UG/PG: UG		Department: Architecture & Planning
Course Code: HST110		Course Name: English
Credit: 3		
Version:		
Pre-requisite	e course:	
Syllabus		
<b>Objective:</b>		
	· · ·	on and expression and usage of language. e of expression of contents in report.
Contents:	Direct and Reported Speech. Active and Passive Voice. Tenses, Proposition, Conditional Sentences. Précis Writing. Business and Professional Writing. Technical Report Writing.	
<b>References:</b>	1 0	
• Engli	nmar & Composition for Commu ish for Engineers : Nancy Tripa ish Grammar & Composition : N	

UG/PG: UG	Department: Architecture & Planning
Course Code: MAT103	Course Name: Mathematics- I
Credit: 4	L-T-P: 3-1-0
Version:	Approved on:
Pre-requisite course:	
Syllabus	
expansions, curvature, concavity, c asymptotes (Cartesian coordinates Differentiation, Euler's Theorem on F Integral Calculus: Areas of simple	differentiation, Leibnitz, Taylor's and Maclaurian's convexity and points of inflexion (Cartesian form only) s), simple cases only, simple curve tracing, Partia Homogenous functions. e curves (Cartesian form), lengths of curves, surfaces and able integration, center of gravity and moment of inertia of
symmetric bodies. Vector Calculus: Differentiation an gradient, divergence, curl and line int	nd integration of vector functions, scalar and vector fields egrals.
Refernces:	
<ul> <li>Higher Engineering Mathematics : I</li> <li>Engineering Mathematics : Dr. K.C.</li> <li>Engineering Mathematics : Y.N.Gaux</li> </ul>	Jain, Dr. M.C.rawat

UG/PG: UG		Department: Architecture & Planning	
<b>Course Code:</b>	ART101	Course Name: Introduction to Architecture and Basic	
		Design	
Credit: 6		L-T-P/S: 1-0-5	
Version:		Approved on:	
Pre-requisite o	course:		
Syllabus			
Objective: To	orient the student to study of A	Architecture as a design discipline and profession	
<b>Contents :</b>			
	Introduction to Architectu	ire:	
	disciplines to be learnt	architectural projects and society in general. Skills and by an architect. Old and new works of architecture and such as vernacular, traditional, tribal classical, Renaissance, rn etc.	
	Basic Design:		
	••••	e, determinants of design forms, shapes, perception of	
		rms of art. Elements of visual design lines, planes, texture,	
	form, space, colors etc.		
		a: balance, rhythm, contrast, harmony, proportion & scale. hetics, order, efficiency and economy.	
Exercises:	Observation studies of wo	rks of Art and Architecture.	
	Two and three dimensio through principles of visua	nal compositions to achieve objectives of visual Design, al design.	
<b>References:</b>			
• Visual	Dictionary of Architecture: Fi	rancis D. K Ching.	
<ul> <li>Form S</li> </ul>	pace & Order: Francis D. K C	Ching.	
<ul> <li>Theory</li> </ul>	of Architecture: Ian Foster.		
<ul> <li>Princip</li> </ul>	les of Aesthetics : Parker, Dev	vitt H.	

Credit: 4       L-         Version:       A]         Pre-requisite course:       Syllabus         Dbjective:       To develop drawing skills as tools to thin         Contents:       Familiarisation with drawing materials an Lettering and fonts.         Principles of plane geometry, scale and comparison of the second sec	
Version:       A]         Pre-requisite course:       Syllabus         Syllabus       Dbjective:         To develop drawing skills as tools to thin         Contents:         Familiarisation with drawing materials an         Lettering and fonts.         Principles of plane geometry, scale and comparison	pproved on: king, visualization, and representation of design. nd equipments.
Pre-requisite course: Syllabus Dbjective: To develop drawing skills as tools to thin Contents: Familiarisation with drawing materials an Lettering and fonts. Principles of plane geometry, scale and co	king, visualization, and representation of design.
Syllabus Dbjective: To develop drawing skills as tools to thin Contents: Familiarisation with drawing materials an Lettering and fonts. Principles of plane geometry, scale and co	nd equipments.
Dbjective: To develop drawing skills as tools to thin Contents: Familiarisation with drawing materials an Lettering and fonts. Principles of plane geometry, scale and co	nd equipments.
To develop drawing skills as tools to thin Contents: Familiarisation with drawing materials an Lettering and fonts. Principles of plane geometry, scale and co	nd equipments.
Contents: Familiarisation with drawing materials an Lettering and fonts. Principles of plane geometry, scale and co	nd equipments.
Familiarisation with drawing materials an Lettering and fonts. Principles of plane geometry, scale and co	
Familiarisation with drawing materials an Lettering and fonts. Principles of plane geometry, scale and co	
Lettering and fonts. Principles of plane geometry, scale and co	
Principles of plane geometry, scale and co	omplex solids.
	omplex solids.
Development of surfaces of solids. Interes	
Development of surfaces of solids. Interse	ection of solids.
Isometric, axonometric of solids.	
Sciography of simple geometric forms lea	ading to sciography of Architectural forms.
Perspective- One point, two point and thr	ee point Exercises from simple geometrical forms
leading to perspective of Building forms.	Plotting of sciography on perspective drawings.
	Pen & Ink of architectural drawings and materials.

Studio assignments based on above topics.

### **References:**

Engineering Drawing : N.D. Bhatt. Rendering with Pen & Ink : Robert W. Gill. Engineering Drawing: P.S. Gill.

UG/PG: UG	Department: Architecture & Planning
Course Code: ARP105	Course Name: Architectural Presentation Techniques I
Credit: 2	L-T-P: 0-0-4
ersion: Approved on:	
Pre-requisite course:	
Syllabus	
<b>Objectives:</b>	
To learn the utility of penc To develop photography sl	il as a powerful tool of graphic communication and use of colours. kills
Contents:	
Free hand pencil drawing,	human figures, automobiles, vegetation, landscape etc.
Indoor and outdoor sketchi	ng in pencil, crayon, colours, charcoal and ink.
Colour wheel and study of	primary, secondary, tertiary colours.
To provide technical know the following:	how about cameras, its accessories and their applications, including
	and Uses of cameras, Lenses, Film rolls, Flash& other accessories. inder, shutter speed with respect to weather, place, colour, mood and
Exercises:	
Free hand pencil drawing hetc.	numan figures, automobiles, hand driven carts, vegetation, landscape
Study of texture, created w	ith use of pencil and textures observed in everyday objects.
Colour wheel and study of	Primary, Secondary, Tertiary colours.
2D &3D compositions in r	nonochrome and polychrome.
Calligraphy and fonts.	
References:	
• Rendering with Pen	& Ink: Robert W. Gill
• The Color Source B	ook for Graphic Designers: Sadao Nakamiva

UG/PG: UG	Department: Architecture & Planning
Course Code: ART102	Course Name: History of Architecture-I
Credit: 3	<b>L-T-P:</b> 2-1-0
Version:	Approved on:
Pre-requisite course:	

#### Syllabus

**Objective**: To understand the role of various factors in the development of Architecture. Major emphasis shall be on development of various construction techniques with regard to material and space formation.

