valley Civilization. Early sculptural traditions of Maurya, Sunga and Kushana periods.
Gupta sculpture

Unit-III Ajanta murals and subsequent continuation at Bagh ,Badami, Ellora and Vijayanagara.
Miniature Painting of Mughal, Rajasthani and Pahari.

Unit IV Company Painting and British Art School.
Raja Ravi Varma and Bengal School.

Note : In this semester students are supposed to know in brief about Indian art, with a general introduction to every topic, by studying their distinct formal and thematic contents. Stress would be on the descriptive formal study.

1st YEAR 2nd SEMESTER SYLLABUS

HISTORY OF VISUAL ART AND AESTHETICS
S1.2.1T. INTRODUCTION TO WESTERN ART

THEORY: 12 periods/4weeks | Marks Internal: 40 | Marks External: 60 | Marks Total: 100

Unit-I Why do we study western art? What is Western Aesthetics?

Unit-II Pre-Historic and Ancient Art in Europe.
Art of Mesopotamia, Egyptian and Greco-roman art. Art of Early Christian and Byzantine.
Art of Romanesque and Gothic.

Unit-III Art of Renaissance and Mannerism.
Art of Baroque and Rococo.

Unit-IV Neo-Classicism and Romanticism.
Realism and Impressionism.

Note : In this semester students are supposed to know in brief about western art, with a general introduction to every topic, by studying their distinct formal and thematic contents. Stress would be on the descriptive and formal study.

II YEAR 1st SEMESTER SYLLABUS

HISTORY OF VISUAL ART AND AESTHETICS (PAINTING & SCULPTURE)
S2.1.1T. HISTORY OF INDIAN ART

THEORY: 8 periods/4weeks | Marks Internal: 40 | Marks External: 60 | Marks Total: 100

Unit-I Early sculptural traditions of Maurya, Sunga and Kushana periods.
Sculptural tradition of Gupta, Rashtrakuta, Pallava, Chola and Vijayanagara.

Unit-II Ajanta Mural tradition.
Continuation of Mural tradition at Bagh, Badami, Ellora and Vijayanagara.

Unit-III Illustrated Manuscripts of Eastern and Western India (Pala and Jain Manuscripts)
Miniature Painting of Mughal, Rajastani
Miniature Painting of Deccani & Pahari.

Unit-IV Indian Aesthetics: A brief introduction to the Indian Aesthetics,
Discuss on Bharatha's Natya Sastra, Concept of Rasa Theory,
Abhinava Gupta and Jayadeva.

Note: In this semester, students are supposed to study each topic in detail, emphasizing on historical evaluation of sculpture and painting in each period, and their significance and stylistic evolution would be focused.

II YEAR 2nd SEMESTER SYLLABUS – SCULPTURE & PAINTING

HISTORY OF ART AND AESTHETICS
S221T HISTORY OF WESTERN ART

THEORY: 8periods/4weeks | Marks Internal: 40 | Marks External: 60 | Marks Total: 100

Unit-I Art of Early Christian and Byzantine: Rise of Christianity and
Significant changes in representation of images are to be discussed.
Art of Romanesque and Gothic: The significant stylistic changes in both periods would be discussed.

Unit-II Art of Renaissance and Mannerism: Introduction to Renaissance art and study with reference to works of Leonardo da Vinci, Raphael and Michelangelo.
And discuss the basic difference between Renaissance and Mannerist Art analyze with works of Tintoretto, El Greco and Cellini.
Art of Baroque and Roccoco: Study of significance of the Baroque art would be discussed with works of Rembrandt, Vermeer, Caravaggio and Bernini.
The significance of the Roccoco painting would be studied.

Unit-III Neo-Classicism: Study of Neo-Classical art, with the important paintings and sculptures of Jacques Louis David, August Dominique Ingres and Antonio Canova
Romanticism: Study of Romanticism in arts, with the painting of Francisco de Goya, John Constable and J.W.N Turner...
Realism: Discuss Realism in Art with reference to works of Courbet, Corot and Daumier.

Unit IV Western Aesthetics: Discuss the Aesthetic views of Plato,
Aristotle and Immanuel Kant.

III YEAR 1st SEMESTER SYLLABUS – SCULPTURE & PAINTING

HISTORY OF ART AND AESTHETICS
S311T. MODERN WESTERN ART

THEORY: 8 periods/4weeks | Marks Internal: 40 | Marks External: 60 | Marks Total: 100

Unit-I
Impressionism: Discuss the coinage of the term, Impressionism and study the paintings of Monet, Manet and Renior
Post-Impressionism: Study of Post-Impressionism with reference to the important paintings of Paul Cezanne, Vincent Vangogh, Georges Seurat and Paul Gaugin.

Unit-II
Fauvism and Cubism. Discuss coinage of the term Fauvism and the important works of Henry Matisse and his fellow artists Andre Derain, Mauric De Vlaminck, George Rouault are to be analyzed.
Define Cubism and analyze the works of Picasso and Braque in to various phases of Cubism.

Unit III
Expressionism and Futurism: study expressionism, through works of two groups "The Bridge" and "The Blue Rider".
Discuss the significance of futurism in art. With the works of Carlo Carra, Giacoma Balla and Umbreto Boccioni.

Unit- IV
Dadaism: Discuss the impact of First World War and emergence of Anti Art or Anti Aesthetics in art practice; Study the works of Marcel Duchamp, Francis Picabia and Man Ray.
Surrealism: Study the works of Salvador Dali, Joan Miro, Rene Magritte.

III YEAR 2nd SEMESTER SYLLABUS – SCULPTURE & PAINTING

HISTORY OF ART AND AESTHETICS
S321T. - MODERN INDIAN ART

THEORY: 8 periods/4weeks | Marks Internal: 40 | Marks External: 60 | Marks Total: 100

Unit-I
Company Painting: Discuss the role/place of Company Painting in India art.
British Art Schools: Establishment of Art Schools in India. (Try to discuss the establishment of Art Schools by British through the process and politics of colonialism.
Raja Ravi Varma: Study the Art of Raja Ravi Varma, about his style and "Indianness" in his paintings

Unit-II
Bengal School – Abanindranath Tagore and his disciples
Shantiniketan – Nandalal Bose
-Binod Bihari Mukarjee
-Ramkinkar Baij.

Unit-III
Art and life of Amrita Shergill, Art and life of Jamini Roy

Unit-IV
Indian art (1940s)
Calcutta Group
Bombay Progressive Artist Group (PAG)
Delhi Shilpi Chakra
Trends in South India

Syllabus Approved copy

BACHELOR OF FINE ARTS
IN
PHOTOGRAPHY
(2011-2012)

Academic Regulations
Course Structure
Syllabus

College of Fine Arts
Jawaharlal Nehru Architecture and Fine Arts University
Mahaveer Marg, Masab Tank, Hyderabad – 500 028.

BFA PHOTOGRAPHY & VISUAL COMMUNICATION
(Four Year Bachelors Degree Programme)
Academic Regulations

For 4 year Degree Course Program BFA with effect from 2011-2012 batch.

1. **Award of Bachelor of Fine Arts Degree:**

Students will be declared eligible for the award of **BFA Degree** if he/she fulfills the following academic regulations.

I. He/She has to pursue a course of study for not less than 4 academic year and not more than 8 academic years in the JNAFAU College of Fine Arts.
II. 1st year, 2nd year, 3rd year and 4th year will be semester pattern consisting 1 to 8 Semesters.
III. The first year will be common for Painting, Sculpture and Applied Arts.
IV. He/She must have satisfied the minimum academic requirements in each Year as here in after stipulated.
V. Students, who fail to fulfill all the academic requirements for the award of the degree within eight academic years from the year of their admission, shall forfeit their seat in the course and their seat shall stand canceled.

2. **Courses of Study:**

The following courses of study are offered for specializing for BFA degree.

1. Applied Art and Visual Communication.
2. Painting and Visual Communication.
3. Sculpture and Visual Communication.
4. Photography and Visual Communication.
5. Animation

3. **Weightage of Marks:**

I. The performance of the student in each semester/year shall be evaluated Subject-wise as per the course structure given ahead.

II. The distribution of marks for the subjects shall be for theory and practicals: 40% internal evaluation and 60% for End Examination (External evaluation)

4. **Attendance requirements:**

I. A student has to put in minimum of 75% of the attendance in aggregate of all Subjects for becoming eligible to register for the end examination and with a minimum of 50% physical attendance in each subject

II. Condonation of shortage of average attendance up to 10% (i.e. between 75% to 65%) in each semester/ 1ST year may be granted by the college academic committee (CAC) on payment of condonation fee and production of satisfactory evidence of the shortage of attendance.

III. Shortage of aggregate attendance below 65% shall in no case be condoned.

IV. Shortage of attendance below 50% in one or more subjects shall not be condoned.

V. Candidates whose shortage of attendance is not condoned either in aggregate are not eligible to sit for the end examinations. They will have to repeat the semester/1ST year in all respects when next offered.

5. **Minimum Academic Requirements:**

I. A student shall be deemed to have satisfied the minimum academic requirements in each subject (Theory/Practical) or project if he secures not less than 35% (out of 60) of marks (i.e. 21 out of 60) in the end evaluation and a minimum of 40% of marks in the sum total of internal evaluation and end evaluation taken together.

II. The candidate can be conditionally promoted from 1st year to 2nd year if he has backlog of not more than 3 subjects.

III. The candidate can be conditionally promoted from 2nd year to 3rd year if he has backlog of not more than 2 subjects.

IV. The candidate can be conditionally promoted from 3rd year to 4th year if he has backlog of not more than 2 subjects.

V. The candidate will be promoted from 3rd year to 4th year only if he/she has No backlogs of 1st year.

VI. The student can have total backlog of 8 subjects as a whole in the total duration of 4 year course.

VII. In all other cases student will be detained and he/she has to repeat the year/semester whenever offered.

VIII. A student has to complete all the academic requirements of all the 1st year subjects in 3 academic years after his admission. Failing to do so the student shall forfeit his/her seat in BFA Course and shall not be eligible for admission again.

IX. The result of the candidate will be declared only when the student has cleared all the backlogs under the above said rules.

6. **Withholding of results:**

The results of any candidate shall be withheld if

(i) He/She has not cleared any dues to the Institution/Hostel.

(ii) A case of disciplinary action is pending against him.

7. **Award of class:**

After a student has satisfied the requirements prescribed for the completion of program and is eligible for award of BFA degree, he/she shall be placed in one of the following three classes.

First class with Distinction	75% and above		From the aggregate marks secured in the whole program
First class	Below 75%	but not less than 60%	
Second class	Below 60%	but not less than 50%	

8. **Minimum Instruction days:**

The minimum instruction days for each semester/1st year shall be 90

days/1

9. G

B.F.A. (Photography and Visual Communication)
COURSE STRUCTURE

I YEAR I SEMESTER

Subject Code No.	SUBJECTS	Hours Per week	Internal Marks	External Marks	Total Marks
111 T	English – I	4	50	50	100
112 T	History of Photography	4	50	50	100
113 T	Basic Photography	4	50	50	100
114 T	Photo Aesthetics	6	50	50	100
115 P	Basic Photography Tech	6	50	50	100
116 P	Photo Aesthetics Tech	6	50	50	100
		30	300	300	600

I YEAR - II SEMESTER

Subject Code No.	SUBJECTS	Hours Per week	Internal Marks	External Marks	Total Marks
121 T	English – II	2	50	50	100
122 T	Digital Photography	4	50	50	100
123 T	Color Photography	4	50	50	100
124 T	Basics of Computers	2	50	50	100
125P	Digital Photo Tech.	10	50	50	100
126 P	Color Photo Tech	8	50	50	100
		30	300	300	600

II YEAR I SEMESTER

Subject Code No	SUBJECTS	Hours Per week	Internal Marks	External Marks	Total Marks
211T	Advertising Photography	4	50	50	100
212 T	Computer Graphics & Multimedia	2	50	50	100
213 T	Applied Photography	2	50	50	100
214 P	Product Photography	8	50	50	100
215 P	Computer lab tech	8	50	50	100
216P	Fine-Art Photo Tech.	6	50	50	100
		30	300	300	600

II YEAR II SEMESTER

Subject Code No	SUBJECTS	Hours Per week	Internal Marks	External Marks	Total Marks
221 T	Photo-Journalism	4	50	50	100
222T	Environmental Studies	2	50	50	100
223P	Digital Imaging tech-I	8	50	50	100
224P	Photo-Journalism Tech.	4	50	50	100
225P	Fashion & Food Photography	6	50	50	100
226P	Portrait Photography	6	50	50	100
		30	300	300	600

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III YEAR I SEMESTER

Subject Code No	SUBJECTS	Hours Per week	Internal Marks	External Marks	Total Marks
311 T	Mass Communication	4	50	50	100
312p	Mass Communication tech	8	50	50	100
313p	Digital Imaging Tech.-II	10	50	50	100
314P	Mini Project	8	50	50	100
		30	200	200	400

III YEAR II SEMESTER

Subject Code No	SUBJECTS	Hours Per Week	Inter-nal Marks	Exter-nal Marks	Total Marks
321 T	Basic Videography	2	50	50	100
322 T	Cinematography	4	50	50	100
323 P	Basic Videography Tech	12	50	50	100
324P	Video Post Production Tech	12	50	50	100
		30	200	200	400

IV YEAR I SEMESTER

Subject Code No	SUBJECTS	Hours Per week	Internal Marks	External Marks	Total Marks
411 T	Professional videography	4	50	50	100
412 P	Professional video tech	8	50	50	100
413P	Advance Post-Production Tech.	12	50	50	100
414 P	Portfolio	6	50	50	100
		30	200	200	400

IV YEAR II SEMESTER

Subject Code No	SUBJECTS	Duration	Internal Marks	External Marks	Total Marks
421P	Practical training & Thesis Submission & Viva-Voce	3months	200	200	400
	75% for Thesis 25% for Viva-Voce				
			200	200	400

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I YEAR I SEM.

HISTORY OF PHOTOGRAPHY
Subject Code No: 112T

UNIT- I (4 BC TO 1827 AD)

Camera Obscura - - Leonardo-da-Vinci - Daniel Barabaro - John Henry Schultz - Thomas Wedgewood -- Joseph Niecephore Niepce.-

UNIT-II (1828 TO 1860)

Loius Jacques Monde Dagurre - Daguerreotype process - Calotype process - Wet collodion process - - Charles Negre - Gustave Le gray - - Roger Fenton.

UNIT-III (1860 TO 1900)

The Gelatin Emulsion - Masters of photography. - Mathew B. Brady - Nadar - - Julia Margaret Cameron - Carlton Eugene Watkins -Ansel Adams - Early Images of war - Early Travel Photography - Early Pictorial Photography - Motion in Photography-Early Portrait Photography..

UNIT - IV (HISTORY OF INDIAN PHOTOGRAPHY (1840 TO 1900)

Importance of photography before independence - Photojournalists and Free lancing - Amateurs on and after Indian Mutinyin1857- Indian Photographers Dr. Naryan Dajee - Lala Deen Dayal - –Raja Savai Man singh.

UNIT -V (HISTORY OF INDIAN PHOTOGRAPHY 1900 ONWARDS)

Honors of Deen Dayal before 1905-06 - His establishments at Hyderabad - Early Photography Societies and its impact on Indian ^hotography - Federation of Indian Photography - India International ^hographic council - Contemporary Indian Photographers -- Atul Lasbekar, Mittal Bedi Brother – O.P. Sharma – Goutham Radhyesa - Dr. G. Thomas - Dr. N,Bhagwandas - O.C. Edwards - Raghubir Singh - Raghu Rai - T.N Perumal - Raja Thriambak Raj Rau Bhahadur- P.N.Mehara -

BOOKS RECOMMENDED

1. Great Photographers by Life series
2. History of Photography (India 1840-1980) by G. Thomas
3. Photography by C.B.Neblette.

Assignment: 1. Prepare a Book on History of Photography with an emphasizing Indian Photographer.

2. Unit Test of 20 marks.

BASIC PHOTOGRAPHY
Subject Code No: 113T

UNIT- I

Camera - Types of Cameras - Pinhole camera - Box Camera - View Camera -Ranger finder Camera - Single lens reflex Camera - Twin lens Reflex Camera - Polaroid Camera - Panoramic Camera - Process Camera - Cine Camera - Video Camera - Digital Camera - Different formats of Camera - Large format - Medium format - Small format.

UNIT- II

Optics - positive and negative lenses -Focal length - resolving power of lens - lens aberration and rectification -'spherical chromatic - coma - astigmatism - distortion –Curvature of field - types of lenses - Normal - wide angle - telephoto - zoom lenses -supplementary lenses –Digital Lenses.

UNIT- III

Anatomy of camera - body - lens - view finder - Aperture - Shutter- Horizontal - vertical moving shutters - Shutter speed – Shutter efficiency - merits and de-merits of between the lens shutter and focal plane shutters - aperture and shutter relation - film compartment- self timer.

UNIT – IV

Focusing - rack and pinion focusing -Scale focusing - automatic focusing – Types of Focusing in Digital - Exposure - exposure latitude - exposure meters - Incident Light meters - reflected light meters - built in light meters - Depth of field - Circle of confusion - Depth of focus - Hyper focal distance.

UNIT-V

Cross section of the film - Resolving power - Speed - Graininess - Different types of films – Different Developers - Ingredients of

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developer – enlargers - Density -paper grades – Convergent Technologies.

BOOKS RECOMMENDED:

I) Camera by Brain coe

2) Basic Photography by Focal Press

3) Advanced Photography by Focal Press

Assignments: Unit Test I & II of each 20 marks.

PHOTO AESTHETICS
Subject Code No: 114T

UNIT – I

Definition of Light - Principles of Light - Properties of Light - Reflection - Refraction - Absorption - Transmission - Dispersion - Light characteristics - Quality - Quantity – Color – Direct light – Indirect light – Diffused light – Light as subject – Shadow as subject

UNIT – II

Need for the light in Photography - Light sources - Natural light -Sunlight - Moon light - Ambient Light - Artificial Light sources - Flood light - Spot light - Halogen light - Electronic flash light – Digital lights.

UNIT – III

Photography Visual Art – Visualization - Principles of visualization - Composition guidelines - Golden mean - Centre of interest - Horizon -Effect of direction - Symbolism - Space - Producing space and controlling - Depth - Composition analysis.

UNIT – IV

Principles of design – Concepts of geometry - Line - Types of lines - Lines of movement - Vertical lines - Horizontal lines - diagonal lines - curved lines - zigzag lines - Angle of view - Perspective - Types of Perspectives - Linear Perspective - Aerial Perspective - Oblique angle Perspective - Vanishing point - Perspective control.

UNIT-V

Composition - Emphasizing factors of composition - Elements of composition - Order - Shape -Balance - Still life study.

BOOKS RECOMMENDED

1. Composition by Focal Press.
2. Basic Techniques of Photography (Ansel Adams Guide)
3. Basic Photography by M.J.Langford.

Assignments: Unit Test I & II of each 20 marks.

BASIC PHOTO TECH
Subject Code No: 115 P

UNIT-I

1. Key light or main light or principle light.
2. Fill in light.
3. Bounce light.
4. Diffused light & Directional Diffused Light
5. Exposure Calculation &. Light meters

UNIT-II

1. Light angles
2. Low Key
3. High Key
4. Rembrandt Lighting
5. Butterfly lighting

UNIT-III

1. Mounting – Fundamentals.
2. Mounting materials & techniques.
3. Display Techniques.
4. Lighting for Display

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I YEAR II SEM.

SUB : DIGITAL PHOTOGRAPHY
Subject Code No : 122 T

UNIT – I Digital Basics - Introduction to Digital Imaging Principles.

UNIT – II The digital Camera – Components of Digital Camera – Sensor – Sensor Characteristics & Configuration – LC D Display – Menu & Operations.

UNIT – III Digital Camera Lenses – Digital Zoom – Auto Focus systems – Optical Zoom – Focal length – Depth of field – Depth of focus

UNIT – IV Image formation – Color Formation; Characteristic of Digital Image – ISO & Resolution – Dynamic Range – Histogram - Noise – Aliasing - Moiré - Remedial measures.

UNIT – V Storage – Methods of storage – File formats & Storage – Storage Devices – Precautions for stories – Data recovery Software.

Recommended Books:

1. The Digital Photography Hand Book by David Jones
2 Advanced Digital Photography by Tom Ang.
3 Photography Foundations for Art & Design mark Galer 3rd Edition
4 Web Resources.

Assignments: Unit Test I & II of each 20 marks.

SUB: COLOR PHOTOGRAPHY
Subject Code No 123 T

UNIT - I

Origin - Early attempts – Hand coloring – Koda Color – Agfa color- Color spectrum - Primary colors and secondary colors – Visible Specturm.

UNIT –II

Colour Contrast – Colour Harmony -Colour Temperature – Addetive colour – subtractive color _ R & B / CMYK Color.

UNIT – III

Colour vision - Colour psychology - Color Synthesis – Color Negative film process – color positive – colour Theory - Negative and Positive colors - Warm colors - Cool colors - Colour balance.

UNIT- IV

Storage of coloring film – Scanning – Drum – Flat Bed Scanner – Output – Indexing for Filming – Retrieval.

UNIT- V

Characteristic of color - Strong color -Muted color – Isolated Colour - Colour hue - color wave length - Grey card.- Mac Beth Color Chart.

BOOKS RECOMMENDED

1. Theory and Practice of color (life series) by France Gerritson.
2. Book of color Photography by Adrain Bailey and Holloway.
3. Color films by Jeorge Wakefield.
4. Color Printing in Practice by Jack Tailor.
5. Ansel Adams Guide to Basic techniques of Photography.

Assignments: 1. Color chat/Color wheel
2.Visible Specturm

Unit Test – I & II of each 20 marks.

SUB: BASICS OF COMPUTERS
Subject Code No: 124T

UNIT – I

What is computer - Characteristics of computer - Types of computer - History of computer - Abacus - Pascal's mechanical calculator Charles Babbage's - differential engine - Electronic numeric Integrator and calculator

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developer – enlargers - Density -paper grades – Convergent Technologies.

BOOKS RECOMMENDED:

I) Camera by Brain coe

2) Basic Photography by Focal Press

3) Advanced Photography by Focal Press

Assignments: Unit Test I & II of each 20 marks.

PHOTO AESTHETICS
Subject Code No: 114T

UNIT – I

Definition of Light - Principles of Light - Properties of Light - Reflection - Refraction - Absorption - Transmission - Dispersion - Light characteristics - Quality - Quantity – Color – Direct light – Indirect light – Diffused light – Light as subject – Shadow as subject

UNIT – II

Need for the light in Photography - Light sources - Natural light -Sunlight - Moon light - Ambient Light - Artificial Light sources - Flood light - Spot light - Halogen light - Electronic flash light – Digital lights.

UNIT – III

Photography Visual Art – Visualization - Principles of visualization - Composition guidelines - Golden mean - Centre of interest - Horizon -Effect of direction - Symbolism - Space - Producing space and controlling - Depth - Composition analysis.

UNIT – IV

Principles of design – Concepts of geometry - Line - Types of lines - Lines of movement - Vertical lines - Horizontal lines - diagonal lines - curved lines - zigzag lines - Angle of view - Perspective - Types of Perspectives - Linear Perspective - Aerial Perspective - Oblique angle Perspective - Vanishing point - Perspective control.

UNIT-V

Composition - Emphasizing factors of composition - Elements of composition - Order - Shape -Balance - Still life study.

BOOKS RECOMMENDED

1. Composition by Focal Press.
2. Basic Techniques of Photography (Ansel Adams Guide)
3. Basic Photography by M.J.Langford.

Assignments: Unit Test I & II of each 20 marks.

BASIC PHOTO TECH
Subject Code No: 115 P

UNIT-I

1. Key light or main light or principle light.
2. Fill in light.
3. Bounce light.
4. Diffused light & Directional Diffused Light
5. Exposure Calculation &. Light meters

UNIT-II

1. Light angles
2. Low Key
3. High Key
4. Rembrandt Lighting
5. Butterfly lighting

UNIT-III

1. Mounting – Fundamentals.
2. Mounting materials & techniques.
3. Display Techniques.
4. Lighting for Display

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(ENIAC) - Universal Automatic computer (UNIVAC).

UNIT – II

Generation of Computers - First Generation (1924-1955) – Second generation (1955-1964) - Third Generation (1964-1975) - Fourth Generation (1975 onwards) - and fifth Generation - Their advantage and disadvantages.

UNIT III

Components of computer - Hardware - Central Processing Unit (CPU) - Primary storage section - Arithmetic logic unit - Control unit – Memory speed - bits and bytes.

UNIT IV

Input Devices - Keyboard - Mouse - Joystick - Trackball - Light pen - Magnetic scanner - Touch screen - Microphone.

UNIT V

Output devices - Monitor - External storage devices - Floppy disk – compact disc – Hard disk - Printer- Software - Types of software - operating systems - Application of software - System software - languages and packages –Basics of disk operating systems - Introduction to MS-WORD

Books Recommended:

1. An introduction to Computer studies by Noel Kalicharan.
2. Computer Basics - Published by Dr. MCR HRD Institute of A.P.
3. Hardware - Bible by Winn L Rosen.

Assignments: Unit Test I & II of each 20 marks.

SUB: DIGITAL PHOTOGRAPHY TECH
Subject Code No: 125P

UNIT – I — How to use Digital Camera – shooting images with correct Exposure - Application of Histogram.

UNIT – II — Understanding the applications of ISO Settings and Noise Problems.

UNIT – III — Shooting with manual Settings Auto Exposure Modes in Indoor & Studio Exercises.

UNIT – IV — Studio Portraiture – Out Door Portraiture.

UNIT – V — Landscape – Architecture – Close up

Assignments:

1. Studio Portrait
2. Land scrap
3. Out portrait
4. Close up

SUB: COLOR PHOTOGRAPHY TECH
Subject Code No: 126P

UNIT – I — Color Contrast - Colour Harmony

UNIT – II — Dawn to Dusk. (Early marking to late after Sunset same subject same framing

UNIT – III — Strong Colour – Muted Colour.

UNIT – IV — Isolated Colour – Color space

U NIT – V — Color printing Commercial labs – working Mechanisms – Scanner – Printer – color Printer – Lazer – Inkjet – Offset - – Color Management -

Assignments:

1. Colour Prints on different surfaces of same subject.
2. Colour Harmony / Contrast
3. Sun Rise, Sun set (Different sky patterns)

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II YEAR I SEM.

ADVERTISING PHOTOGRAPHY
Subject Code No: 211 T

UNIT - I
Evolution of Advertising - The age. of technology Print media - News papers - Magazines - Electronic media - Radio –Television - Luterult.

UNIT - II
Role of advertising - Advertising to the consumer - Advertising to business and professional - Advertising to services - Advertising approaches -

UNIT – III
Advertising agency - Art director - Photographer - Logo designer –Copy writer - Layout artist - What advertising agency do - creative Services - marketing concepts – research & development - psychology of consumer - marketing services - How agencies are structured.

UNIT – IV
Media - Media strategy - Distinguish between marketing and advertising - roles - the chief characteristics of the people in our target market - where is the product distributed - the best timing for our advertising schedule - what is the competition doing - media strategies- Illustration - advertisement in newspaper - magazines - radio -television - websites.

UNIT-V
Role of Photography in Advertising – Relationship Coordination – Working Schedules - Equipment and techniques - Planning - Stage setting - Modeling - Make-up - Uses and importance of medium format and large format cameras - model release-Property release.

BOOKS RECOMMENDED
1. Otto Kepleners Advertising Procedure 9th edition.
2. Advertising excellence by Bovieethill Dovel - wood.
3. Complete encyclopedia of Photography by Michael Langford.

Assignments: Unit Test I & II of each 20 marks.

SUB:COMPUTER GRAPHICS & MULTIMEDIA
Subject Code No: 212T

UNIT – I
Definition of Multimedia - Importance of Multimedia - the growth of Multimedia - impact of multimedia on society - privacy - encryption -and the clipper chip - censorship - protectionism.

UNIT – II
Multimedia computer - system unit - CPU - RAM – Graphic Card - Pointing device --Accessories - CD - Rom - DVD – Blue Ray - Digital audio - speakers - digital video – MIDI - Read and write storage - Hard disk - SCSI - Video File formats .

UNIT – III
Communication options - modem - network - Internet connection - Router - Application and development of multimedia - presentation packages - power point authoring - Electronic publishing. - Scanners - hand held scanners - flat bed scanners –Transparency scanner.

UNIT – IV
Color space - defining resolution - color resolution - image resolution image formats - Bitmap - graphics - vector graphics – compression formats.

UNIT – V

Image processing with Adobe photo shop CS 5 OR After Effects – Macromedia Flash basics - image conversions - color model - size and resolution - basic selection tools - layers - defining areas with paths - working with selections - fills - feathering - copy and paste - spatial effects - channels and masks.

Books Recommended
1. Multimedia studio for windows by. Jeff Burger
2. Multimedia literacy by Fred T. Hof stetter

Assignments: Unit Test I & II of each 20 marks.

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APPLIED PHOTOGRAPHY
Subject Code No:213T

UNIT-I

Forms & Specializations in Photography - Agriculture – Sports – Table top – Commercial Photography – Architectural photography – Interiors Photography – Jewelry – People Photography – war Photography -

UNIT – II

Scientific application - Ultra Violet photography - Infrared Photography – Forensic Photography

UNIT – III

Medium format - Large format cameras - working principles - camera movements - tripods – Digital Backs - Industrial Photography - Various branches - Interactions - Shooting machineries - Shooting large Indusial set up - Techniques involved in shooting.

UNIT – IV Aerial Photography – Astro Photography - Medical & Bio Medical Photography – Underwater Photography.

UNIT – V- Closeup Photography - Micro photography – Microfilming - zone system -exposure values. Macro Photography - Supplementary lenses -Extension tubes and bellows

BOOKS RECOMMENDED

1. Experimental Photography by John Warsen.
2. Photography by Barbara Upton and John Upton.
3. Hand book of Photography (5th edition) by Foils and Lovell.
4. Focal encyclopedia of Photography by Michael Langford

Assignments: Unit Test I & II of each 20 marks.

SUB: PRODUCT PHOTOGRAPHY TECH
Subject Code No: 214 P

Unit – I Overview of Product Photography - Product Photography significance – role in promotion of products - categorization of products – The lighting Equipment – Types of lighting units – Accessories – Digital Lights - Study of Concepts – Accessories - Props – Backgrounds - Models – Locations – hiring of studios – equipment.

Unit – II

Electronics Products - Shooting Script – Lighting Schemes – Exercises.

Unit – III

House Hold Products - Shooting Script – Lighting Schemes – Exercises
Liquid Products – Shooting Script – Lighting Schemes – Exercises.

Unit – IV

Executive Products - Shooting Script – Lighting Schemes – Exercises. - Concept Photography - Shooting Script – Lighting Schemes – Exercises

Unit – V

Industrial Photographer – Lighting in Natural & Artificial

Books Recommended:

1. New Product Shots by Alex Larg & Jane Wood.
2. Lighting for Food & Drink by Steve Bavister.
3. Practical Photography by Michael Freeman.
4. Magazines vide WEB.
5. Magazines on Advertising.

Assignments:
1. Liquid Product (with model / without model)
2. House hold Product
3. Electronic Product
4. Cosmetic Product

Note: All the above assignment should be printed on 8"x10" size with mounts along with shooting details.

COMPUTER LAB TECH
Subject Code No 215 P

UNIT-I

1. Operation of computers.

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2. Keyboard.
3. Mouse.
4. Speakers

UNIT – II

1. Introduction to MS word
2. Creating a document.
3. Moving through document.
4. Saving a document.

UNIT – III

1. Editing a document
2. Copy, Cut, and Paste options.
3. Formatting Document.
4. Creating bullets and numbers.

UNIT – IV

1. Changing the case of the text.
2. Intending text with tabs.
3. Controlling fonts.
4. Creating column wise document..

UNIT-V

1. Page set up.
2. Creating header and footer.
3. Inserting pictures.
4. Creating mail merge document.

Assignment:
1. Creating a "Folder" in a particular drive and storing/saving a file in that Folder.'
2. Making of a Table
3. Making a greeting card using MS word.

SUB: FINE ART PHOTOGRAPHY TECH
Subject Code No: 216 P

UNIT I

Overview of fine art photography – Painting & Photography Relations -- Pictorialism - Aesthetics of Fine Art photography – light – shade – objects – shape – form – line – texture – pattern - Exploring concepts Abstract – still life – nude – portraiture – character portraiture – candid - Fine art photography - Commercial considerations - Fine Art & Computer Graphics – New form of Fine Art – Digital Photography - Portraiture Indoor & outdoor – Male - female - child –Character – candid.

