

BIJU PATNAIK UNIVERSITY OF TECHNOLOGY, ORISSA
ROURKELA

FIRST YEAR SYLLABUS FOR B.ARCH. PROGRAMME

COURSE STRUCTURE: FIRST YEAR B.ARCH PROGRAMME

Ist SEMESTER				
Sl.No.	Code	Theory	Contact Hrs (L-T-P)	Credit
1.	AH113	Mathematics- I	3-0-0	3
2.	AS123	Mechanics- I	3-0-0	3
3.	AR133	Theory of Architecture	3-0-0	3
4.	AR143	Building Material- I	3-0-0	3
TOTAL				12

Sl No.	Code	Sessionals	Contact Hrs (L-T-P)	Credit
5.	AR154	Descriptive Geometry-I	0-0-6	4
6.	AR162	Model Making Wksp - I	0-0-3	2
7.	AH173	Communicative English	1-0-2	2
8.	AR184	Basic Design-I	0-0-6	4
9.	AR192	Bldg Const - I	0-0-3	2
TOTAL				14
Total Credits				26

IInd SEMESTER				
Sl.No.	Code	Theory	Contact Hrs (L-T-P)	Credit
1.	AH213	Mathematics- II	3-0-0	3
2.	AS223	Mechanics- II	3-0-0	3
3.	AR233	History of Architecture - I	3-0-0	3
4.	AR243	Building Material- II	3-0-0	3
TOTAL				12

Sl No.	Code	Sessionals	Contact Hrs (L-T-P)	Credit
5.	AR252	Descriptive Geometry-II	0-0-3	2
6.	AR263	Visual Graphics	1-0-3	3
7.	AR272	Model Making Workshop - II	0-0-3	2
8.	AR284	Basic Design-II	0-0-6	4
9.	AR292	Bldg Const - II	0-0-3	2
TOTAL				13
Total Credits				25

COURSE STRUCTURE: SECOND YEAR B.ARCH PROGRAMME

IIIrd SEMESTER				
Sl.No.	Code	Theory	Contact Hrs (L-T-P)	Credit
1.	AH312	Environmental Psychology	2-0-0	2
2.	AS323	Building Services - I	3-0-0	3
3.	AS333	Structural Analysis – I	3-0-0	3
4.	AR343	History of Architecture- II	3-0-0	3
5.	AR353	Climatology	3-0-0	3
TOTAL				14

Sl No.		Sessionals	Contact Hrs (L-T-P)	Credit
6.	AR366	Architectural Design – I & Measured Drawing	0-0-9	6
7.	AR372	AutoCAD – I	0-0-3	2
8.	AR382	Climatology Lab	0-0-3	2
9.	AR392	Bldg Const - III	0-0-3	2
TOTAL				12
Total Credits				26

IVth SEMESTER				
Sl.No.		Theory	Contact Hrs (L-T-P)	Credit
1.	AH412	Sociology	2-0-0	2
2.	AM423	Building Services – II (Refrigeration & Air Conditioning)	3-0-0	3
3.	AS433	Surveying - I	3-0-0	3
4.	AR443	History of Architecture- III	3-0-0	3
5.	AR453	Environmental Studies	3-0-0	3
TOTAL				14

Sl No.		Sessionals	Contact Hrs (L-T-P)	Credit
6.	AR466	Architectural Design – II	0-0-9	6
7.	AR472	AutoCAD – II	0-0-3	2
8.	AR482	Bldg Const - IV	0-0-3	2
9.	AS492	Surveying Lab	0-0-3	2
10.	AR402	Architectural Photography	0-0-3	2
TOTAL				14
Total Credits				28

COURSE STRUCTURE: THIRD YEAR B.ARCH PROGRAMME

Vth SEMESTER				
Sl.No.		Theory	Contact Hrs (L-T-P)	Credit
1.	AR513	Contemporary Architecture	3-0-0	3
2.	AR523	Building Services - III(Acoustics)	3-0-0	3
3.	AS534	Concrete Structure	4-0-0	4
4.	AH542	Economics	2-0-0	2
5.	AR553	Interior Design	3-0-0	3
TOTAL				15