#### **Content:**

An introduction to pre- historic Architecture: Stone age, Qatal Hugok, Cyclopean walls, Sepulchral Structures, Egyptian Architecture: Mastbas of Memphis Age. Pyramids – Stepped pyramid of King Zosers, Pure pyramids of Khufu, Khafreand ,Mankure Middle Kingdom temples, tombs, New kingdom temple of Amon, Khons.

Greek Architecture: Orders-Doric, Ionic & Corinthian Optical Corrections in Greek Architecture Temples of Athena Nike, Acropolis: Temple of Artemis, Erectheum, Parthenon, Athens. Theatres: Theatre at Epidauras, Assembly Hall at Priene. City Planning & civic spaces of Greeks; Acropolis, Athens & city of Miletus, Priene; Hippodamus Planning Principles.

Roman Architecture: Special emphasis on understanding structural system and materials Aqua ducts & bridges: pont du Guard, Nimes& Aqua Claudia, Rome. Temple: Pantheon, Rome; Temple of Trojan, Rome; temple of Jupiter, Balbek. Amphitheatres & Circus: Rings of Maximus, Rome and Pompei. Theatres: Theatre of Marcelli, Romen Coloseum, Rome; Theatre of Pompei. Bath House: Bath of Carcalla&Dicoletian, Leptis Magna. Forum's Basilicas of Constantine, Rome; Forum of Augustus; Forum & Basilica of Trojan, Rome. Triumphal Arches: Arch of Titus, Rome. Villas & Palaces: Domus Aurea (Golden House) Rome Hadrian's Villa, Trivoli. City Planning of Rome.

### **References:**

- Sir Banister Fletcher: A History of Architecture
- World Atlas of Architecture: Christine Flon
- Master Builder: Henry J. Cowan
- History of Architectural Styles: T. Roger Smith
- The World Atlas of Architecture : Published by Portland House

UG/PG: UG	Department: Architecture & Planning
Course Code: ART104	Course Name: Theory of Design-I
Credit: 2 L-T-P: 1-1-0	
Version: Approved on:	
Pre-requisite course:	
Syllabus	
Objective:	
To understand theory and principles of	of architecture.
Contents:	
Determinants of architectural form; C	limate, Construction techniques and Materials.
Interdependence of space, structure, c	virculation and function.
Scale and architecture.	
Perception of architecture: Kinestheti	c and Sensory
Qualities of architectural space: size,	proportion, degree of enclosure, light and relationship with
other spaces.	
Architectural Programming.	
Reciprocal relationship between form	and space.
	-
References:	
• Form, Space & Order: Franci	s D.K. Ching,
• Elements of space making: J	-
<ul> <li>Elements of Design – James</li> </ul>	
- Liements of Design Junes	500m

UG/PG: UG	Department: Architecture & Planning	
Course Code: ART106	<b>Course Name:</b> Building Construction and Materials –1	
Credit: 4	L-T-P: 2-0-3	
Version: Approved on:		
Pre-requisite course:		
Syllabus		
Objectives:		
The understanding and application	of basic building materials and techniques in conventional	
construction practices.		
Contents:		
	ructural, visual and textural properties, varieties and	
application of brick, stone and timb		
Construction principles and details		
Foundations - simple wall and colu	mn footings.	
Masonry work – bonding details in	walls and piers.	
Openings – lintels, arches, sill and j	jamb details.	
Doors and windows – joinery and fixing details of simple timber doors and windows.		
Exterior and interior wall sections.		
Exercises :		
Identification of materials and study	y of relevant I.S. codes, visits of manufacturing units, field	
	nd presentation of seminars, preparation of detailed drawings	
on above topics.		
References :		

- ences:
  - Building construction W.B.McKay
  - Building construction R Berry
  - Building construction Chudley
  - Building construction Francis D.K. Ching

UG/PG: UG	Department: Architecture & Planning
Course Code: CPT110	Course Name: Computer Systems and Programming- I
Credit: 3	L-T-P: 2-0-2
ersion: Approved on:	
Pre-requisite course:	
Syllabus	
Basic Computer organization: Proces	ssor & Memory Model.
data types, constants, variables, decl associativity, input and output oper- array and character strings, built- variables, structures and unions, po pointers and structures, dereferencin preprocessor directives simple use of Introduction to Networking Concep Browsers, HTML Programming usin <b>References:</b> • Programming with 'C': Bala, • The 'C' programming language	guruswamy ge.: Kerninghan and Ritchie Programming in C: Govil, Agarwal, Mathur&Pathak Sinha&Sinha .

UG/PG: UG	Department: Architecture & Planning
Course Code: ARP108	Course Name: Architectural Presentation Techniques II
Credit: 3	L-T-P: 0-0-5
Version:	Approved on:
Pre-requisite course:	
Syllabus	
Objective:	
Development of skills in graphic c	creation & presentation.
Development of comprehension of	f 3D forms and spaces.
<b>Contents:</b> Rendering of architectural drawing Graphic communication through s	gs in ink and color. ignage, optical art, advertisement posters, etc.
Exercises:	
÷ •	arious materials e.g. Handmade sheets. Mount Board, ylic sheet, Metal, Natural wood etc.
References:	
• Rendering with Pen & Ink:	Robert W. Gill
• The Color Source Book for	Graphic Designers: Sadao Nakamiva

UG/PG: UG	Department: Architecture & Planning
Course Code: ARP110	Course Name: Architectural Design-I
Credit: 8	L-T-P/S: 0-0-8
Version:	Approved on:
Pre-requisite course:	·

#### Syllabus

#### **Objective:**

To understand the process of evolution of architectural form through analysis of simple activities, structural systems and geometry.