UNIT – II Landscape

1. Nature
2. Architecture
3. Skyscape
4. seascape
5. Urban & rural

UNIT – III Still life

1. Form
2. shape
3. Color
4. Texture
5. Conceptual

UNIT – IV Digital Abstract

1. Collage
2. Panoramas

Books Recommended

1. Picture Encyclopedia.
2. British Photography Journals.
3. The Era of Photography by Braive.
4. The Art of Photography Life Series Books
5. Focal Encyclopedia of Photography.
6. Web Resources.

Assignments:
1. Land scape
2. Sky scape
3. Sea scape
4. Panorama
5. Conceptual Still life
6. Architecture (Interior/Exteriors)

All in 8"x10" mounted with technical details.

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II YEAR II SEM.

Sub: Photo Journalism
Subject code no: 221 T

Unit – i photo journalism

Meaning of photojournalism, brief history ,beginning from 1860 to1919 , the roaring twenties , birth of modern photo journalism, nature and scope of photojournalism; photographers as social documentaries - fsa photographers - - visual awareness.

Unit – ii types of photojournalism

Sports photojournalism: war photojournalism: glamour photojournalism, spot news photojournalism: travel photojournalism: wildlife photojournalism, composition and rules in photo journalism, limitations in photo journalism-realistic approach

Unit – iii applications of photojournalism

Photo journalism in perspective - snap shots -news papers - weekly news magazine. - Eye witness - methods and techniques - politics and realism -spot news - photo feature - photo sequence-

Unit-iv: editorial

Instant reports - reporters as allies - ethics of posing -editorial thinking print media – overview – digital technology – digital libraries – electronic publishing –digital journals – internet news paper.

Unit-v: ethics

Photography law – photographs as evidence – defining ownership of photograph and digital images – what is obscene – taking photographs of a patient – photography in court –court room rules. - photographing ancient monuments – taking photographs of open sceneries – covering public functions – photographing in private campus – photographing models – photographing the nudes – snap shots of illegal act - importance of model release forms — privacy question appropriation – intrusion – publication of private matters – court room rules – libel and photography – new digital dilemma – the legal consequences and remedies.

Famous photojournalists – international - felica beato – robert capa –henri carter bresson – ernest haas –steve macurry - indian – raghu rai – raghubeer singh -

Books recommended

1. Photo journalism by frank p.hog
2. Documentary by David Schiefields.
3. Photo journalism by B.K. Deshpande.
4. Photo journalism – the professional approach by Kenneth Kobre.
5. Modern news structure in print media& electronic media.

Assignments:
1. EDFAT
2. Environmental Portrait
3. Street Life (Series of 6 Pictures of 6"x4")
4. Sports Photos
5. Photo Sequence
6. Photo Feature

All in 8"x10" mounted with write up

Sub: ENVIRONMENTAL STUDIES
CODE 222T

UNIT - 1

The Multi disciplinary nature of environmental studies Definition, scope and importance need for public awareness.

UNIT – 2 NATURAL RESOURCES:
RENEWABLE AND NON-RENEWABLE:
NATURAL RESOURCES AND ASSOCIATED PROBLEMS.

a) **Forest resources**: Use and over-exploitation, deforestation, case studies. Timber extraction, mining, dams and their effects on forests and tribal people.
b) **Water resources**: Use and over-utilization of surface and ground water, floods, drought, conflicts over water, dams-benefits and problems.
c) **Mineral resources**: Use and exploitation, environmental effects of extracting and using mineral resources, case studies.

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d) **Food resources**: World food problems, changes caused by agriculture and overgrazing, effects of modem agriculture, fertilizer-pesticide problems, water logging, salinity, case studies.

e) **Energy resources;** Growing energy needs, renewable and non renewable energy sources, use of alternate energy sources, case studies.

f) **Land** resources: Land as a resource, and degradation, man Induced landslides, soil erosion and desertification.

- Role of an individual in conservation of natural resources.
- Equitable use of resources for sustainable lifestyles. (8 lectures)

UNIT – 3 ECOSYSTEMS

- Concept of an ecosystem.
- Structure and function of an ecosystem.
- Producers, consumers and decomposers.
- Energy flow in the ecosystem.
- Ecological succession.
- Food chains, food webs and ecological pyramids.
- Introduction, types, characteristic features, structure and function of the following ecosystem:-

a) Forest ecosystem
b) Grassland ecosystem
c) Desert ecosystem
d) Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, Estuaries) (6 lectures)

UNIT – 4 BIODIVERSITY AND ITS CONSERVATION

- Introduction — Definition : genetic, species and ecosystem diversity.
- Biogeographically classification of India Value of biodiversity : consumptive use,

Productive use social, ethical, aesthetic and option values. Biodiversity at global,

National and local levels,

- Hot-spots of biodiversity.
- Threats to biodiversity : habit loss, poaching of wildlife, man-wildlife conflicts.
- Endangered and endemic species of India. Conservation of biodiversity: In --situ and Ex-- situ conservation of biodiversity.

UNIT – 5 ENVIRONMENTAL POLLUTION

DEFINITION

- Causes, effects and control measures of: -

a. Air pollution
b. Water pollution
c. Soil pollution
d. Marine pollution
e. Noise pollution
f. Thermal pollution
g. Nuclear hazards

Solid waste Management: Causes , effects and control measures of urban and industrial wastes.

- Role of individual in prevention of pollution.
- Pollution case studies.

Disaster management: floods, earthquake, Cyclone and landslides. (8 lectures)

UNIT – 6 SOCIAL ISSUES AND THE ENVIRONMENT

- From Unsustainable to Sustainable development Urban problems related to energy
- Water conservation, rain water harvesting, watershed management
- Resettlement and rehabilitation of people ; its problems and concerns case studies.
- Environmental ethics: Issues and possibi~ solutions.
- Climate change, global warming, acid rain, ozone layer depletion, nuclear accidents and holocaust, case studies.
- Wasteland reclamation.
- Consumerism and waste products.
- Environment protection Act.
- Air (Prevention and Control of Pollution) Act.
- Water (Prevention and control of Pollution) Act. Wildlife protection Act. Forest Conservation Act.

Issues involved in Enforcement of Environmental legislation Public awareness. (7 lectures)

UNIT – 7 HUMAN POPULATION AND THE ENVIRONMENT

- Population growth, variation among nations. Population explosion —

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Family Welfare Programme.
- Environment and Human Health.
- Human Rights.
- Value Education.
- HIV/AIDS.
- Women and child welfare.
- Role of information Technology in Environment and Human Health Case studies (6 lectures)

UNIT – 8 FIELD WORK
- Visit to a local area to document environmental assets-river / forest / grassland / hill / mountain
- Visit to a local polluted site — Urban / rural / industrial / agricultural
- Study of common plants, insects, birds
- Study of simple ecosystems — pond, river, hill slopes, etc. (Field work Equal to 5 lecture hours)

Assignments: Unit Test I & II of each 20 marks.

Digital Imaging Tech-1
223 P

Unit I
1. Introduction to power point
2. The screen Elements of point
3. The presentation window
4. Saving presentation
5. Closing presentation

Unit-II
1. Drawing objects in power point
2. Adding clip arts to presentation
3. Inserting pictures
4. Final presentation

Unit-III
1. Introduction to Adobe Photoshop
2. Tools
3. Create new file
4. Open an existing file
5. Selection tools

Unit –IV
1. Cut, copy and paste
2. Move crop and zoom tools
3. Paint brush, paint bucket and gradient
4. Eraser, eyedropper and clone stamp
5. Burn, dodge and smudge tools

Unit-V
1. Print scanning
2. Image editing
3. Back ground changing
4. Adding text and layers
5. Photo colleague

Assignments:
1. Prepare a P Pt with your own picture (20) on any social awareness with Tilter, Audio, etc.
2. Create 4 posters using your own picture, using Adobe Photoshop.
   a) Child Labour b) Pollution c) Traffic awareness
   d) use of cell phone

SUB: PHOTO JOURNALISM TECH
224-P

Unit I: EDFAT

Unit-II: Candid Photography, Environmental Portrait, Men at Work, Child Labour, Street Life.

Unit III: Culture, traditions, life style, food, monuments, festivals, article writing on travel photography

Unit IV: Photo sequence, Photo feature, Photo editing, sports photo journalism.

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Unit V: Documenting_Events, processions, boycotts, spot news stories (accidents, robbery, political news, fashion shows, launching of products) soft news stories (water problem, child labor, global warming)

SUB:FASHION & FOOD PHOTOGRAPHY TECH
Subject Code No: 225 P

UNIT – I

Fashion Photography overview – Fashion Concepts – Fashion Photography Ideology – Fashion Photography in Indian scenario -Categories of Fashion Photography – Beauty Shots – Portraits –Hair - Make Up – Products –Textiles - Fashion Photography equipment – Cameras – accessories – Lighting equipment – Props & Accessories. - Famous Indian Fashion Photographers --Fashion Photography & Life Style/ Life style products - Fashion Photography and advertisements – Impact of Fashion Photography on Marketing.

UNIT – II

Fashion shoot - planning –mood board – Equipment/ props – shooting schedule - Fashion shoot on Textile products.

UNIT - III

Types of foods - Geographical Foods – Indian – Chinese – Italian – Mexican - Continental – Characteristics of Food Items – Food & Etiquettes – Food & Cutlery – Food Ingredients –Food & Life style -

UNIT - IV

Categorization of Food items – Appetizers – Beverages – Cooking Techniques – Soups & Juices – liquids – Desserts & Ice creams – Food Grains & Cereals – Bakery products – Oils & Fatty Foods — Vegetables & Fruits – Sea Food – Poultry & Meat products – Snacks & Meals - Eggs & Salads - Food Grains & Cereals – shooting script – lighting schemes – exercises

UNIT - V

Food Style – Role of Food Stylists -The Studio for Food photography – The Lighting Equipment – Props & Backgrounds – Shooting techniques – study of food Photographs -

Books Recommended:

1. Beauty Shots By Alex Larg & Jane Wood.
2. Fashion Photography Pro lighting Series.
3. Fashion Photography by Freeman.

Assignments:
1. Fashion Portrait
2. Soap product
3. Textile product
4. Bakery product
5. Sea food product
6. Ice Cream
7. Food Sky lines

PORTRAIT PHOTOGRAPHY
226 P

UNIT I: LIGHTING & EQUIPMENT

UNIT II: CHARACTERSTIC PORTRAIT - Lighten for different predominant faces (Big forehead/chin/nose, etc.)

UNIT III: WINDOW LIGHT PORTRAIT

UNIT IV: GLAMOUR PORTRAIT / CHILD PORTRAIT / CHARACTER PORTRAIT

UNIT V: WEDDING PORTRAIT – ON LOCATION – PROPOSAL PORTRAIT

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III YEAR I SEM.

SUB: MASS COMMUNICATION
Subject Code No: 311 T

UNIT-I

Mass Communication - Means of mass communication - Aspects of communication Process – The impact of mass communication - Role of mass communication in daily Life –Functions of mass communication and social contacts - Information instruction – Entertainment – Surveillance - correlation - Interpretation Social utility - Content and Contexts – Transmission values - watch dogging.

UNIT-II

A. V for Communications -. Public relation - The Public relation programs - Information gathering - Planning - Getting the message across - Thinking visually - Developing a Concept - Understanding the audience - Planning & Budgeting - Preparation of Script - using still photography - - Using computer graphics – Film Slide tape shows - power point Slide tape Shows – Sound – Narration and Voice –over – Slide Tape Programming - Editing - - Editing sound.

UNIT-III

Origin of Print Media - Process of Development –News Papers - Magazines – Books – Electric and electronic media - Radio - Television – Computer -Satellite.- Development of print media in India - Pre independence period-Post Independence period – Press council - The role of Press in community development - Information technology in India.

UNIT – IV

Broad Casting Media in India – An Overview – Prasar Bharati – Broadcasting Agencies – Television – Satellite broad casting in India – Digital Video Broad Casting – Understanding the place of Television in Maas Communication – Indian Radio – Radio as Communication media – Types of Network – AIR – AM – COMMUNITY RADIO – CAMPUS RADIO - INTERNET RADIO – Short Wave – FM.

UNIT-V

Internet & Web Communication - Brief History meaning and difference – Internet Structure – Applications & Utilities - E-Mail –File Sharing – Messaging – Fax –Voice over IP – Internet & Society – Internet & Marketing – www –Functioning – Infrastructure – HTTP –URL –web resources – Web Browsers -

BOOKS RECOMMENDED

1. Introducing mass communication 2nd edition by Michael W. Gamble and Terikwal Gamble
2. The dynamics of mass communication 4th edition by Joseph RDominick.
3. News Reporting & Editing – Suhas Chakravorthy.
   Mass media in the information age by Thomas M.Pasgna, Jr. James, K. Buckalew and Robert E.Rayfield, James W. Tankard, Jr.

Assignments: Unit Test I & II of each 20 marks.

Mass Communication Tech.
312 P

Visiting the news agencies, print media & Broad casting Media-Report on visit.

Critical review on feature film/documentary.

News photography.

Caption writing, cut lines, report writing on the events, article writing and synopsis.

Digital Imaging Tech – II
313 P

UNIT – I: Image processing - various Photo Editing software's.

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UNIT – II: Photoshop applications & Methodology

UNIT – III: Adobe Photoshop Special Effects Filters.

UNIT – IV: Photo Stitching -Panoramic images – Photomontages – Photo-Collages

UNIT – V: Projects.

Books Recommended:

1. Adobe Photoshop series books by Pearson Publications.

Mini Project:
314 P

The students are given the opportunity to select any Topic, Concept, Theme subject or subjects and undertake critical study in Print Media at the end of Semester the students submit 8 prints of 12" x 18" Size neatly mounted towards Evaluation.

III YEAR II SEM.

Basic Videography T
321 T

UNIT – I

History – Evolution of video - light into electricity - cathode ray tube – How Video works -Different video systems - Beta Max. - Video 2000 - VHS – U-matic -Beta cam - Digital video - SVHS - VHS-C - Video-8 – Mini DV – DV CAM- DVC Pro - different types of camcorders - CCD camcorder - Video tape – Batteries – Chargers.

UNIT – II

Video camera - parts of the video camera - Gain control - white balance - cables –Understanding Camera - basics of sound - microphones - monitoring the sound - manipulating the sound - sound recorders – earphones. The lens - focusing - the view finder - colour correction - aperture and depth of field - handling the camera - tripods -monopods – the moving camera walking-shots panning - tracking. Picture - power cables.

UNIT - III

In side camera - Pick-up tube - Single tube camera system - Multi tube Camera system - U-matic - Low band - High band - Beta cam – HDV - and Electronics - Natural light conditions - Low light - light and accessories building -Lighting setup - Lighting the image - lighting for realism - mixing light - special effect lighting - color quality of the light - lighting problems – light and exposure.

UNIT - IV

Video signals - color analysis - color mixtures - light and shade - Transmitting colors - Television picture - Television screen - Television transmission through Satellite.

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UNIT-V

The Television studio - The Production control room - Master Control – Service and support areas - Studio rehearsals - Camera operations. Television production - Television team - Planning - Set up and shooting recording – Storage – Pre Production – Post Production – Studio & Outdoor recording – Single & Multi Camera Operation.

Assignments: Unit Test I & II of each 20 marks.

SUB: CINEMATOGRAPHY
322 T

UNIT-I

Brief history - - Type of Cameras -components of movie camera - working principles of camera -Persistence of vision - Intermittent mechanism - Magazines - matte box – Introduction to Digital Cinematography - Cinematography terminology

UNIT – II

Motion Picture Filming Techniques - camera movements & Angles - panning - tilting - trolley shots - crane shots - steady cam - Transition - Camera speed - Fast motion - Slow motion - Stop motion - time lapse - shot division - continuity - stage techniques.

UNIT-III

Lighting Equipment & Accessories - various light units - HMI - Day lights -HMI arc Iodine lamp - Reflectors - cutters - Barn doors - Skimmers -Lighting techniques Digital Lighting Units – Power Supplies and outputs.

UNIT – IV

Movie film types and sizes - movie film processing - equipment and procedure - Editing - machinery and techniques of editing - Film synchronization -film slicing - types of joints - film unit - sound addition to film - optical sound track - magnetic sound track - - advantages of magnetic recordings - processing sound film - photographic sound reproduction - Digital Editing - Digital Intermediate - AVID Editing – FCP Editing - digital sound track – Titling - VFX.

UNIT-V

Projection - principles - equipment and techniques - operations personal film - factual film - fiction film - theme - treatment - script writing –

BOOKS RECOMMENDED:

1. Movie photography by Davi Chessire
2. Principles of Cinematography by Leslie J wheeler
3. Cine Craft by J David Bealand
4. Cinematography by Joseph V.Marcelli.

Assignments: Unit Test I & II of each 20 marks.

SUB: BASIC VIDEOGRAPHY TECH
323-P

UNIT -1

1. Operation of Video Camera
2. Gain Control
3. White Balance
4. Focusing
5. Viewfinder

UNIT – II

1. Lens
2. Aperture

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3. Filters
4. Shutter speed
5. Zoom Control

UNIT – III

1. Panning
2. Tilting
3. Tracking
4. Zoom
5. Dolly.

UNIT-IV

1. Shot Divisions
2. Close up
3. Medium Shot
4. Long Shot
5. Establishing Shot

UNIT-V

1. Camera Supports
2. Tripods
3. Lights
4. Coverage of Interview
5. Using different microphones.

Books Recommended

1. Television Production Gerald Miller son.
2. Television Production Hand Book by ZETTL
3. Web resources for magazines.

Assignments:
1. Basic Camera movements
2. Basic shooting

VIDEO POST PRODUCTION TECH
324 P

Unit – 1

Understanding Non-linear FCP Equipment & Controls.

Unit – II

Understanding User Interface of FCP Software – Various Commands.

Unit – III

Creation of Files – opening of Files – Capturing – Types of Capturing – Preview for EDL.

Unit – IV

Editing – Editing Methods & Techniques imports – Storage –Selection – Synchronization.

UNIT – V

Creation of Titles – Special Effects – Rendering – Output

Books Recommended

1. FCP Catalogue
2. Web Resources.
3. Amazon Publishers on FCP
4. Peach pit Publications on FCP

Assignments:
1. Capturing the raw footage (Batch/Clip/Aa)
2. Editing the project
3. Adding Titles

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IV YEAR I SEM.

SUB: Television Production
411 T

Unit - I
Broad casting Media in India an overview – Prasar Bharati – Broad casting Agencies –

Unit - II
Television – Satellite Broad Casting in India – Digital; Video Broad casting in India – Understanding the place of Television in Mass communication –

Unit - III
Radio as Broadcasting media – AIR Networking systems – Overview – Radio as Communication Media – Types OF Network – AIR – AM – INTERNET Radio – Short wave – FM.

BOOKS RECOMMENDED

1. Television Production Gerald Millerson.
2. Television video systems by Bernand Grab.
3. Complete book of video by David Chershirs.

Books Recommended

1. Electronic Media Law and Regulation By Kenneth C. Creech.
2. Photography Law By Arunachalam.
3. Copy Right laws Media Law by Law Publications.

Assignments: Unit Test I & II of each 20 marks.

PROFESSIONAL VIDEO TECH.
412 P

UNIT I: STORY BOARD

UNIT II: NEWS ANCHORING

UNIT III: INTERVIEW

UNIT IV: SOFT NEWS STORY

UNIT V: 1 MINT. SHORT FILM.

ADVANCE POST PRODUCTION TECH
413-P

Assignments:
1. 20 Seconds Add Film
2. 30 Seconds Promo Film

Port folio:
414-P

The students are given the opportunity to select any topic, concept, theme, subject or subjects and undertake critical study in Print Media at the end of Semester.

The students have to submit 15 prints of 12"x18" size neatly mounted towards evaluation followed by exhibition.

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IV YEAR II SEM.

Practical Training / Intern ship

A student needs to select his choice of field (Still Photography/ Videography/ Cinematography (Cameraman/Editing/ Gladding etc.) Editing still picture using Photoshop/TV Channel (Camera Section/News/ Editing, etc.) Press Photography/ Adot photography) and he should go to a specialized organization, working with them practically and present a Thesis Book (in the prescribed format) a Thesis Book (in the prescribed format) including some of the works, he has done at the organization during his stay.

1) Letter of Indent 2) Letter of acceptance 3) Thesis Book

The organization or the person where the student likes to undergo should have minimum of 5 years of Professional experience after his graduation or the organization should be 5 years old.

After completion of Training, every student will have to submit a detail Thesis on the work done and at least 2 works/Projects on which she/he has worked during the 12 weeks of P.T.

After submission of the Thesis to the Department, Head of the Department will arrange for the conduct of the Viva-voce examination.

The Thesis will be evaluated a t a Viva-voce by a jury consisting of one External and one Internal and Head of the Department.

Note: The format of Thesis can be obtained from the HoD or from the Senior's Thesis Books.

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Syllabus Approved copy

BACHELOR OF FINE ARTS
IN
PHOTOGRAPHY
(2011-2012)

Academic Regulations
Course Structure
Syllabus

College of Fine Arts
Jawaharlal Nehru Architecture and Fine Arts University
Mahaveer Marg, Masab Tank, Hyderabad – 500 028.

BFA PHOTOGRAPHY & VISUAL COMMUNICATION
(Four Year Bachelors Degree Programme)
Academic Regulations

For 4 year Degree Course Program BFA with effect from 2011-2012 batch.

1. **Award of Bachelor of Fine Arts Degree:**

Students will be declared eligible for the award of **BFA Degree** if he/she fulfills the following academic regulations.

I. He/She has to pursue a course of study for not less than 4 academic year and not more than 8 academic years in the JNAFAU College of Fine Arts.
II. 1st year, 2nd year, 3rd year and 4th year will be semester pattern consisting 1 to 8 Semesters.
III. The first year will be common for Painting, Sculpture and Applied Arts.
IV. He/She must have satisfied the minimum academic requirements in each Year as here in after stipulated.
V. Students, who fail to fulfill all the academic requirements for the award of the degree within eight academic years from the year of their admission, shall forfeit their seat in the course and their seat shall stand canceled.

2. **Courses of Study:**

The following courses of study are offered for specializing for BFA degree.

1. Applied Art and Visual Communication.
2. Painting and Visual Communication.
3. Sculpture and Visual Communication.
4. Photography and Visual Communication.
5. Animation

3. **Weightage of Marks:**

I. The performance of the student in each semester/year shall be evaluated Subject-wise as per the course structure given ahead.

II. The distribution of marks for the subjects shall be for theory and practicals: 40% internal evaluation and 60% for End Examination (External evaluation)

4. **Attendance requirements:**

I. A student has to put in minimum of 75% of the attendance in aggregate of all Subjects for becoming eligible to register for the end examination and with a minimum of 50% physical attendance in each subject

II. Condonation of shortage of average attendance up to 10% (i.e. between 75% to 65%) in each semester/ 1ST year may be granted by the college academic committee (CAC) on payment of condonation fee and production of satisfactory evidence of the shortage of attendance.

III. Shortage of aggregate attendance below 65% shall in no case be condoned.

IV. Shortage of attendance below 50% in one or more subjects shall not be condoned.

V. Candidates whose shortage of attendance is not condoned either in aggregate are not eligible to sit for the end examinations. They will have to repeat the semester/1ST year in all respects when next offered.

5. **Minimum Academic Requirements:**

I. A student shall be deemed to have satisfied the minimum academic requirements in each subject (Theory/Practical) or project if he secures not less than 35% (out of 60) of marks (i.e. 21 out of 60) in the end evaluation and a minimum of 40% of marks in the sum total of internal evaluation and end evaluation taken together.

II. The candidate can be conditionally promoted from 1st year to 2nd year if he has backlog of not more than 3 subjects.

III. The candidate can be conditionally promoted from 2nd year to 3rd year if he has backlog of not more than 2 subjects.

IV. The candidate can be conditionally promoted from 3rd year to 4th year if he has backlog of not more than 2 subjects.

V. The candidate will be promoted from 3rd year to 4th year only if he/she has No backlogs of 1st year.

VI. The student can have total backlog of 8 subjects as a whole in the total duration of 4 year course.

VII. In all other cases student will be detained and he/she has to repeat the year/semester whenever offered.

VIII. A student has to complete all the academic requirements of all the 1st year subjects in 3 academic years after his admission. Failing to do so the student shall forfeit his/her seat in BFA Course and shall not be eligible for admission again.

IX. The result of the candidate will be declared only when the student has cleared all the backlogs under the above said rules.

6. **Withholding of results:**

The results of any candidate shall be withheld if

(i) He/She has not cleared any dues to the Institution/Hostel.

(ii) A case of disciplinary action is pending against him.

7. **Award of class:**

After a student has satisfied the requirements prescribed for the completion of program and is eligible for award of BFA degree, he/she shall be placed in one of the following three classes.

First class with Distinction	75% and above		From the aggregate marks secured in the whole program
First class	Below 75%	but not less than 60%	
Second class	Below 60%	but not less than 50%	

8. **Minimum Instruction days:**

The minimum instruction days for each semester/1st year shall be 90

days/1

9. G

B.F.A. (Photography and Visual Communication)
COURSE STRUCTURE

I YEAR I SEMESTER

Subject Code No.	SUBJECTS	Hours Per week	Internal Marks	External Marks	Total Marks
111 T	English – I	4	50	50	100
112 T	History of Photography	4	50	50	100
113 T	Basic Photography	4	50	50	100
114 T	Photo Aesthetics	6	50	50	100
115 P	Basic Photography Tech	6	50	50	100
116 P	Photo Aesthetics Tech	6	50	50	100
		30	300	300	600

I YEAR - II SEMESTER

Subject Code No.	SUBJECTS	Hours Per week	Internal Marks	External Marks	Total Marks
121 T	English – II	2	50	50	100
122 T	Digital Photography	4	50	50	100
123 T	Color Photography	4	50	50	100
124 T	Basics of Computers	2	50	50	100
125P	Digital Photo Tech.	10	50	50	100
126 P	Color Photo Tech	8	50	50	100
		30	300	300	600

II YEAR I SEMESTER

Subject Code No	SUBJECTS	Hours Per week	Internal Marks	External Marks	Total Marks
211T	Advertising Photography	4	50	50	100
212 T	Computer Graphics & Multimedia	2	50	50	100
213 T	Applied Photography	2	50	50	100
214 P	Product Photography	8	50	50	100
215 P	Computer lab tech	8	50	50	100
216P	Fine-Art Photo Tech.	6	50	50	100
		30	300	300	600

II YEAR II SEMESTER

Subject Code No	SUBJECTS	Hours Per week	Internal Marks	External Marks	Total Marks
221 T	Photo-Journalism	4	50	50	100
222T	Environmental Studies	2	50	50	100
223P	Digital Imaging tech-I	8	50	50	100
224P	Photo-Journalism Tech.	4	50	50	100
225P	Fashion & Food Photography	6	50	50	100
226P	Portrait Photography	6	50	50	100
		30	300	300	600

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III YEAR I SEMESTER

Subject Code No	SUBJECTS	Hours Per week	Internal Marks	External Marks	Total Marks
311 T	Mass Communication	4	50	50	100
312p	Mass Communication tech	8	50	50	100
313p	Digital Imaging Tech.-II	10	50	50	100
314P	Mini Project	8	50	50	100
		30	200	200	400

III YEAR II SEMESTER

Subject Code No	SUBJECTS	Hours Per Week	Inter-nal Marks	Exter-nal Marks	Total Marks
321 T	Basic Videography	2	50	50	100
322 T	Cinematography	4	50	50	100
323 P	Basic Videography Tech	12	50	50	100
324P	Video Post Production Tech	12	50	50	100
		30	200	200	400

IV YEAR I SEMESTER

Subject Code No	SUBJECTS	Hours Per week	Internal Marks	External Marks	Total Marks
411 T	Professional videography	4	50	50	100
412 P	Professional video tech	8	50	50	100
413P	Advance Post-Production Tech.	12	50	50	100
414 P	Portfolio	6	50	50	100
		30	200	200	400

IV YEAR II SEMESTER

Subject Code No	SUBJECTS	Duration	Internal Marks	External Marks	Total Marks
421P	Practical training & Thesis Submission & Viva-Voce	3months	200	200	400
	75% for Thesis 25% for Viva-Voce				
			200	200	400

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I YEAR I SEM.

HISTORY OF PHOTOGRAPHY
Subject Code No: 112T

UNIT- I (4 BC TO 1827 AD)

Camera Obscura - - Leonardo-da-Vinci - Daniel Barabaro - John Henry Schultz - Thomas Wedgewood -- Joseph Niecephore Niepce.-

UNIT-II (1828 TO 1860)

Loius Jacques Monde Dagurre - Daguerreotype process - Calotype process - Wet collodion process - - Charles Negre - Gustave Le gray - - Roger Fenton.

UNIT-III (1860 TO 1900)

The Gelatin Emulsion - Masters of photography. - Mathew B. Brady - Nadar - - Julia Margaret Cameron - Carlton Eugene Watkins -Ansel Adams - Early Images of war - Early Travel Photography - Early Pictorial Photography - Motion in Photography-Early Portrait Photography..

UNIT - IV (HISTORY OF INDIAN PHOTOGRAPHY (1840 TO 1900)

Importance of photography before independence - Photojournalists and Free lancing - Amateurs on and after Indian Mutinyin1857- Indian Photographers Dr. Naryan Dajee - Lala Deen Dayal - –Raja Savai Man singh.

UNIT -V (HISTORY OF INDIAN PHOTOGRAPHY 1900 ONWARDS)

Honors of Deen Dayal before 1905-06 - His establishments at Hyderabad - Early Photography Societies and its impact on Indian ^hotography - Federation of Indian Photography - India International ^hographic council - Contemporary Indian Photographers -- Atul Lasbekar, Mittal Bedi Brother – O.P. Sharma – Goutham Radhyesa - Dr. G. Thomas - Dr. N,Bhagwandas - O.C. Edwards - Raghubir Singh - Raghu Rai - T.N Perumal - Raja Thriambak Raj Rau Bhahadur- P.N.Mehara -

BOOKS RECOMMENDED

1. Great Photographers by Life series
2. History of Photography (India 1840-1980) by G. Thomas
3. Photography by C.B.Neblette.

Assignment: 1. Prepare a Book on History of Photography with an emphasizing Indian Photographer.

2. Unit Test of 20 marks.

BASIC PHOTOGRAPHY
Subject Code No: 113T

UNIT- I

Camera - Types of Cameras - Pinhole camera - Box Camera - View Camera -Ranger finder Camera - Single lens reflex Camera - Twin lens Reflex Camera - Polaroid Camera - Panoramic Camera - Process Camera - Cine Camera - Video Camera - Digital Camera - Different formats of Camera - Large format - Medium format - Small format.

UNIT- II

Optics - positive and negative lenses -Focal length - resolving power of lens - lens aberration and rectification -'spherical chromatic - coma - astigmatism - distortion –Curvature of field - types of lenses - Normal - wide angle - telephoto - zoom lenses -supplementary lenses –Digital Lenses.

UNIT- III

Anatomy of camera - body - lens - view finder - Aperture - Shutter- Horizontal - vertical moving shutters - Shutter speed – Shutter efficiency - merits and de-merits of between the lens shutter and focal plane shutters - aperture and shutter relation - film compartment- self timer.

UNIT – IV

Focusing - rack and pinion focusing -Scale focusing - automatic focusing – Types of Focusing in Digital - Exposure - exposure latitude - exposure meters - Incident Light meters - reflected light meters - built in light meters - Depth of field - Circle of confusion - Depth of focus - Hyper focal distance.

UNIT-V

Cross section of the film - Resolving power - Speed - Graininess - Different types of films – Different Developers - Ingredients of

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developer – enlargers - Density -paper grades – Convergent Technologies.

BOOKS RECOMMENDED:

I) Camera by Brain coe

2) Basic Photography by Focal Press

3) Advanced Photography by Focal Press

Assignments: Unit Test I & II of each 20 marks.

PHOTO AESTHETICS
Subject Code No: 114T

UNIT – I

Definition of Light - Principles of Light - Properties of Light - Reflection - Refraction - Absorption - Transmission - Dispersion - Light characteristics - Quality - Quantity – Color – Direct light – Indirect light – Diffused light – Light as subject – Shadow as subject

UNIT – II

Need for the light in Photography - Light sources - Natural light -Sunlight - Moon light - Ambient Light - Artificial Light sources - Flood light - Spot light - Halogen light - Electronic flash light – Digital lights.

UNIT – III

Photography Visual Art – Visualization - Principles of visualization - Composition guidelines - Golden mean - Centre of interest - Horizon -Effect of direction - Symbolism - Space - Producing space and controlling - Depth - Composition analysis.

UNIT – IV

Principles of design – Concepts of geometry - Line - Types of lines - Lines of movement - Vertical lines - Horizontal lines - diagonal lines - curved lines - zigzag lines - Angle of view - Perspective - Types of Perspectives - Linear Perspective - Aerial Perspective - Oblique angle Perspective - Vanishing point - Perspective control.