Sl No.		Sessionals	Contact Hrs (L-T-P)	Credit
6.	AR566	Architectural Design – III	0-0-9	6
7.	AR572	AutoCAD – III	0-0-3	2
8.	AR582	Interior Design lab	0-0-3	2
9.	AR594	Working Drawing -I	0-0-6	4
TOTAL				14
Total Credits				29

VI th SEMESTER				
Sl.No.		Theory	Contact Hrs (L-T-P)	Credit
1.	AS614	Steel Structure	4-0-0	4
2.	AE623	Building Services - IV(Illumination)	3-0-0	3
3.	AR633	Landscape Design	3-0-0	3
4.	AS642	Estimation	2-0-0	2
5.	AR653	Specification	3-0-0	3
TOTAL				15

Sl No.		Sessionals	Contact Hrs (L-T-P)	Credit
6.	AR666	Architectural Design – IV	0-0-9	6
7.	AR674	Working Drawing -II	0-0-6	4
8.	AR682	Landscape Design & Site Planning	0-0-3	2
TOTAL				12
Total Credits				27

COURSE STRUCTURE: FOURTH YEAR B.ARCH PROGRAMME

VII th SEMESTER				
Sl.No.		Theory	Contact Hrs (L-T-P)	Credit
1.	AR713	Principle of Human Settlements	3-0-0	3
2.	AR723	Construction & Project Mgt	3-0-0	3
3.	AR733	Housing	3-0-0	3
4.	AR743	Urban Design	3-0-0	3
5.	AR753	Elective I: Cost Effective Tech / Traditional Architecture	3-0-0	3
6.	AR763	Elective I I: Solar Architecture/ Medical Architecture	3-0-0	3
TOTAL				18

Sl. No.		Sessionals	Contact Hrs (L-T-P)	Credit
1.	AR716	Arch Design – V & Field Trip	0-0-9	6
2.	AR722	Architectural Details	0-0-3	2
3.	AS732	Structural Drawing & Details	0-0-3	2
TOTAL				10
Total Credits				28

VIII th SEMESTER				
Sl.No.		Theory	Contact Hrs (L-T-P)	Credit
1.	AR813	Contract Documents & Bldg Byelaws	3-0-0	3
2.	AR823	Disaster Resistant Architecture	3-0-0	3
3.	AR833	Research Methods	3-0-0	3
4.	AR843	Elective III: Town & Country Planning/ Transportation planning	3-0-0	3
5.	AR853	Elective IV: Barrier Free Environment/ Industrial Architecture	3-0-0	3
TOTAL				15

Sl. No.		Sessionals	Contact Hrs (L-T-P)	Credit
1.	AR818	Arch Design – VI & Field Trip	0-0-12	8
2.	AR822	Seminar	0-0-3	2
3.	AR831	Seminar (Project)	0-0-2	1
TOTAL				11
Total Credits				26

COURSE STRUCTURE: FIFTH YEAR B.ARCH ROGRAMME

IX th SEMESTER				
Sl.No.		Theory	Contact Hrs (L-T-P)	Credit
1.	AR913	Professional Practice	3-0-0	3
TOTAL				3

Sl No.		Sessionals	Contact Hrs (L-T-P)	Credit
2.	AR9212	Thesis/ Dissertation	0-0-18	12
3.	AR932	Comprehensive viva voce		2
TOTAL				14
Total Credits				17

X th SEMESTER				
Sl.No.		Sessionals / Practicals	Contact Hrs (L-T-P)	Credit
1.	AR014	Architectural Office Training		4
2.	AR023	Site Supervision Training		3
3.	AR032	Field Observation Studies		2
4.	AR042	Critical Appraisal of Building Projects		2
5.	AR053	Field Documentation & Architectural Details		3
TOTAL				14
Total Credits				14

IST SEMESTER

AH114 MATHEMATICS I (3-0-0)

The intent of the mathematics courses for architecture students is three fold (i) modeling: Converting given data of a physical situation into a mathematical form (ii) solving them by standard techniques and (iii) interpreting the results. It is expected that students should not only know different mathematical techniques but should also be conversant with different applications.