#### **Exercises:**

Mono functional structures, accommodating specific activities like kiosks, ticket booths, pavilions, etc. Layout of interiors; to examine due relationship between anthropometrics, furniture, movement, and space such as bedrooms, lobbies, toilets, classrooms, offices, etc.

#### **References:**

Neufert Architects' Data

Time Saver Standards for Building Types: Joseph De Chiara & John Hancock Callender

UG/PG: UG	Department: Architecture & Planning
Course Code: ART201	Course Name: History of Architecture-II
Credit: 3	<b>L-T-P:</b> 2-1-0
Version:	Approved on:
Pre-requisite course:	<b>/</b>
Cullaburg	

#### Syllabus

**Objective**:

To understand the evolution of space and structure for the expression and space required in early Western Architecture.

**Contents**:

*Early Christian Architecture*: Laterno Basilica. Rome, Basilica of S. Peter. Rome S. Clement, Rome& S. Lorenzo, Rome.

*Byzantine Architecture*: Planning & structural system of S. Hagia Sophia, Constantipole S. Mark, Venice.

*Romanesque Architecture* in Italy and around Pisa Cathedral, Pisa: The Campanile, The Baptistery Abbey of St. Denis in France. Central Europe: Church of Apostees, Cologne, Worm's Cathedral, Military Buildings/forts, general Chateau de mer. Sidon.

*Gothic Architecture*: Structural System & play of lights France: Loan Cathredal: ChartesCathredal: Reims & Amiens Cathredal British Isles: Canterbury: King's College Chapel, Cambridge: Westminster Abbey Wells Cathredal. Italy: MilanCathredal: S. Maria Del Florence: S. Maria Novella, Florence.

Renaissance Architecture (upto1800 A.D.): Forces governing and character of EarlyRenaissance. Fillipo Brunelleschi. Dome of FlorenceCathredal FoundlingHospitalS.

Lorenzo. Florence Michelozzo: MediciPalace (PallazoRicardi) Florence; PallazoPittiFlorence Leon BatisssaAlberti; S.Francesco, Rimini.PallazoRucellai, St. Andrea at Mantua, St. Maria Novella.

*High Renaissance & Mannerism* Bramante: Tampietto, Rome: S. Peter, Rome: Pallazo Farnese, Rome House of Raphael, Andrea Palladio: Basilica, Vicenza, Rotunda (Villa Capra), S. Georgia Maggiore, Venice:Palladian motiff Michelangelo: Laurentian Library, Florence: CapitolinePalaces, Rome: S. Peter, Rome: Pallazo Farnese, Rome Vilgnola's- IL- Gesu, Rome Raphael: Villa Madama, Rome.

Baroque And Rococco- Bernini: S. andrea at Quirnale, Rome; St. Susana Piazza of S.Peter, Rome
Francesso Borromini: S. Carlo AlleQvattroFontane, Rome
Goivoni in Caterno Rome
GuarionoGuarini: S. Lorenzo Turin, Capelladella; S. Sindone, Turin *France*: Chateau de
Chambord, Pierre Nepren FountainbleauPalais de Palace of Versailles: Church of Invalides.

*England*: Tudor, Elizabethan Jacobean Tour Houses &straut& restoration St. Paul's Cathedral, London Sir Christopher Wren S. Martine in Fields, London: Castle Howard Palladianism: Houghton Hall, Norfolk.

### **References:**

.

- Sir Banister Fletcher- History of Architecture
- Christoff- History of Architecture
- World Architecture
- Encyclopaedia of Architecture & Architects

UG/PG: UG	Department: Architecture & Planning
Course Code: ART203	Course Name: Building Science-I (Climatology)
Credit: 3	<b>L-T-P:</b> 2-1-0
Version:	Approved on:
Pre-requisite course:	·
а ш 1	

# Syllabus

#### **Objective**:

Understanding of interrelationships of built environments with natural environment. Also issues of balance in traditional and contemporary built environments.

#### **Contents:**

Elements of Climate: Solar radiation Terrestrial Radiation, Temperature, Humidity, Wind, Cloud, Precipitation etc. Factors effecting climate at micro and macro level, measurements and quantification.

Effect of Climate on Man: Body Heat balances, Thermal Indices, Thermal Comfort, Psychometric chart and its application.

Analysis of climatic data: climatological site analysis and its application in site planning and design evolution.

Effect of climate on Building Envelope: Heat flow, Heat transfer, Heat storage and time lag of various building materials and elements.

Study of sun-path and design of shading devices.

Study of indigenous shelter and urban form as a response to climate.

#### **References:**

- Man, Climate & Architecture: V. Olgyay
- Manual to tropical Housing and Building : Koenigsberger
- Climatology : D.S.Lal
- Energy Efficient Building in India : MiliMajumdar

UG/PG: UG	Department: Architecture & Planning
Course Code: CET293	Course Name: Surveying
Credit: 2	L-T-P: 1-0-2
Version:	Approved on:
Pre-requisite course:	
Syllabus	
Different types of survey. Chain survey: instruments, types of cl Different types of compass, Meridian of angles, loose needle methods, comp Leveling and Contouring: Basic computations & permanent adjustmen Theodolite survey: basic definitions, of vertical and horizontal angle, minu- plane table traversing.	definitions, types of levelling, and sources of errors,

### **References:**

- Surveying,&Levelling, :S.K. Duggal Surveying: Dr. B.C. Punmia •
- •

UG/PG: UG	Department: Architecture & Planning	
Course Code: ART205	Course Name: Building Construction and Materials –II	
Credit: 4 L-T-P: 2-0-3		
Version:	Approved on:	
Pre-requisite course:		
SyllabusObjectives :The understanding and a	application of metals and their products in building	
<b>Contents</b> : Study of manufacturing process, structural, visual and textural properties , varieties and application of steel, glass, metals and alloys.		
Foundation : Grillage foundation.		
Structure: Steel columns and space	structure, steel trusses.	
Roofing: Roof covering in G.I., Asbestos and fiber Sheets etc. ,North light roof truss , patent glazing details.		
Flooring and finishes: Industrial flooring and metal cladding.		
Openings: Section windows in aluminium and steel.		
Staircases : Metal staircase.		
Exercises: Identification of materials and study of relevent I.S. codes, market survey, field trips.		
Preparation of study reports and presentation of seminars, preparation of detailed drawings on above topics.		
References:		
Building construction: W.B.McKay		
Building construction: R Berry		
Building construction: Chudley		
• Building construction: Francis D.	K. Ching	

UG/PG: UG		Department: Architecture & Planning
Course Cod	e: ART207	Course Name: Architectural Presentation Techniques III
Credit: 3		<b>L-T-P:</b> 1-0-3
Version:		Approved on:
Pre-requisit	e course:	
Syllabus		
<b>Objective</b> :	ctive: Introduction of Graphic software and related techniques.	
Contents:	<b>Contents</b> : Introduction to various Graphic software e.g. Coral Draw, Adobe Photoshop etc. Introduction to computer peripherals like printers, plotter, scanner etc.	
Exercises:	Documentation of art work, architectural projects/products through different techniques e.g. photography, movie making, animation or power point presentation.	
<b>References:</b>		
•	Rendering with Pen & Ink: Robert W. Gill .	
•	The colour Source Book for Graphic Designers: Sadao Nakamiva.	
•	Colour in Sketching & Rendering : Guptil.	