UNIT-V

Composition - Emphasizing factors of composition - Elements of composition - Order - Shape -Balance - Still life study.

BOOKS RECOMMENDED

1. Composition by Focal Press.
2. Basic Techniques of Photography (Ansel Adams Guide)
3. Basic Photography by M.J.Langford.

Assignments: Unit Test I & II of each 20 marks.

BASIC PHOTO TECH
Subject Code No: 115 P

UNIT-I

1. Key light or main light or principle light.
2. Fill in light.
3. Bounce light.
4. Diffused light & Directional Diffused Light
5. Exposure Calculation &. Light meters

UNIT-II

1. Light angles
2. Low Key
3. High Key
4. Rembrandt Lighting
5. Butterfly lighting

UNIT-III

1. Mounting – Fundamentals.
2. Mounting materials & techniques.
3. Display Techniques.
4. Lighting for Display

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I YEAR II SEM.

SUB : DIGITAL PHOTOGRAPHY
Subject Code No : 122 T

UNIT – I Digital Basics - Introduction to Digital Imaging Principles.

UNIT – II The digital Camera – Components of Digital Camera – Sensor – Sensor Characteristics & Configuration – LC D Display – Menu & Operations.

UNIT – III Digital Camera Lenses – Digital Zoom – Auto Focus systems – Optical Zoom – Focal length – Depth of field – Depth of focus

UNIT – IV Image formation – Color Formation; Characteristic of Digital Image – ISO & Resolution – Dynamic Range – Histogram - Noise – Aliasing - Moiré - Remedial measures.

UNIT – V Storage – Methods of storage – File formats & Storage – Storage Devices – Precautions for stories – Data recovery Software.

Recommended Books:

1. The Digital Photography Hand Book by David Jones
2 Advanced Digital Photography by Tom Ang.
3 Photography Foundations for Art & Design mark Galer 3rd Edition
4 Web Resources.

Assignments: Unit Test I & II of each 20 marks.

SUB: COLOR PHOTOGRAPHY
Subject Code No 123 T

UNIT - I

Origin - Early attempts – Hand coloring – Koda Color – Agfa color- Color spectrum - Primary colors and secondary colors – Visible Specturm.

UNIT –II

Colour Contrast – Colour Harmony -Colour Temperature – Addetive colour – subtractive color _ R & B / CMYK Color.

UNIT – III

Colour vision - Colour psychology - Color Synthesis – Color Negative film process – color positive – colour Theory - Negative and Positive colors - Warm colors - Cool colors - Colour balance.

UNIT- IV

Storage of coloring film – Scanning – Drum – Flat Bed Scanner – Output – Indexing for Filming – Retrieval.

UNIT- V

Characteristic of color - Strong color -Muted color – Isolated Colour - Colour hue - color wave length - Grey card.- Mac Beth Color Chart.

BOOKS RECOMMENDED

1. Theory and Practice of color (life series) by France Gerritson.
2. Book of color Photography by Adrain Bailey and Holloway.
3. Color films by Jeorge Wakefield.
4. Color Printing in Practice by Jack Tailor.
5. Ansel Adams Guide to Basic techniques of Photography.

Assignments: 1. Color chat/Color wheel
2.Visible Specturm

Unit Test – I & II of each 20 marks.

SUB: BASICS OF COMPUTERS
Subject Code No: 124T

UNIT – I

What is computer - Characteristics of computer - Types of computer - History of computer - Abacus - Pascal's mechanical calculator Charles Babbage's - differential engine - Electronic numeric Integrator and calculator

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developer – enlargers - Density -paper grades – Convergent Technologies.

BOOKS RECOMMENDED:

I) Camera by Brain coe

2) Basic Photography by Focal Press

3) Advanced Photography by Focal Press

Assignments: Unit Test I & II of each 20 marks.

PHOTO AESTHETICS
Subject Code No: 114T

UNIT – I

Definition of Light - Principles of Light - Properties of Light - Reflection - Refraction - Absorption - Transmission - Dispersion - Light characteristics - Quality - Quantity – Color – Direct light – Indirect light – Diffused light – Light as subject – Shadow as subject

UNIT – II

Need for the light in Photography - Light sources - Natural light -Sunlight - Moon light - Ambient Light - Artificial Light sources - Flood light - Spot light - Halogen light - Electronic flash light – Digital lights.

UNIT – III

Photography Visual Art – Visualization - Principles of visualization - Composition guidelines - Golden mean - Centre of interest - Horizon -Effect of direction - Symbolism - Space - Producing space and controlling - Depth - Composition analysis.

UNIT – IV

Principles of design – Concepts of geometry - Line - Types of lines - Lines of movement - Vertical lines - Horizontal lines - diagonal lines - curved lines - zigzag lines - Angle of view - Perspective - Types of Perspectives - Linear Perspective - Aerial Perspective - Oblique angle Perspective - Vanishing point - Perspective control.

UNIT-V

Composition - Emphasizing factors of composition - Elements of composition - Order - Shape -Balance - Still life study.

BOOKS RECOMMENDED

1. Composition by Focal Press.
2. Basic Techniques of Photography (Ansel Adams Guide)
3. Basic Photography by M.J.Langford.

Assignments: Unit Test I & II of each 20 marks.

BASIC PHOTO TECH
Subject Code No: 115 P

UNIT-I

1. Key light or main light or principle light.
2. Fill in light.
3. Bounce light.
4. Diffused light & Directional Diffused Light
5. Exposure Calculation &. Light meters

UNIT-II

1. Light angles
2. Low Key
3. High Key
4. Rembrandt Lighting
5. Butterfly lighting

UNIT-III

1. Mounting – Fundamentals.
2. Mounting materials & techniques.
3. Display Techniques.
4. Lighting for Display

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(ENIAC) - Universal Automatic computer (UNIVAC).

UNIT – II

Generation of Computers - First Generation (1924-1955) – Second generation (1955-1964) - Third Generation (1964-1975) - Fourth Generation (1975 onwards) - and fifth Generation - Their advantage and disadvantages.

UNIT III

Components of computer - Hardware - Central Processing Unit (CPU) - Primary storage section - Arithmetic logic unit - Control unit – Memory speed - bits and bytes.

UNIT IV

Input Devices - Keyboard - Mouse - Joystick - Trackball - Light pen - Magnetic scanner - Touch screen - Microphone.

UNIT V

Output devices - Monitor - External storage devices - Floppy disk – compact disc – Hard disk - Printer- Software - Types of software - operating systems - Application of software - System software - languages and packages –Basics of disk operating systems - Introduction to MS-WORD

Books Recommended:

1. An introduction to Computer studies by Noel Kalicharan.
2. Computer Basics - Published by Dr. MCR HRD Institute of A.P.
3. Hardware - Bible by Winn L Rosen.

Assignments: Unit Test I & II of each 20 marks.

SUB: DIGITAL PHOTOGRAPHY TECH
Subject Code No: 125P

UNIT – I — How to use Digital Camera – shooting images with correct Exposure - Application of Histogram.

UNIT – II — Understanding the applications of ISO Settings and Noise Problems.

UNIT – III — Shooting with manual Settings Auto Exposure Modes in Indoor & Studio Exercises.

UNIT – IV — Studio Portraiture – Out Door Portraiture.

UNIT – V — Landscape – Architecture – Close up

Assignments:

1. Studio Portrait
2. Land scrap
3. Out portrait
4. Close up

SUB: COLOR PHOTOGRAPHY TECH
Subject Code No: 126P

UNIT – I — Color Contrast - Colour Harmony

UNIT – II — Dawn to Dusk. (Early marking to late after Sunset same subject same framing

UNIT – III — Strong Colour – Muted Colour.

UNIT – IV — Isolated Colour – Color space

U NIT – V — Color printing Commercial labs – working Mechanisms – Scanner – Printer – color Printer – Lazer – Inkjet – Offset - – Color Management -

Assignments:

1. Colour Prints on different surfaces of same subject.
2. Colour Harmony / Contrast
3. Sun Rise, Sun set (Different sky patterns)

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II YEAR I SEM.

ADVERTISING PHOTOGRAPHY
Subject Code No: 211 T

UNIT - I
Evolution of Advertising - The age. of technology Print media - News papers - Magazines - Electronic media - Radio –Television - Luterult.

UNIT - II
Role of advertising - Advertising to the consumer - Advertising to business and professional - Advertising to services - Advertising approaches -

UNIT – III
Advertising agency - Art director - Photographer - Logo designer –Copy writer - Layout artist - What advertising agency do - creative Services - marketing concepts – research & development - psychology of consumer - marketing services - How agencies are structured.

UNIT – IV
Media - Media strategy - Distinguish between marketing and advertising - roles - the chief characteristics of the people in our target market - where is the product distributed - the best timing for our advertising schedule - what is the competition doing - media strategies- Illustration - advertisement in newspaper - magazines - radio -television - websites.

UNIT-V
Role of Photography in Advertising – Relationship Coordination – Working Schedules - Equipment and techniques - Planning - Stage setting - Modeling - Make-up - Uses and importance of medium format and large format cameras - model release-Property release.

BOOKS RECOMMENDED
1. Otto Kepleners Advertising Procedure 9th edition.
2. Advertising excellence by Bovieethill Dovel - wood.
3. Complete encyclopedia of Photography by Michael Langford.

Assignments: Unit Test I & II of each 20 marks.

SUB:COMPUTER GRAPHICS & MULTIMEDIA
Subject Code No: 212T

UNIT – I
Definition of Multimedia - Importance of Multimedia - the growth of Multimedia - impact of multimedia on society - privacy - encryption -and the clipper chip - censorship - protectionism.

UNIT – II
Multimedia computer - system unit - CPU - RAM – Graphic Card - Pointing device --Accessories - CD - Rom - DVD – Blue Ray - Digital audio - speakers - digital video – MIDI - Read and write storage - Hard disk - SCSI - Video File formats .

UNIT – III
Communication options - modem - network - Internet connection - Router - Application and development of multimedia - presentation packages - power point authoring - Electronic publishing. - Scanners - hand held scanners - flat bed scanners –Transparency scanner.

UNIT – IV
Color space - defining resolution - color resolution - image resolution image formats - Bitmap - graphics - vector graphics – compression formats.

UNIT – V

Image processing with Adobe photo shop CS 5 OR After Effects – Macromedia Flash basics - image conversions - color model - size and resolution - basic selection tools - layers - defining areas with paths - working with selections - fills - feathering - copy and paste - spatial effects - channels and masks.

Books Recommended
1. Multimedia studio for windows by. Jeff Burger
2. Multimedia literacy by Fred T. Hof stetter

Assignments: Unit Test I & II of each 20 marks.

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APPLIED PHOTOGRAPHY
Subject Code No:213T

UNIT-I

Forms & Specializations in Photography - Agriculture – Sports – Table top – Commercial Photography – Architectural photography – Interiors Photography – Jewelry – People Photography – war Photography -

UNIT – II

Scientific application - Ultra Violet photography - Infrared Photography – Forensic Photography

UNIT – III

Medium format - Large format cameras - working principles - camera movements - tripods – Digital Backs - Industrial Photography - Various branches - Interactions - Shooting machineries - Shooting large Indusial set up - Techniques involved in shooting.

UNIT – IV Aerial Photography – Astro Photography - Medical & Bio Medical Photography – Underwater Photography.

UNIT – V- Closeup Photography - Micro photography – Microfilming - zone system -exposure values. Macro Photography - Supplementary lenses -Extension tubes and bellows

BOOKS RECOMMENDED

1. Experimental Photography by John Warsen.
2. Photography by Barbara Upton and John Upton.
3. Hand book of Photography (5th edition) by Foils and Lovell.
4. Focal encyclopedia of Photography by Michael Langford

Assignments: Unit Test I & II of each 20 marks.

SUB: PRODUCT PHOTOGRAPHY TECH
Subject Code No: 214 P

Unit – I Overview of Product Photography - Product Photography significance – role in promotion of products - categorization of products – The lighting Equipment – Types of lighting units – Accessories – Digital Lights - Study of Concepts – Accessories - Props – Backgrounds - Models – Locations – hiring of studios – equipment.

Unit – II

Electronics Products - Shooting Script – Lighting Schemes – Exercises.

Unit – III

House Hold Products - Shooting Script – Lighting Schemes – Exercises
Liquid Products – Shooting Script – Lighting Schemes – Exercises.

Unit – IV

Executive Products - Shooting Script – Lighting Schemes – Exercises. - Concept Photography - Shooting Script – Lighting Schemes – Exercises

Unit – V

Industrial Photographer – Lighting in Natural & Artificial

Books Recommended:

1. New Product Shots by Alex Larg & Jane Wood.
2. Lighting for Food & Drink by Steve Bavister.
3. Practical Photography by Michael Freeman.
4. Magazines vide WEB.
5. Magazines on Advertising.

Assignments:
1. Liquid Product (with model / without model)
2. House hold Product
3. Electronic Product
4. Cosmetic Product

Note: All the above assignment should be printed on 8"x10" size with mounts along with shooting details.

COMPUTER LAB TECH
Subject Code No 215 P

UNIT-I

1. Operation of computers.

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2. Keyboard.
3. Mouse.
4. Speakers

UNIT – II

1. Introduction to MS word
2. Creating a document.
3. Moving through document.
4. Saving a document.

UNIT – III

1. Editing a document
2. Copy, Cut, and Paste options.
3. Formatting Document.
4. Creating bullets and numbers.

UNIT – IV

1. Changing the case of the text.
2. Intending text with tabs.
3. Controlling fonts.
4. Creating column wise document..

UNIT-V

1. Page set up.
2. Creating header and footer.
3. Inserting pictures.
4. Creating mail merge document.

Assignment:
1. Creating a "Folder" in a particular drive and storing/saving a file in that Folder.'
2. Making of a Table
3. Making a greeting card using MS word.

SUB: FINE ART PHOTOGRAPHY TECH
Subject Code No: 216 P

UNIT I

Overview of fine art photography – Painting & Photography Relations -- Pictorialism - Aesthetics of Fine Art photography – light – shade – objects – shape – form – line – texture – pattern - Exploring concepts Abstract – still life – nude – portraiture – character portraiture – candid - Fine art photography - Commercial considerations - Fine Art & Computer Graphics – New form of Fine Art – Digital Photography - Portraiture Indoor & outdoor – Male - female - child –Character – candid.

UNIT – II Landscape

1. Nature
2. Architecture
3. Skyscape
4. seascape
5. Urban & rural

UNIT – III Still life

1. Form
2. shape
3. Color
4. Texture
5. Conceptual

UNIT – IV Digital Abstract

1. Collage
2. Panoramas

Books Recommended

1. Picture Encyclopedia.
2. British Photography Journals.
3. The Era of Photography by Braive.
4. The Art of Photography Life Series Books
5. Focal Encyclopedia of Photography.
6. Web Resources.

Assignments:
1. Land scape
2. Sky scape
3. Sea scape
4. Panorama
5. Conceptual Still life
6. Architecture (Interior/Exteriors)

All in 8"x10" mounted with technical details.

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II YEAR II SEM.

Sub: Photo Journalism
Subject code no: 221 T

Unit – i photo journalism

Meaning of photojournalism, brief history ,beginning from 1860 to1919 , the roaring twenties , birth of modern photo journalism, nature and scope of photojournalism; photographers as social documentaries - fsa photographers - - visual awareness.

Unit – ii types of photojournalism

Sports photojournalism: war photojournalism: glamour photojournalism, spot news photojournalism: travel photojournalism: wildlife photojournalism, composition and rules in photo journalism, limitations in photo journalism-realistic approach

Unit – iii applications of photojournalism

Photo journalism in perspective - snap shots -news papers - weekly news magazine. - Eye witness - methods and techniques - politics and realism -spot news - photo feature - photo sequence-

Unit-iv: editorial

Instant reports - reporters as allies - ethics of posing -editorial thinking print media – overview – digital technology – digital libraries – electronic publishing –digital journals – internet news paper.

Unit-v: ethics

Photography law – photographs as evidence – defining ownership of photograph and digital images – what is obscene – taking photographs of a patient – photography in court –court room rules. - photographing ancient monuments – taking photographs of open sceneries – covering public functions – photographing in private campus – photographing models – photographing the nudes – snap shots of illegal act - importance of model release forms — privacy question appropriation – intrusion – publication of private matters – court room rules – libel and photography – new digital dilemma – the legal consequences and remedies.

Famous photojournalists – international - felica beato – robert capa –henri carter bresson – ernest haas –steve macurry - indian – raghu rai – raghubeer singh -

Books recommended

1. Photo journalism by frank p.hog
2. Documentary by David Schiefields.
3. Photo journalism by B.K. Deshpande.
4. Photo journalism – the professional approach by Kenneth Kobre.
5. Modern news structure in print media& electronic media.

Assignments:
1. EDFAT
2. Environmental Portrait
3. Street Life (Series of 6 Pictures of 6"x4")
4. Sports Photos
5. Photo Sequence
6. Photo Feature

All in 8"x10" mounted with write up

Sub: ENVIRONMENTAL STUDIES
CODE 222T

UNIT - 1

The Multi disciplinary nature of environmental studies Definition, scope and importance need for public awareness.

UNIT – 2 NATURAL RESOURCES:
RENEWABLE AND NON-RENEWABLE:
NATURAL RESOURCES AND ASSOCIATED PROBLEMS.

a) **Forest resources**: Use and over-exploitation, deforestation, case studies. Timber extraction, mining, dams and their effects on forests and tribal people.
b) **Water resources**: Use and over-utilization of surface and ground water, floods, drought, conflicts over water, dams-benefits and problems.
c) **Mineral resources**: Use and exploitation, environmental effects of extracting and using mineral resources, case studies.

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d) **Food resources**: World food problems, changes caused by agriculture and overgrazing, effects of modem agriculture, fertilizer-pesticide problems, water logging, salinity, case studies.

e) **Energy resources;** Growing energy needs, renewable and non renewable energy sources, use of alternate energy sources, case studies.

f) **Land** resources: Land as a resource, and degradation, man Induced landslides, soil erosion and desertification.

- Role of an individual in conservation of natural resources.
- Equitable use of resources for sustainable lifestyles. (8 lectures)

UNIT – 3 ECOSYSTEMS

- Concept of an ecosystem.
- Structure and function of an ecosystem.
- Producers, consumers and decomposers.
- Energy flow in the ecosystem.
- Ecological succession.
- Food chains, food webs and ecological pyramids.
- Introduction, types, characteristic features, structure and function of the following ecosystem:-

a) Forest ecosystem
b) Grassland ecosystem
c) Desert ecosystem
d) Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, Estuaries) (6 lectures)

UNIT – 4 BIODIVERSITY AND ITS CONSERVATION

- Introduction — Definition : genetic, species and ecosystem diversity.
- Biogeographically classification of India Value of biodiversity : consumptive use,

Productive use social, ethical, aesthetic and option values. Biodiversity at global,

National and local levels,

- Hot-spots of biodiversity.
- Threats to biodiversity : habit loss, poaching of wildlife, man-wildlife conflicts.
- Endangered and endemic species of India. Conservation of biodiversity: In --situ and Ex-- situ conservation of biodiversity.

UNIT – 5 ENVIRONMENTAL POLLUTION

DEFINITION

- Causes, effects and control measures of: -

a. Air pollution
b. Water pollution
c. Soil pollution
d. Marine pollution
e. Noise pollution
f. Thermal pollution
g. Nuclear hazards

Solid waste Management: Causes , effects and control measures of urban and industrial wastes.

- Role of individual in prevention of pollution.
- Pollution case studies.

Disaster management: floods, earthquake, Cyclone and landslides. (8 lectures)

UNIT – 6 SOCIAL ISSUES AND THE ENVIRONMENT

- From Unsustainable to Sustainable development Urban problems related to energy
- Water conservation, rain water harvesting, watershed management
- Resettlement and rehabilitation of people ; its problems and concerns case studies.
- Environmental ethics: Issues and possibi~ solutions.
- Climate change, global warming, acid rain, ozone layer depletion, nuclear accidents and holocaust, case studies.
- Wasteland reclamation.
- Consumerism and waste products.
- Environment protection Act.
- Air (Prevention and Control of Pollution) Act.
- Water (Prevention and control of Pollution) Act. Wildlife protection Act. Forest Conservation Act.

Issues involved in Enforcement of Environmental legislation Public awareness. (7 lectures)

UNIT – 7 HUMAN POPULATION AND THE ENVIRONMENT

- Population growth, variation among nations. Population explosion —

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Family Welfare Programme.
- Environment and Human Health.
- Human Rights.
- Value Education.
- HIV/AIDS.
- Women and child welfare.
- Role of information Technology in Environment and Human Health Case studies (6 lectures)

UNIT – 8 FIELD WORK
- Visit to a local area to document environmental assets-river / forest / grassland / hill / mountain
- Visit to a local polluted site — Urban / rural / industrial / agricultural
- Study of common plants, insects, birds
- Study of simple ecosystems — pond, river, hill slopes, etc. (Field work Equal to 5 lecture hours)

Assignments: Unit Test I & II of each 20 marks.

Digital Imaging Tech-1
223 P

Unit I
1. Introduction to power point
2. The screen Elements of point
3. The presentation window
4. Saving presentation
5. Closing presentation

Unit-II
1. Drawing objects in power point
2. Adding clip arts to presentation
3. Inserting pictures
4. Final presentation

Unit-III
1. Introduction to Adobe Photoshop
2. Tools
3. Create new file
4. Open an existing file
5. Selection tools

Unit –IV
1. Cut, copy and paste
2. Move crop and zoom tools
3. Paint brush, paint bucket and gradient
4. Eraser, eyedropper and clone stamp
5. Burn, dodge and smudge tools

Unit-V
1. Print scanning
2. Image editing
3. Back ground changing
4. Adding text and layers
5. Photo colleague

Assignments:
1. Prepare a P Pt with your own picture (20) on any social awareness with Tilter, Audio, etc.
2. Create 4 posters using your own picture, using Adobe Photoshop.
   a) Child Labour b) Pollution c) Traffic awareness
   d) use of cell phone

SUB: PHOTO JOURNALISM TECH
224-P

Unit I: EDFAT

Unit-II: Candid Photography, Environmental Portrait, Men at Work, Child Labour, Street Life.

Unit III: Culture, traditions, life style, food, monuments, festivals, article writing on travel photography

Unit IV: Photo sequence, Photo feature, Photo editing, sports photo journalism.

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registrar@jnafau.ac.in
www.jnafau.ac.in

JAWAHARLAL NEHRU ARCHITECTURE AND FINE ARTS UNIVERSITY

(Established under A.P. Legislature Act. No. 31 of 2008)
Mahaveer Marg, Masab Tank, Hyderabad - 500 028.

PROF. DR. N. KAVITA DARYANI RAO,
B. Arch., M.H., Ph. D., AHA, MHPA
REGISTRAR I/C

Lr.No.RC/DAP/JNAFU/BFA – Scul. - Approval/2014 - 15 Date: 12.10.2014

To
THE PRINCIPAL I/C
JNAFA University
College of Fine Arts
Masab Tank – Hyderabad.

Sir,

Sub: JNAFA University – Hyderabad – Academic and Planning – Recommendations of the Board of Studies for Sculpture – Request for take further necessary action - Reg.

Ref: 1. Lr.No.C/126/450/BS/2013-14, dt: 02.12.2013 from the Principal I/C, JNAFAU – CFA.

2. Under Item No. 09 of Academic Committee Meeting held on 03.07.2014.

* * *

The Board of Studies for Sculpture meeting was held on 04.11.2013 and the recommendations were placed before Academic Committee and the committee has approved the Board of Studies recommendations subject to final ratification of Monitoring and Development Committee.

In this connection, the Principal I/C, JNAFA University – College of Fine Arts is requested implement recommendations as suggested by Board of Studies for Sculpture.

Yours faithfully

REGISTRAR I/C

Copy to Director of Evaluation for favour of Information.

Proposed changes in the current syllabus approved in November 2013

1 To change the periods of the following subjects in BFA IV/II Sculpture

Subject	No of periods Present	No of Periods Proposed to change
Composition	106	98
Life Study	106	98
Metal Casting	106	98
Stone/Wood Carving	106	98

Workshop and History of Art remain the same as follows

Workshop 52 periods

History of art 32 periods

2 To change Elective Screen Printing in III/I and etching in III/II to Wood Cut
3 To change in BFA III/II Sculpture Internship Subject Title to Project I
4 To change in BFA IV/II Sculpture Dissertation Subject to Project II

23-8-17

JAWAHARLAL NEHRU ARCHITECTURE AND FINE ARTS UNIVERSITY

COLLEGE OF FINE ARTS, HYDERABAD

Academic Regulations

For 4 year Degree Course Program BFA with effect from 2013-2014 batch.

1. **Award of Bachelor of Fine Arts Degree:**

Students will be declared eligible for the award of **BFA Degree** if he/she fulfills the following academic regulations.

I. He/She has to pursue a course of study for not less than 4 academic year and not more than 8 academic years in the JNA&FAU. College of Fine Arts.

II. 1st year, 2nd year, 3rd year and 4th year will be semester pattern.

III. The first year will be common for Painting, Sculpture and Applied Arts.

IV. He/She must have satisfied the minimum academic requirements in each Year as here in after stipulated.

V. Students, who fail to fulfill all the academic requirements for the award of the degree within eight academic years from the year of their admission, shall forfeit their seat in the course and their seat shall stand canceled.

2. **Courses of Study:**

The following courses of study are offered for specializing for BFA degree.

1. Applied Art and Visual Communication.
2. Painting
3. Sculpture
4. Photography and Visual Communication.

3. **Weightage of Marks:**

I. The performance of the student in each semester/year shall be evaluated Subject -wise as per the course structure given ahead.

II. The distribution of marks for the subjects shall be for theory:

50% internal evaluation and 50% for End Examination (External evaluation)

III. The distribution of marks for the subjects shall be for Practicals:

50% internal evaluation and 50% for End Examination and Class Work Submissions (External evaluation)

4. **Attendance requirements:**

a. A student has to put in minimum of 75% of the attendance in aggregate of all Subjects for becoming eligible to register for the end examination and with a minimum of 50% physical attendance in each subject

b. Condonation of shortage of average attendance up to 10% (i.e. between 75% to 65%) in each semester/ 1ST year may be granted by the college academic committee (CAC) on payment of condonation fee and production of satisfactory evidence of the shortage of attendance.

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c. Shortage of aggregate attendance below 65% shall in no case be condoned.

d. Shortage of attendance below 50% in one or more subjects shall not be condoned.

e. Candidates whose shortage of attendance is not condoned either in aggregate are not eligible to sit for the end examinations. They will have to repeat the semester/1ST year in all respects when next offered.

5. **Minimum Academic Requirements:**

A. A student shall be deemed to have satisfied the minimum academic requirements in each subject (Theory/Practical) or project if he secures not less than 35% of marks (i.e. 18 out of 50) in the end evaluation and a minimum of 40% of marks in the sum total of internal evaluation and end evaluation taken together.

B. The candidate can be conditionally promoted from 1st year to 2nd year if he has backlog of not more than 3 subjects.

C. The candidate can be conditionally promoted from 2nd year to 3rd year if he has backlog of not more than 2 subjects.

D. The candidate can be conditionally promoted from 3rd year to 4th year if he has backlog of not more than 2 subjects.

E. The candidate will be promoted from 3rd year to 4th year only if he/she has No backlogs of 1st year.

F. The student can have total backlog of 8 subjects as a whole in the total duration of 4 year course.

G. In all other cases student will be detained and he/she has to repeat the year/ semester whenever offered.

H. A student has to complete all the academic requirements of all the 1st year subjects in 3 academic years after his admission. Failing to do so the student shall forfeit his/her seat in BFA Course and shall not be eligible for admission again.

I. The result of the candidate will be declared only when the student has cleared all the backlogs under the above said rules.

6. **Withholding of results:**

The results of any candidate shall be withheld if

i. He/She has not cleared any dues to the Institution/Hostel.

ii. A case of disciplinary action is pending against him.

7. **Award of class:**

After a student has satisfied the requirements prescribed for the completion of program and is eligible for award of BFA degree, he/she shall be placed in one of the following three classes.

Distinction	75% and above		From the
First class	Below 75%	but not less than 60%	aggregate marks secured in the whole program
Second Class	Below 60%	but not less than 50%	
Third Class	Below 50%	but not less than 40%	
Fail	Below 40%		

approved

8. Minimum Instruction days:

The minimum instruction days for each semester shall be 90 days excluding the examination days.

9. General:

(i) The academic regulations should be read as a whole for the purpose of any interpretation.

(ii) The marks in internal evaluation and **end** examination shall be shown separately in the grade sheet.

(iii) To enable the students to satisfy the academic requirements and examinations

shall be arranged at the end of each semester.

(iv) A candidate who has backlogs can appear either at the regular or supplementary examinations.

4.11.2013

Minutes/recommendations of the Board of Studies for BFA (Sculpture) Meeting held on 04.11.2013 at 02.00 P.M in the Depatment of Sculpture, JNAFA University.

THE FOLLOWING MEMBERS PRESENT

S.No	Name	Designation		SIGNATURE
1.	Smt. Shanti Swaroopini Roy	Associate Professor in Sculpture & HoD I/C – College of Fine Arts - JNAFAU	*Chairperson*	
2.	Prof. B. Srinivas Reddy	Professor in Sculpture & Principal I/C – College of Fine Arts – JNAFAU	Internal Member	
3.	Sri. Alex Mathew	Associate Professor University of Hyderabad	External Member	
4.	Dr. Kirtana Thangavelu	Associate Professor University of Hyderabad	External Member	
5.	Dr. Baishali Ghosh	Assistant Professor University of Hyderabad	External Member	

The Meeting of Board of Studies for BFA (Sculpture) Meeting was held on 04.11.2013 at 02.00 P.M in the in the Depatment of Sculpture, JNAFA University and upon deliberations it has been arrived at the following Resolutions, recommendations.

1. The members have discussed the syllabus, Course Structure and Pattern of evaluations w.e.f 2011 batch presently in 2/2, 3/4
2. No End Semester Examination to be conducted in the subjects Wood, Stone Caring and Metal Casting during the course of the BFA (Sculpure) and instead it is also recommmend to have submissions to be evaluated by the external jury.
3. For History of Art it is recommended not to have external examiner for paper setting and evaluation.
4. 2 – 3 days Workshops to be condcuted for History of Art by the External resource person who will also undertake evaluation.
5. Increase faculty postions for teaching Histoty of Art.
6. Enhance the remmuneartion for the resource person/guest Faculty from Rs. 1,000/- to Rs. 2,000/-.

FOR THE FUTURE ART HISTORY SYLLABUS ;

4.11.2013

a. BFA – 1st Year – Introduction to Art and Intriduction to World Art.

b. 2nd Year to 4th Year intensive Indian and Western Art.

7. In the Award of class Item No. 07 if the student secure above 40% below 50% can be awarded with the 3rd Class/Pass Class.

8. Pattern of Evaluation proposed for the 2nd Year to 4th Year End semester evaluation for 50 marks to be split into 20 + 30 of which 20 marks will be evaluated by the external Jury for the works of the students done during the entire semester in addition to separate internal assessed marks for 50. The marks for the end semester exams will be confined to 30 marks.

9. In the II Year I Semester instead of painting OR Printing making as Elective subject. It is proposed to have drawing subject.

10. In the III Year – II Semester. Introduction of Internship programme instead of Wood/Stone Carving.

11. New Subjects Workshops to be introduced from 2nd Year to 4th Year. For total 100 Marks (Internal 50 + External 50) for evey semester, changes to be made in course structure accordingly.

Shantha Murthy
4.11.2013

B.F.A. SCULPTURE

Four Year Degree Programme (8 Semesters)

COURSE STRUCTURE

I YEAR I SEMESTER

Code	Name of the Subject	Periods in 4 Weeks	Duration of examination	Internal Evaluation	Examination	marks
THEORY						
S1.1.1T	History Of Visual Art & Aesthetics Introduction to Indian Art	12	3 hrs.	50	50	100
S1.1.2T	English-I	12	3hrs.	50	50	100
PRACTICALS						
S1.1.3P	Drawing-I	24	5 hrs.	50	50	100
S1.1.4P	Color Design-I	24	5 hrs.	50	50	100
S1.1.5P	Applied Art-I	24	5 hrs.	50	50	100
S1.1.6P	Painting-I	24	5 hrs.	50	50	100
S1.1.7P	Sculpture-I	24	5 hrs.	50	50	100
TOTAL		144				700

I YEAR II SEMESTER

Code	Name of the Subject	Periods in 4 Weeks	Duration of examination	Internal Evaluation	Examination	marks
THEORY						
S1.2.1T	History Of Visual Art & Aesthetics Introduction to Western Art	12	3 hrs.	50	50	100
S1.2.2T	English-II	12	3hrs.	50	50	100
PRACTICALS						
S1.2.3P	Drawing-II	24	5 hrs.	50	50	100
S1.2.4P	Color Design-II	24	5 hrs.	50	50	100

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S1.2.5P	Applied Art-II	24	5 hrs.	50	50	100
S1.2.6P	Painting-II	24	5 hrs.	50	50	100
S1.2.7P	Sculpture-II	24	5 hrs.	50	50	100
	Total	144				700

Approved

PATTERN OF EVALUATION for the following semesters

End semester evaluation for 50 marks to be split into 20 + 30 of which 20 marks will be evaluated by the external Jury for the works of the students done during the entire semester in addition to separate internal assessed marks for 50. The marks for the end semester exams will be confined to 30 marks.