Module 1 (10 Classes)

Calculus: Curve tracing, curvature, asymptotes

Ordinary Differential Equations: First order differential equations, separable equations exact differential equations. Bernoulli's equation.

Module 2 (10 Classes)

Linear differential equations of second and higher order, homogeneous equation with constant coefficients.

Module 3 (10 Classes)

Series solution of differential equation: Power series method, Legendre's equation, Legendre's polynomial. Bessel's equation, Bessel's functions $J_n(x)$

Module 4 (8 Classes)

Laplace transformation and its use in solving differential equations. Convolution, Integral equations.

The course is covered by:

1. *Calculus: Gorakh Prasad:*
2. *Advance Engineering Mathematics - E. Kreyszig*
3. *John Wiley & sons Inc. - 8th edition*
Chapter 1 (1.1-1.7)
Chapter 2 (2.1. - 2.10, 2.12)
Chapter 4 (4.1- 4.6)
Chapter 5 (5.1- 5.7)

AS124 MECHANICS - I (3-0-0)

Statics

MODULE - I (Force Analysis)

Principles of Statics, Equilibrium of concurrent forces in a plane, Plane Trusses: Method of Joints, Method.

MODULE II - (Centre of Gravity)

Centre of Parallel Forces in a plane, Centre of gravity, Centroids of composite Plane Figures, Centroids of curves, Distributed force in a plane.

Dynamics

MODULE - III (Kinematics)

Rectilinear Translation: Kinematics of rectilinear motion, Principles of dynamics, Differential equation of rectilinear motion, Force as a function of time, Force proportional to displacement,

MODULE - IV

D'Alembert's Principles, Momentum and Impulse, Work and Energy, Conservation of Energy, Impact.

Textbooks:

Engineering Mechanics by: S. Tuimoshenko, D.H. Young, Mc-Graw Hill International Edition
Chapters: 1 ,2,
& 6.

Reference Book:

- (1) *Fundamentals of Engineering Mechanics, Second Edition, Publisher: Vikas Publishing House Pvt. Ltd. by S. Rajashekharan and G. Sankara Subhramanian.*
- (2) *Engineering Mechanics, K. L. Kumar, TMH*

AR133 THEORY OF ARCHITECTURE (3-0-0)

Objective:

To acquaint the students with the basic aesthetic principles involved in architectural design.

Outline:

Role and meaning of art various types of arts - fine arts, performing arts, commercial arts, industrial arts, folk arts, abstract art, visual arts, spatial arts, temporal arts, pop art, etc., relationship of architecture with other arts like painting and Sculpture. Principles of architectural composition unity, balance, proportion, scale, rhythm, contrast, harmony, accentuation, restraint, definition, repose, vitality, strength, with the help of illustrations of buildings, both historical as well as contemporary.

Organising principles of architectural composition- symmetry, hierarchy, datum, axis - different types of spatial organizations of masses linear, centralised, radial, clustered, grid organization illustrations of buildings both historical as well as contemporary.

Use and need of ornament in architectural design - different types of ornamentation in buildings - historical perspective of the use of ornament in buildings.

Use of different materials like brick, timber, stone, concrete, glass for aesthetic and structural purposes.

References:

1. *"Form, Space and Order" by Francis D.K. Ching*
2. *"Design Fundamentals in Architecture" by Parmar V.S.*

AR143 BUILDING MATERIAL - I (3-0-0)

General introduction to buildings, Natural materials clay materials , bricks, terracotta, stones, timber.

Soils: Formation – Index property, Specific gravity, grain size distribution, plasticity,

characteristics and phase relationship, Identification, Local names, I.S.I. Classification, Sources and uses of sand, fineness modulus.

Bricks : Types and their qualities and their manufacture.

Lime : Fat and Hydraulic lime, their uses and properties, manufacture of lime, preparation of lime mortar, functions and requirements of good mortar, mix proportions of various works.

Stones : Types and their qualities and their methods of quarrying.

Cement : Type, properties, composition and manufacturing process and setting of cement composition of cement mortar. Plastering.