UG/PG: UG	Department: Architecture & Planning
Course Code: ART209	Course Name: Computer Application for Architects-I
Credit: 2	<b>L-T-P:</b> 1-0-2
Version:	Approved on:
Pre-requisite course:	

#### **Syllabus**

#### **Objective:**

To apprise the students of the existing presentation related softwares

#### **Contents:**

Introduction to various softwares relevant to Architects viz. Excel, Corel draw, Adobe Photoshop, etc. and various computer peripherals like plotter, scanner and digitizer along with their usage.

Introduction to drawing and graphic softwares relevant for Architects. Drawing and drafting of 2D drawing on AutoCAD, Revit, Cadian and Architectural Desktop.

Usage of printer and plotter for printing and plotting drawings..

#### **Exercises:**

- Drafting letters, reports on MS Word.
- Drawing basic geometrical objects and colouring them.
- Making simple presentations and animations in MS PowerPoint.
- Scanning images and modifying them in Photoshop and transferring them in different allied softwares.
- Drawing and drafting small objects, building plans etc.

#### **References:**

• Autodesk user manual

UG/PG: UG		Department: Architecture & Planning
Course Code: ARP211		Course Name: Architectural Design-II (including
		measure drawing camp)
Credit: 8		L-T-P: 0-0-8
Version:		Approved on:
Pre-requisite	course: ART101 Introduction t	o Architecture and Basic Design.
Syllabus		
Objective:	Analysis of activities and spaces in a given predominant function. Its representation in graphic form.	
Contents:	Introduction to basic design methodologies involving study of single functions with due emphasise on development of form, study of mass, void skyline and materials used. Study of building having multiple functions of simple nature. Measure drawing camp to include study of building/group of buildings/ settlements of architectural importance, involving detailed drawings, constructional details, material used giving due importance to the given context.	
Exercises:	Design exercises may include buildings of single functions such as ticket counters/reception offices, security offices, kiosks, booths, information cells etc. Multiple function such as primary health centres, convenient shopping etc. At least one design problem to concentrate on comprehensive graphic representation to form a prelude to measure drawing.	
<b>References:</b>		
•	Time Savers Standards: Build	ling Types.
•	Neuferts Architectural Data.	

UG/PG: UG	Department: Architecture & Planning
Course Code: ART202	Course Name: History of Architecture –III
Credit: 3	<b>L-T-P:</b> 2-1-0
Version:	Approved on:
Pre-requisite course:	

#### Syllabus

**Objectives:** To understand characteristic features and genesis of "Architectural styles" with reference to causative forces such as climate, society, technology and geonatural factors and underlying design theories with reference to Indian architecture.

**Contents:** Architecture of Indus valley, Buddhist era, Temple architecture of South India, Hindu empires (Deccan style) and Nagara style of Orissa, Central and western parts of India in terms of design parameters, such as art, construction methods and Indian vastushastra.

Islamic architecture- Sultanate architecture characteristic features of various provincial styles such as Malwa, Bengal, Gujrat, Deccan and Central India, Rajput Architecture, Mughal Architecture.

Exercises: Students seminar on works of prominent architects. Assignments on above topics.

#### **References:**

- A History of Architecture : Percy Brown
- History of Architecture : Satish Grover.
- IndianTemple Architecture: Adam Hardy.

UG/PG: UG		Department: Architecture & Planning
Course Code: ART204 Credit: 2 Version:		Course Name: Building Services- I
		<b>L-T-P:</b> 1-1-0
		Approved on:
Pre-requisite	course:	
Syllabus Objectives:	To give the student a basic overview and understanding of water supply and distribution at the city level and also within the premises. To enable the student to work out waste management of the premises and to effectively connect it into the city sewer system or other alternatives.	
Contents: -		
	distribution system at city lev Requirements and calculation occupancies, storage and dist Hot water supply installation fittings and appliances and materials used where necessar <b>Drainage and Sanitation:</b> Terminology. Rain and storm water draina and harvesting. Systems of waste and soil co Collection and disposal of ga	ons of water consumption for various building types and tribution of water within building premises. ons, solar water heating installations and supply, study of their layout within the building with references of different
Exercises:-	To detect plumbing of simple buildings. To make layouts connecting sanitary fittings within buildings to septic tank / main sewe lines.	
• Build	ing Construction :W.B. McKay ing Services :(Barry Vol.5 nal Building Code	7

• National Building Code

UG/PG: UG	Department: Architecture & Planning
Course Code: CET242	Course Name: Architectural Structures-I
Credit: 3	<b>L-T-P:</b> 2-0-2/2
Version:	Approved on:
Pre-requisite course:	
Syllabus:	
	t of inertia, radius of gyration, polar moment of inertia, product of
inertia, parallel and perpend	icular axes theorems, perpendicular axes.
Concept of stress and strain,	, stress-strain curve, moduli of elasticity, Poisson's ratio
Shear force and bending mo beams.	ment diagrams for simply supported cantilever and over hanging
Theory of simple bending, d	listribution of bending stresses.
Shear stress distribution in b	beams of rectangular, circular I and T sections.
Analysis of pin jointed plan	e frame- method of joints and method of section.
The long and short columns	, slenderness ratio, buckling load for various end conditions.
References:	
• Strength of Materia	ls & mechanic of Structure : B.C.Punmia
	cs & Analysis, : V.S.Prasad
Basic Structural An	alysis : C.S.Reddy

UG/PG: UG	Department: Architecture & Planning
Course Code: ART206	Course Name: Building Construction and Materials –III
Credit: 4	<b>L-T-P:</b> 2-0-3
Version:	Approved on:
Pre-requisite course:	

#### Syllabus

**Objective:** The understanding and application of lime, cement and R.C.C. construction.

**Contents:** Study of manufacturing process structural visual and textural properties varieties and application.

Lime, Cement and Cement concrete: Preparation, tests and application techniques of lime and cement mortar and concrete, varieties of concrete, concreting under special conditions.