II YEAR I SEMESTER

Course No.	Name of the subject	Internal marks	End Exam marks	Total Marks	Duration of End sem. exam	No. Of periods* in a Semester
Theory						
S211T	History Of Visual Arts & Aesthetics History Of Indian Art	50	50	100	3hrs	32 periods
Practical						
S212P	Life study-I	50	50	100	25hrs	112 periods
S213P	Composition-I	50	50	100	25hrs	112 periods
S214P	Terracotta/ Ceramics	50	50	100	15hrs	112 periods
S215P	Electives -I Drawing	50	50	100	10hrs	112 periods
S216P	Workshop	50	50	100	-	60 periods

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Approved

II YEAR II SEMESTER

Course No.	Name of the subject	Internal marks	End Exam marks	Total Marks	Duration of End sem. exam	No. Of periods* in a Semester
Theory						
S221T	History Of Visual Arts & Aesthetics History Of	50	50	100	3hrs	32 periods

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	Western Art					
S222T	Environmental studies	50	50	100	3hrs	32 periods
Practical		50	50	100	25hrs	106 periods
S223P	Life study-II					
S224P	Composition-II	50	50	100	25hrs	106 periods
S225P	Stone /Wood Carving -I	50	50	100	-	106 periods
S226P	Electives -II Painting / Print-Making	50	50	100	10 hrs	106 periods
S227P	Workshop	50	50	100	-	52 periods

Note: Study Tour will be once in a year for five working days.

III YEAR I SEMESTER

Course No.	Name of the subject	Internal marks	End Exam marks	Total Marks	Duration of End sem. exam	No. Of periods* in a Semester
Theory						
S311T	History Of Visual Arts & Aesthetics Modern Western Art	50	50	100	3hrs	32 periods
Practical		50	50	100	25hrs	112 periods
S312P	Life study-III					
S313P	Composition III	50	50	100	25hrs	112 periods
S314P	Stone/Wood Carving-II	50	50	100	-	112 periods
S315P	Electives -III Painting / Print-Making	50	50	100	10 hrs	112 periods
S316P	Workshop	50	50	100	-	60 periods

III YEAR II SEMESTER

Maruthi. S Roy
4.11.2013

Course No.	Name of the subject	Internal marks	End Exam marks	Total Marks	Duration of End sem. exam	No. Of periods* in a Semester
Theory						
S321T	History Of Visual Arts & Aesthetics Modern Indian Art	50	50	100	3hrs	32 periods
Practical		50	50	100	25hrs	112 periods
S323P	Life study -IV					
S324P	Composition-IV	50	50	100	25hrs	112 periods
S325P	Internship Program	50	50	100	-	112 periods
S326P	Electives -IV Painting / Printa-Making	50	50	100	10 hrs	112 periods
S327P	Workshop	50	50	100	-	60 periods

Note: Study Tour will be once in a year for five working days.

IV YEAR I SEMESTER

Course No.	Name of the subject	Internal marks	End Exam marks	Total Marks	Duration of End sem. exam	No. Of periods* in a Semester
Theory						
S411T	History Of Visual Arts & Aesthetics Contemporary Art In West	50	50	100	3hrs	32 periods
Practical		50	50	100	30hrs	112 periods
S412P	Life study –V					
S413P	Creative sculpture – I	50	50	100	30hrs	112 periods
S414P	Stone/Wood Carving –III	50	50	100	-	112 periods
S415P	Metal casting-I	50	50	100	-	112 periods

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S416P	Workshop	50	50	100	–	60 periods

IV YEAR II SEMESTER

Course No.	Name of the subject	Internal marks	End Exam marks	Total Marks	Duration of End sem. exam	No. Of periods* in a Semester
Theory		50	50	100	3hrs	32 periods
S421T	History Of Visual Arts & Aesthetics Contemporary Art In India					
Practical		50	50	100	30hrs	106 periods
S422P	Life study -VI					
S423P	Creative sculpture-II	50	50	100	30hrs	106 periods
S424P	Stone/Wood Carving-IV	50	50	100	–	106 periods
S425P	Metal casting-II	50	50	100	–	106periods
S426P	Dissertation Thesis Submission & viva – voce	100	100	200	------	32 periods
S427P	Workshop	50	50	100	–	52 periods

Note: Study Tour will be once in a year for five working days.

Shanthi. S Ray
4.11.2013

1st YEAR 1st SEMESTER SYLLABUS – SCULPTURE

HISTORY OF VISUAL ART AND AESTHETICS

S1.1.1T -INTRODUCTION TO INDIAN ART

THEORY: 32 periods/4weeks | Marks Internal: 50 | Marks External: 50 | Marks Total: 100

Unit-I What is Art and Aesthetics? How it has be seen, discussed, practiced in India

Unit-II Pre-historic art in India. Art of Indus valley Civilization. Early sculptural traditions of Maurya, Sunga and Kushana periods Gupta sculpture

Unit-III Ajanta murals and subsequent continuation at Bagh, Badami, Ellora and Vijayanagara*. Miniature painting of Mughal, Rajastani and pahari.

Unit IV Company painting and British art school*.

Raja Ravi Varma and Bengal School.

Note: In this semester students are supposed to know in brief about Indian art, with a general introduction to every topic, by studying their distinct formal and thematic contents. Stress would be on the descriptive formal study.

S1.1.2T ENGLISH-I:

THEORY: 12 periods/4weeks | Marks Internal: 50 | Marks External: 50 | Marks Total: 100

Unit-I: Prescribed lessons from text book titled "Learning English-A communicative approach" by Dr. A. Ramakrishna Rao

The following selected lessions will be covered

1. Astronomy
2. Humour
3. Health and Medicine
4. Travel and Transport

Unit-II: General grammar: Prepositions, Articles, Tenses, Degree of Comparison, Active and Passive voice, question tags, direct and indirect speech sentences (Simple, Complex and compound)

Books recommended:

1. "Know your English" by K. Subramanyam
2. "Learning English — A Communicative approach" by Dr. A. Ramakrishna Rao

S1.1.3P DRAWING-I:

PRACTICALS: 24 periods/4weeks | Marks Internal: 50 | Marks External: 50 | Marks Total: 100

Unit-I: Nature drawing — various rendering media and techniques various light conditions study from any kind of forms in nature ponds, birds, animals, rocks, trees, flowers, fruits, plants, butterflies, insects, etc. (pencil study, pen and ink)

Unit-II: Drawing from objects — drawing from cubes, cones, cylindrical objects, casts, still life groups etc. (pencil study)

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S1.1.4P COLOUR DESIGN-I

PRACTICALS:24 periods/4weeks | Marks Internal: 50 | Marks External: 50 | Marks Total: 100

Unit-I: Definition of Light and Colour.

Unit-II: Opaque colours and transparent colours-colour wheel, relationship of primary, secondary, tertiary colours

Unit-III: Physical properties-understanding of tonal values in colour and black and white in relation to grays (tints & shades).

S1.1.5P APPLIED ART-I

PRACTICALS:24 periods/4weeks | Marks Internal: 50 | Marks External: 50 | Marks Total: 100

Unit-I: Basic principles of beautiful writing —Calligraphy. Sense of letter form, judgment of composition of letters-spacing-intuitive and logical planning of writing, development of style.

Unit-II: Basic study of letter forms. Principles of letter forms, Study of "Gothic" Style letter forms in small and capitals, Suitability & legibility of printed matter,

S1.1.6 P PAINTING-I

PRACTICALS:24 periods/4weeks | Marks Internal: 50 | Marks External: 50 | Marks Total: 100

Unit-I: Study of two-dimensional space and its compositional values from objects and nature.

Unit-II: Elements of pictorial expressions, Pictorial expression related to concepts of space and forms. Pictorial elements such as point, line, shape, volume, texture, light, colour.

Unit-III: Transformation of images and collage techniques. Study of various types of objects (Natural and man made) with view to transform them into flat pictorial images. With special attention to character. Rhythm. Harmony, balance, repletion. Spacing and proportion.

S1.1.7P SCULPTURE-I

PRACTICALS:24 periods/4weeks | Marks Internal: 50 | Marks External: 50 | Marks Total: 100

Unit-I Introduction of sculptural elements and materials to develop the sense of the 3 dimensional designs with Cube, prism, sphere, cylinder.

Unit-2 Study of natural and man made objects in round. Detail drawings of the objects to be modeled in clay.

Unit-3 Introduction to pottery and terracotta Coil work or slab work.

Unit-4 Study of Human body parts I: Drawing and clay modeling of eyes, nose, ears and mouth.

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1st YEAR 2nd SEMESTER SYLLABUS – SCULPTURE

HISTORY OF VISUAL ART AND AESTHETICS

S1.2.1T. INTRODUCTION TO WESTERN ART

THEORY: 12 periods/4weeks | Marks Internal: 50 | Marks External: 50 | Marks Total: 100

Unit-I: Why do we study western art? What is Western Aesthetics?

Unit-II: Pre-Historic and Ancient Art in Europe.

Art of Mesopotamia, Egyptian and Greco-roman art. Art of Early Christian and Byzantine.

Art of Romanesque and Gothic.

Unit-III Art of Renaissance and Mannerism*.

Art of Baroque and Rococo.

Unit-IV Neo-Classicism and Romanticism*.

Realism and Impressionism.

Note : In this semester students are supposed to know in brief about western art, with a general introduction to every topic, by studying their distinct formal and thematic contents. Stress would be on the descriptive and formal study.

S1.2.2T ENGLISH-II:

THEORY: 12 periods/4weeks | Marks Internal: 50 | Marks External: 50 | Marks Total: 100

Unit-I: Prescribed lessons from text book titled "Learning English-A communicative approach" by Dr. A. Ramakrishna Rao

The following selected lessons will be covered

l. Inspiration 2. Human Interest 3. Media

Unit-II: Vocabulary- Words often confused, Pairs of words

Unit-III: Composition, Precise writing, Essay writing, Letter writing, Report writing, Comprehension

Books recommended:

1. Know your English by K. Subramanyam

2. Learning English — A Communicative approach" by Dr. A. Ramakrishna Rao

S1.2.3P DRAWING-II:

PRACTICALS: 24 periods/4weeks | Marks Internal: 50 | Marks External: 50 | Marks Total: 100

Unit-I: Information to elements of perspective — studies of basic solids plan and elevation, main aspects as parallel and Z angular perspective.

Unit-II: Head study — study of head from cast (various age groups)

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Unit-III: Out door sketching — rapid sketching from any objects from busy streets, markets, stations etc. sketching from zoo and museum. Exposure to drawings made by masters, articles of different times (colour pencils, dry pastels, oil pastels etc.)

S1.2.4P COLOUR DESIGN-II

PRACTICALS : 24 periods/4weeks	Marks Internal: 50	Marks External: 50	Marks Total: 100

Unit-I: (Colour experience (pigment and light theory) High key, middle key, and low key, high key tone with and low contrast. Chromatic expression on different backgrounds, depiction of seasons etc.

Unit-II: Colour experience-colour harmonies. Complementary, split complementary, double split complementary analogous and receding colours. Visual mixing, creative designs through simple motifs from nature* and man made objects,

Unit-III: Elementary knowledge of design (golden rules of art) design based on the fundaments such as line, from, colour, texture, proportion and rhythm tonal values in 3 dimensions exercise with cube prism, sphere, cylinder etc. (E.g. for* Nature:Mountain. clouds, butterfly, flowers, fish & water plants, birds, animals etc).

Unit-IV: Overlapping of motifs & colour combinations to be given from tertiary colours with tints and shades. E.g. For objects: distorted in given space (golden rules of art) exercises — nature and object combination to be given related to colors theory

S1.2.5P APPLIED ART-II

PRACTICALS:24 periods/4weeks	Marks Internal: 50	Marks External: 50	Marks Total: 100

Unit-I: Press Layout: Introduction to press layout, elements of press layout, functions of a press layout, designing a press layout for rational products (consumer items) in a given size of 1 column by 15 cm in B/W

Unit-II: Poster Design: Introduction to Poster design, elements of a poster, functions of a poster. Designing a poster for out door publicity in a given size of *10"xl5"* using 3 colours for consumer items (rational products)

Unit-III: Book Cover Design: Designing of a book cover in a size of 6"x 8" in 3 colours. (Presentation of Title and suggestive pictorial to be emphasized and to be executed with excellent composition)

S1.2.6P PAINTING-II

PRACTICALS:24 periods/4weeks	Marks Internal: 50	Marks External: 50	Marks Total: 100

Unit-I: Developing an awareness of inter-relationship of different shapes and forms relative values. Activation of space though form and color-optical illusions. Handling various materials for pictorial expressions such as pencil, pen poster colours, pastel crayon with inks, water colours etc.

Unit-II: Print making: observation in intrinsic texture of various surfaces and the textures of natural and manmade things surface painting in relief media i.e. cardboards techniques using various texture to understand and develop the design concept in black and white.

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S1.2.7P SCULPTURE-II

PRACTICALS:24 periods/4weeks | Marks Internal: 50 | Marks External: 50 | Marks Total: 100

Unit I Introduction to

Relief composition with found objects from the surroundings.

Round composition from the sketches of the surroundings.

Unit II Study of human body parts II: Drawing and clay modeling of human hands and legs.

Unit III Study of animals and birds

Drawing and modeling in clay or plaster or any material.

Unit IV Decorative motive from history of Sculpture.

II YEAR 1st SEMESTER SYLLABUS – SCULPTURE

HISTORY OF VISUAL ART AND AESTHETICS

S211T. HISTORY OF INDIAN ART

THEORY: 32 periods in a Semester | Marks Internal: 50 | Marks External: 50 | Marks Total: 100

Unit-I: Early sculptural traditions of Maurya, Sunga and Kushana periods.

Sculptural tradition of Gupta, Rashtrakuta, Pallava, Chola and Vijayanagara.

Unit-II Ajanta mural tradition.

Continuation of mural tradition at Bagh, Badami, Ellora and Vijayanagara.

Unit-III Illustrated manuscripts of eastern and western India (Pala and Jain manuscripts)

Miniature painting of Mughal, Rajasthani

Miniature painting of Deccani & Pahari.

Unit-IV Indian Aesthetics: a brief introduction to the Indian aesthetics,

Discuss Bharatha's natya sastra, concept of Rasa theory,

Abhinava Gupta and Jayadeva.

Note: In this semester, students are supposed to study each topic in detail, emphasizing on historical evaluation of sculpture and painting in each period, and their significance and stylistic evolution would be focused.

PRACTICALS

S212P. LIFE STUDY-I:

PRACTICALS : 112 periods in a Semester | Marks Internal: 50 | Marks External: 50 | Marks Total: 100

- Head study: life size

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Quick sketches on paper and in clay

Detailed drawings and modeling in clay.

- Preparation of plaster waste mould – casting in plaster/cement.
- Study of human head from life using direct material like terracotta or any suitable material.

Home Assignment: 30 quick sketches & 20 drawings of the study of human figure in pencil or charcoal have to be submitted.

S213P. COMPOSITION-I:

PRACTICALS : 112 periods in a Semester | Marks Internal: 50 | Marks External: 50 | Marks Total: 100

- Representational composition based on human figures, birds and animals in relief and round.
- Construction of armature
- Preparation of plaster waste mould and casting in plaster, cement or any other medium

Home Assignment: 20 sketches exploring different ideas for composition

10 drawings for composition exercise have to be submitted

S214P. TERRACOTTA / CERAMICS:

PRACTICALS : 112 periods in a Semester | Marks Internal: 50 | Marks External: 50 | Marks Total: 100

- Introduction to terracotta clay and different methods of baking processes.

  Preparation of clay – coil method and direct building method.
- Study of the head of a man and woman.
- Study of animal head.
- One relief work.

Home Assignment: 30 drawings related to the exercises have to be submitted

S215P. ELECTIVES- I

PRACTICALS: 112 periods in a Semester | Marks Internal: 50 | Marks External: 50 | Marks Total: 100

Drawing-

- Study of the Plaster cast of full figure with Pencil and Charcoal.
- Drawing live model with Pencil, Charcoal. Dry pastels and Indian ink.
- Study the head. arms and legs in detail.

Home Assignment: 60 sketches and 20 drawings of full figures from life have to be submitted

S216P.WORKSHOP:

Shantiniketan Roy
4.11.2013

PRACTICALS: 60 periods in a Semester | Marks Internal: 25 | Marks External: 25 | Marks Total: 50

An activity that the students of all the batches participate together working under the guidance of external expert to learn and apply various new skills and knowledges of Art practices which are not included in any of the Subjects during the Course.

DISPLAY

Display of finished works from all the subjects at the end of semester.

II YEAR 2nd SEMESTER SYLLABUS – SCULPTURE

HISTORY OF ART AND AESTHETICS

S221T HISTORY OF WESTERN ART

THEORY: 32 periods in a Semester | Marks Internal: 50 | Marks External: 50 | Marks Total: 10

Unit-I Art of Early Christian and Byzantine: rise of Christianity and significant changes in representation of images are to be discussed.

Art of Romanesque and Gothic: The significant stylistic changes in both periods would be discussed.

Unit-II Art of Renaissance and Mannerism: Introduction to Renaissance art and study with reference to works of Leonardo da Vinci, Raphael and Michelangelo. And discuss the basic difference between renaissance and mannerist art analyze with works of Tintoretto, El Greco and Cellini.

Art of Baroque and Rococo: study of significance of the Baroque art would be discussed with works of Rembrandt, Vermeer, Caravaggio and Bernini.

The significance of the rococo painting would be studied.

Unit-III Neo-Classicism: study of neo classical art, with the important paintings and sculptures of Jacques Louis David, August Dominique Ingres and Antonio Canova

Romanticism: study of romanticism in arts, with the painting of Fancisco de Goya, John Constable and J.W.N Turner...

Realism: discuss realism in art with reference to works of Courbet, Corot and Daumier.

Unit IV Western Aesthetics: discuss the aesthetic views of Plato, Aristotle and Immanuel Kant.

S222T: ENVIRONMENTAL STUDIES

THEORY: 32 periods in a Semester | Marks Internal: 50 | Marks External: 50 | Marks Total: 100

UNIT – I. The Multidisciplinary nature of environmental studies Definition, scope and importance Need for public awareness.

UNIT - II: Natural Resources:

Renewable and non-renewable:

Natural resources and associated problems.

a. Forest resources: Use and over-exploitation, deforestation, case studies. Timber

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extraction, mining, dams and their effects on forests and tribal people.

Water resources: Use and over-utilization of surface and ground water, floods, drought, conflicts over water, dams-benefits and problems.

b. **Mineral resources**: Use and exploitation, environmental effects of extracting and using mineral resources, case studies

c. **Food resources**: World food problems, changes caused by agriculture and overgrazing, effects of modem agriculture, fertilizer-pesticide problems, water logging, salinity, case studies.

d. **Energy resources**; growing energy needs, renewable and non renewable energy sources, use of alternate energy sources. case studies.

e. Land resources: Land as a resource, and degradation, man Induced landslides, soil erosion and desertification.

- Role of an individual in conservation of natural resources.
- Equitable use of resources for sustainable lifestyles. (8 lectures)

UNIT - III : Ecosystems

- Concept of an ecosystem.
- Structure and function of an ecosystem.
- Producers, consumers and decomposers.
- Energy flow in the ecosystem.
- Ecological succession.
- Food chains, food webs and ecological pyramids.
- Introduction, types, characteristic features, structure and function of the following ecosystem:-

  a. Forest ecosystem

  b. Grassland ecosystem

  c. Desert ecosystem

  d. Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, Estuaries)

(6 lectures)

UNIT -IV: Biodiversity and its conservation

- Introduction — Definition: genetic, species and ecosystem diversity.
- Biogeographically classification of India

  Value of biodiversity: consumptive use, productive use social, ethical, aesthetic and option values:

  Biodiversity at global, National and local levels,
- Hot-spots of biodiversity.
- Threats to biodiversity: habit loss, poaching of wildlife, man-wildlife conflicts.
- Endangered and endemic species of India.

Conservation of biodiversity: In — situ and Ex — situ conservation of Biodiversity

(8 lectures)

Shanthi Sagar 4.11.2013

UNIT- V: Environmental pollution:

Definition

- Causes, effects and control measures of: -
  a. Air pollution
  b. Water pollution
  c. Soil pollution
  d. Marine pollution
  e. Noise pollution
  f. Thermal pollution
  g. Nuclear hazards

Solid waste Management: Causes , effects and control measures of urban and industrial wastes.

- Role of individual in prevention of pollution.
- Pollution case studies.

Disaster management : floods , earthquake,. Cyclone and landslides.

(8 lectures)

UNIT- VI: Social Issues and the Environment

- From Unsustainable to Sustainable development Urban problems related to energy
- Water conservation, rain water harvesting, watershed management
- Resettlement and rehabilitation of people ; its problems and concerns case studies.
- Environmental ethics : Issues and possibility solutions.
- Climate change, global warming, acid rain, ozone layer depletion, nuclear accidents and holocaust, case studies.
- Wasteland reclamation.
- Consumerism and waste products.
- Environment protection Act.
- Air (Prevention and Control of Pollution) Act.
- Water (Prevention and control of Pollution) Act. Wildlife protection Act.

Forest Conservation Act.

Issues involved in Enforcement of Environmental legislation. Public awareness.

(7 lectures)

UNIT - VII: Human Population and the Environment

- Population growth , variation among nations.
- Population explosion — Family Welfare Programme.
- Environment and Human Health.

Mamtha Roy
4.11.2013

- Human Rights.
- Value Education.
- HIV/AIDS.
- Women and child welfare.
- Role of information Technology in Environment and Human Health Care studies

(6 lectures)

UNIT - VIII : Field Work

- Visit to a local area to document environmental assets-river / forest / grassland / hill / mountain
- Visit to a local polluted site — Urban / rural / industrial / agricultural
- Study of common plants , insects , birds
- Study of simple ecosystems — pond, river, hill slopes, etc . (Field work Equal to 5 lecture hours

PRACTICALS

S223P LIFE STUDY-II:

PRACTICALS: 106 periods in a Semester | Marks Internal: 50 | Marks External: 50 | Marks Total: 100

- Study of human figure male/female in half life -size.
- Quick sketches on paper and clay maquettes.
- Detailed drawing and modeling in clay.
- Preparation of plaster waste-mould and casting in plaster/cement

Home Assignment: 50 drawings on the study of human figure in pencil or charcoal have to be submitted.

S224P. COMPOSITION-II:

PRACTICALS : 106 periods in a Semester | Marks Internal: 50 | Marks External: 50 | Marks Total: 100

- Composition in round or relief in half life -size.
- Representational compositions based on various themes which include human figures, animals and natural forms.
- Drawings related to the various themes of the composition.
- Construction of armature for clay modeling.
- Preparation of plaster waste mould and casting in plaster/other mediums.

Home Assignment: 30 sketches and 20 drawings based on the composition exercise have to be submitted.

S225P. WOOD CARVING -I:

PRACTICALS : 106 periods in a Semester | Marks Internal: 50 | Marks External: 50 | Marks Total: 100

- Introduction to various kinds of wood and methods of wood-carving in low and high relief
- Drawings for carving in POP or wood.
- Clay modeling for one composition of a bird, an animal or a human head suitable for wood carving.
- Size 24"X18"

Home Assignment: 20 drawings and 5 maquettes for wood carving have to be submitted

S226P. ELECTIVES -II

PRACTICALS : 106 periods in a Semester | Marks Internal: 50 | Marks External: 50 | Marks Total: 100

A student can choose from either of the subjects given below

Painting- water colours

- Study the still life with wash technique.
- Study the human head in water colours.

Print Making- Stencil -Black & White; Colour

Wood-cut Black & White; Colour

- Still life
- Human head
- Human figure in outdoors

S227P.WORKSHOP:

PRACTICALS: 52 periods in a Semester | Marks Internal: 25 50 | Marks External: 25 50 | Marks Total: 50 / 100

An activity that the students of all the batches participate together working under the guidance of external expert to learn and apply various new skills and knowledges of Art practices which are not included in any of the Subjects during the Course.

DISPLAY

Display of finished works from all the subjects at the end of the semester.

III YEAR 1st SEMESTER SYLLABUS – SCULPTURE

HISTORY OF ART AND AESTHETICS

S311T. MODERN WESTERN ART

THEORY: 32 periods in a Semester | Marks Internal: 50 | Marks External: 50 | Marks Total: 100

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Unit-I Impressionism: discuss the coinage of the term, impressionism and study the paintings of Monet, Manet and Renior

Post-Impressionism: study of post impressionism with reference to the important paintings of Paul Cezanne,Vincent Vangogh, Georges.Seurat and Paul Gaugin.

Unit-II Fauvism and Cubism. Discuss coinage of the term fauvism and the important works of Henry Matisse and his fellow artists Andre Derain, Mauric De Vlaminck, George Rouault are to be analyzed.

Define cubism and analyze the works of Picasso and Braque in to various phases of cubism.

Unit III Expressionism and Futurism: study expressionism, through works of two groups "The Bridge" and "The Blue Rider".

Discuss the significance of futurism in art. With the works of Carlo Carra, Giacoma Balla and Umbreto Boccioni.

Unit- IV Dadaism: discuss the impact of first world war and emergence of anti art or anti aesthetics in art practice,study the works of Marcel Duchamp, Francis Picabia and Man Ray.

Surrealism: study the works of Salvender Dali, Joan Miro, Rene Magritte.

PRACTICALS

S312P. LIFE STUDY-III:

PRACTICALS : 112 periods in a Semester Marks Internal: 50 Marks External: 50 Marks Total: 100

- Study of human figure in clay
- Human figure in different postures and gestures
- ¾ size figures.
- Preparation of waste mould from clay work.
- Preparation of a plaster cast to take a Piece-mould.

Home Assignment: 30 drawings of male and female human figure in pencil and charcoal have to be submitted.

S313P. COMPOSITION-III:

PRACTICALS : 112 periods in a Semester Marks Internal: 50 Marks External: 50 Marks Total: 100

- Composition in a creative approach reflecting the contemporary life.
- Relief or Round Composition from everyday life
- Fiber-glass casting and any other materials.

Home Assignment: 30 detailed drawings related to composition have to be submitted

S314P. STONE/WOOD CARVING -II

PRACTICALS : 32 periods in a Semester | Marks Internal: 50 | Marks External: 50 | Marks Total: 100

- Preparation of drawings and maquettes for carving
- Understanding the carving techniques like cutting, chopping, carving, burning and use of different hand tools
- Various techniques of joining the wood.

Home Assignment: 10 detailed drawings and 10 maquettes on the related topics in pencil or charcoal have to be submitted.

S315P. ELECTIVES - III

PRACTICALS : 34 periods/4weeks | Marks Internal: 50 | Marks External: 50 | Marks Total: 100

A student can choose from either of the subjects given below

Painting- Acrylic colours

- Life study – study of human figure in acrylic colours.
- Landscape - acrylic colours.

Print Making introduction to Screen Printing/Black & White; Colour / wood cut

- Human Figure/Animals/Birds
- Landscape and street-scape

S316P.WORKSHOP:

PRACTICALS: 60 periods in a Semester | Marks Internal: 25 50 | Marks External: 25 50 | Marks Total: 50 100

An activity that the students of all the batches participate together working under the guidance of external expert to learn and apply various new skills and knowledges of Art practices which are not included in any of the Subjects during the Course.

DISPLAY

Display of finished works from all the subjects at the end of semester.

III YEAR 2nd SEMESTER SYLLABUS – SCULPTURE

HISTORY OF ART AND AESTHETICS

S321T. - MODERN INDIAN ART

THEORY: 32 periods in a Semester | Marks Internal: 50 | Marks External: 50 | Marks Total: 100

Unit-I

Company Painting: discuss the role/place of company painting in India art.

British Art Schools: establishment of art schools in India. (try to discuss the establishment of art schools by British through the process and politics of colonialism

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Raja Ravi Varma: study the art of Raja Ravi Varma, about his style and "Indianness" in his paintings

Unit-II Bengal School – Abanindranath Tagore and his disciples

Shantiniketan – Nandalal Bose

-Binod Bihari Mukarjee

-Ramkinkar Braij.

Unit-III Art and life of Amritha Sherghill Art and life of Jamini Roy

Unit-IV Indian art (1940s)

Calcutta Group

Bombay Progressive Artist Group (PAG)

Delhi Shilpi Chakra

Trends in South India

PRACTICALS

S322P. LIFE STUDY-IV:

PRACTICALS : 112 periods in a Semester Marks Internal: 50 Marks External: 50 Marks Total: 100

- Study of human figure in clay emphasizing expressions.
- Male or female figures in full life size.
- Maquettes of the human figure.
- Moulding and Casting of the clay work in cement or fiber glass

Home Assignment: 30 drawings based on the study of male and female human figure in pencil and charcoal have to be submitted

S323P. COMPOSITION-IV:

PRACTICALS : 112 periods in a Semester Marks Internal: 50 Marks External: 50 Marks Total: 100

- Composition with multiple figures and animals.
- Interpretation of theme in creative approach.
- Composition can either be in round or relief or in both.
- Compositions by various techniques in metal and direct metal work.
- Arc-welding, soldering technique.

Home Assignment: 30 detail drawings on the preparation of composition have to be submitted

S324P. Internship Program:

PRACTICALS : 112 periods in a Semester | Marks Internal: 50 | Marks External: 50 | Marks Total: 100

During the internship program students can choose to study under an expert for twenty working days based on the area of their interest. The program gives an opportunity to gain hands on experience to study other art practices which are not taught on the campus like puppetry, paper making, toy making, leather art, metal beating, ceramic pottery, dyeing and weaving etc.

Submission: A visual and written record to be submitted along with work that was produced at the end of internship program

S325P. ELECTIVES -IV

PRACTICALS : 32 periods in a Semester | Marks Internal: 50 | Marks External: 50 | Marks Total: 100

A student can choose from either of the subjects given below

Painting- Oil colours

- Human Figure/Animals/Birds
- Landscape and street-scape

Print Making- introduction to Dry point and Etching on zinc plate in Black & White.

- Human Figure/Animals/Birds
- Landscape and street-scape

S327P.WORKSHOP:

PRACTICALS: **60** periods in a Semester | Marks Internal: 25 50 | Marks External: 25 50 | Marks Total: 50 / 100

An activity that the students of all the batches participate together working under the guidance of external expert to learn and apply various new skills and knowledges of Art practices which are not included in any of the Subjects during the Course.

DISPLAY

Display of finished works from all the subjects at the end of semester.

IV YEAR 1st SEMESTER SYLLABUS – SCULPTURE

HISTORY OF ART AND AESTHETICS

S411T. CONTEMPORARY ART IN WEST

THEORY: 32 periods in a Semester | Marks Internal: 50 | Marks External: 50 | Marks Total: 100

Unit-I American Painting (1920's): discuss the art scene during 1920s, with important works.

Abstract Expressionism: discuss the ideas of Clement Greenberg in relation to abstract expressionism, study the Paintings of Mark Rothko, William de Kooning, Jackson Pollock and Barnett Newman.

Unit-II - British Pop Art

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American Pop Art

Op Art

Unit-III Minimal Art

Conceptual Art

Unit IV Feminist art in Europe.

PRACTICALS

S412P. LIFE STUDY-V:

PRACTICALS : 112 periods in a Semester	Marks Internal: 50	Marks External: 50	Marks Total: 100

- Study of full figure of male or female from old masters work.
- Character and stylization of the old masters work have to be studied in half life size.
- Moulding and Casting of the work in Plaster, Cement or Fiber Glass.

Home Assignment: 20 drawings of old masters in pencil and charcoal have to be submitted.

S413P. CREATIVE SCULPTURE-I:

PRACTICALS : 112 periods in a Semester	Marks Internal: 50	Marks External: 50	Marks Total: 100

- One composition dealing with real space and contextualizing space/site.
- Sketches/maquettes in round or relief using direct material.
- Realization of the composition in any suitable material.
- Creative and individualistic approach to be explored.

Home Assignment: 50 drawings on the related topics in pencil or charcoal have to be submitted.