Cement Products : Mosaic tiles, CC work etc., Proportions, constitute materials of plain cement concrete including light weight concrete , aerated , cellular, form and such other types of cement concrete products , artificial stone.

Visits to work under construction, to study brick work, stone work and wood work. Report with sketches of visits to be submitted by each student a sessional work.

Introduction to building technology – building components and their functions. Rural construction (Using rural materials like soil, Clamp burnt bricks, thatch, coconut and bamboo trunks, flat tiles) Types of foundations, Types of walls, and simple trusses. Types of flooring and finishes.

References:

1. *S.C. Rangwala, Engineering Materials , Charotar publishing house, Anand, 1982*
2. *S.C. Rangwala, Building Construction , Charotar publishing house, Anand.*

AR152 DESCRIPTIVE GEOMETRY – I (0-0-6)

Concept of Orthographic Projection, First-Angle Projection, Projections of Points, Projections of Straight Lines, Projections of Planes, Projections of Solids, Intersection of Surfaces, Development of Surfaces, Isometric Projection

Uses of instruments in architectural drafting, dimensioning. Plan and proportional scales. Lines and angles, proportional, triangles, quadrilaterals, circles and tangents. Circles touching lines, regular, polygons, arches, plane curves. ellipse, parabola and hyperbola. Geometrical construction of mouldings and tracery.

Geometry of lines..and planes, Geometrical shapes (two dimensional)-polygons volutes. Study of solid geometrical forms in various positions including group of forms. Simple Projections and projections of solids, Polyhedron, solids of revolution, solids in simple position, Axis perpendicular to a plane, Axis parallel to both the plane, Axis parallel to one plane and inclined to other. Axis inclined to both the planes, spheres.

Section of solids-Section planes, True shapes of section, sections-of prisms, sections of pyramids, cylinders, cones etc.

Interpenetration of solids and representation in two-dimension. Analysis of complex forms (mouldings, vaults etc) at different intersections. Surface development of simple solid forms leading to complex forms including interpenetration.

Isometric and Axonometric projections.

References:

1. *Engineering Drawing by N.D. Bhatt & V.M. Panchal, Charotar Publishing House, Anand*
Ch - 8, 9, 10, 12, 13, 15, 16 & 17
2. *N.D.Bhatt, Elementary Engineering drawing, Chartor publishing house.*
3. *A.C.Parkinson, London, Sir Issac Pitman and sons. A First year Engg. Drawing.*
4. *Earl D.Black. Engg. and Technical Drawing.*
5. *S.C.Sharma, Engg.. Drawing, S.Chand & Company, New Delhi.*

AR162 MODEL MAKING WORKSHOP – I (0-0-3)

Use of carpentry tools and making joints such as Dovetail joint, Mortise and Tenon joint, Lap joint, Butt joint, etc. to be used for making furniture.

Instructions on the use of tools and materials such as Clay, Thermocol, Paper and Softwood etc. for making architectural models.

AH173 COMMUNICATIVE ENGLISH (1-0-2)

This is a practice-oriented, need-based, functional-communicative course. It seeks to develop the student's skills of communication in listening, speaking and writing. Reading, though formally not included, is still a recommended activity. The student is advised to cultivate the habit of reading newspapers, magazines and books in a free, extensive manner to consolidate the skills already achieved. A more interactive process of teaching/learning is called for in order to achieve the skills of effective communication.

Specific Objectives

The course attempts to Familiarize the student with the sounds of English in a nutshell, particularly long and short vowels, some consonants, stress and intonation.

Provide adequate listening and speaking practice so that the learner can speak with ease, fluency and reasonable clarity in common everyday situations and on formal occasions.

Use grammar in meaningful contexts.

Things with words, i.e. to perform functions like ordering, requesting, inviting and so on

Module -I

Communication (6 hours)

Verbal and non-verbal spoken and written

Language functions-descriptive, expressive and social

To inform, enquire, attract, influence, regulate and entertain

Bias-free and plain English

Format and informal style

Module-II

WRITING-I (7 hours)

1.1 Paragraph writing - topic sentence, cohesion and coherence - sentence linkers (so, but,

however etc.).