Foundation: R.C.C. footings, isolated, strip and combined footings along with D.P.C.

**Structure:** R.C.C. columns and beam structure, simple, R.C.C. *roof* with water proofing details, study of different R.C.C. roof form sand its connection with structure.

**Flooring and finishing:** IPS flooring, mosaic flooring and cement tile flooring interlocking paving blocks.

**Openings:** Sliding doors, sliding and folding doors in wood, aluminium and steel

Staircases: R.C.C. staircase.

**Exercises**: Identification and study of relevant I.S. codes, field trips. Preparation of study reports and presentation of seminars, preparation of detailed drawings on above topics.

#### **References:**

- Building construction: W.B. McKay
- Building construction: R Berry

UG/PG: UG	Department: Architecture & Planning
Course Code: ART208	Course Name: Computer Application for Architects-II
Credit: 2	L-T-P: 1-0-2
Version:	Approved on:
Pre-requisite course:	
Syllabus	
Objective:	
To introduce the students to 3D	D-drawing, software and presentation.
Contents:	
Introduction to surface & solid	model of built form using Auto-Cad, Revit, etc.
Rendering of solid models usir	ng 3ds Max, Photoshop and Corel Draw etc.
Exercises:	
Architectural presentation views and presentation drawings.	
References:	
• Autodesk user manual	

UG/PG: UG	Department: Architecture & Planning
Course Code: ART-212	Course Name: Architectural Model Making
Credit: 3	L-T-P: 1-0-3

#### Objective:

Physical models are a uniquely revealing and compelling tool for the architect. More forcefully than any other way of visualizing a building, models represent ideas, as opposed to images. The sensory impact of a physical model, its materiality, is an important step in the design process. A model not only allows the designer to explore freely while testing out specific ideas but also to advance and communicate their ideas effectively to others.

#### Contents:

Module I.	Introduction to Model Making - Purpose and Utility, 3d space visualization and
	decision making
Module II.	Tools and Materials - ivory sheets, triplex sheets, plexi sheets, metal sheets; Mount
	boards, sun board; softwood - balsa, lime wood; metal wires, wire mesh, plaster of
	Paris, adhesives
Module III.	Materiality
Module IV.	Model making methods and techniques - Paper modeling, Surface development,
	Cutting Techniques eg Hot wire cutting,
Module V.	Planning an Architectural Model
Module VI.	Model Scale
Module VII.	Model Prototypes - Product models, Architectural Exterior Models, Interior/Openable
	models, Layout/wire-mesh models, Landscape Models, City-scape/Urban scale
	models, Engineering/ Structural Load bearing models, Working construction models
Module VIII.	Modern Tools and Techniques - 3D Printers, Laser cutters, CNC Model making.

<b>Template for</b>	<b>Course Details</b>
---------------------	-----------------------

UG/PG: UG		Department: Architecture & Planning
Course Code: ARP210		Course Name: Architectural Design-III
Credit: 8		L-T-P: 0-0-8
Version:		Approved on:
Pre-requisite	e course: ARP110 Architectural	Design-I
Syllabus		
Objective:	To understand varied space usage and their application in multifunctional buildings.	
Content:	Introduction to basic design methodologies including emphasis on case-studies, time activities studies, anthropometrics and their presentation as a prelude to design solution. Due emphasis is to be given on concurrent subjects like Climatology, construction techniques etc. Incorporation of building materials in design solution to be emphasised.	
Exercises:	Ū Ī	e buildings with multiple use such as clubs, clinics, banks, ry schools, and community centre.
<b>References:</b>		
•	Design for living : Bawa.	
•	Design Fundamentals in Architecture,: Pramer.	
•	Time Savers Standards: Build	ling Types

UG/PG: UG		Department: Architecture & Planning	
Course Code: ART301 Credit: 3 Version:		Course Name: History of Architecture – IV L-T-P: 2-1-0	
			Approved on:
		<b>Pre-requisite</b>	course:
Objective:	causative forces, such as s	tic features and "Architectural movements" with reference to society, technology and geonatural factors and underlying maissances and Modern architecture from Nineteenth century	
Contents:	Post Renaissance European Architecture. Art and craft movement, Ur Eclecticism, Interaction of art and architecture in pre-modern architectur Novaeau, Art deco, Bahausschool, structural rationalism and birth of movement, modern architecture in first half of 20 <sup>th</sup> century, works and philos F. L. Wright, Louis Sullivan, Mies van de Rohe, Le Corbusier and other master		
	Late modern Architecture, works of Michael Graves, Frank Gehry, Peter Eisenman etc. Post modernism, Deconstructivist Architecture, Futuristic and contemporary trends in architecture.		
	British Colonial Architecture in India, Colonial Architecture in Bombay, Calcutta. New Delhi etc., Post-independence architecture in India.		
	Works of Le Corbusier, Louis Kahn, A.P. Kanvinde, B.V. Doshi, Charles Correa, Raj – Rewal etc. Contemporary trends in Indian architecture.		
Exercises:	Students seminar and pres	sentation. Assignment on above topics.	
<b>References:</b>			
• A his	ory of Architecture – Sir Banist story of Modern Architecture – ern Architecture since 1900 – V	- Kenneth Frampton	

UG/PG: UG	Department: Architecture & Planning
Course Code: ART303	Course Name: Quantity Survey & Specifications
Credit: 4	<b>L-T-P:</b> 1-1-0
Version:	Approved on:
Pre-requisite course:	

#### Syllabus

**Objective**: Basic understanding of preparing estimates and tender documents for Design of building.

#### Contents :

- Introduction to procedure of estimating, data required for framing an estimate, types of estimates. Approximate and detailed estimate. Abstract of Estimates, bills of quantities, Contingencies, Taking off quantities for Principal civil works, electrical works, Analysis of Rate for Principal Civil works, items rate considering current market rate for building materials and labour wages as well as P.W.D. scheduled of rates. Composition of rate
- Percentage-distribution for materials, labour, tools plant and Contractor's Profit.
- Preparation of tender document, notice inviting tender and advising the Client regarding selection of contractor. Mode of measurement.
- Significance of specifications in building construction. General and detailed Specifications for all kind of principal building works and building materials.