S414P. STONE / WOOD CARVING-III:

PRACTICALS : 112 periods in a Semester	Marks Internal: 50	Marks External: 50	Marks Total: 100

- Drawings and maquettes for carving.
- Introduction to machine tools.
- Carving with an emphasis to the surfaces and understanding of various textures.
- Creative individualistic approach to be explored by adding other materials.

Home Assignment: 20 drawings and 10 maquettes on the related exercises in pencil or charcoal have to be submitted

S415P. METAL CASTING-I:

PRACTICALS : 112 periods in a Semester	Marks Internal: 50	Marks External: 50	Marks Total: 100

- Introduction of metal casting processes to Indian and Western.
- Preparation of drawing and maquettes for metal casting in wax.

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- Making the investment mould for metal casting.
- De-waxing and metal melting and pouring of the metal.
- Chasing and patination.

Home Assignment: 20 drawings and 10 maquettes on related topics in pencil or charcoal have to be submitted

S416P.WORKSHOP:

PRACTICALS: 60 periods in a Semester | Marks Internal: 25/50 | Marks External: 25/50 | Marks Total: 50/100

An activity that the students of all the batches participate together working under the guidance of external expert to learn and apply various new skills and knowledges of Art practices which are not included in any of the Subjects during the Course.

DISPLAY

Display of finished works from all the subjects at the end of semester.

IV YEAR 2nd SEMESTER SYLLABUS – SCULPTURE

HISTORY OF ART AND AESTHETICS

S421T. CONTEMPORARY ART IN INDIA

THEORY: 32 periods in a Semester | Marks Internal: 50 | Marks External: 50 | Marks Total: 100

Unit-I **Indigenism in Indian Art:**

Baroda Initiative (K.G. Subramanian)

The Southern Initiative (K.C.S. Pannikar)

Works of (J. Swaminathan)

Unit II Radical Painters and Sculptors Associations

Unit III **Indian Women artists:** Discuss the works of Meera Mukharjee, Nasreen Mohamadi, Nelima Sheik and Rekha Rodiwitya

Unit-IV **Conceptual art in India:** Study of Installation art, site specific, performance based, video, kinetic art

PRACTICALS

S422P. LIFE STUDY-VI:

PRACTICALS : 106 periods in a Semester | Marks Internal: 50 | Marks External: 50 | Marks Total: 100

- Study of Human Figure with character and expression of the model in full life size with clay.
- Application of the old masters' style is encouraged.

Home Assignment: 30 drawings related to the Subject in have to be submitted.

S423P. CREATIVE SCULPTURE-II:

PRACTICALS : 106 periods in a Semester | Marks Internal: 50 | Marks External: 50 | Marks Total: 100

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- Exploration towards creative and individual approach.
- Exploration of various materials or mixed media.
- Experimenting and conceptualizing sculpture after a real or existing place/space

Home Assignment: 20 drawings related to creative composition in pencil or charcoal have to be submitted.

S424P. STONE / WOOD CARVING-IV:

PRACTICALS : 106 periods in a Semester | Marks Internal: 50 | Marks External: 50 | Marks Total: 100

- Representational themes exploitation of various textures.
- Creative individualistic approach to be explored by adding other materials.

Home Assignment: 20 drawings in pencil or charcoal and 10 maquettes related to carving have to be submitted.

S425P. METAL CASTING-II:

PRACTICALS : 106 periods in a Semester | Marks Internal: 50 | Marks External: 50 | Marks Total: 100

Drawing and maquettes for metal casting in wax.

- Making the investment mould for metal casting.
- De-waxing and metal melting and pouring of the metal.
- Chasing and patination.
- Use of different materials along with the work in metal casting is encouraged.

Home Assignment: 10 drawings in pencil or charcoal have to be submitted

S426P. DISSERTATION:

THEORY: 32 periods in a Semester | Marks Internal: 50 | Marks External: 50 | Marks Total: 100

At the end of the academic Programme, every student has to submit a Dissertation containing a minimum of 3,000 words with sufficient number of illustrations of photographs on the specific topics. This thesis project is meant to develop skills for articulating and analyzing thing for clarity of thought and ideas. The student and guide will mutually select the topics.

VIVA-VOCE

S427P.WORKSHOP:

PRACTICALS: 52 periods in a Semester | Marks Internal: 25 | Marks External: 25 | Marks Total: 50

50An activity that the students of all the batches participate together working under the guidance of external expert to learn and apply various new skills and knowledges of Art practices which are not included in any of the Subjects during the Course.

DISPLAY

Display of finished works from all the subjects at the end of semester.

4.11.2013

BACHELOR OF FINE ARTS

IN

ANIMATION

(2015-2016)

Academic Regulations

Course Structure

Syllabus

College of Fine Arts

Jawaharlal Nehru Architecture & Fine Arts University

Mahaveer Marg, Masab Tank, Hyderabad – 500 028.

(as approved by the Board of Studies in Animation - JNAFAU College of Fine Arts) – 2015-16

I Year - I Semester - (Foundation)

Subject Code	Name of the Subject	No of Periods For 4 Weeks	Duration of End Semester exams	Internal Marks	Ext. Marks	Total
AN11-1T	History of Art (T)	12	3 hrs.	50	50	100
AN11-2T	English (T)	12	3 hrs.	50	50	100
AN11-3T	Story Development (T)	12	3 hrs.	50	50	100
AN11-4P	Drawing	27	5 hrs.	50	50	100
AN11-5P	Colour	27	5 hrs.	50	50	100
ANI 1-6P	Modeling	27	10hrs	50	50	100
	Total	**117/120**		**300**	**300**	**600**

I Year - II Semester - (Foundation)

Subject Code	Name of the Subject	Periods 4 Weeks	Duration of End Semester exams	Internal Marks	Ext. Marks	Total
AN12-1T	English (T)	12	3 hrs.	50	50	100
AN12-2T	Script Writing (T)	12	3 hrs.	50	50	100
AN12-3P	Forms & Figures	28	5 hrs.	50	50	100
AN12-4P	Perspective Drawing	28	5 hrs.	50	50	100
AN12-5P	Design Principles	20	5 hrs.	50	50	100
AN12-6P	Animation Principles	20	10 hrs.	50	50	100
	Total	**120**		**300**	**300**	**600**

II Year - I Semester - (2D Animation)

Subject Code	Name of the Subject	Periods 4 Weeks	Duration of End Semester exams	Int. Marks	Ext. Marks	Total
AN21-1T	History of Animation (T)	16	for each student 3 hrs.	50	50	100
AN21-2P	Introduction to Digital Media	18	5 hrs.	50	50	100
AN21 -3P	2D Character Design	21	10 hrs.	50	50	100
AN21-4P	Back ground Design	21	10 hrs .	50	50	100
AN21-5P	Story Boarding	20	10 hrs.	50	50	100
AN11-6P	Layout Design	21	10 hrs	50	50	100
	Total	**117/120**		**300**	**300**	**600**

II Year - II Semester - (2D Animation

Subject Code	Name of the Subject	Periods 4 Weeks	Duration of End Semester exams	Int. Marks	Ext. Marks	Total
AN22-1T	Environmental Studies (T)	17	For each student 3 hrs.	50	50	100
AN22-2P	Sequential Drawing	16	10 hrs.	50	50	100
AN22 -3P	Key Frame Animation	28	10 hrs.	50	50	100
AN22-4P	Compositing -I	28	5 hrs.	50	50	100
AN22-6P	Portfolio – I	28	Submission & Viva	50	50	100
	Total	**117/120**		**300**	**300**	**600**

Prof. S. Pradeep Kumar

Dr. S. N. Vikas,

Sri. M. L. Anand Rao,

Sri. A. R. Kamal Roy

Mr. A. Balakrishna,

Mrs. Geethika Tondon,

Sri. P. Rajasekhar,

Sri. K. Basi Reddy

Sri. Chandrahasan

Ms. Sutapa Basu

Sri. T. Gangadhar

Sri. N. S. Murthy

III Year - I Semester - (3D Animation)

Subject Code	Name of the Subject	Periods 4 Weeks	Duration of End Semester exams	Int. Marks	Ext. Marks	Total
AN31-1T	Production Pipeline (T)	17	3 hrs. (per student)	50	50	100
AN31-2P	Props & Set Modeling	20	10hrs.	50	50	100
AN31-3P	Character Modeling	22	10 hrs.	50	50	100
AN31-4P	Texturing	22	10 hrs.	50	50	100
AN31-5P	Lighting	18	10 hrs.	50	50	100
	Total	**99/120**		**250**	**250**	**500**

III Year - II Semester - (3D Animation)

Subject Code	Name of the Subject	Periods 4 Weeks	Duration of End Semester exams	Int. Marks	Ext. Marks	Total
AN32-1P	Rigging	16	10 hrs. (per student)	50	50	100
AN32-2P	Acting for Animators	16	20 min. (per student)	50	50	100
AN32-3P	Character Animation	22	15 hrs.	50	50	100
AN32-4P	Facial Animation	22	10 hrs.	50	50	100
AN32-5P	3D Camera and Rendering	26	15 hrs.	50	50	100
	Total	**102/120**		**250**	**250**	**500**

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IV Year - I Semester

Subject Code	Name of the Subject	Periods in 4 Weeks	Duration of End Semester exams	Int. Marks	Ext. Marks	Total
			For each student			
AN41-1P	VFX	40	15 hrs.	50	50	100
AN41-2P	Compositing – II	40	10 hrs.	50	50	100
ANI41-3P	Seminar on Animation Technology		30 min. Presentation	--	100	100
AN41-P	Final project	40	Submission & Viva	150	150	300
	Total			**250**	**350**	**600**

IV Year - II Semester

Subject Code	Name of the Subject	Duration weeks	Int. Marks	Ext. Marks	Total
AN42-1P	Internship / Practical Training	12	--	--	--
AN42-2P	Thesis & Viva Voce	4	100	200	300
	Total		**100**	**200**	**300**

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Sri. K. Basi Reddy

Sri. Chandrahasan

Ms. Sutapa Basu

Sri. T. Gangadhar

I Year - I Semester - (Foundation)

Code: AN11-1T

HISTORY OF ART

Art History - survey of the western heritage of Art and Architecture. The course introduces to the language of the Arts, Artistic Techniques, the materials, and the creative processes that give rise to the important stylistic developmental look at the art of the past cultures within the context of the social, historical, religious, and political circumstances that produced it. The methodology analyzes stylistic characteristics of each major period as well as the original milieu and function of works of art. Thus, historical context will be equally important as style in our analysis of the visual culture of the western world.

THE STYLISTIC PERIODS ARE:

Unit 1- Primitive Art
Unit 2- Ancient Greece
Unit 3- Ancient Rome
Unit 4 - The Medieval Art -Early Christian Art, Byzantine, Romanesque, Gothic
Unit 5 - The Early Italian Renaissance, The Early Northern Renaissance

ASSIGNMENT:

- Identify important works of art from the major stylistic periods of the western world (emphasis to the stylistic trends artistic preferences of different cultures across time.
- Major artists & their works that best exemplify particular stylistic period.
- Make connections between different stylistic periods & perceive the various cultural & intellectual influences that determine the particular style & function of works of art in a given time & place.

Code: AN11-2T

ENGLISH-I

Unit 1: Listening: Phonology, Stress-making, Homophones

Unit 2: Grammar: Syntax formation, Sentence structure & types, Parts of speech, Tenses, Degrees of comparison, Question tags, Phrases & clauses, Direct indirect, Active passive

Unit 3: Reading : Dictionary reference, Thesaurus reference, Encyclopaedia reference, Book reading, Comprehension

Proposed **question paper** marking for Semester one

Internal Exam: All the three units (Unit I – Listening, Unit II – Grammar, Unit III – Reading) are to be assessed internally and given marks under internal exam marks category.

External Exam: Only Units II and III are to be assessed externally and given marks under external marks category.

Proposed & Recommended Text Books:

1. Communication Skills for Technical Students – T M Farhathullah
2. Essential English – E. Suresh, P. Sreehari, J. Savithri

Code: AN11-3T

Story Development

Narrative Story development is a required writing class, where the students share their fiction through workshops. The course is designed to learn the elements of narrative storytelling: dialogue, point of view, character development, plot, setting and variations in narrative genre. Students learn to visualize and dramatize, using the written word as their artistic medium, and to choose effective and grammatically correct language. Emphasis is placed on the value of revision.

Unit 1 NARRATIVE ELEMENTS AND TOOLS NARRATIVE GENRES, STORY SOURCE

- Required a writing on a topic, share fiction through workshop

Unit 2 IDENTIFYING CHARACTER, STORY BEGINNINGS

- Understand, identify, and use the elements to use the tools for story telling techniques using effective language

Unit 3 IDENTIFYING VOICE, POINT OF VIEW NARRATORS

- Dialogue, point of view, character development, plot setting, variations and gain exposure to alternative narrative generes

Unit 4 Work Shop

Code: AN11-4P

Drawing - I

The course is designed to understand the form by learning to see and utilize light, shadow, and basic perspective. And to build the ability to focus and analyze complex subject matter through long, in-depth, sustained drawing projects rendered in different black and white media. The subjects considered will be still-life, drapery, and plaster casts.

Unit 1 STUDY OF FIGURES CASTED FROM PLASTER/ CLAY/ CARD BOARD/ WOOD ETC.

- Basic shapes
- Four Basic shapes in value
- Basic composition & light
- Still life study

Unit 2 HEAD STUDY

- Study of Head Shapes like oval, hexagonal, squarish, & round
- Study of different views like front, three quarter, side, tiled view of month, eyes, nose, ears.

Unit 3 STUDY OF SHAPE

- Masses of the Figure,
- Masses of the Head,
- Column Forms of the Arms and Legs
- Study of Torso
- Perspective projection of the Figure

Unit 4 STUDY FROM NATURE

- Insects , Birds and Animals
- Ponds, Rocks, Trees, Plants, Flowers, etc,
- Outdoor study

Unit 5 ANATOMY TRADITIONAL AND REALISTIC APPROACH

- Basic human figure proportions of various age group (male/female)
- Fundamental postures (sitting, standing, walking) etc,
- Human figures in Cylinders and Barrel forms

ASSIGNMENT:
Submit a minimum of 10 sketches as each of the above topics in the medium mentioned in the class.

Explore to create 5 Realistic & Traditional drawings of people in situations (including all types and ages engaged in a variety of actions & poses where in costumes of today & previous era regardless of medium is incorporated)

Code: AN11-5P

Colour

Enable the students to produce successful visuals through an in-depth study of the elements, principles, concepts of colour and design. Principles will include contrast, balance, unity, rhythm, symmetry/ asymmetry, and visual emphasis to gain the ability to harmonise colour through colour schemes, and an understanding the influence of light on forms.

All projects incorporate colour principles covered to emphasize craftsmanship and clean presentation.

UNIT 1 COLOUR BASICS
Light color, components of colors. contrast and value principles, , pigment and light theory, tints and shades color tones ,Key of Colors in primary and secondary colors

Unit 2 Color in nature
Study of different color combinations with the help of nature.

UNIT 3 COLOUR WHEEL
24 steps color wheel

ASSIGNMENTS:
Submit 2 assignments on each of the above topic.

Code: AN12-6P

MODELLING

Enables the student to understand the geometrical shapes its construction, Characteristics in 3D form. Construct these shapes by using clay, mount board, thermocole etc.

Unit - 1
Understanding the geometrical forms and construction of the above mentioned by using clay, and mount board.

Unit – 2
Intersection and overlapping of different geometrical shapes

Unit – 3
Creating spaces inside the different geometrical shapes

Unit - 4
Working with still life objects like fruits, vegetables, vases, human body parts etc.

I Year - II Semester - (Foundation)

Code: AN12-1T

ENGLISH-II

Unit 1: Vocabulary Building: Idioms, Proverbs, Collocations, Foreign vocabulary influence in English, Numbers in English, One-word substitutes, -Nyms, Affixes, Phrasal verbs, Abbreviations

Unit 2: Speaking: Speech, Debates, Presentation, Group discussion, Interview skills, Dialogue

Unit 3: Writing: Essay writing, Precise, Letter, Report, Summary, Paragraph, Email, Resume, Punctuation, Capitalization

Internal Exam: All the three units (Unit IV – Vocabulary building, Unit V – Speaking, Unit VI – Writing) are to be assessed internally and given marks under internal exam marks category.

External_Exam: Only Units IV and VI are to be assessed externally and given marks under external marks category.

Proposed & Recommended Text Books:

1. Communication Skills for Technical Students – T M Farhathullah
2. Essential English – E. Suresh, P. Sreehari, J. Savithri

Code: AN12-2T

Script Writing

Script writing involves creating an outline of all of the events taking place in an animation scenario. This means detailing all the audio such as dialogue, sound effects and music score. It also details all of the visual events or features appearing or taking place throughout such as fades, transitions from one scene to another, characters appearing, descriptions of the landscape etc.

Unit 1: CONCEIVING

- Story planning & producing for media production

Unit 2: DEVELOP REALISTIC CRITIQUING SKILLS

- Concepts & techniques need for animation scripting
- Evaluating & creating emotional connection with the audience
- Skills for their own visual stories

Unit 3: DEVELOP, RECOGNIZABLE VERBAL LANGUAGE

- Study of narrative story telling
- Dialogue
- Point of view
- Character development

Unit 4: TALES OF HEROES (LEGEND & RELIGIOUS)

- Infuse story & develop emotional connection
- Writing scene by scene
- Joseph Canbell 'Hero's Journey '

ASSIGNMENT

1. Prepare a mini story with script & dialogue for a dramatic presentation.

Code: AN11-3P

Forms & Figures

An introductory study of the bones and muscles of the human body as they relate to Figurative Art. Examine basic animal (quadruped) anatomy, in comparison to human. An understanding of the structures, make up the body, to deal with the figure in an effective, convincing, cartoon and realistic manner.

Unit 1: FORMS AND STRUCTURES

- cylinders and barrel forms
- Overlapping forms
- Interconnecting lines
- Anatomical and structural forms
- Emphasis to the muscle – system, study of the muscles of the human body
- Form flow and form unity

Unit 2: FUNDAMENTAL POSTURES

(Sitting, standing, walking, running, bending, lying etc)

- Draw skeleton in an easy way
- Basic human hands and legs - explanation & practice understanding their movement, add limitation of joints
- Clothed figure-Wrinkle & Drapery
- Overview of basic animal (quadruped) anatomy comparative to human

Unit 3: COMIC HUMAN FIGURE PROPORTIONS (MALE, FEMALE & CHILD)

- Comic related character skeleton system
- Cartoon character construction

Unit 4: BASIC HUMAN FIGURE PROPORTIONS (MALE, FEMALE & CHILD)

- Introduction and study of the skeleton
- Division as per head ratio
- Cartoon character construction, Basic skeletal system for cartoons
- Cartoon skeletal system in comparison to human skeletal system
- Cartoon character expressions & attitude.

ASSIGNMENT:

1. Draw different parts and angles of the head in cubic and cylindrical forms of all genders and ages
2. Draw basic human shapes in form of cylinders for all anatomy figures

3. Draw the dynamic figure drawing in forms of cylinders and barrels

4. Draw comic Hero character and mention their creator.

Code: AN12-4P

PERSPECTIVE DRAWING

The objective is to study and practice drawing the characteristics, dress and costume of today and of the previous eras. It includes study of all age groups of people, engaged in a variety of actions and poses, wearing interesting clothing and holding props. Establishing narrative expression in the drawings will be an additional goal. Learning the solid fundamental skills of clothed figure.

Unit 1: DEFINITION AND PRINCIPLE OF PERSPECTIVE

- Center, high & low perspective
- One two and three point perspective, plotting and rendering of shadows, atmospheric perspective reflections.

Unit 2: OUT DOOR SKETCHING

- Variety of actions poses, wearing interesting clothing and holding props. (costumes of today and previous eras)
- Rapid sketching from busy streets, markets, stations, zoo, & nature.

Unit 3: ISOMETRIC DRAWING WITH LIGHT AND SHADOW

- Isometric Theory and samples, step by step concept drawing (Ant, Bird & Spider eye view)
- Value, plotting light & shadow, plotting and rendering of sunlight, local light composition.

Unit 4 FISH EYE DISTORTION

- Four & five point perspective.

ASSIGNMENT:

* One point & two point perspective figures in bird's eye & ant's eye view figures to be drawn (minimum two assignments)
* In a room environment with a single perspective & a spider eye view to be drawn (minimum 2 assignments)
* 5 classical drawing & painting of the human / animals with the basic principles of basic anatomical construction in drawing with light & shade primarily in black & white, charcoal, poster colours & water colours.

Code: AN12-5P

DESIGN PRINCIPLES

The study and practice of artistic, mathematical, philosophical , and aesthetic aspects of a group of geometric constructions and proportions underlying the structure of the natural and human made universe. Examine the symbolic and practical theories and application of these properties from both classical and contemporary sources. Supplements of these studies with work using rulers, compasses, pencils and papers to compliment the overview. Because of its universal nature, this subject has a variety of applications for the broad area of artistic endeavors.

Unit 1: GOLDEN RULES

Focal point concept, emphasis to the seven universal shapes, elementary constructions

The vasectomies, the circle and T square, the "how to's of ratio and proportion,

Division of circle, symbolism and philosophy of geometric shapes, geometric anatomy.

ASSIGNMENT

* Study of two-dimensional space and its compositional values from objects and nature
* Pictorial expression related to concepts of space and forms.
* Pictorial elements such as point, line, shape, volume, texture, light, colour

Code: AN12-6P

ANIMATION PRINCIPLES

Intended to develop the skills necessary to implement and bring life to the drawings through the principles of animation. To explore the effect of volume, weight, inertia, gravity, air and material through step by step exercises designed to simplify the figure into a variety of narrative situations.

Unit 1: BASIC ANIMATION PRINCIPLES

Concepts of 12 animation principles & their importance.

Unit 2: KEY DRAWING AND ASSISTANCE ANIMATION

Storyboarding to extreme key poses (Layout Staging), In-between, breakdowns, clean-ups, Layers, Registrations, time chart/ladder, exposure sheet, lip-sync.

Unit 3: TIMING/SPACING; ANTICIPATION, STRAIGHT A HEAD/POSE TO POSE; ARCS; FOLLOW THROUGH & OVER LAPPING ACTION; STAGING

- Hand action throwing a ball, cannon ball, rubber ball, balloon, ball rolling on a ramp/ flat floor. Action before a main action, follow an arc to make a smooth pleasing motion on an action, to create feeling of weight in a character.
- Character poses and strong guestures with line of action, action movement with path of action.

Unit 4: SLOW-IN/ SLOW-OUT, SECONDARY ACTION; EXAGGERATION; SQUASH & STRETCH; SOLID DRAWING AND APPEAL

To give action to all the flexible and loosely wavy objects, rhythm of animation is through wave action, cuteness is based on the basic proportion of a character.

Animation the character with consistency and flow of action.

ASSINGMENTS

1. Design a scene using different geometrical forms
2. Express emotions, feelings and gestures using geometrical forms

II Year - I Semester - (2D Animation)

Code: AN21-1T

HISTORY OF ANIMATION

History of animation a survey of the Heritage of Art & Architecture the methodology to analyze the language of the creative process and the principles of design, as well as techniques and materials. Examining the major monuments and artwork in a chronological sequence, focusing on those from each period, which give the essence of their time, place, function, intent, and the aspirations of the culture and artist, In short, historical context will be equally as important as style.

Unit 1 : Introduction to animation

TYPES OF ANIMATION

- Clay animation, Traditional animation, 3Danimation, Puppet/ toy animation, material animation. Why animation?
- To get rewarding careers in Entertainment Media, Feature Film, Television Episodes, Gaming , Web Animation , Ad agencies, Education

Unit 2 : History of Animation

DRAWING IN TIME – HISTORY

- History of early man / cave man. Ancient Animation
- In Egypt, Greek – Wheel of Life, kricher'smagic lantern, Flip book Invention of Animation
- Blackton – Human faces& Funny faces,Mc.Cay"Gertie the Dinosaur"-Disney' "Steamboat Wille"

Unit 3 : Animation standards

DEFINITION

- Film theory – Definition
- Frame rate, NTSE / PAL/Film speed/Conversion & calculation as per scene.
- Visual transition Devices
- Cut, Fade In /Fade out Cross Dissolve, Wipe

Unit 4 : Audio- visual session

History of Walt Disney studios and in depth study of its characters. Study of International and Indian animation films. Animation Movie show which should include making of the movie

Assignment

- Collect data on each type of animation
- Ex: Name/Title, Director, Style, Country.
- Create a Zoetrope of your own
- Create a flip book/Cardboard disc

Code: AN21-2PT

INTRODUCTION TO DIGITAL MEDIA

Unit 1: COMPUTER BASICS

Types of Operating System, Input Devices, Output Devices and Storage Devices, Introduction to windows, Desktop and Desktop Icons,

Types of Scanners and Printers. Introduction to Graphic file formats, Movies formats

Unit 2: Photography

Understanding the basic principles of lighting and its effects on different subjects and technology involved in capturing these images by camera. Digital shooting- digital advantages- resolution-file compressing- controlling colour and tones. digitizing an image - mixing images - applying layer effects and filters to an image. converting black and white image into colour- retouching the photograph digital photo printing.

Unit 1: PRINCIPLES OF PHOTOGRAPHY

Understanding photography, principles behind the photography, equipment required for photography, camera and its parts, camera controls

Unit 2: RELEVANCE OF LIGHT IN PHOTOGRAPHY

Study of a key light, using key light in front of the scene, which is the primary illumination and casts the shadows in the scene. Study of fill light, and study of background light.

ASSIGNMENT

Out door photography which involves the study of streets, buildings, environment, animals etc.

Slide project

Capturing the images for stop motion animation

Any four assignments covering the above mentioned chapters.

Unit 3: INTRODUCTION TO IMAGE EDITING

Working with colours and making tonal adjustments, correcting images using a histogram, levels dialog box, highlight & shadow target values and sharpening images Drawing and painting, Applying Filters, Using Layers and Channels

Unit 4: INTRODUCTION TO VECTOR BASED ANIMATION SOFTWARE

Creating basic shapes, understanding the key frame animation by using the basic shapes

ASSIGNMENTS

Prepare various type of elements effects - wood, sand, soil, glass, cloth, metal and sky.

Code: AN21-3P

STORY BOARDING

An introduction to pre production planning. A storyboard is a further definition of the script. The focus will be on learning to communicate the drama of the movements and special effects through effective design and pacing. The panels are laid out in order according to the script to give a visual and linear explanation of the story. Storyboards are useful for planning camera angles (framing a shot), position of characters, lighting, etc.

Unit 1:

CREATING THE VISUAL STORY composed of consecutive story sketch panels that depict the action and staging of the script. The storyboard is the basic game plan, the vision of continuity that will drive the entire production. Storyboarding involves working from a film script to set a story down in picture or illustration form. The storyboard functions as the blueprint of an animated picture.

Unit 2:

A SEQUENCE consists of a series of Scene which follow a particular event from beginning to conclusion. In live action, a sequence is generally termed a scene, while what we call a scene is a shot.

Unit 3:

CREATING FINAL STORYBOARD along with the refined characters and with full technical details.

ASSIGNMENT

Any three assignments unit wise.

Code: AN21-4P

Subject: Layout Design

Layout is the art of background for animation. Designs are executed in pencil on punched animation paper of various sizes with light box, depending on the requirements of the scene. Is to determine how to construct the scene

technically for the camera in order to capture the intentions of the story sketch.

Unit 1: STUDY OF PERSPECTIVE:
Design, understanding the character animation, effect animation, inking and background painting, they must also have the ability to draw a wide variety of subject matter in many different styles.

Unit 2: SHADOW PERSPECTIVE:
Render the rough layout, defining lines and shapes and gradations and shading to create dimension. Character registration lines are generally indicated with red pencil. While the rest of the drawing is in black pencil.

Unit 3: PERSPECTIVE:
How can we best give the illusion that the characters are in a three – Dimensional environment than a flatdrawing.

Unit 4: INTRODUCTION LAYOUT LAYER SEPARATION IN LAYOUTS:
Layouts intro, pencil shadings for layouts perspective study of character as per layouts. In door/Outdoor andvarious styles of layouts. Layer separation – UL, OL, held cell.

SETTING:
How can we create a living world for the characters, and what props and elements would best fit that world.

ASSIGNMENTS:

1. Create a perspective view of any object wing 3 point perspective
2. Create a layout shouting a shadow in perspective from one given scene according to the requirement of the strong board.
3. Prepare three types of elements & effects-from either wood, sand, soil, glass, cloth, metal, sky.

Code: AN21-5P

2D CHARACTER DESIGN

Character design involves developing the appearance and features of characters in an animation. Often an actual model will be produced using modeling clay in order to get a better idea of the appearance of the character. **Model Sheets and Expression Sheets** are produced to help students be consistent with the appearance of characters. The more complex the character the harder it is to repeat over and over again.

Unit 1: DESIGNING CHARACTERS
Different moods manually in different backgrounds so as to have an idea about the appearance of the same on screen

Unit 2: DEVELOPING OR COPY OF EXISTING CHARACTERS
Different moods manually in different backgrounds to make a sequence of events.

Character Line-up Sheets are also produced to compare the scale of the characters against one another.

Unit 3: Creating character designs of birds, trees, aquatic life.

Unit 4: EXAGGERATED CHARACTERS

By using hands and feet of humans to create exaggerated characters.\ Developing a character with expressions using any home appliances

ASSIGNMENT:

1. Create 5 characters based on any of the units mentioned above
2. 3 actions of a single character in 3 different moods & background to appear on the same screen.

Code: AN21-6P

Sub: BACKGROUND DESIGN

The background is the "set" or environment that the character or animating cell works over. Backgrounds are to be painted "soft", with a spotlight effect on the area to be the center of attention. Certain areas in this spotlight need to be rendered sharply and more distinctly. To create the imaginary world that the characters inhabit, and through the subtle use of lighting and color, serve to compose and spotlight the action, as well as give emotional impact and continuity of each sequence.

Unit – 1 PERSPECTIVE .
Perspective terms, importance of perspective in back ground

* Explanation one point perspective with simple exercises
* Explanation of two point perspective with simple exercises
* Three point perspective with simple exercise crate a perspective view of building using three point perspective

Unit – 2 IMPORTANCE OF BACK GROUND
Explanation of the importance of background for an animation scene and how an animation background

gives impact to the scene

* Making rough layouts and background

Unit – 3 SHADOW PERSPECTIVE
Showing a shadow in perspective from the given scene according to the requirement of the storyboard.

Unit – 4 IMPORTANCE OF COLOUR
Creating mood to the given scene using colour shades.
Background painting manually mixing of layout with background scene to the given camera's angles mentioned in the story board.

ASSIGNMENT:
Any four assignments covering the above mentioned subjects.

Eg : Creating a perspective view of a building using 3 point perspective.



II Year - II Semester - (2D Animation)

Code: AN22-1T

Sub: ENVIRONMENTAL STUDIES

UNIT 1:

The Multi disciplinary nature of environmental studies Definition, scope and importance need for public awareness.

UNIT 2:NATURAL RESOURCES:

RENEWABLE AND NON-RENEWABLE:

NATURAL RESOURCES AND ASSOCIATED PROBLEMS.

a) **Forest resources:** Use and over-exploitation, deforestation, case studies. Timber extraction, mining, dams and their effects on forests and tribal people.

Water resources: Use and over-utilization of surface and ground water, floods, drought, conflicts over water, dams-benefits and problems.

b) **Mineral resources:** Use and exploitation, environmental effects of extracting and using mineral resources, case studies

c) **Food resources:** World food problems, changes caused by agriculture and overgrazing, effects of modem agriculture, fertilizer-pesticide problems, water logging, salinity, case studies.

e) **Energy resources:** Growing energy needs, renewable and non renewable energy sources, use of alternate energy sources. case studies.

f) **Land** resources: Land as a resource, and degradation, man Induced landslides, soil erosion and desertification.

- Role of an individual in conservation of natural resources.

- Equitable use of resources for sustainable lifestyles. (8 lectures)

UNIT – 3 ECOSYSTEMS

- Concept of an ecosystem.
- Structure and function of an ecosystem.
- Producers, consumers and decomposers.
- Energy flow in the ecosystem.
- Ecological succession.
- Food chains, food webs and ecological pyramids.
- Introduction, types, characteristic features, structure and function of the following ecosystem:-
  a) Forest ecosystem
  b) Grassland ecosystem
  c) Desert ecosystem
  d) Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, Estuaries)

(6 lectures)

UNIT 4: BIODIVERSITY AND ITS CONSERVATION

- Introduction — Definition: genetic, species and ecosystem diversity.
- Biogeographically classification of India Value of biodiversity: consumptive use, productive use social, ethical, aesthetic and option values. Biodiversity at global, National and local levels,
- Hot-spots of biodiversity.
- Threats to biodiversity : habit loss, poaching of wildlife, man-wildlife conflicts.
- Endangered and endemic species of India. Conservation of biodiversity: In --situ and Ex-- situ conservation of biodiversity.