1.2 Preparation of a business report - writing a business proposal - format, length, structure

Module-III

WRITING-II (7 hours)

2.1 Preparing notes - writing business letters and E-Mail messages

2.2 Documentation: References, notes and bibliographies.

Module-IV

WRITING-III (7 hours)

3.1 Writing a curriculum vitae (both chronological and functional) along with an application for a job.

3.2 Public relations - concept and relevance - PR in a business organization - handling the media.

Meeting and presentation (9 hours)

4.1 Organizing a meeting, preparing an agenda, chairing a meeting drafting resolutions, writing minutes.

4.2 Making an oral Presentation

4.3 Facing an interview

Books prescribed :

1. *Geoffrey Leech and Jan Swartvik, Longman " A communicative Grammar of English, 2. J.D. O'connor, Better English Pronunciation, ELBS*
J.K. Chand and B.C.Das, A Millennium Guide to writing and Speaking English, Friends' Publishers

(John Sealy) Oxford Guide to Writing and Speaking English, OUP. (Bovee etal) Business Communication Today Pearson Education. (Rovi and Rai) Business Communication,

(J/v. Cilanilam) More Elective Communication, Sage Publications.

(J.K. Chand and B. C. das) A Millennium Guide to Writing and Speaking, (Friencs Publishers)

The Chicago manual of style (Part 2 Section 15) Prentice-Hall of India. (Sushil Bahl) Business communication Today, Sage Publications.

AR184 BASIC DESIGN (0-0-6)

Aim: The study aims at building up the vocabulary in visual and basic design principles.

1. To study & practice through lettering exercises & graphical presentations techniques.

2 To study the fundamentals of visual –design such as points, lines, planes, colours, textures, etc. resulting into

2-dimensional composition.

3. Understanding the various principles of composition eg. Symmetry, Rhythm, Harmony, Contrast, Balance, Monotony etc.

Exercises based on these principles.

4. Study of visual relationships through exercises on placement of objects at different eye-levels and different distances.
5.
 - i) Study of basic terms such as surface, form, space and understanding their relationship to each other.
 - ii) Two dimensional studies in surface composition , arrangements, relationships, continuity etc.
 - iii) Three dimensional studies in Stability relationship, balance, composition etc.
6. Understanding the Elementary structural forms.

References:

1. *V.S.Parmer, Design fundamentals in Architecture, Somaiya {publications private limited, New Delhi.*
2. *Francis D.K.Ching, Architecture-Form, space and order, Van, Nostrand Reinhold company, New; York.*

AR192 BUILDING CONSTRUCTION– I (0-0-3)

Brick masonry: Masonry tools and equipment, bending and its principle, headers, stretchers, king and queen closers, English and Flemish bonds for corner, tee and cross junctions in 35 cms, 23 cms and 11 cms brick walls and buttress and pilasters and piers of 45,35 and 23 cms size, section of a compound wall.

Stone masonry: Various types of stone dressing, plain bevelled, and rebated joints, dowels and cramps, quoins, headers and bond. Rubble, and Ashlar masonry walls, walls with stone facing and brick backing.

Simple foundations: Simple foundation for masonry load bearing walls and piers.
Sessional work based on above topics.

References:

- W.B. Mckay. Building construction. Vol-I, Vol-IV*
- R .Barry. The Construction of Buildings. Vol.I-Vol-IV, The English Language book society, Crosby Lockwood staples, London.*

2ND SEMESTER

AH214 MATHEMATICS – II (3-0-0)

Module 1

Linear algebra: matrices, vectors, determinants and linear system of equations, matrices and linear system of equations, matrix eigen value problems, symmetric, skew symmetric and orthogonal matrices.

Module 2

Complex matrices: Hermitian, skew hermitian and unitary matrices, Similarity of matrices. Vector differential calculus: grad, div, curl, vector integral calculus

Module 3

Line integrals, Green theorem: Surface integrals, Gauss theorem, Stockes theorem

Module 4

Fourier series: Fourier series, Expansions functions of any period, even and odd functions, half range expansion. .