**Exercises** : Preparing estimate and tender document for a building.

Studying tender document of Government projects and private projects.

### **References** :

- Estimation and Costing Rangwala
- Estimation and Costing- B.C.Punmia

UG/PG: UG	Department: Architecture & Planning
Course Code: CET343	Course Name: Architecture structures-II
Credit: 3	<b>L-T-P:</b> 2-1-0
Version:	Approved on:
Pre-requisite course:	
Syllabus	
Objectives:	
Slopes and deflections in state area method and conjugate be	ically determinate beams using double integrations method, moment eam method.
Equilibrium and stability of s frames.	structures, static and kinematic indeterminacies of beams and plane
Analysis of continuous beam method.	as and simple portal frame using slope deflection method and M.D.
Approximate method of analy	sis for lateral loads- portal and cantilever method.
Arches: Geometrical properti arches.	es, basic mechanics, arch action; three hinged arch, and two hinged
References:	
<ul> <li>Strength of Materials &amp; Mech</li> <li>Structural Mechanics &amp; Analy</li> <li>Basic Structural Analysis : C</li> </ul>	-

UG/PG: UG		Department: Architecture & Planning
Course Code: ART305		Course Name: Building Construction and Materials –IV
Credit: 4 Version:		L-T-P: 2-0-3
		Approved on:
Pre-requisite	e course:	
Syllabus		
<b>Objective</b> : T	he understanding and application	tion of decorative and protective finishes in building
Contents :	cladding materials. Build admixtures etc .Plastics in	-
	Decorative and protective finishes, cladding in stone metal, glass, ceramic tiles etc., curtain walling.	
	Partitions, paneling and fa board, different kind of tin	lse ceiling in timber and other materials; such as gypsum nber derivatives.
	Protective finishes for base	ement, toilets and terrace.
	Timber floors, stairs and re	oofs, parquet flooring.
Exercises :	Identification of materials	and study of relevant I.S. codes, market survey, field trips.
	Preparation of study repor drawings on above topics.	ts and presentation of seminar, preparation of detailed
References :		
<ul><li>Βι</li><li>Βι</li></ul>	uilding construction : W.B.Muilding construction : R Berruilding construction : Chudleuilding construction : Franci	ry ey

UG/PG: UG	Department: Architecture & Planning
Course Code: ART315	Course Name: Department Elective –I (Interior Design)
Credit: 3	L-T-P: 1-0-3
Version:	Approved on:
Pre-requisite course:	
Syllabus	
Contents:	
restaurants, offices, hotels e Market survey of different r lighting fixtures etc. Construction details of furn Designing for human comfo	litional trends, Study of interiors of different nature like homes, etc. covering aspects like furniture, lighting, flooring, ceiling etc. materials used in interiors like wood, veneers, laminates, metals, iture, wood joinery, metal fabrication, false ceiling, flooring etc. ort and ergonomics. st of designing of interiors of residences, offices, hotels etc.
References:	
• Interior Design : John F.Pil	le
Time Sever Standards for L	ntanian Dasian

• Time Saver Standards for Interior Design

UG/PG: UG	Department: Architecture & Planning
Course Code: ART307	Course Name: Departmental Elective-I (Vernacular
	Architecture)
Credit: 3	<b>L-T-P:</b> 1-0-3
Version:	Approved on:
Pre-requisite course:	
Syllabus	
Contents:	
techniques, symbolism and de North West India – Gujrat and Rajasthani rural & urban. Goa, Daman, Portugese Kashmir Valley, Gujjar, Pandi South India – Tamilnadu- Irul Karnataka- Tuluvas, Andhra F East and North-East India Bengali Rural, Bankura, Assar Manipur, Orrisa- Khond. Andmanese, Nicobaris	a, Kota, Kuromba, Toda, Kerla- Nair, Maharashtra- Konkani,
Exercise:	
	detailed study of one community with reference to architecture,
settlement pattern, techniques,	, materials, symbolism and rituals.
References:	
•	esign ,Construction and Operation : Keith Moskow ture Social and Environmental Dimensions: Joo- Hwa Bay &

UG/PG: UG	Department: Architecture & Planning
Course Code: ARP309	Course Name: Architectural Design-IV
Credit: 8	L-T-P: 0-0-8
Version:	Approved on:
Pre-requisite course: ARP211 Arch	nitectural Design-II
Syllabus	
Objectives:	
To understand multi functiona	al multi level buildings at community level.
Contents:	
Understanding basic architec	ablic buildings or recreational building at community scale. Actural character of such buildings. Influence of land, climate and sign. Part detail of the project to understand design.
Exercises:	
Community hall, School, Bar	nk building, Institutional buildings, Shopping plaza, Nursing home,
Resort.	
<ul> <li>References:</li> <li>Time Saver Standards</li> <li>Neufert's Architect's Data</li> <li>Architecture- Form, Space &amp; </li> <li>IS Codes</li> </ul>	order, Francis : D.K. Ching

UG/PG: UG	Department: Architecture & Planning
Course Code: ART302	Course Name: Building Services II (Electrical)
Credit: 3	L-T-P/S: 2-1-0
Version:	Approved on:
Pre-requisite course:	

### Syllabus

**Objective**: To give the student a basic understanding of electrical services in building design.

### **Contents:**

Terminology Typology and systems of wiring and cabling, planning and layout of electrical installations within a building complex Fittings and accessories and their installations, earthing and lightening protection in buildings.

Domestic electrical appliances, their usage and load calculations for simple building types

Fundamentals of specialized electrical installations such as lifts, escalators, pumps, motors, air conditioning systems etc.

Installations and wiring for standby systems like generators, inverters etc.