UNIT 5: ENVIRONMENTAL POLLUTION

DEFINITION

- Causes, effects and control measures of: -

a. Air pollution
b. Water pollution
c. Soil pollution
d. Marine pollution
e. Noise pollution
f. Thermal pollution
g. Nuclear hazards

Solid waste Management: Causes, effects and control measures of urban and industrial wastes.

- Role of individual in prevention of pollution.
- Pollution case studies.

Disaster management: floods, earthquake,. cyclone and landslides. (8 lectures)

UNIT – 6 SOCIAL ISSUES AND THE ENVIRONMENT

- From Unsustainable to Sustainable development Urban problems related to energy
- Water conservation, rain water harvesting, watershed management
- Resettlement and rehabilitation of people; its problems and concerns case studies.
- Environmental ethics : Issues and possibi~ solutions.
- Climate change, global warming, acid rain, ozone layer depletion, nuclear accidents and holocaust, case studies.
- Wasteland reclamation.
- Consumerism and waste products.
- Environment protection Act.
- Air (Prevention and Control of Pollution) Act.
- Water (Prevention and control of Pollution) Act. Wildlife Protection Act. Forest Conservation Act.

Issues involved in Enforcement of Environmental legislation. Public awareness.

(7 lectures)

UNIT – 7 HUMAN POPULATION AND THE ENVIRONMENT

- Population growth , variation among nations. Population explosion — Family Welfare Programme.
- Environment and Human Health.
- Human Rights.
- Value Education.
- HIV/AIDS.
- Women and child welfare.
- Role of information Technology in Environment and Human Health Case studies

(6 lectures)

UNIT – 8 FIELD WORK

- Visit to a local area to document environmental assets-river / forest / grassland / hill / mountain
- Visit to a local polluted site — Urban / rural / industrial / agricultural
- Study of common plants , insects , birds
- Study of simple ecosystems — pond, river, hill slopes, etc. (Field work Equal to 5 lecture hours

Code: AN22-2P

Subject: Sequential Drawing

The process of creating the intermediate frame by frame drawings or images to fill in the action from key frame drawing in order to complete the scene/shot in sequential order without " In-betweens and break downs" ,drawings demonstrate the essence of an animated action so as to make the drawing complete and to show in sequence hence called sequential drawing.

Unit - 1
Creating "In-betweens" for biped characters in different backgrounds, in moods and different light effects.

Creating "In-betweens" for quadruped characters in different backgrounds, in moods and different light effects.

Unit - 2
Creating "Inbetweens" for octopod characters in different backgrounds, in moods and different light effects.

Creating a single character animation in flip book animation

Unit – 3
Study of Exposure Sheet: An exposure sheet is build to each scene. The exposure sheets a method of documenting every action of the scene.

ASSIGNMENT:
Any three assignments covering the above mentioned subjects.

Draw key drawings with in betweens for the given assignments using appropriate principles 1-12 field animation paper

Code: AN22-3P

Subject: Key Frame Animation

Key Frame Animation (Light box - Computer with web camera)

Key frame animation is a technique that works a little like storyboarding (a comic strip series of images illustrating a sequence of events). It enables us to choreograph and build an animation by arranging objects and taking snapshots of them at key moments during a sequence of movement or change. These key moments or key frames become the fixed points in time through which the animation passes. Animation between these key frames is calculated by the application.

Unit – 1
Making movements using geometrical shapes as a character

Unit – 2
making movements using birds in flight and animal movements

Unit – 3
Character Action: Principal involved in animation with volume and weight, Acting and attitude, run, jump walk push, pull

Unit – 4
Inbetweening techniques, cleanup techniques, time grid, registration, trace back, breakdown drawings, line quality, line consistency.

ASSIGNMENT:
5 actions with a single character,
5 Different elements FX animation.

Code: AN22-4P

Subject: Compositing-I

To assemble the different characters and backgrounds into single frames and sequences and so is often the first to begin to see the animation as intended for the final audience.

Unit – 1 INTRODUCTION
2D digital animation software

Unit – 2 VECTOR ANIMATION
X-sheet creation, scanning, vectorising

Unit – 3 SIGNIFICANCE OF COLOUR IN ANIMATION
Creating colour models: ink and paint, palette creation

Unit – 4 ANIMATION SEQUENCE

Scene planning, EFX, resolution setting, aspect ration field of view, playback.

ASSIGNMENT

Any four assignments covering the above mentioned subjects.

Code: AN22-5P

Subject: 2D Portfolio

An opportunity to step back and survey a body of their work produced during the first two years in the program. In this juncture the candidates analyse and identifies his/her strengths, weakness and interest to best lay a course towards a clear and committed emphasis. The first step in portfolio awareness development to meet the current standards of the industry.

ASSIGNMENT

Individual student

Related to all the subjects of this semester, each student has to complete at least 3 scene to scene creation to final compositing.

Group of three students

Submission of 30 second animation file of a chosen subject giving equal importance to all the elements in cell or key frame animation with sound.

III Year - I Semester - (3D Animation)

Code: AN31-1T

Production Pipeline (T)

UNIT –I Pre production -: Overview of preproduction planning - program ideas, production models Writing the program proposal, preparing a budget-, Presenting the proposal - Writing the script, Director's roles & procedures, Visualization & sequencing,

UNIT – II PRODUCTION : Basic art of filmmaking using currently available video cameras- types and outputs- digital software/hardware tools. - techniques of shooting – system generic processes of images production – animation introductions- image creations by importing movie/video clips from different sources- like films- still images- 3D images- studying various motions- study of sets- props – backdrops Selection -lighting

UNIT – III : Post production : Image editing equipment – Using Editing Software – editing basics- types of editing – - Digitization, AV data from tape to computer hard disk. Editing Work Station management – disk space & speed requirement – graphics files. Understanding compression and its affects along with various methods understanding layers and tracks.-

UNIT – IV : various techniques used in non-linear editing – colour correction, importing and applying compatible –– creating new images - etc— color correction tools and methodology - Choosing Image Filters - image rigging- texturting – rendering - mixed and un-mixed versions- effecting transitions and animation synchronizations finished fine edit product.

UNIT – V: Audio Recording – introduction to various file formats- qualities of sound – audio levels, — sound tracks –sound mixing – synchronization equipment and techniques - special effects —- importing sound –cutting copying inserting sound- adjusting pitch frequency amplitudes – sound synchronization- mastering final edit line

References:

1. Technology of Video & Audio streaming ,by DAVID AUSTERBERRY
2. Audio Post production for film & Video - Includes Audio CD ,by JAY ROSE
3. Technique of Film & Video Editing History theory & Practice, by KEN DANCYGER
4. Digital Video Editing with final Cut Express, by CHARLES ROBERTS
5. Video Editing a Post Production Primer ,by STEVEN E BROWNE
6. Introduction to Video & Audio Measurement ,by PETER HODGES

Assignments: 1 Assignment form unit – 1, 1 assignment from unit – ii , 1 assignment from unit 3.4.5

Code: AN31-2P

Subject: Props and Set Modeling

Focuses on using 3d software to build sets and props. The 3d modeling tools required and are also encouraged to develop their own 3d scenes. Modeling interior and exterior sets based on a designed layout is also a focus during this part of the course.

Unit – 1 INTRODUCTION TO NURBS MODELING
Creating NURBS primitive objects, Creating NURBS curves, attaching and detaching curves, NURBS components, Editing NURBS surfaces

Unit – 2 CREATING NURBS SURFACES
Revolving, lofting and extruding curves to create surfaces, attaching and detaching surfaces, socking, stitching surfaces

Unit – 3 INTRODUCTION TO POLYGON MODELING
Creating polygon primitive objects, polygon components, editing polygon surfaces, combining and separating polygons

Unit – 4 CREATING POLYGON OBJECTS
Splitting and sub-dividing polygons, extruding polygons, merging vertices, bevel, extract, smooth, working with proxy

Assignments: Design one set with minimum of three props and one environment.

Code: AN31-3P

Subject: Character Modeling

Focuses on modeling 3d characters. Use reference images to build characters from scratch and add features to them. Encouraged to build cartoonic, heroic, alien, human and animal characters.

Unit – 1: LOW POLY CHARACTER MODELING
Importing image planes in viewports, Making a basic shape of the character from a primitive object, keeping a count on no. of faces etc.,

Unit – 2: HIGH POLY CHARACTER MODELING
Adding details to the basic shape of the character, subdividing, applying smooth

Unit – 3 : REFINING THE TOPOLOGY
Learning to maintain the proper flow of edges and mesh resolution, cleaning up character models, understanding surface normal's

Assignment: create one low PolyOne high poly of male or female or any character.

Code: AN31-4P

Subject: Texturing

Focuses on creating shedders and materials. Encouraged to study the surface features of the various objects and create shedders accordingly. This section also covers the workflow involved in texturing characters.

Unit – 1 CREATING SHADERS AND MATERIALS
Understanding shader attributes, Creating shading networks, connecting nodes in work area, using 2d and 3d texture nodes, applying maps to various material attributes like transparency maps, bump maps etc.,

Unit – 2 UNWRAPPING UV'S
Understanding unwrapping, unwrapping props and characters to facilitate texture painting, relaxing and unfolding UV's, split UV's, creating UV sets

Unit – 3 UV MAPPING TECHNIQUES
Understanding UV's, editing UV's and using mapping projections on polygon surfaces, planer mapping, cylindrical mapping, spherical mapping, automatic mapping, working with UV texture editor window

Unit – 4 CREATING AND PAINTING TEXTURES
Painting texture maps, 3d painting, creating PSD networks, Paint Effects, painting diffuse maps, bump maps, specular maps

Assignment : assignment submitted under Character Modeling to be Textured.

Code: AN31-5P

Subject: Lighting

Focuses on understanding light properties, shadow properties and visual impact of lighting on CG sets. Encouraged to observe and study real world lighting and simulate the same with CG lighting.

Unit – 1 CREATING LIGHTS
Creating various types of lights, light properties, understanding light attributes, direct and indirect lighting, using maps on light attributes, break light links, make light links

Unit 2: WORKING WITH SHADOWS
Understanding visual functions of shadow, shadow algorithms, depth-map shadow, ray traced shadow, soft shadows, hard shadows, faking shadows

Unit 3: ILLUMINATING 3D SCENES
Using various lights to illuminate scenes, day lighting, night lighting, adding fog to environments, light glows, indoor and outdoor lighting, diffused lighting, 3-point lighting, key light, fill light and

back light,

Unit 4: GLOBAL ILLUMINATIONS
Understanding global illuminations, introduction to photons & Causties, final gathering.

Assignment : Assignment submitted under props & Set Modeling to be employed for arranging and assigning Lighting.

III Year - II Semester - (3D Animation)

Code: AN32-1P

Subject: Rigging

Focuses on creating character setups. Create skeleton and attach them to character meshes. Students will be encouraged to create animation friendly Rigs.

Unit 1: CONSTRAINS
Parenting and grouping objects, using point, orient, parent constrains, creating controllers, set driven keys etc.,

Unit 2: CREATING SKELETONS
Creating joints, editing joints, parenting joints, orienting joints, creating hierarchical structures and skeletons for biped and quadruped characters.

Unit 3: KINEMATICS
Understanding Forward Kinematics and Inverse Kinematics, Using IK solvers on skeletons, blending FK and IK, creating controllers and adding custom attributes, creating facial setups, blend shape deformers

Unit 4: SKINNING
Understanding Rigid Bind and Smooth Bind, Binding skeletons to characters, painting skin weights, Editing skin weights using component editor, mirroring skin weights, adding influence objects and muscles

Unit 5: FACIAL MODELING
Using various deformers and modifiers to add expressions on the characters.

Code: AN32-2P

Subject: Acting for Animators

Enable students to understand the need of acting, make the characters think and act on screen. Encouraged to understand the difference between performance and actions.

Students will be asked to start observing the body language, attitude in performance, emotions etc.,

Unit 1: STUDY OF ACTION SEQUENCES
Study of some of the action sequences in feature films and animated films by observing them repeatedly. Analyzing and understanding the character style, behavior, body language, body dynamics, anticipation, follow-through and weights shifts.

Unit 2: ACT AND OBSERVE
Working with short takes. Preparing and warming up the body, mind, human senses. Acting and recording some of the action sequences including drama and comedy and observing them , Miming the scene.

Unit 3: CHANGE ACTION INTO PERFORMANCE
Try to act and develop rhythm in an action. Understanding the tense and relaxed situations, dramaand comedy situations, attitude and emotions.

Unit 4: PERFORMING A SCENE
Study the scene, rehearsing and playing action with scene partners, improvisation, working with a Director, performing scene in front of the audience.

Assignment workshop based assessment.

Code: AN32-3P

Subject: Character Animation

Focuses on students developing skills necessary to bring life to characters. Encouraged to study principles of animation. To explore the effect of volume, weight, inertia, gravity through step by step exercises.

Unit 1: INTRODUCTION to 3D ANIMATION TECHNIQUES
Learning animation tools, motion path animation, ghosting, play blasting, setting key frames, copying and pasting key frames, Graph editor, tangents, dope sheet, playback speed

Unit 2: ANIMATING CHARACTERS
Creating bouncing ball animation, pendulum animation etc., Creating important story telling poses, pose to pose vs. straight ahead animation, line of action, extremes and breakdowns, walk cycles, progressive walk, adding attitude in walks.

Unit – 3 BODY MECHANICS
Animating small actions to familiarize body weight, volume, gravity etc., lifting heavy objects, pushing and pulling objects, character interaction with objects

Assignment: 10 sec submission of any animated character.

Code: AN32-4P

Subject : Facial Animation
Focuses on creating realistic and natural expressions and emotions. To learn the important mouth shapes used during dialogues and sync them with audio.

Unit 1: UNDERSTANDING MUSCULAR STRUCTURE OF FACE
Studying anatomy of the face, understanding how muscles work together to create expressions and emotions.

Unit 2: CREATING FACIAL EXPRESSIONS
Creating all important mouth shapes like happy, sad, shocked, smiling, crying, laughing etc.,. eye brow movements, eye blinks, head turn etc.,

Unit 3: IMPORTING SOUND AND LIP SYNCHING
Importing supported audio files into the timeline, using X-sheets, Synchronize expressions and mouth shapes to the audio.

Assignment: 10 clips of synchronization of facial expression &lip with sound. to be produced

Code: AN32-5P

Subject: 3D Camera & RENDERING TECHNIQUES

Focuses on using cameras, animating cameras, learning rendering techniques to a final output in the form of video or sequential images.

Unit 1: 3D CAMERA
Introduction to 3D camera camera tools, depth of field and motion blur.

Unit 2: RENDERING TECHNIQUES
Rendering using software, render settings, rendering quality, file formats, resolution, batch rendering,

Unit: 3 RENDERING IN LAYERS
Rendering a scene in different layers like occlusion layer, shadow layer, specular layer, diffuse layer etc.

ASSIGNMENT: Renderout one scene with different passess.

IV Year - I Semester

Code: AN41-1P

Subject : VFX

This section focuses on understanding Visual Effects and adding VFX into an animation film.

Unit 1: EFFECTS USING PARTICLE SYSTEMS
Understanding particles, emitters, particle goals, creating smoke, fire, explosion effects using particle effects, instancing particles, crowd simulation

Unit 2: RIGID AND SOFT BODY DYNAMICS
Understanding rigid bodies, active rigid body, passive rigid body, rigid body solver, applying forces on rigid bodies, breaking rigid bodies, creating effects using soft bodies

Unit 3: FLUID EFFECTS
Creating clouds, water, oceans, ponds using fluid effects

Unit 4: CAMERA TRACKING –PF track/Bozu
Understanding camera tracking, track points, tracking movements of track points, good and bad tracks, using constraints, solving etc.,

Unit 5: Particle system – crowd simulation
Assignment : Integrate vfx into a live scene track oriented.

Code: AN41-2P

Subject : Compositing –II

This section focuses on compositing various elements like backgrounds, animation clips, effects, color correction and making a final output for different broadcasting mediums.(NUKE & SILHOUTTE based)

Unit 1: IMPORTING CLIPS, ROTOMAKING
Understanding Nodes, Mattes, Roto, Traking, Rendering

Unit 2: PAINT AND WIRE REMOVAL
VFX Paint, Stereo Paint, Wire and Rig removal

Unit 3: KEYING AND COMPOSITING
Keying, Film Compositing, Color correction

Unit 4: 3D, 3D-COMPOSITING AND RENDERING
3D, Camera Projection, 3D Passes Compositing, D Compositing

Assignment : 1. Produce live compositing VFX effect (live VFX, Wire Removals Rotoscoping)

2.CG integrating into a live scene of any footage.

Code: AN41-3P S

Seminar: Presentation of 30 minutes on any technical subject of Animation.

Code: AN41-4P S

Subject : Portfolio-II

3D-Submission of not les than 2min. by a group of maximum four students. roles defined by individual contributing and viva based assessment.

If portfolio is undertaken in 2Dit can be individual submission of minimum20 sec. duration.

IV Year - II Semester

Code: AN42-1P

Subject : Internship / Practical Training

Internship / Practical Training
Students have to undergo practical training for a period of 12 weeks in any of the reputed animation studios any where in India on their own choice, the student has to submit the copy of the work done during the training process to the department for his assessment.

Code: AN42-2P

Subject : Thesis & Viva Voce

Submission of thesis on the work/topic undertaken during practical training in animation under the guidance of the concerned faculty. The presentation will be a

viva voce based and is conducted by one external expert of animation and one internal faculty on the thesis and practical experience gained during his/her internship.

* * *

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JNAFAU COLLEGE OF FINE ARTS

MAHAVEER MARG, MASAB TANK, HYDERABAD - 500 028, A.P., INDIA.

PROPOSED ACADEMIC REGULATIONS FOR MFA (APPLIED ART)

(with effect from the academic year 2008-09)

I.COURSES OFFERED:

The following courses of study are offered for the award of MFA programme.

1. APPLIED ART AND VISUAL COMMUNICATON
2. PHOTOGRAPHY AND MEDIA COMMUNICATON
3. PAINTING AND VISUAL COMMUNICATON
4. SCULPTURE AND VISUAL COMMUNICATON

II. ELIGIBILITY FOR ADMISSION:

1. Admission will be made on the entrance test conducted by the JNA&FAU College of Fine Arts, Hyderabad for those who have fulfilled eligible qualifications, subject to reservations prescribed by the University.

2. Candidates seeking admission to these programs shall be working in and around Hyderabad.

III. COURSE DETAILS:

1. MFA Programme is of 2 years with 4 semesters.

2. Subjects are classified as Theory, Practicals, Project Work, Internship (if necessary), Practical training and Viva-voce.

3. Each semester will have a minimum of 20 weeks of instruction including examination period (with 90 clear instruction days) and 6 days per week.

IV. MINIMUM ACADEMIC REQUIREMENT:

1. A student has to put in a minimum of 75% attendance in aggregate of all the subjects to be eligible for end examination.

2. A 10% short of aggregate attendance in any semester upon production of satisfactory reasons may be condoned by Way on condonation fee as prescribed by the college academic committee.

3. Any student whose aggregate attendance is below 65% shall not be eligible to appear for end semester examination.

4. Any student who is declared ineligible for shortage of required percentage of attendance shall repeat the semester subject to availability but has no matter of right for demanding commencement of the respective semester and accordingly no future claims of what so ever nature in this regard.

5. A student can be conditionally promoted from first semester to second semester if he/she has not more than two backlogs either theory or practical.

6. A student cannot be promoted from first semester to second semester if he/she has not more than two backlogs either theory or practical.

7. Regular and supplementary examinations shall be conducted at the end of each semester to facilitate the students to fulfill the academic requirements including backlogs.

V. EVALUATION:

1. The performance of the candidate in each semester shall be evaluated subject-wise with a maximum of 100 marks for the theory and 100 marks for the practicals, on the basis of internal evaluation and End Semester Examination.

2. The theory subjects 60 marks shall be awarded based on the performance on the End Semester Examination. 40 marks shall be awarded based on the Internal Evaluation. The Internal Evaluation shall be made based on the better of the marks secured in the two-midterm examination (in case of theory subjects) conducted in the middle of the Semester and the other immediately after the completion of instruction.

3. For practical subjects, 60 marks shall be awarded based on the performance in the End Semester Examinations, 40 marks shall be awarded based on the day-to-day performance as Internal Marks.

4. A candidate shall be deemed to have secured the minimum academic requirement in a subject of he secures a minimum of 40% of marks in the End Examination and a minimum aggregate of 50% of marks in the total marks in the End Semester Examination and Internal Evaluation taken together.

5. In case the candidate does not secure the minimum academic requirement in any subject he has to reappear for the End Examination in that subject.

6. In case the student secures less than he required attendance in the Examination in that subject(s), he shall not be permitted to appear for the End Examination in that subjects. He shall re-register the subject when next offered.

VI. AWARD OF DEGREE:

1. A student shall be declared eligible for the award of MFA degree if he/she completes it successfully for not less than 2 academic years and not more than 4 academic years.

2. A student who fail to fulfill all the above academic requirements for the award of the MFA degree within 4 academic years from the year of his/her admission shall forfeit his/her seat in MFA course.

VII. AWARD OF CLASS:

A student upon successful completion of requirements prescribed by the Academic Regulations and the Course Structure governing the respective Discipline is eligible for award of M.F.A. Degree Certificate in the concerned discipline. He/She shall be awarded. One of the following Four Classes calculated on the aggregate marks secured in the entire programme.

Class Awarded	% of marks secured
First Class with distinction	75% and above
First Class	Below 75% but not less than 60%
Second Class	Belbw 60% but not less than 50%

VIII. TRANSITORY REGULATIONS:

Candidate who have discontinued or have been detained for want of attendance or who have failed after having undergone the course are eligible for admission to the same or equivalent subjects as and when subjects are offered.

IX. WITHHOLDING OF RESULTS:

The results of any student shall be withheld if:

1. He/She has not cleared the dues to the Institution/Department.
2. A case of disciplinary action is pending against him/her.

X. GENERAL:

1. The academic regulations should be read as a whole for purpose of any interpretation.

2. In case of any doubt or ambiguity in the interpretation of the above rules, the decision of the Vice-Chancellor is final.

3. The University may change or amend the academic regulations and syllabus at any time and the changes and amendments made shall be applicable to all the students with effect from the date notified by the University.

4. When ever the word he/him or his occur, it will also include she/her and hers.

MASTER OF FINE ARTS (MFA) (REGULAR)

APPLIED ART & VISUAL C0MMUNICATION

COURSE STRUCTURE

1ST SEMESTER

Code	Name Of The Subject	Periods In 4 Weeks	Internal Evaluation	External Evaluation	Total Marks	Duration Of End Semester Exams
	THEORY					
MFA A 11 T	HISTORY OF GRAPHIC DESIGN	18	40	60	100	3 HRS
	PRACTICALS					
MFA A 12 P	VISUALIZATION 1	30	40	60	100	15 HRS
MFA A 13 P	ILLUSTRATION 1	30	40	60	100	15 HRS
MFA A 14 P	MINI PROJECT 1	30	40	60	100	SUBMISSION

2ND SEMESTER

Code	Name Of The Subject	Periods In 4 Weeks	Internal Evaluation	External Evaluation	Total Marks	Duration Of End Semester Exams
	THEORY					
MFA A 21 T	Advertising And Market Research (TH)	18	40	60	10 0	3 HRS
	PRACTICALS					
MFA A 22 P	Visualization 2	30	40	60	100	15 HRS
MFA A 23 P	Graphic Design 1 Or Illustration 2	30	40	60	100	15 HRS
MFA A 24 P	Mini Project 2	30	40	60	100	SUBMISSION

3RD SEMESTER

Code	Name Of The Subject	Periods In 4 Weeks	Internal Evaluation	External Evaluation	Total Marks	Duration Of End Semester Exams
	THEORY					
MFA A 31 T	The Legal Aspects Of Advertising (TH)	18	40	60	100	3 HRS
	PRACTICALS					
MFA A 32 P	Specialization In Illustration 3 Or Graphic Design 2	30	40	60	100	15 HRS
MFA A 33 P	Specialization in Visualization 3	30	40	60	100	15 HRS
MFA A 34 P	Mini Project 3	30	40	60	100	SUBMISSION

4TH SEMESTER

Code	Name Of The Subject	Duration in Weeks	Internal Evaluation	External Evaluation	Total Marks	Duration Of End Semester Exams
MFA A 41 P	**Final Project Work (Campaign)**	**08**	**100**	**200**	**300**	**SUBMISSION**
MFA A 42 T	**Thesis**	**04**	**40**	**60**	**100**	**SUBMISSION**
MFA A 43 P	**Viva Voce**		**40**	**60**	**100**	

MASTER OF FINE ARTS (MFA) (REGULAR)
APPLIED ART & VISUAL C0MMUNICATION SYLLABUS

1ST SEMESTER

MFA A 11: History of Graphic Design
Pre-Historic graphic communications: Paleolithic, Monolithic and Neolithic times.

UNIT 1: Kinds of Graphic images: Petroglyphs, Pictographs, Ideographs and their definitions.

Graphic communications from ancient river valley civilizations. Mesopotamian civilization: Important contributions of the civilization to human development and also to the progress in communication systems such as invention of writing, development of writing from pictorial to abstract characters, formation of 'ownership' patterns and hence of 'Trade marks'.

UNIT 2: Egyptian civilizations: Their method of pictorial writing, Understanding the Hieroglyphs: Important discoveries, Invention of paper: Making of paper from Papyrus and its usage.

UNIT 3: The Chinese contribution: Invention of paper & printing, logograms, calligraphy 1800 BC onwards. The different styles of writing, Bone and Shell script, Bronze script, small scale bronze script – 200 BC Kai-shu regular.

The development of Alphabet, Getan alphabet, Minion civilization, Phoenician alphabet, Greek alphabet, Roman alphabet. The medieval manuscript, Origins of painting and typography in Europe.

UNIT 4: Italian **renaissance of Graphic design**, salient features of German renaissance, Epoch of typographic excellence: particular focus on Rococo period.

Typography in Industrial age: Innovations in typography, wood type poster. Popular graphics of Victorian era, Lithography and Chromo-lithography, the raise of editorial and advertising design. Mechanization of typography.

The arts and crafts movement (i) the century guild (ii) the Kelmscott presses, (iii) the private press movement, (iv) Book design, Art Noveau & the turn of the century: French art Noveau, English art Noveau, American art Noveau.

***Reference**: (1) "A HISTORY OF GRAPHIC DESIGN" by Phillip B. Meggs, Published by Viking Penguin Inc., 40 west 23rd street, New York, 10010, USA.*

MFA A 12
Visualization
Creative Visualization is the Key to Success…. Remez Sasson
Visualization and conceptualization of ideas for problem solving activity of visual communication through expressive typography. Advanced study of corporate identity program for corporate firms, Products and events. Exploring media / formats for instructional design and other promotional activities. Basic concepts of ad films.

UNIT 1: Corporate identity for various firms i.e., logo & stationary

UNIT2 : poster design – indoor and outdoor

UNIT3: Sinages and instructional manuals for various activities like package design, railways, airports etc.

UNIT4: Publication design like magazine news paper
No: of works to be submitted --- 4 works

MFA A 13
ILLUSTRATION
"There is no greater instrument for understanding the visual world than the hand and a pencil." ~ Milton Glaser

Basic principles of making illustrations, process of making illustrations. Students creating ability, self expression and visual communication skills are stressed to create individual studying Illustrations.

UNIT 1: Control drawings to convey characters. Advanced study of human figure, gesture and manmade objects in different mediums and techniques.

UNIT 2: Illustrations for Various Sports Magazines

UNIT 3: Thematic Illustration

UNIT 4: Creative Illustrations

No: of works to be submitted --- 4 works

MFA A 14

MINI PROJECT
A Student has to select a Topic / Subject on any Social Cause in Selected Mediums (Minimum 6 Nos. to be submitted)

Identify the cause and its understanding the media, importance and relevance in view of the target audience.

2ND SEMESTER

MFA A 21

Advertising and Market Research (Th)

UNIT 1: Social and economic aspects of advertising

UNIT 2: Legal aspects of advertising

UNIT 3: Selection of media planning

UNIT 4: Marketing and market research

REFERENCE: ADVERTISING ART AND IDEAS –G.M. REGE

MFA A 22

Visualization

From Imagination to Reality - Making Creative Visualization Work …. Remez Sasson
Visualization and conceptualization of ideas for problem solving activity of visual communication for various Medias like corporate identity, Products and events. Identify the cause and its understanding the media, importance and relevance in view of the target audience.

UNIT 1: Concepts of ad films

UNIT 2: Exploring media / formats

UNIT 3: Promotional activities. (kiosks, mailers, danglers etc.)

UNIT 4: Road shows

No: of works to be submitted --- 4 works

MFA A 23

GRAPHIC DESIGN OR ILLUSTRATION

GRAPHIC DESIGN

The term graphic design can refer to a number of artistic and professional disciplines which focus on visual communication and presentation.

Various methods are used to create and combine symbols, images and/or words to create a visual representation of ideas and messages. A graphic designer may utilize typography, visual arts and page layout techniques in varying degrees to produce the final result.

Graphic design often refers to both the process (designing) by which the communication is created and the products (designs) which are generated.

Unit 1 : Symbols, images and/or words to create a visuals

Unit 2 : Designing sinages

Unit 3 : Book cover and book jacket designs

Unit 4 : Expressive typography

No. of works to be submitted --- 4 works

Illustration

"There is no greater instrument for understanding the visual world than the hand and a pencil." Milton Glaser

UNIT 1: Traditional Illustrations, Graphic Illustrations

UNIT 2 : Fashion Illustrations, Fantasy Illustrations, Sequential Art and Comic Book Art

UNIT 3 : Wildlife Illustrations (Creature Design) , Character Illustrations

UNIT 4 : Combination Of The Above Using Vector Graphics

No. of works to be submitted --- 4 works

MFA A 24

Mini Project

Students should choose their own topic in discussion with the concerned faculty (Guide) in executing the project**. Creativity with good design skills and illustrative skills will be credited.**

(Minimum 6 Nos. works)

3RD SEMESTER

MFA A 31

The Legal Aspects of Advertising (TH)

Status of advertising agents, outdoor advertising – advertisements in newspapers and magazines – radio and television advertising – advertising contracts – consequences of advertising – defamation – slander of goods – passing off – copyright – trademarks other laws affecting advertising – indecent advertisements.

UNIT 1 : Advertisements in newspapers and magazines

UNIT 2 : Radio and television advertising – advertising contracts

UNIT 3 : Consequences of advertising – defamation, slander of goods – passing off- copyright

UNIT 4 : Trade marks other laws affecting advertising – indecent advertisements.

REFERENCE: ADVERTISING ART AND IDEAS –G.M. REGE

MFA A 32

Visualization
From Imagination to Reality - Making Creative Visualization Work …. Remez Sasson

Visualization - A mastery of technical and conceptual abilities and involves intensive education in the formulation of ideas, problem solving and artistic skill. Students are asked to stretch their talents and refine the skills that will enhance their art, broadening the opportunities for their work. Development of the individual's style and viewpoint.

UNIT 1 : Social services

UNIT 2 : Electronic media

UNIT 3 : Web design- home page with links

UNIT 4 : Product layouts

No: of works to be submitted --- 4 works

MFA A 33

GRAPHIC DESIGN OR ILLUSTRATION

Graphic Design

Graphic Designers create books, websites, magazines, film titles, catalogs, typefaces, signage systems, television graphics, posters and postcards. From complex identity programs to single logos, graphic designers give a face and a "visual voice" to retail and cultural enterprises, to entertainment, manufacturing and service industries, governmental and political interests. Simply put, graphic designers give meaningful visual form to content in all media: from print to screen; business cards to billboards; computer interfaces to movie screens. But the most critical skill graphic designers' offer is their unique ability to communicate specific messages through the artful manipulation of typography and images, systems and structures. Their work promotes, educates, directs, informs, exposes, clarifies, beautifies and delights.

Designing on various public related topics using…..

UNIT 1: Typographic, Print & Package Design,

UNIT 2: Publication Design, Branding and Identity Design,

UNIT 3: Corporate Communications Design

UNIT 4: Communication Design.

No: of works to be submitted --- 4 works

Illustration

Illustrations can give faces to characters in a story…..

UNIT 1: Fantasy Illustration, Sequential Art and Comic Book Art

UNIT 2: Wildlife Illustration. Illustrations through Caricatures, Character Design (Character Drawing, Cartooning)

UNIT 3: Product Illustrations, Thematic Illustrations, Medical Illustrations

Unit 4: Digital Illustrations using Adobe Illustrator / Coral Draw and Adobe Photoshop on any topic chosen.