Course covered by: Advance Engineering mathematics by E. Kreyszig, 8th Edition

Chapter 6 (6.1 - 6.7)

Chapter 7 (7.1 - 7.5)

Chapter 8 (8.1 - 8.4,8.9 - 8.11)

Chapter 9 (9.1 - 9.9)

Chapter 10 (10.1 -10.4)

AS223 MECHANICS - II (3-0-0)

Statics

MODULE - I (Virtual Work)

Principles of virtual work: Equilibrium of Ideal Systems, Efficiency of simple mechanics, Stable and unstable equilibrium.

Text: Tuinoshenko, Ch-5

Dynamics

MODULE - II (Kinematics)

Kinematics of Curvilinear motion, Motion of Projectile, Moment of Momentum, Work & Energy in curvilinear motion.

Kinematics of Rotation, Rotation under the action of a constant moment, The compound pendulum,

MODULE - III (Moment of Inertia)

Moments of Inertia of Plane Figures with respect to an axis in its plane, with respect to an axis perpendicular to the plane, Parallel axis theorem, Product of inertia, Principal axes and Principal moments of inertia.

Solid Mechanics

MODULE - IV (Concepts of Stress & Strain)

Concepts of Stress and Strain, Normal stress, Shear stress, normal strain, shear strain, Hooke's law, Poisson's ratio, Principal stresses, Principal strains, Mohr's Circle for stress and strain.

Textbooks:

Engineering Mechanics by : S. Timoshenko, D.H. Young, Mc-Graw Hill International Edition
Chapters: 1,2,3 & 6.

Reference Books:

Fundamentals of Engineering Mechanics, Second Edition, Publisher: Vikas Publishing House Pvt. Ltd. by S. Rajashekharan and G. Sankara Subhranian.
Engineering Mechanics, K. L. Kumar, TMH
Elements of Strength of Materials by Timoshenko & Young

AR233 HISTORY OF ARCHITECTURE – I (3-0-0)

The uses of History and the need for the study of the History of Architecture. The origins of Architecture. The Houses, the temple and the tomb. The sciences connected with ancient Architecture, like cosmology, Geometry, etc. Houses from various regions of the Earth. Definition of space, form and time. Study of architecture and critical appreciation of the Indian History. ANCIENT INDIA - Impact of; Aryan culture, Vedic religion. The Mauryan Dynasty, The emergence of Empire, Trade routes and communication.

Buddhist Architecture: Mauryan dynasty, wooden palace and fort, productions of Ashokan school, Buddhist monuments, Ashokan pillar, Sarnath, Sanchi stupa. Rock cut Architecture, Viharas and chaitya halls in the Hinayana and Mahayana periods. JAIN PERIOD - General planning, sitting and decorative treatment of Jain Temples. HINDU PERIOD - The role of the Guptas. Trade and social aspects of the culture. Changes in Hinduism. Philosophical schools. Early shrines of the Gupta period. Evolution of principle features of Hindu temples. INDO ARYAN STYLE TEMPLE plan and form, Orissa Temples at Bhubaneswar, Sun temple Konark.

References:

1. Sir Banister Fletcher, A History of Architecture, University of London, The Antholone Press.
2. G. K. Hiraskar, World History of Architecture, Dhanpat Rai and Sons, Delhi.
3. Percy Brown, Indian architecture.
4. Satish Grover, Architecture in India.

AR243 BUILDING MATERIAL – II (3-0-0)

Timber : Uses and characteristics of timber, cutting, seasoning, and preservation of timber.
Types of Timber and defects in timber. Protection from termites. Manufacturing process and uses of laminated timber.

Iron and Steel : cast iron, Steel and wrought iron with properties, brief idea of manufacturing process and use of iron work in buildings.

Paints and Varnishes : Composition, manufacture and properties and uses of ordinary paints, Varnishes and wood preservatives , method of distempering wall surfaces, and painting of timber and iron work.

Glass : Types of glass like plate, decorative, tinted , heat absorbing etc. structural glass bricks and glasscrete, fibre glass, wool etc.

Corrugated galvanized iron sheets and asbestos cement sheets with accessories and wood preservatives, methods of their fixing, clay tiles – Mangalore , Allahabad and Country type.