**Exercises**: To work out electrical loads, and detail the electrical layout of simple building types

### **References:**

- National Building Code, 2005
- BIS Code IS4648 1968
- Electric wiring and Estimation S. L. Uppal

UG/PG: UG	<b>Department: Architecture &amp; Planning</b>
Course Code: CET344	Course Name: Architectural Structures –III
Credit: 3	<b>L-T-P:</b> 2-0-2
Version:	Approved on:
Pre-requisite course:	
Syllabus	
Contents:	
	coarse aggregate and fine aggregates, properties of concrete in fresh and ility of concrete and introduction to concrete mix design procedures.
Introduction to worki	ng stress method of design.
Limit State method of	Design, difference between limit state and working stress method.
Design of beams, sin flexure, shear and tor	gly and doubly reinforced rectangular beams and T- Beams subjected to sion.
e	-way slab, and two-way slab with corners free to lift and held down codes; Design of doglegged staircase.
Design of Column; sh	ort column and long columns with lateral ties and helical reinforcement.
Design of footing. I foundation.	solated column footings, concept of combined footing, raft and pile
Pre-stressing: Method	s and losses in pre-stressing
References:	
0	ure (Limit State) Dayaratnam ure (Limit State) Dr.A.K. Jain

UG/PG: UG	Department: Architecture & Planning
Course Code: ART312	Course Name: Departmental Elective-II (Construction
	Management)
Credit: 3	L-T-P: 1-2-0
Version:	Approved on:
Pre-requisite course:	
Syllabus	
Role of Architect in Construction Management. CPM, PERT Scheduling of construction. Planning of construction site. Inventory, liasoning with different authority, Arbitration, payment, legal implications, etc. <b>References:</b>	
<ul> <li>Construction planning and management : P.S. Gehlot</li> <li>Construction management : Trefor Williams</li> <li>Advance construction technology : Roy Chudley Roger Green</li> </ul>	

UG/PG: UG	Department: Architecture & Planning
Course Code: ART304	Course Name: Departmental Elective-II (Barrier Free
	Architecture)
Credit: 3	<b>L-T-P:</b> 1-2-0
Version:	Approved on:
Pre-requisite course:	
Syllabus	
Contents:	
get to, and participate without assi services, community living, emplo The Main objective of the course i designing Barrier free built environ for Barrier Free Built Environmen	is to develop and understand the fundamental principles for nment. To learn and apply the Guidelines and space standards t for Disabled and Elderly Person in various buildings such as
To learn about the act and provision Opportunities, Protection of Rights	, shopping complexes and office buildings etc. on of act laid in the Persons with Disabilities (Equal s and Full Participation) Act, 1995 enacted by the Government ye-laws which would be applicable to all buildings and facilitie
• •	sabilities, mobility devices, controls, maintenance and operatio ges, materials, hardware and different products, constructio

#### **References:**

details etc.

- Barrier free designs :James Holmes- Seidle
- Barrier free design : Oliver Heiss,

UG/PG: UG	r	Department: Architecture & Planning
Course Code: ART306 Credit: 4 Version:		<b>Course Name:</b> Building Construction and Materials –V
		<b>L-T-P:</b> 2-0-3
		Approved on:
Pre-requisit	e course:	
Syllabus		
Objective :	To familiarize students with alternative and special/advanced construction materials and techniques.	
Contents :	Study of preparation, structural, visual and textural properties, varieties and application of mud, precast building components, fiber reinforced concrete	
	Materials for temporary	construction.
	Pre stressing and post te building components in	nsioning :principles and techniques, application of precast buildings.
	Pile and raft foundations	S.
	Temporary constructions in timber and steel.	s,: Shoring, underpinning, strutting, formwork, scaffolding etc.
	Exhibition pavelions, po	ortable structures etc.
	Construction of lifts and escalators.	
Exercises :	study of relevant I.S. codes, , field trips. preparation of study reports and presentation of seminars, preparation of detailed drawings on above topics.	
<b>References:</b>		
•	Construction journals, CBRI	publications and leaflets of various organizations involved in
	construction research.	

UG/PG: UG		Department: Architecture & Planning
<b>Course Code:</b>	ART308	Course Name: Site Planning and Landscape
Credit: 3 Version:		<b>L-T-P:</b> 1-0-3
		Approved on:
Pre-requisite	course:	
Syllabus		
Objective:	To develop understanding	g of principles of landscape design.
	Plant characteristics – the climbers and ground cove Site analysis and develop building projects, gardens Principal and elements Chinese, Italian, French an	sign and their relation to built environment. structure, colour, form and foliage of various trees, shrubs, ers. Study and identification of Indian plants and trees etc. ment. Designing and presentation of landscape schemes for / parks, Historical monuments and places of tourist interest. of garden design – study in history, Mughal, Japanese,
	and household level and in	
	Construction details for la	indscaping art of garden furniture, lighting and signage.
Exercise:		
	Exercise covering about cor design exercise	ntent in the form of seminars, research/tech. papers, or/and
<ul><li>Landso</li><li>The La</li></ul>	aver Standards: Landscape Arc cape Construction & Detailing andscape of Man : Geoffery a ning the new Landscape: Sut	: Alan Blanc nd Susan Jellicoe

UG/PG: UG	Department: Architecture & Planning
Course Code: ARP310	Course Name: Architectural Design- V
Credit: 8	L-T-P: 0-0-8
Version:	Approved on:
Pre-requisite course: ARP210 Architectural Design- III	

# Syllabus

## **Objective:**

To understand the Architectural heritage, its status, measures to restore and possibility of adaptive reuse. To understand the concepts required to design for the disabled.

## **Contents:**

Identification of a building/building complexes/precinct of heritage value, (having potential of contemporary use/s) which can be taken up for adaptive rescue/ restoration/ conservation project. To design a public building and make it completely Barrier free. Inputs from concurrent related subjects may be incorporated in the scope of design problems.

#### **Exercises:**

Projects on specific buildings suitable for adaptive reuse, restoration, conservation. Projects for heritage hotels and sites of interest, old havelis, royal buildings, cenotaphs. Baori's. The Barrier free design can be of a small Hotel, Public Library, commercial complex, Institute, nursing home etc.

- Surveying Historic Buildings : David Watt
- Development and Design of Heritage Sensitive Site, Kenneth Williamson

UG/PG: UG	Department: Architecture & Planning	
Course Code: ART401	<b>Course Name:</b> Building Science II (Acoustics and Illumination)	
Credit: 3	L-T-P/S: 2-1-0	
Version:	Approved on:	
Pre-requisite course:	· · ·	
Syllabus		
building.	ent aware of general design approach with reference to acoustics in a	
Contents:		
<u>Acoustics</u>		
Basic terminology and def	-	
	enclosed space. Requisites for acoustic environment	
0 11	es for different building types, with reference to applicable	
	oustic materials, construction details and fixing.	
	rol of structure borne sound and noise from different mechanica	
equipment.		
<u>Illumination</u>	initions laws of illumination	
	initions, laws of illumination. ference to applicable standards	
0 0 0		
Classification of lighting systems: direct, indirect, diffused etc. Jse of artificial lighting as an element in different building types such as exhibitions,		
heatres, offices and stores		
theatres, onces and stores		

# **Exercises:**

Acoustical design in medium size buildings supported with calculations. Qualitative and Quantitative understanding of lighting in buildings through site study and exercises.