No: of works to be submitted --- 4 works

MFA A 34

Mini Project

Students should choose their own topic in discussion with the concerned faculty (Guide) in executing the project.

4TH SEMESTER

MFA A 41 P

Final project work (campaign)

Students should choose their own topic in discussion with the concerned faculty (Guide) in executing the final project (campaign)

MFA A 42 T

Thesis

Students should choose their own topic in discussion with the concerned faculty (Guide) in executing the thesis.

Thesis should be in accordance with the following:

Title, acknowledgement, certification, content, content review Chapters, conclusion, glossary and bibliography

MFA A43 P

VIVA VOCE

* * *

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JNAFAU COLLEGE OF FINE ARTS

MAHAVEER MARG, MASAB TANK, HYDERABAD - 500 028, INDIA.

PROPOSED ACADEMIC REGULATIONS FOR MFA (PAINTING)

(with effect from the academic year 2008-09)

I. COURSES OFFERED:

The following courses of study are offered for the award of MFA programme.

1. APPLIED ART AND VISUAL COMMUNICATON
2. PHOTOGRAPHY AND MEDIA COMMUNICATON
3. PAINTING AND VISUAL COMMUNICATON
4. SCULPTURE AND VISUAL COMMUNICATON

II. ELIGIBILITY FOR ADMISSION:

1. Admission will be made on the entrance test conducted by the JNAFAU College of Fine Arts, Hyderabad for those who have fulfilled eligible qualifications, subject to reservations prescribed by the University.

2. Candidates seeking admission to these programs shall be working in and around Hyderabad.

III. COURSE DETAILS:

1. MFA Programme is of 2 years with 4 semesters.

2. Subjects are classified as Theory, Practicals, Project Work, Internship (if necessary), Practical training and Viva-voce.

3. Each semester will have a minimum of 20 weeks of instruction including examination period (with 90 clear instruction days) and 6 days per week.

IV. MINIMUM ACADEMIC REQUIREMENT:

1. A student has to put in a minimum of 75% attendance in aggregate of all the subjects to be eligible for end examination.

2. A 10% short of aggregate attendance in any semester upon production of satisfactory reasons may be condoned by Way on condonation fee as prescribed by the college academic committee.

3. Any student whose aggregate attendance is below 65% shall not be eligible to appear for end semester examination.

4. Any student who is declared ineligible for shortage of required percentage of attendance shall repeat the semester subject to availability but has no matter of right for demanding commencement of the respective semester and accordingly no future claims of what so ever nature in this regard.

5. A student can be conditionally promoted from first semester to second semester if he/she has not more than two backlogs either theory or practical.

6. A student cannot be promoted from first semester to second semester if he/she has not more than two backlogs either theory or practical.

7. Regular and supplementary examinations shall be conducted at the end of each semester to facilitate the students to fulfill the academic requirements including backlogs.

V. EVALUATION:

1. The performance of the candidate in each semester shall be evaluated subject-wise with a maximum of 100 marks for the theory and 100 marks for the practicals, on the basis of internal evaluation and End Semester Examination.
2. The theory subjects 60 marks shall be awarded based on the performance on the End Semester Examination. 40 marks shall be awarded based on the Internal Evaluation. The Internal Evaluation shall be made based on the better of the marks secured in the two-mid term examination (in case of theory subjects) conducted in the middle of the Semester and the other immediately after the completion of instruction.
3. For practical subjects, 60 marks shall be awarded based on the performance in the End Semester Examinations, 40 marks shall be awarded based on the day-to-day performance as Internal Marks.
4. A candidate shall be deemed to have secured the minimum academic requirement in a subject of he secures a minimum of 40% of marks in the End Examination and a minimum aggregate of 50% of marks in the total marks in the End Semester Examination and Internal Evaluation taken together.
5. In case the candidate does not secure the minimum academic requirement in any subject he has to reappear for the End Examination in that subject.

6. In case the student secures less than he required attendance in the Examination in that subject(s), he shall not be permitted to appear for the End Examination in that subjects. He shall re-register the subject when next offered.

VI. AWARD OF DEGREE:

1. A student shall be declared eligible for the award of MFA degree if he/she completes it successfully for not less than 2 academic years and not more than 4 academic years.

2. A student who fail to fulfill all the above academic requirements for the award of the MFA degree within 4 academic years from the year of his/her admission shall forfeit his/her seat in MFA course.

VII. AWARD OF CLASS:

A student upon successful completion of requirements prescribed by the Academic Regulations and the Course Structure governing the respective Discipline is eligible for award of M.F.A. Degree Certificate in the concerned discipline. He/She shall be awarded. One of the following Four Classes calculated on the aggregate marks secured in the entire programme.

Class Awarded	% of marks secured
First Class with distinction	75% and above
First Class	Below 75% but not less than 60%
Second Class	Below 60% but not less than 50%

VIII. TRANSITORY REGULATIONS:

Candidate who have discontinued or have been detained for want of attendance or who have failed after having undergone the course are eligible for admission to the same or equivalent subjects as and when subjects are offered.

IX. WITHHOLDING OF RESULTS:

The results of any student shall be withheld if:

1. He/She has not cleared the dues to the Institution/Department.

2. A case of disciplinary action is pending against him/her.

X. GENERAL:

1. The academic regulations should be read as a whole for purpose of any interpretation.

2. In case of any doubt or ambiguity in the interpretation of the above rules, the decision of the Vice-Chancellor is final.

3. The University may change or amend the academic regulations and syllabus at any time and the changes and amendments made shall be applicable to all the students with effect from the date notified by the University.

4. When ever the word he/him or his occur, it will also include she/her and hers.

Regular MFA Programme-Painting 2 years Duration

COURSE STRUCTURE

Semester – I

Code	Name of the Subject	Internal Marks	End Exam Marks	Total Marks	Duration of End Sem. Exam.	Period in a month
MP1 1.1 T	History of Visual art & Aesthetics Painting - I	40	60	100	03 Hrs	20
MP1 1.2	Practical Specialization (Any one below) Creative Painting/ Other Medium	40	60	100	25 Hrs.	120

Note: Project Presentation at end of the Semester from any given topic
Total Periods in a Month 140

Semester – II

Code	Name of the Subject	Internal Marks	End Exam Marks	Total Marks	Duration of End Sem. Exam.	Period in a month
MP2 1.1 T	History of Visual art & Aesthetics Painting - II	40	60	100	03 Hrs	20
MP2 1.2	Practical Specialization (Any one below) Creative Painting/ / Other Medium	40	60	100	25 Hrs.	120

Note: Project Presentation at end of the Semester from any given topic
Total Periods in a Month 140

Semester – III

Code	Name of the Subject	Internal Marks	End Exam Marks	Total Marks	Duration of End Sem. Exam.	Period in a month
MP3 1.1 T	History of Visual art & Aesthetics Painting - III	40	60	100	03 Hrs	20
MP3 1.2	Practical Specialization (Any one below) Creative Painting / Other Medium	40	60	100	25 Hrs.	120

Note: Project Presentation at end of the Semester from any given topic
Total Periods in a Month 140

Semester – IV

Code	Name of the Subject	Internal Marks	End Exam Marks	Total Marks	Duration of End Sem. Exam.	Period in a month
MP4 1.1 T	History of Visual art & Aesthetics Painting - IV	40	60	100	03 Hrs	20
MP4 1.2	Practical Specialization (Any one below) Creative Painting/ / Other Medium	40	60	100	25 Hrs.	120

Note: Project Presentation at end of the Semester from any given topic
Total Periods in a Month 140

PROPOSED SYLLABUS for M.F.A PAINTING

Ist SEMESTER

Duration: 90 days

MP1 1.1 T- HISTORY OF VISUAL ART & AESTHETICS-I:

THEORY Modern Indian art:

Unit I

It would be ideal to provide a comprehensive understanding of Modernism with an emphasis on Indian modernism and other Colonial modernisms. And an understanding towards historiography and Art Historiography giving and understanding of structure and problems of Art History in general and also in Indian context.

Unit II

- Company Painting; socio-economic changes in the colonial period with a critical analysis.
- British Artists in India (Johann Zofanny, Telly Kettle, Daniel Brothers, William Hodges, etc.)
- Bazaar Painting; Indian painters who worked for Company officials.

Unit III

- Kalighat Painting, Open Bazaar Artists, Bat Tala Printing Presses.
- Fine Art Schools established by British.

Unit IV

British Art education policy, Curriculum, and its ideological implications, Art School Artists – Ananda Prosad Bagchi, Banapada Banerjee, G.K. Mahthre, Dhurandhar…

Unit V

Raja Ravi Verma – discuss his work through the concepts of Artist's individuality and self expression and his notions of 'Indianness' in his works; how he tried to invoke the consciousness of nationalism in Art

MODERN WESTERN ART:

Unit -I

Introduction to certain key concepts like 'Modern', 'Modernity', 'Modernization' in the context of Western Art; general discussion about the changing ideas of Art, Artist and the Artist's individuality and self expression in the context of modernization.

Note: Each period or 'ism' should be discussed through the socio-historical, and politico-cultural situations of the contemporary times and how the form undergoes change(s) under such conditions in the hands of certain artists who established shifts from the 'past' or 'existing' in the course of history of Art.

Unit II

Neoclassicism – Discuss the impact of 'Enlightenment' philosophy; the aesthetic theory of Johann Winkelmann and its influence on the contemporary art through the works of some prominent artists of the times (Jacques Louis David, August Dominique Ingres, Antonio Canova, Bertel Thorwaldson, Horato Greenogh)

Romanticism – Discuss the philosophy of Jean Jacques Rousseau and its impact on Art; discuss also the rise in the notions of nationalism; and the coinage of the term 'Romantic' and Romanticism. These issues can be discussed through the works of Theodore Gericault, Eugene Delacroix, and Anne Girodet Troison from France; Casper David Fredrich, Otto Runge from Germany; J.M.W Turner, John Constable, and William Blake from England; French sculptors like Francois Rude and Jean Baptiste Carpeaux.

- **The rise of Landscape Painting** – Discuss about the changing notions of landscape and its development into a separate genre and also the emergence of the notions of *picturesque* in the context of landscape.

- **Barbizon School** – Discuss the conditions for and the development of Barbizon School through the kind of landscapes that were produced by its members – Theodore Rousseau, Jean Francois Millet, etc.

Unit III

Pre-Raphaelites – Discuss the emergence of Pre-Raphaelite brotherhood and its context through the works of Dante Gabriel Rossetti, Holman Hunt, and Millais.

Realism - Discuss the context of 'Realism' through the contemporary historical developments and political conditions as well as the scientific and technological innovations like the invention of camera.

Discuss the tendencies of social realism in contrast to the 'Art for Art's Sake' movement.

Unit IV

Impressionism – Introducing to the movement by giving the important developments in the field of art, influence of Charles Baudelaire's writings; development of colour theories and light theories. The impact of changing city-scape as well as the changing lifestyle of the society those reflect in the impressionist paintings of – Edward Manet, Claude Monet, Camille Pissaro, Auguste Renoir, Mary Cassatt, Berthe Morisot, Alfred Sissily, Edgar Degas and others.

Post Impressionism – Explaining the term, its coinage and Roger Fry, and Clive Bell's aesthetic ideas. Discuss its significance analyzing the works of Vincent Vangogh, Paul Cezanne, Paul Gauguin, Georges Seurat, and Henry De Toulouse–Lautrec.

Discuss the works of Henry Rousseau and the 'Naïve Art'.

Discuss The Nabis – Emile Bernard, Edouard Vuillard, and Pierre Bonnard in the context of the Post Impressionist developments.

PRACTICALS:

MP 1 1.2

Sub: Creative Painting

Insisting on Drawing and exercises in any one of chosen material and medium, clarifying and developing methods and modes of expressions.

From this experience arriving at a Painting form of their-own.

Objective:

- To self introduce and way of seeing and doing, thus acquiring a vocabulary, which could be useful in describing their own professional way language and its art practice.
- This will be enable student to establish as a professional practice by achieving a firm sense of direction for creative painting.
- As part of an orientation to this course students expected to present a statement of purpose (study proposal).
- Emphasis would be place on individual studio practice.
- Subject creative painting art practice experimented from pictures to remind themselves and what quality is and work will be explore on developing by theme of imagination, and its medium.
- Scribble book maintenance and practice of drawings in creative manner.
- An orientation of this course the students should be expected to present his/her slides/softcopies of early practiced work.
- In the open class period/weekend life study by live reference/model (creative methods)
- (Creative methods=particular medium x individual style, techniques and medium quality understanding
- In every end of III rd week any art film screening/lecture by art history faculty

A) DISCIPLINE:

- Frequent visits to museums for study and self-represent explored in studio work also with reference of contemporary artist works/author books.

B) TEACHING AIDS:

- Studio practice with life study.
- Work with a life model in standing/seated, or recycling poses.
- The work practice with short warm-up poses/free hand drawing, using a medium such as (charcoal/pastel/ink/water color/mixed medium) imposed by themselves.

C) EXPERIENCE AND EVOLUTION:

- Students will be able to develop self-disciplinary skills and inherent to their studio practice via, individual directed research.

D) ASSESSMENT:

- Completion of work by students, appropriate display in the provided studio-space.
- Presentation of works by student.
- Written statement about their work
- Minimum four completed (with quality) final works has to be submitted along with related studies/Practice Projects.

IInd SEMESTER

Duration: 90 days

MP2 1.1 T - HISTORY OF VISUAL ART & AESTHETICS-II:

THEORY: Modern Indian art:

Unit I

Nationalist Movement and Art – Bengal Revivalism – the ideological constructs around the notion Nation and its pictorial imaginations.

- The influences of Nationalist consciousness in Art particularly in the works of Abanindranath Tagore, Gaganendranath Tagore and some followers.
- The Pan-Asian political and cultural consciousness.
- Discuss the influence of Far East on art and thought of the times with the writings of Coomaraswamy, Sister Nivedeta etc.

Unit II

Santiniketan School – Rabindranath Tagore and his alternative educational project. Discuss the importance of Santiniketan and the ideas and Art of Rabindranath that contributed to Kala Bahvan.

- Discuss in detail the contributions Nandalal Bose, Benode Behari and Ramkinkar. Also extending the discussion to some significant artists of Santiniketan and its decline after the death of Tagore.

Unit III

- Discussing the works of Jamini Roy and his market strategies and mass production.
- Discussing the works of Amrita Sher Gill and East West dilemma.

Unit IV

An outline of sculpture produced within the parameters of Modern Indian Art.

Modern Western Art:

Unit I

Symbolism – discuss the influences that developed Symbolism and the works of Odilon Redon, Gustave Moreau.

Art Nouveau – Discuss the impact of 'Craft's Movement' and the writings of William Morris and his followers/associates. Discuss the works of Gustav Klimt, and later Egon Scheille and Aubrey Beardsley. Discuss Art Nouveau in architecture the works of Antonio Gaudi.

Fauvism – Discuss the coinage of the term and its significance in the context of Modern Western Painting. Discuss the works of Fauvists and their aftermath through the works of Henry Matisse, Andre Derain, Maurice De Vlaminck, Georges Rouault etc.

Unit II

Expressionism – Discuss the influence of Eduard Munch. In the contemporary socio-political context and the historical conditions, discuss Expressionism through the works of the artists of 'The Bridge' and 'The Blue Rider' groups. Also discuss the individual artists like Paula Modersohn – Becker, Kathe Kollwitz and the transformation of the movement at a later stage like the works of Max Beckman.

Abstraction – Discuss the development of Abstraction as a visual language and its relation with music in the context of Kandinsky and also the significance of Piet Mondrian and Paul Klee. Also discuss about Bauhaus School, De Stijl.

Unit III

Cubism – Discuss the emergence and significance of Cubism and its influence on the European Art afterwards. Discuss the works of Pablo Picasso, Georges Braque, Juan Gris and certain Post cubist tendencies. Discuss also the cubist developments in sculpture.

Early 20th Century Sculpture – Discuss the influence of Rodin and the works of some of the sculptors – Aristide Maillol, Ernst Barlach, George Minne, Wilhelm Lehmbruck, Raymond Duchamp-Villon Broudille and Archipenko.

PRACTICALS:

MP 2 1.2

Creative Painting:

Discussing the developments of Painting and particularly Modern Indian and Western Painting achievements provides a historical understanding to the students. At the same time it also gives a direction to the student to choose any of the artists from the past to be inspired for his/her own work

- Continued emphasis on student practice

- Review of study proposal

- One practice oriented workshop/seminar involving exposure to and training in local painting practices such as wasli, tempera painting, wash painting, pat painting, Nirmal painting and Kalamkari painting, Tanjore Painting, Kondapalli toys, laser painting.

- This could be continued for the remaining semesters.

- Executing original Painting based on the above studies. Color composition with various Techniques, Drawings and their concepts, Documentation of the process in studio journal along with related studies/Practice Projects.

IIIrd SEMESTER Duration: 90 days

MP3 1.1 T- HISTORY OF VISUAL ART & AESTHETICS-III:

THEORY: Modern Indian art:

Unit I

- Movements of 1940's Bengal, Calcutta Group of 1942.
- Bengal Famine and the reactions of the artists particularly – Somnath Hore, Chittoprosad, Zainul Abeddin etc.
- Bombay Progressive Group – 1947

Unit II

- Madras Progressive Group.
- Developments in Sculpture through out contemporary India
- Delhi Shilpa Chakra and the artists associated with it.

Unit III

- Conditions of Post Independent India and the socialist/humanist/communist artists.
  'Partition', 'Migration' and 'Relocation' in works of particular artists (Jogen Choudhury, Bikash Bhattacharya, Ganesh Payne, Satish Gujral, M.F.Hussain, Swaminathan etc.)
- Re-emergence of indigenous tendencies; Probing the inception of International Trends in Indian Art

Unit IV

Art since 1970's

- The Group 1890 in Baroda and figurative and narrative trends.
  Indigenism and works of KCS Pannikar, J Swaminathan and K. G. Subramanyan and appropriation of so-called folk art, tribal art, minor art, tantric art, bazzar art, mass art in various artists' works. Influence of the notion "Living Traditions" on number of artists and their works.

Modern Western Art:

Unit I

Futurism – Discuss the political scenario of Europe in the contemporary times and its relation to Futurism. Discuss the works of Carlo Carra, Giacomo Balla, and Umberto Boccioni. Also discuss about Futurist sculpture.

Suprematism and Constructivism – Discuss the works of Suprematism and its significance with the works of Kasmir Malevich. Discuss the formation of Constructivism as a Russian movement that differed from French movements and the works of Vladimir Tatlin, El Lissitzky etc.

Unit II

Dada – Discuss the historical conditions and the condition of the artists in the contemporary times of the emergence of the movement and how it spread from Berlin to New York, Zurich etc. discuss the artists – Marcel Duchamp, Hugo Ball, Hans Arp, Francis Picabia, Man Ray, Schwitters.

Surrealism – Discuss Surrealist Manifesto by Andre Breton, its emergence and the various reasons for its emergence. Discuss the works of the artists like De Chirico, Salvador Dali, Rene Magritte, Ernst Max, Joan Miro, etc through their specific contexts.

20th Century Sculpture – Discuss the important individual sculptors like Henry Moore, Alberto Giacometti, and kinetic sculptors – Naum Gabo, Alexander Calder etc.

Unit III

Photography – Discuss the development and aesthetics of photography and its emergence as a language in itself that played a role between two world wars. Discuss how and why photography though is been practiced parallel to Mainstream Art never enjoyed a status of a painting or art in general. Through an itinerary of important photographers, discuss the changes in the language of photography in respect to the changes in the times as well as the influence of art.

American Art Scene – Discuss the contributions of the artists between two world wars Edward Hopper, Charles Sheeler in the context of American Art between the world wars.

Mexican Muralists and painters – Discuss the works of one of the most important politically committed artist Diego Rivera and the other artists influenced by Mexican nationalism – Jose Clemente Orozco and David Alfaro Siqueiros. Apart from these muralists, one of the most ingenious woman painters Frida Kahlo also needs to be discussed.

PRACTICALS:

MP 3 1.2
Creative Painting:

In this semester Internship is introduced to the students. Guidance is given in choosing the topic for internship as well as certain practical assistance. A report on their chosen internship area has to be submitted and a work or a practical assignment in the form of Painting theme has to be conceptualized. The practical assignment is intended to translate their experience in the internship into a visual form

- In studio practice, Painting with marked individual and innovative approach in any particular media
- Continuation of studio practice
- Submission of dissertation topic and outline plan
- Exposure to new media practices, involving slide show, group discussion and demo of works
- Submission of one work in new media
- Elective subject (Sculpture/Photography/Print-making) according to the student choice along with related studies/Practice Projects.

IVth SEMESTER

Duration: 90 days

MP4 1.1 T - HISTORY OF VISUAL ART & AESTHETICS-IV:

THEORY: Modern Indian art:

Unit I

An introduction to the concept of Post-Modernism and its criticism towards Modernism; Post Colonialism and other critical concepts like Feminism etc and the emergence of Feminist Art; a critical analysis of the Modernist Art, and Art as a discourse in general in the context of contemporary artistic practices.

Unit II

- Incorporation of the elements from varied denomination in the works of prominent individual artists, such as Bhupen Khakar, Jahangir Jani etc
- The ideology and the 'movement' of the Indian Radical Painters and Sculptors Association
- Contemporary Indian Art in the context of international art scene

Unit III

Women Artists

Emergence of the category of women Artists and a historical outline of the women artists earlier to the category. Feminist engagements of some of the women artists. Why do we study women artists separately? Why do we deal their works more specifically with the transactions, on gender terms, between private sphere and public concern?

Discussing the contemporary women artists, like Meera Mukherjee, Arpita Singh, Mrinalini Mukherjee, N. Pushpamala, Nilima Sheikh, Navjot Altaf, Nalini Malani, Anita Dube, Sheela Gowda, Anupam Sud, Anju Dodiya, Rekha Rodwitya, etc

Unit IV

A brief history of Print Making in India and the development of graphic art in contemporary Indian with reference to the works of major print-makers in various techniques.

Modern Western Art:

Abstract Expressionism – Discuss the theory of Formalism in the context of Abstract Expressionism by Clement Greenberg's. Also discuss the shift of the centre of art from Europe to America in respect to the post war political and socio-cultural situation. Discuss the works of Jackson Pollock, Franz Kline, Robert Motherwell, Mark Rothko, William de

Kooning, Barnett Newman and others.

Pop Art – Discuss the reaction of Pop Art to Abstract Expressionism through the works of Jasper Johns, Robert Rauschenberg, Roy Lichtenstein, Richard Hamilton, Claes Oldenburg, Andy Warhol etc.

OP Art – Discuss the works of Bridget Riley in the context of Op Art.

Minimal and Conceptual Art – Discuss the works of Frank Stella, Robert Morris, Carl Andre and Eva Hesse in the context of Minimal Art; discuss the works of the Land Artists – Christo, Robert Smithson and James Turrell..

Photo Realism and New Image Painting – Discuss the works of Balthus and David Hockney who reacted to the extreme formalism of Minimalism.

In the context of Photo Realism discuss the phenomenon of Simulacra as discussed by Baudrillard and some of the Photo realists – Richard Estes, Chuck Close etc.

Postmodernism and Art – Discuss the concept of Postmodernism and post- modernity generally as well as its impact on art. Discuss the multiplicity of visual languages practiced through the politics of Post modernism, identity etc.

PRACTICALS:

MP 4 1.2
Creative Painting:

Guidance of the teacher is extended after the development of the student from the first year. Assessing the course and direction of those works the student is helped with the conceptual and mediumistic possibilities for the future course of work. At the same time an introduction to the New Media art, Public Art and Community Art, Site Specific Art as well as Political dimensions of Art that are prevalent in the contemporary art 'Field

Dissertation is introduced explaining the scope and significance of it in the context of their own work. A respective guidance to each student is provided regarding the topic as well as the process of completion of it.

- submission of dissertation /portfolio

- production of a coherent body of work for final display/exhibition

* * *

MASTER OF FINE ARTS
IN
PHOTOGRAPHY
(2011-2012)

Academic Regulations
Course Structure
Syllabus

College of Fine Arts
Jawaharlal Nehru Architecture and Fine Arts University
Mahaveer Marg, Masab Tank, Hyderabad – 500 028.

ACADEMIC REGULATIONS FOR MFA (PHOTOGRAPHY & MEDIA COMMUNICATION)

(with effect from the academic year 2011-12)

I. COURSES OFFERED:

The following courses of study are offered for the award of MFA programme.

1. APPLIED ART AND VISUAL COMMUNICATON
2. PHOTOGRAPHY AND MEDIA COMMUNICATON
3. PAINTING AND VISUAL COMMUNICATON
4. SCULPTURE AND VISUAL COMMUNICATON

II. ELIGIBILITY FOR ADMISSION:

Admission will be made on the entrance test conducted by the JNA&FAU, College of Fine Arts, Hyderabad for those who have fulfilled eligible qualifications, subject to reservations prescribed by the University.

III. COURSE DETAILS:

1. MFA Programme is of 2 years with 4 semesters.
2. Subjects are classified as Theory, Practicals, Project Work, Internship (if necessary), Practical training and Viva-voce.
3. Each semester will have a minimum of 20 weeks of instruction including examination period (with 90 clear instruction days) and 5 days per week.

IV. MINIMUM ACADEMIC REQUIREMENT:

1. A student has to put in a minimum of 75% attendance in aggregate of all the subjects to be eligible for end examination.
2. A 10% short of aggregate attendance in any semester upon production of satisfactory reasons may be condoned by way of condonation fee as prescribed by the college academic committee.

3. Any student whose aggregate attendance is below 65% shall not be eligible to appear for end semester examination.

4. Any student who is declared ineligible for shortage of required percentage of attendance shall repeat the semester subject to availability but has no matter of right for demanding commencement of the respective semester and accordingly no future claims of what so ever nature in this regard.

5. A student can be conditionally promoted from first semester to second semester if he/she has not more than two backlogs either theory or practical.

6. A student cannot be promoted from first semester to second semester if he/she has not more than two backlogs either theory or practical.

7. Regular and supplementary examinations shall be conducted at the end of each semester to facilitate the students to fulfill the academic requirements including backlogs.

V. EVALUATION:

1. The performance of the candidate in each semester shall be evaluated subject-wise with a maximum of 100 marks for the theory and 100 marks for the practicals, on the basis of internal evaluation and End Semester Examination.

2. The theory subjects 60 marks shall be awarded based on the performance on the End Semester Examination. 40 marks shall be awarded based on the Internal Evaluation. The Internal Evaluation shall be made based on the better of the marks secured in the two-mid term examination (in case of theory subjects) conducted in the middle of the Semester and the other immediately after the completion of instruction.

2. For practical subjects, 60 marks shall be awarded based on the performance in the End Semester Examinations, 40 marks shall be awarded based on the day-to-day performance as Internal Marks.

4. A candidate shall be deemed to have secured the minimum academic requirement in a subject of he secures a minimum of 40% of marks in the End Examination and a minimum aggregate of 50% of marks in the total marks in the End Semester Examination and Internal Evaluation taken together.

5. In case the candidate does not secure the minimum academic requirement in any subject he has to reappear for the End Examination in that subject.

6. In case the student secures less than he required attendance in the Examination in that subject(s), he shall not be permitted to appear for the End Examination in that subjects. He shall re-register the subject when next offered.

VI. AWARD OF DEGREE:

1. A student shall be declared eligible for the award of MFA degree if he/she completes it successfully for not less than 2 academic years and not more than 4 academic years.

2. A student who fail to fulfill all the above academic requirements for the award of the MFA degree within 4 academic years from the year of his/her admission shall forfeit his/her seat in MFA course.

VII. AWARD OF CLASS:

A student upon successful completion of requirements prescribed by the Academic Regulations and the Course Structure governing the respective Discipline is eligible for award of M.F.A. Degree Certificate in the concerned discipline. He/She shall be awarded. One of the following Four Classes calculated on the aggregate marks secured in the entire programme.

Class Awarded	% of marks secured
First Class with distinction	75% and above
First Class	Below 75% but not than 60% less
Second Class	Below 60% but not than 50% less

VIII. TRANSITORY REGULATIONS:

Candidate who have discontinued or have been detained for want of attendance or who have failed after having undergone the course are eligible for admission to the same or equivalent subjects as and when subjects are offered.

IX. WITHHOLDING OF RESULTS:

The results of any student shall be withheld if:

1. He/She has not cleared the dues to the Institution/Department.
2. A case of disciplinary action is pending against him/her.

X. GENERAL:

1. The academic regulations should be read as a whole for purpose of any interpretation.

2. In case of any doubt or ambiguity in the interpretation of the above rules, the decision of the Vice-Chancellor is final.

3. The University may change or amend the academic regulations and syllabus at any time and the changes and amendments made shall be applicable to all the students with effect from the date notified by the University.

4. When ever the word he/him or his occur, it will also include she/her and hers.

COURSE STRUCTURE

M.F.A. (Photography and Media Communication)

I Year / I Semester

Subject Code	Name of the Subject	Periods in a Weeks	Internal Evaluation	External Exam	Total marks
	THEORY				
111T.	Digital Photography	4	40	60	100
112T.	Media & Communication	4	40	60	100
	PRACTICALS				
113P.	Digital Photography Tech	10	40	60	100
114P.	Media & Communication Tech.	12	40	60	100
	Total	**30**	**160**	**240**	**400**

I Year / II Semester

Subject Code	Name of the Subject	Periods in a Weeks	Internal Evalu-ation	External Exam	Total marks
	THEORY				
121T	Television Production	4	40	60	100
122T	Video Post Production	4	40	60	100
	PRACTICALS				
123P	Television ProductionTech	12	40	60	100
124P	Video Post Production Tech	10	40	60	100
	Total	**30**	**160**	**240**	**400**

II Year / I Semester

Subject Code	Name of the Subject	Periods in Weeks	Internal Evalua-tion	External Exam	Total marks
	THEORY				
211T	Electronic Media & Communication	4	40	60	100
212P	Project Work	6	40	60	100
	PRACTICALS				
213P	Electronic Media & Communication Tech	10	40	60	100
214P	Short Film Making	10	40	60	100
	Total	**30**	**160**	**240**	**400**

II Year / II Semester

Subject Code	Name of the Subject	No. of Weeks	Interna l Evalu-ation	Externa l Exam	Total marks
	PRACTICALS				
221P	Practical Training / Internship & Thesis Submission	15 weeks	150	150	300
222P	Viva-Voce		50	50	100
	Total	**15**	**200**	**200**	**400**

SYLLABUS

I YEAR – I SEM.

SUB : DIGITAL PHOTOGRAPHY
Code : 111 T

UNIT – I Digital Basics - Introduction to Concept of Digital Imagin-Color management.

UNIT – II The digital Camera – Components of Digital Camera – Sensor – Sensor Characteristics & Configuration – LCD Display – Menu & Operations.

UNIT – III Digital Camera Lenses – Digital Zoom – Auto Focus systems.

UNIT – IV Image Formation – color formation Characteristic of Digital Image – ISO & Resolution – Dynamic Range – Histogram - Noise - Aliasing Moiré - Remedial measures - Camera firmware – EXIF Mechanism.

UNIT – V Storage – Functioning Technology – Capacities types of Storage – Storage Devices – CD – DVD – BLUE RAY DISCS. Advantages & Disadvantages.

Media and Communication (Theory)
112 T

Unit-I Critical Media Theory-Communication Development
Unit-Ii Emerging Trends In Television, Print Journalism, Radio And New Media.
Unit-Iii Evolution Of Mass Media In India.
Unit-Iv Analyzing Media Texts- Advertising, Television And Film
Unit-V International Communication, Information And Communication Technology Revolution And Mass Nmedia.

Globalization And Media.

Books Recommended

1. Danis Mc Quail-Mass Communication Theory
2. Television Production By Alan Wurtzel.
3. Media Communication And Photo Journalism By Krishna Menon
4. Understanding Digital Media And Web Long Journalism By Anil K.Rai.
5. Modern News Structure In Print Media Nad Electronicmedia By Jp Aluwaliya
6. Documentary Story Telling For Video And Film Making By Sheila Curran Bernard.
7. Documentary In Digital Age By Maxine Baker.

DIGITIAL PHOTO TECH - (PRACTICAL) 113 P

Unit-I

1. Set up of Digital Studio - Lab.
2. Digital camera operation.
3. Shooting with different light sources.

Unit-II

1. Portrait.
2. Product.
3. Food.

Unit-III Introduction to Adobe Photoshop. Working with tools.

Unit – IV Storing in different files formats. Set up of Image Resolution / Working with Resolutions. Image editing - using Adobe Photoshop.

Unit-V Photo stitching in Photoshop -Panoramic images – Photomontages – Photo - Collages.

Media and communication tech 114 P

Documentary screening and analysis

Documentary film making-choosing the theme-production design-planning-research-script writing-production-postproduction.