References:

- 1 S.C. Rangwala, Engineering Materials , Charotar publishing house, Anand, 1982
- 2.W.B. Mckay. Building construction. Vol-1,Vol-IV
- 3..S.C. Rangwala, Building Construction , Charotar publishing house, Anand.
4. R.Barry. The construction of Buildings. Vol –I, Vol –IV , The English Language book society ,Crosby Lockwood staples ,London.

AR252 DESCRIPTIVE GEOMETRY - II (0-0-3)

1. Perspective - parallel, angular and three points. Exercise from simple solid geometrical shapes leading to perspective of building forms plotting of sciography on perspective drawings simple rendering of perspectives. Free hand perspectives Different drawings mediums. Measuring point Method, Three point perspective. Perspective of Buildings, and Interior, Rendering of Perspectives.

2. Shades and shadows on Buildings, perspectives Drawing. Rendering of perspective with sciography of Architectural Design problems. Sciography - Use, Definition, Direction of Light, Location of object, Method of finding shadows of a sphere, Right circular cone, shade of double curve surface of revolution. Shadows of lines and circles. Shadows of architectural elements. Shadows of circular solids. Shadows on buildings.

AR263 VISUAL GRAPHICS (1-0-3)

Aim : To study and understand the use of colours and rendering techniques to prepare 2 & 3 dimensional presentations. The subject also aims to enhance the skills in Visual perceptions of design theories.

- 1 Study of colours and colour schemes.
-Composition with primary, secondary & tertiary colours
.....2 sheets
- Composition with complementary, split and analogous colours.
.....2 sheets

2. Study of light and shade effects on simple objects.
Exercises in 2 & 3 dimensional compositions with effects of light and shade
.....2 sheets
3. Sketching of simple natural / manmade forms in combination with trees , human figures etc
using
pencil
.....2 sheets
4. Rendering buildings and other manmade forms in combination with natural elements using
pen and
ink, charcoal, water colours etc.
.....2 sheets
5. Study of scales and proportions with perspectives of simple geometric forms.
- 2 dimensional compositions on straight linear form.
- 3 dimensional composition on convex-concave and curvilinear forms.

AR272 MODEL MAKING WORKSHOP – II (0-0-3)

Introduction to modeling with plastics, acrylics, boards, P.O.P. and Tiles. Exercises to be developed individually for Architectural models.

AR284 BASIC DESIGN – II (0-0-6)

Objective : Understanding of elements of visual –design translated into detailed drawings & drafting techniques for Architectural-design presentation i.e. Plan, Elevation, Section, Perspectives, Site plan & Model.

1. Measured drawings of different furniture types, doors, windows etc.
Dimensional compositions using repetitively the same forms to create different arrangements
incorporating, understanding of Activity, Users circulation etc.
Dimensional composition resulting into spaces.
2. Quantitative & qualitative analysis of 3-dimensional space. Perception of space in terms of mundane, vibrant, soothing , irritating, free flowing etc. Indoor and Outdoor space relationship.
4. Simple imaginative problems – Memorials, bus Shelter , park furniture etc. Model of the design problems in appropriate scale.
5. Characteristics of built form – Hi-tech, Urban, Rural, Simulation of different built forms in landscape setting. Model and building visualization.

References :

1. V.S.Parmer, Design fundamentals in Architecture, Somaiya {publications private limited, New Delhi.
2. Francis D.K.Ching, Architecture-Form, space and order, Van, Nostrand Reinhold company, New; York.

AR292 BUILDING CONSTRUCTION – II (0-0-3)

Lintel and Arches: Brick, stone, timber and RC.C. lintels Arches: Flat, segmental, semicircular, parabolic, elliptical in brick and stone masonry, Joggle joint.

Simple Timber Doors- Ledged braced battened and paneled door.

Simple Timber Roofs: Roof layout, ridge. hip, valley, gable etc., Lean to, couple and collar roof with tile and sheet covering.

Cladding in walls. Prefabricated building components.

Sessional work based upon above topics.

References:

1. W.B. McKay. Building construction. Vol-I, Vol-IV
2. R Barry. The Construction of Buildings. Vol.1-Vol-IV, The English Language book society, Crosby Lockwood staples, London.