Presentation of a NEWS feature in Images–POLITICAL – CULTURAL – SPORTS – Matters of public Importance.

Photo documentary on Important Public issue in 15 pages.

Advertisement lay out for magazine.

I YEAR – II SEM.

Television Production(Theory)
121 T

Unit -1

Introduction - 1. Nature of Video Production - Communication & Video - Medium -Technical & Aesthetic Factors.

Unit – II

Video equipment for Production:

1. **Handling your Camera** –
   Studio working condition preparing for rehearsals - standard shots - Remembering the shot - checking the shot - Focusing - Moving people - Camera moves - Raising and levering the Camera - Camera shadows.

2. **The persuasive Camera** –
   Shooting style - screen size selecting the shot - very long shot - long shot- medium shot - Close up - Deep focus technique - Shallow - focus technique panning - Tilting -Moving the camera & head Camera height - Subjective treatment -Zoom lens.

Lenses and Visualization

Types of lenses & functions - Zoom lens components - Zoom lens operation - Aperture control and depth of field Digital Optical Zoom.

3. **Visualization and Composition**

Aesthetic of visual composition - Camera movement - shooting edit subject - Camera Relationships.

Unit - III

1. **Video Recording**

Helical scan Recording - control track - Videotape Recording formats -Compatibility - Types of Video cassette Recorders - Videotape - Video Recording Devices.

2. **Operating systems of Video Camcorder**

The basic systems - Camcorder Camera section control VCR Section controls and input/outputs - power and Videotape - Camcorder system Setup - Audio and Video connectors - monitoring the Recording -Camera - mounting equipment - carrying the equipment.

Unit –IV **Lighting** - Aims of lighting - Light intensity - color quality of light -light dispersion - direction of light -Controlling the intensity of light-power requirements - setting lamps - Lighting equipment –Base Illumination - Contrast Range - Color - Modeling light - Three Point Lighting - Lighting a flat surface - lighting an object - Lighting people - Lighting areas — Lighting on Location -Lighting problems.

Unit –V

1. **Sound** - Technical Factors - Sound in Video field production - Microphone characteristics - Camera mounted microphones - External Microphones - wired and wireless microphones - Recording sound on a Portable camcorder - Mixers - Recording procedure monitoring sound -Improving sound quality - Adding sound to prerecorded Videotape -Additional sound Recording and play back Devices.

2. **Sound Aesthetics:** - Types of sound - sound perspective and sound Presence - Constructing the Audio portion of programs - the Visual Impact of microphones.

SUB : VIDEO POST PRODUCTION
122 T

Unit –I
Production – Overview – Editing Modes – On line – Offline.

Unit –II
Basic Editing Systems – Linear – NoN Linear – Linear Editing Systems – Features – Techniques –Control Tract – Time Code – Editing.

Unit –III
Non – Linear Editing Systems – Desktop Systems – Desktop High Capacity Systems – NoN linear editing Features – techniques –

Unit –IV
Visual Effects – Television Graphics – Audio systems - Configurations –

Unit –V
Audio& Video Synchronization – Rendering – Out put.

Television Production Tech (Practical)
122 P

Unit -1 **Introduction**
Studio - Studio in action - the production control room - **master control services and support areas.** Video tape -Formats -**VCR — Camcorders — Advanced** Camcorders - Camcorder features -Light & exposure color temperature - Color correction - Power batteries and Chargers - Basic shots - Language of movies.

Unit - II Script writing technique - The story board - Simple scripted movie – Roll of the director

Unit - III Camera operating - Focusing techniques -Camera movements - Long shot - Medium shot - Close -up - Panning - Tilting - Moving the camera - Using Zoom lens - Practical composition - Composition Principles - Farming - Pictorial balance - Unifying interest - Continuity a center of interest dynamic - Composition - Shooting techniques - Line -Creating sequence - moving camera - expanding the action - Assembled sequence.

Unit -IV **Lighting** Techniques of lighting - lighting sources -lighting control -Setting lamps - Problems of lighting - Lighting in indoor - Lighting on Location.

Unit - V **Production** - Approach directors job - Production practices - Production organizations outdoor production - In door production.

Book: - The Complete book of Video. **Author:** David Cheshire.
Book: - Television Production. **Author:** - Gerald Millers.

Television Production Tech (Practical)
123 P

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Studio - Studio in action - the production control room - **master control services and support areas.** Video tape -Formats -**VCR — Camcorders — Advanced** Camcorders - Camcorder features -Light & exposure color temperature - Color correction - Power batteries and Chargers - Basic shots - Language of movies.

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SUB:VIDEO POST PRODUCTION TECH 124 P

Unit – 1
Understanding NoN linear FCP Equipment& Controls.

Unit – II
Understanding User Interface of FCP Software. – Various Commands.

Unit – III
Creation of Files – opening of Files – Capturing – Types of Capturing – Preview for EDL.

Unit – IV
Editing – Editing Methods & Techniques imports – Storage –Selection –Synchronization.

UNIT – V
Creation of Titiles – Special Effects – Rendering – Output.

Books Recommended
1. FCP Catalogue
2. Web Resources.
3. Amazon Publishers on FCP
4. Peach pit Publications on FCP

II YEAR – I SEM.

Electronic Media & Communication TH 211 T

UNIT – I: Electronic Mass Media – Broadcasting Media – Streaming Media – Internet. - Electronic Record keeping – Digital television – Electronic Publishing - Broad casting Media in India an overview – Prasar Bharati – Broad casting Agencies –

Unit - II
Television – Satellite Broad Casting in India – Digital; Video Broad casting in India – Understanding the place of Television in Mass communication –

Unit - III
Radio as Broadcasting media – AIR Networking systems – Overview – Radio as Communication Media – Types OF Network – AIR – AM – INTERNET Radio – Short wave – FM.

Unit - IV
Ethical issues in Media - Understanding Copyright laws – Exclusive rights – Copyright Act of India – Period of copyright – registration of copyright – Trade mark and copyright – Civil remedies – International copyright.

Unit - V
Electronic Media – Norms & Regulations – Press Council of India – Defamation – Libel – Slander and damages - Media Associations – Press Identity Cards.

Books Recommended
1. Electronic Media Law and Regulation By Kenneth C. Creech.
2. Photography Law By Arunachalam.
3. Copy Right laws Media Law by Law Publications.

Electronic Media & Communication Tech
213 P

Unit-I News stories:-Soft news story making with research, investigative news story

Unit-II making a theme for promos, script writing and story board. Budget plan, promos for events, social message promos

Unit-III choosing a product for advertisement for television creating the theme, script writing, story board, budget plan, making a advertisement

SHORT FILM MAKING
214 P

Unit-I Concept developing:-choosing a theme-research-pros and corns in developing and implementation of the theme.

Unit-II Script writing-story board for 1 minute and 10 minutes short films

Unit-III Shooting short film with a minimum budget.

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COLLEGE OF FINE ARTS
JAWAHARLAL NEHRU ARCHITECTURE & FINE ARTS UNIVERSITY,
MAHAVEER MARG, MASAB TANK, HYDERABAD -500 028. A.P. INDIA.

Regular M.F. A. Programme Sculpture 2 Years Duration

Award for Master of Fine Arts (MFA Sculpture)

Eligibility	Diploma in Sculpture, Painting, and Applied Art with 4 years of teaching or Professional experience **Or** BFA Degree in Sculpture, painting, or Applied Art
Duration	2 years or 4 Semesters (Regular Course)
Intake	10 Candidates
Admission Criteria	Common entrance Examination

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Regular M.F. A. Programme Sculpture 2 Years Duration

COURSE STRUCTURE

1st Year /1st Semester

Course Code	Name of the Subject	Internal Marks	End Exam Marks	Total Marks	Duration of End Semester Exam	Periods in 4 weeks
Theory		40	60	100	3 hours	24 Periods
111T	History of visual Arts& Aesthetics-I					
Practical		40	60	100	35 Hours	120 periods
112P	Practical Specialization (any one of the below) Creative Sculpture-I Metal Casting-I Ceramic Sculpture-I					

Note: Semester works to be display at end of the semester

COURSE STRUCTURE

1st Year / 2nd Semester

Course Code	Name of the Subject	Internal Marks	End Exam Marks	Total Marks	Duration of End Semester	Periods in 4 weeks

					Exam	
Theory		40	60	100	3 hours	24 Periods
121T	History of visual Arts& Aesthetics-II					
Practical		40	60	100	35 Hours	120 periods
122P	Practical Specialization (any one of the below) Creative Sculpture-II Metal Casting-II Ceramic Sculpture-II					

Note: Semester works to be display at end of the semester

COURSE STRUCTURE

IInd Year /Ist Semester

Course Code	Name of the Subject	Internal Marks	End Exam Marks	Total Marks	Duration of End Semester Exam	Periods in 4 weeks
Theory		40	60	100	3 hours	24 Periods
211T	History of visual Arts& Aesthetics-III					
Practical		40	60	100	35 Hours	120 periods

212P	Practical Specialization (any one of the below) Creative Sculpture-III Metal Casting-III Ceramic Sculpture-III					

Note: Semester works to be display at end of the semester

COURSE STRUCTURE

IInd Year / IInd Semester

Course code	Name of the Subject	Internal Marks	End Exam Marks	Total Marks	Duration of End Semester Exam	Periods in 4 weeks
	Theory	40	60	100	3 hour	18 Periods
221T	History of visual Arts& Aesthetics-IV					
	Practical					

	Practical Specialization (any one of the below)					
222P	Creative Sculpture-IV Metal Casting-IV Ceramic Sculpture-IV	40	60	100	35 Hours	120 Periods
223T	Dissertation Thesis Submission & viva voce	40	60	100	---------	6 Periods

Note: Internal marks are based on the progress and class presentation of the students.

External marks are based on the final finishing, proper completion and viva voce.

Proposed Academic Regulations for Regular MFA Two Year Degree Course effective from 2008-2009

Preamble: The 2 year MFA Degree course is offered for the first time. The course is exclusively designed on regular self finance basis.

1. Award of Master of Fine Arts Degree

The MFA degree shall be awarded to the student who fulfills the following academic regulations:

I. A student who has successfully pursued a course on a semester pattern for two academic years.

II A Student who successfully fulfills stipulated minimum academic requirements

III Students who fail to fulfill the academic requirements within two years shall not be eligible for the award of the degree and their admissions lapses unconditionally without any claims whatsoever nature.

2. Courses offered:

Four distinct courses are offered under this regular MFA degree programmes that are as follows:

1. Applied Art & Visual Communication.
2. Painting & Visual Communication.
3. Photography & Visual Communication.

4. Sculpture & Visual Communication.

3. Courses Structure:

A) The two-year course is formatted semester wise and the subjects are classified as theory, practical, project, internship, practical training and viva voce.

b) The marks are prescribed under course structure for each subject respectively and the students are awarded marks according to their individual performances under internal evaluation and end examination in the following ratio:
   1. Internal evaluation 40%
   2. End examination 60%

4. Minimum Academic Requirement:
(Course duration and attendance)

A) Each semester shall have a minimum of 90 days instruction. Classes will be of 6 hours duration to be held in a day.

b) A student has to put in a minimum of 75% of the attendance in aggregate of all subjects to be eligible for end examinations.

c) A 10% shortage of aggregate attendance in any semester upon production of satisfactory reasons may be condo nation fee as prescribed CAC.

d) Any student whose aggregate attendance in below 65% shall not be eligible end examination.

e) Any student who is declared ineligible for shortage of required percentage of attendance shall repeat the semester subject to availability but has no matter of right demanding commencement of the respective semester and accordingly no future claims of what so ever nature in this regard.

f) A student can be conditionally promoted from first semester to second semester if he/she has four backlogs either theory or practical.

g) A student can be promoted from second semester to next semesters in any year if he/she has four backlogs either theory or practical.

h) Regular and supplementary examinations shall be conducted at the end of each semester to facilitate students to fulfill the academic requirements including backlogs.

5. Withholding of results:

1. The results of any student shall be withheld if:

   - He /She not cleared the dues to institution/Department.
   - A case of disciplinary action is pending against him/her.

6. Award of Class:

A Students upon successful completion of the respective course of study according to Academic Regulations and course structure governing the MFA course shall be awarded one of the following four classes calculated on the aggregate marks secured in the entire programme.

First Class with Distinction	70% and above
First Class	Between 70% - 60%
Second Class	Between 60% - 50%
Third Class	Between 50% - 40%

PROPOSED SYLLABUS M.F.A (SCULPTURE)

1st year / 1st semester Duration: 90 days

111T. HISTORY OF VISUAL ART & AESTHETICS-I (Theory)-I:

THEORY: 20 hours/4 weeks	Marks Internal: 40	Marks External: 60	Marks Total: 100

Modern Indian art:

Unit I

It would be ideal to provide a comprehensive understanding of Modernism with an emphasis on Indian modernism and other Colonial modernisms. And an understanding towards historiography and Art Historiography giving and understanding of structure and problems of Art History in general and also in Indian context.

Unit II

- Company Painting; socio-economic changes in the colonial period with a critical analysis.
- British Artists in India (Johann Zofanny, Telly Kettle, Daniel Brothers, William Hodges, etc.)
- Bazaar Painting; Indian painters who worked for Company officials.

Unit III

- Kalighat Painting, Open Bazaar Artists, Bat Tala Printing Presses.
- Fine Art Schools established by British.

Unit IV

British Art education policy, Curriculum, and its ideological implications, Art School Artists – Ananda Prosad Bagchi, Banapada Banerjee, G.K. Mahthre, Dhurandhar…

Unit V

Raja Ravi Verma – discuss his work through the concepts of Artist's individuality and self expression and his notions of 'Indianess' in his works; how he tried to invoke the consciousness of nationalism in Art.

MODERN WESTERN ART:

Unit I

Introduction to certain key concepts like 'Modern', 'Modernity', 'Modernization' in the context of Western Art; general discussion about the changing ideas of Art, Artist and the Artist's individuality and self expression in the context of modernization.

Note: Each period or 'ism' should be discussed through the socio-historical, and politico-cultural situations of the contemporary times and how the form undergoes change(s) under such conditions in the hands of certain artists who established shifts from the 'past' or 'existing' in the course of history of Art

Unit II

Neoclassicism – Discuss the impact of 'Enlightenment' philosophy; the aesthetic theory of Johann Winkelmann and its influence on the contemporary art through the works of some prominent artists of the times (Jacques Louis David, August Dominique Ingres, Antonio Canova, Bertel Thorwaldson, Horato Greenogh)

Romanticism – Discuss the philosophy of Jean Jacques Rousseau and its impact on Art; discuss also the rise in the notions of nationalism; and the coinage of the term 'Romantic' and Romanticism. These issues can be discussed through the works of Theodore Gericault, Eugene Delacroix, and Anne Girodet Troison from France; Casper David Fredrich, Otto Runge from Germany; J.M.W Turner, John Constable, and William Blake from England; French sculptors like Francois Rude and Jean Baptiste Carpeaux.

- **The rise of Landscape Painting** – Discuss about the changing notions of landscape and its development into a separate genre and also the emergence of the notions of *picturesque* in the context of landscape.
- **Barbizon School** – Discuss the conditions for and the development of Barbizon School through the kind of landscapes that were produced by its members – Theodore Rousseau, Jean Francois Millet, etc.

Unit III

Pre-Raphaelites – Discuss the emergence of Pre-Raphaelite brotherhood and its context through the works of Dante Gabriel Rossetti, Holman Hunt, and Millais.

Realism - Discuss the context of 'Realism' through the contemporary historical developments and political conditions as well as the scientific and technological innovations like the invention of camera. Discuss the tendencies of social realism in contrast to the 'Art for Art's Sake' movement.

Unit IV

Impressionism – Introducing to the movement by giving the important developments in the field of art, influence of Charles Baudelaire's writings; development of colour theories and light theories. The impact of changing city-scape as well as the changing lifestyle of the society those reflect in the

impressionist paintings of – Edward Manet, Claude Monet, Camille Pissaro, Auguste Renoir, Mary Cassatt, Berthe Morisot, Alfred Sissily, Edgar Degas and others.

Post Impressionism – Explaining the term, its coinage and Roger Fry, and Clive Bell's aesthetic ideas. Discuss its significance analyzing the works of Vincent Vangogh, Paul Cezanne, Paul Gauguin, Georges Seurat, and Henry De Toulouse–Lautrec.

Discuss the works of Henry Rousseau and the 'Naïve Art'.
Discuss The Nabis – Emile Bernard, Edouard Vuillard, and Pierre Bonnard in the context of the Post Impressionist developments.

1st Year / Ist Semester (PRACTICALS) Duration: 90 days

Any **one** of subject from the group.

An explanation about the significance of MFA course in sculpture differing from the BFA is needed. At the same time a general introduction to the contemporary practices of sculpture worldwide and a focus on Indian trends of sculpture making.

112P.Creative Sculpture-I:

PRACTICLES : 120 hours/4 weeks	Marks Internal: 40	Marks External: 60	Marks Total: 100

Objective: In this particular category students can explore a sort of freedom in expression using any material chosen by them and exploring it in multiple ways developing a direction to their thought.

Insisting on drawings and exercises in any chosen material and medium, clarifying, and developing methods and modes of expressions.
From this experience arriving at a sculptural form of their own.

Metal Casting-I:

PRACTICLES : 120 hours/4 weeks	Marks Internal: 40	Marks External: 60	Marks Total: 100

Objective: Casting is intended to provide knowledge about the traditional mediums of expressions and how we can use those mediums for our contemporary experiments and expressions.

Introduction to Sand Casting method: Green sand Casting, CO_2 process. Visit & Study of local Sand Casting and Box casting foundries. Documentation and journal on the visited.

Drawings and Macquettes in any chosen material generating and developing ideas and concepts.

Ceramic Sculpture-1:

PRACTICLES : 120 hours/4 weeks	Marks Internal: 40	Marks External: 60	Marks Total: 100

Objective: Traditionally ceramics played an important role in the production of artifacts worldwide. It also preserved the history and culture of the past generation that we can study through. Thus in this course that knowledge of ceramic technique could be implicated to the contemporary artistic production.

Preparing various bodies of clay and selecting three out of these bodies for sculpture. Executing sculpture by slip, slab and hand built method. Preparation of stains, low and high temperature glazes. Documentation of the process in studio journal.

Assignments: Submission of Four Works each.

Drawings and studies.

1st year / IInd semester Duration: 90 days

121T HISTORY OF VISUAL ART & AESTHETICS-I (Theory)-II:

THEORY: 20 hours/4 weeks	Marks Internal: 40	Marks External: 60	Marks Total: 100

Modern Indian art :

Unit I

Nationalist Movement and Art – Bengal Revivalism – the ideological constructs around the notion Nation and its pictorial imaginations.

- The influences of Nationalist consciousness in Art particularly in the works of Abanindranath Tagore, Gaganendranath Tagore and some followers.
- The Pan-Asian political and cultural consciousness.
- Discuss the influence of Far East on art and thought of the times with the writings of Coomaraswamy, Sister Nivedeta etc.

Unit II

Santiniketan School – Rabindranath Tagore and his alternative educational project. Discuss the importance of Santiniketan and the ideas and Art of Rabindranath that contributed to Kala Bahvan.

- Discuss in detail the contributions Nandalal Bose, Benode Behari and Ramkinkar. Also extending the discussion to some significant artists of Santiniketan and its decline after the death of Tagore.

Unit III

- Discussing the works of Jamini Roy and his market strategies and mass production.
- Discussing the works of Amrita Sher Gill and East West dilemma.

Unit IV

An outline of sculpture produced within the parameters of Modern Indian Art.

Modern Western Art:

Unit I

Symbolism – discuss the influences that developed Symbolism and the works of Odilon Redon, Gustave Moreau.

Art Nouveau – Discuss the impact of 'Craft's Movement' and the writings of William Morris and his followers/associates. Discuss the works of Gustav Klimt, and later Egon Scheille and Aubrey Beardsley. Discuss Art Nouveau in architecture the works of Antonio Gaudi.

Fauvism – Discuss the coinage of the term and its significance in the context of Modern Western Painting. Discuss the works of Fauvists and their aftermath through the works of Henry Matisse, Andre Derain, Maurice De Vlaminck, Georges Rouault etc.

Unit II

Expressionism – Discuss the influence of Eduard Munch. In the contemporary socio-political context and the historical conditions, discuss Expressionism through the works of the artists of 'The Bridge' and 'The Blue Rider' groups. Also discuss the individual artists like Paula Modersohn – Becker, Kathe Kollwitz and the transformation of the movement at a later stage like the works of Max Beckman.

Abstraction – Discuss the development of Abstraction as a visual language and its relation with music in the context of Kandinsky and also the significance of Piet Mondrian and Paul Klee. Also discuss about Bauhaus School, De Stijl.

Unit III

Cubism – Discuss the emergence and significance of Cubism and its influence on the European Art afterwards. Discuss the works of Pablo Picasso, Georges Braque, Juan Gris and certain Post cubist tendencies. Discuss also the cubist developments in sculpture.

Early 20th Century Sculpture – Discuss the influence of Rodin and the works of some of the sculptors – Aristide Maillol, Ernst Barlach, George Minne, Wilhelm Lehmbruck, Raymond Duchamp-Villon Broudille and Archipenko.

1st Year - IInd Semester (PRACTICALS) Duration: 90 days

Any **one** of subjects given below.

122P. Creative Sculpture-II:

PRACTICLES : 120 hours/4 weeks | Marks Internal: 40 | Marks External: 60 | Marks Total: 100

Discussing the developments of sculpture and particularly Modern Indian and Western sculptural achievements provides a historical understanding to the students. At the same time it also gives a direction to the student to choose any of the artists from the past to be inspired. from his/her own work.

Metal Casting-II:

PRACTICLES : 120 hours/4 weeks | Marks Internal: 40 | Marks External: 60 | Marks Total: 100

Introduction to Indian Lost-Wax methods – South Indian and Baster / Orissa methods. Visit to the artisan studio. Documentation in a foundry journal. Drawings and Macquettes in any chosen material generating and developing ideas and concepts.

Drawings and Macquettes in any chosen material generating and developing ideas and concepts.

Ceramic Sculpture-II:

PRACTICLES : 120 hours/4 weeks | Marks Internal: 40 | Marks External: 60 | Marks Total: 100

Making piece mould. Slip casting and surface made with various methods used in ceramics.

- Visit to various places of indigenous baking and preparing terracotta.
- Study of their methods of preparing body, surface treatment and baking.
- Executing original sculpture based on the above studies. Relief composition with various techniques. Drawings and Macquettes of their concepts. Documentation of the process in studio journal.

ASSIGNMENTS : Submission of Four Works each.

Drawings and studies.

2nd year / Ist semester Duration: 90 days

211T. HISTORY OF VISUAL ART & AESTHETICS-I (Theory)-III:

THEORY: 20 hours/4 weeks	Marks Internal: 40	Marks External: 60	Marks Total: 100

Modern Indian art:

Unit I

- Movements of 1940's Bengal, Calcutta Group of 1942.
- Bengal Famine and the reactions of the artists particularly – Somnath Hore, Chittoprosad, Zainul Abeddin etc.
- Bombay Progressive Group – 1947

Unit II

- Madras Progressive Group.
- Developments in Sculpture through out contemporary India
- Delhi Shilpa Chakra and the artists associated with it.

Unit III

- Conditions of Post Independent India and the socialist/humanist/communist artists. 'Partition', 'Migration' and 'Relocation' in works of particular artists (Jogen Choudhury, Bikash Bhattacharya, Ganesh Payne, Satish Gujral, M.F.Hussain, Swaminathan etc.)
- Re-emergence of indigenous tendencies; Probing the inception of International Trends in Indian Art

Unit IV

Art since 1970's

- The Group 1890 in Baroda and figurative and narrative trends.

Indigenism and works of KCS Pannikar, J Swaminathan and K. G. Subramanyan and appropriation of so-called folk art, tribal art, minor art, tantric art, bazzar art, mass art in various artists' works. Influence of the notion "Living Traditions" on number of artists and their works.

Modern Western Art:

Unit I

Futurism – Discuss the political scenario of Europe in the contemporary times and its relation to Futurism. Discuss the works of Carlo Carra, Giacomo Balla, and Umberto Boccioni. Also discuss about Futurist sculpture.

Suprematism and Constructivism – Discuss the works of Suprematism and its significance with the works of Kasmir Malevich. Discuss the formation of Constructivism as a Russian movement that differed from French movements and the works of Vladimir Tatlin, El Lissitzky etc.

Unit II

Dada – Discuss the historical conditions and the condition of the artists in the contemporary times of the emergence of the movement and how it spread from Berlin to New York, Zurich etc. discuss the artists – Marcel Duchamp, Hugo Ball, Hans Arp, Francis Picabia, Man Ray, Schwitters.

Surrealism – Discuss Surrealist Manifesto by Andre Breton, its emergence and the various reasons for its emergence. Discuss the works of the artists like De Chirico, Salvador Dali, Rene Magritte, Ernst Max, Joan Miro, etc through their specific contexts.

20th Century Sculpture – Discuss the important individual sculptors like Henry Moore, Alberto Giacometti, and kinetic sculptors – Naum Gabo, Alexander Calder etc.

Unit III

Photography – Discuss the development and aesthetics of photography and its emergence as a language in itself that played a role between two world wars. Discuss how and why photography though is been practiced parallel to Mainstream Art never enjoyed a status of a painting or art in general. Through an itinerary of important photographers, discuss the changes in the language of photography in respect to the changes in the times as well as the influence of art.

American Art Scene – Discuss the contributions of the artists between two world wars Edward Hopper, Charles Sheeler in the context of American Art between the world wars.

Mexican Muralists and painters – Discuss the works of one of the most important politically committed artist Diego Rivera and the other artists influenced by Mexican nationalism – Jose Clemente Orozco and David Alfaro Siqueiros. Apart from these muralists, one of the most ingenious woman painters Frida Kahlo also needs to be discussed.

2nd year – Ist Semester (PRACTICALS) Duration: 90 days

Any **one** of subject from the group.

212P. Creative Sculpture-III:

PRACTICLES : 120 hours/4 weeks | Marks Internal: 40 | Marks External: 60 | Marks Total: 100

In this semester Internship is introduced to the students. Guidance is given in choosing the topic for internship as well as certain practical assistance. A written report on their chosen internship area has to be submitted and a work or a practical assignment in the form of sculpture has to be conceptualized. These practical assignments are intended to translate their experience of the internship fieldwork finally into a work of art.

Drawings and Macquettes developing their own sculptures have to be submitted, incase the student has not taken internship.

Metal Casting-III:

PRACTICLES : 120 hours/4 weeks | Marks Internal: 40 | Marks External: 60 | Marks Total: 100

Introduction to Western Methods of Metal Casting (Italian). Piece Mould techniques can be applied to their works and Flexible mould techniques can also be used to make sculptures. These techniques have to be applied into developing their own visual language.

- Metal sheet embossing techniques can be applied on their work. Documentation in foundry journal.

- Make drawings and macquettes in any chosen material developing their own individual concepts.

Ceramic Sculpture-III:

PRACTICLES : 120 hours/4 weeks | Marks Internal: 40 | Marks External: 60 | Marks Total: 100

- Preparation of Semi-Stoneware and Stoneware clay bodies.
- Preparation of low and high temperature glazes.
- Executing original sculpture based on the above studies. Documentation in studio journal.
- Make drawings and macquettes in any chosen material developing their own individual concepts.

Assignments: Submission of Four Works each.

Drawings and studies.

2nd year / IInd semester Duration: 90 days

221T. HISTORY OF VISUAL ART & AESTHETICS-I (Theory)-IV:

THEORY: 20 hours/4 weeks	Marks Internal: 40	Marks External: 60	Marks Total: 100

Modern Indian art:

Unit I

An introduction to the concept of Post-Modernism and its criticism towards Modernism; Post Colonialism and other critical concepts like Feminism etc and the emergence of Feminist Art; a critical analysis of the Modernist Art, and Art as a discourse in general in the context of contemporary artistic practices.

Unit II

- Incorporation of the elements from varied denomination in the works of prominent individual artists, such as Bhupen Khakar, Jahangir Jani etc
- The ideology and the 'movement' of the Indian Radical Painters and Sculptors Association
- Contemporary Indian Art in the context of international art scene

Unit III

Women Artists

Emergence of the category of women Artists and a historical outline of the women artists earlier to the category. Feminist engagements of some of the women artists. Why do we study women artists separately? Why do we deal their works more specifically with the transactions, on gender terms, between private sphere and public concern?

Discussing the contemporary women artists, like Meera Mukherjee, Arpita Singh, Mrinalini Mukherjee, N. Pushpamala, Nilima Sheikh, Navjot Altaf, Nalini Malani, Anita Dube, Sheela Gowda, Anupam Sud, Anju Dodiya, Rekha Rodwitya, etc

Unit IV

A brief history of Print Making in India and the development of graphic art in contemporary Indian with reference to the works of major print-makers in various techniques.

Modern Western Art:

Abstract Expressionism – Discuss the theory of Formalism in the context of Abstract Expressionism by Clement Greenberg's. Also discuss the shift of the centre of art from Europe to America in respect to the post war political and socio-cultural situation. Discuss the works of Jackson Pollock, Franz Kline, Robert Motherwell, Mark Rothko, William de Kooning, Barnett Newman and others.

Pop Art – Discuss the reaction of Pop Art to Abstract Expressionism through the works of Jasper Johns, Robert Rauschenberg, Roy Lichtenstein, Richard Hamilton, Claes Oldenburg, Andy Warhol etc.

OP Art – Discuss the works of Bridget Riley in the context of Op Art.

Minimal and Conceptual Art – Discuss the works of Frank Stella, Robert Morris, Carl Andre and Eva Hesse in the context of Minimal Art; discuss the works of the Land Artists – Christo, Robert Smithson and James Turrell..

Photo Realism and New Image Painting – Discuss the works of Balthus and David Hockney who reacted to the extreme formalism of Minimalism.
In the context of Photo Realism discuss the phenomenon of Simulacra as discussed by Baudrillard and some of the Photo realists – Richard Estes, Chuck Close etc.

Postmodernism and Art – Discuss the concept of Postmodernism and post- modernity generally as well as its impact on art. Discuss the multiplicity of visual languages practiced through the politics of Postmodernism, identity etc.

2nd year – IInd Semester (PRACTICALS) Duration: 90 days

Any **one** of subjects given below.

222P. Creative Sculpture-IV:

PRACTICLES : 120 hours/4 weeks	Marks Internal: 40	Marks External: 60	Marks Total: 100

Guidance of the teacher is extended after the development of the student from the first year. Assessing the course and direction of those works the student is helped with the conceptual and mediumistic possibilities for the future course of work. At the same time an introduction to the New Media art, Public Art and Community Art, Site Specific Art as well as Political dimensions of Art that are prevalent in the contemporary art 'Field'

Dissertation is introduced explaining the scope and significance of it in the context of their own work. A respective guidance to each student is provided regarding the topic as well as the process of completion of it.

Metal Casting-IV:

PRACTICLES : 120 hours/4 weeks	Marks Internal: 40	Marks External: 60	Marks Total: 100

One compositional work of their own in metal, cast in parts and joined.

Documentation of the process in visual and writing. Applying any or all of the different methods on their works by assembling, fabricating, or welding methods.

Make drawings and macquettes in any chosen material developing their own individual concepts.

Ceramic Sculpture-IV:

PRACTICLES : 120 hours/4 weeks	Marks Internal: 40	Marks External: 60	Marks Total: 100

Relate the knowledge gained during the previous years on their own creative works and conceptualize the future possibilities of that particular works. Help them in developing their individual along with their art practice.

Assignments: Submission of Four Works each.

Drawings and studies.

223T. Dissertation :

The idea of dissertation is to develop articulation skills and the better understanding of their own works by the students. Here the students would be explaining their experience with a particular medium and the kind of language that they arrive at the end of the course. They are expected to submit their dissertation thesis of about thirty five pages along with the plates of their works. The project also should address the kind of influences or inspiration(s) that the student would experience, both through writing and including the visual examples.

Final Display/Assessment:

The Final Display is to be held at the end of the two year MFA course, i.e. at the end of the fourth semester. The students are expected to display their works in a given space (or chosen by the students in certain specific cases where space forms and important element of display) at the end of the fourth semester on the date provided by the University and these works are assessed and marked on their two year development and achievement.

MODEL QUESTION PAPER

MFA SCULPTURE & VISUAL COMMUNICATION

1st Sem. end Exam, Feb/Mar – 2009

CREATIVE SCULPTURE

Time: 75 hours **Max Marks: 60**

Create a work of art in any chosen material relating to your concept.

Submit minimum 10 drawings showing the development of your concept.

Size: Not to exceed 3 feet

Note: Not to take help from others

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JNA & FAU COLLEGE OF FINE ARTS
MASAB TANK , HYDERABAD-500 028

LIST OF EXPERTS IN SCULPTURE

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