- Architectural Acoustics (Applications of Modern Acoustics) Marshall Long
- Room Acoustics Heinrich Kuttruff
- Auditorium Acoustics and Architectural Design Michael Barron
- Detailing for Acoustics Peter Lord, Duncan Templeton
- Architectural Acoustics M. David Egan
- Lighting Design Basics Mark Karlen, Benya
- Electrical Engineering B. L. Thareja

UG/PG: UG	Department: Architecture & Planning
Course Code: CET445	Course Name: Arch. Structures- IV
Credit: 3	L-T-P/S: 2-1-0
Version:	Approved on:
Pre-requisite course:	·
Syllabus	

#### Syllabus

**Objective:** To study the design of steel structures in buildings.

# **Contents**:

Connection: riveted and bolted joints; design of fillet, butt, plug and slot welds; design of riveted, bolted and welded joints for axially loaded member, eccentric connection Design of tension member Design of compression member; built up column, design of lacing and battering. Column base; introduction to grillage foundation. Design of laterally restrained beams; simple and built up sections. Roof trusses; generally arrangement of trusses, spacing of trusses, design loads, design of purlin and simple roof trusses.

## **Exercises:**

Analytical and illustrative exercises based on above

- IS Codes
- Design of steel structure S. K. Duggal
- Design of steel structure R. Chandra

UG/PG: UG	Department: Architecture & Planning
Course Code: ART403	Course Name: Introduction to Planning
Credit: 3	L-T-P/S: 1-0-4
Version:	Approved on:
Pre-requisite course:	•

# Syllabus

**Objective:** To make the student aware of basic principles and concepts of town planning.

#### **Contents**:

Planning as an architectural expression & form of developing a human settlement. Current theories of city planning, new towns & cities. Survey techniques, zoning & land use, neighbourhood planning, site planning, urban traffic, urban renewal & redevelopment, present day planning in India.

**Exercises:** Survey of existing neighbourhood, community, Study of existing development plans at city level, Planning of small units like neighbourhood, townships, etc.

- The Urban Pattern-City Planning & Design Arthur B. Gallion & Simon Eisner
- Urban Architecture (City Planning) Arco Colour series
- Ancient Cities-Sacred Skies Malville & Gujaral
- Town Planning Rangwala

UG/PG: UG	Department: Architecture & Planning
Course Code: ART405	Course Name: Departmental Elective-III (Design for
	Health Facilities)
Credit: 3	L-T-P/S: 1-0-3
Version:	Approved on:
Pre-requisite course:	

#### **Syllabus**

**Objective:** To understand various issues related to design of healthcare buildings.

# **Contents**:

Identification of various levels and type of health facilities. Norms and standards for the various health facilities. Introduction to terminology related to facilities and equipments. Design approaches & consideration for health facilities. Planning of Engineering & Technical services in health facilities. Introduction to Management of health facilities, such as waste management.

# **Exercises:**

Conceptual design for health facilities with focus on movement pattern, parking, functional requirements and understanding of services required. Emphasis on detailing of areas like OT Complex, wards, diagnostic facilities etc.

# **References :**

• Hospitals and Healthcare Facility Design – Miller & Swensson.

UG/PG: UG	Department: Architecture & Planning
Course Code: ART405	<b>Course Name:</b> Departmental Elective-III (Product Design)
Credit: 3	L-T-P/S: 1-0-3
Version:	Approved on:
Pre-requisite course:	
Syllabus	
-	nts about the design and detailing of industrial prove upon them with respect to usage and
Contents:	
concepts and methodo studies of various proc	uct design, history of product design, design ologies, design process, current trends and case ducts. Economics, introduction to various ses and materials. Design of various products in
<b>Exercises:</b> Study of various produ like mobiles, watches, cameras, et	ucts in market. Design of small hand held products tc, Design of home appliances.
References:	

UG/PG: UG	Department: Architecture & Planning
Course Code: ART405	Course Name: Departmental Elective-III
	Energy Efficient Architecture
Credit: 3	L-T-P/S: 1-0-3
Version:	Approved on:
Pre-requisite course:	

#### **Syllabus**

**Objective:** To make the student aware of design and detailing of energy efficient buildings and components.

**Contents:** Energy crunch, a global scenario. Problem of energy shortage with reference to buildings and settlement Energy demand of a building, during construction and operation, Principles and application of energy conscious architecture, Alternative energy systems for buildings: passive solar techniques for heating and cooling of buildings Solar water heating. Traditional settlement pattern and Vernacular construction techniques for energy efficiency. Energy from waste: Bio gas technology and its application, Energy from urban sanitary landfills etc.

# **Exercises:**

Design of buildings utilizing energy efficient concepts and understanding their application at layout level.

- The Environmental Brief Pathways for Green Design- Hyde R., Wodson S., Chehire W. and Thowson M.
- Greening Existing Buildings- Yudelson J.
- Energy and Environment in Architecture: A Technical Design Guide Baker, N. and Steemers, K.
- Energy-efficient Architecture: Basics for Planning and Construction- Gonzalo R. and Habermann K.J.
- Retrofitting for Energy Conservation Clark W.H.
- ECBC Guidelines
- Energy Conservation building Directives for Rajasthan
- Energy Efficient Buildings in India Milli Majumdar
- Representative designs of energy-efficient buildings in India TERI

UG/PG: UG	Department: Architecture & Planning
Course Code: ARP407	Course Name: Working drawing
Credit: 2	L-T-P/S: 0-0-3
Version:	Approved on:
Pre-requisite course:	
Syllabus	
<b>Objective:</b> To develop understand	ing of architectural detailing and working drawings.
Contents:	
Understanding of scale, din drawings.	nensioning, texture and symbols for making constructions
	wings – plan, elevations, section, foundation layout and section
shuttering plan, electrical a staircase.	nd sanitary details, detailed drawings of toilets, kitchen &
	r municipal approval showing area statement, FAR calculations
Exercises:	
Preparation of detailed wor	rking drawings of various buildings designed by the students in
the previous semesters.	
References:	
	ng and Design – John Molnar, P.E.
Building Construction Illustra	
-	etails for Commercial buildings – Joseph De Chiara
Working Drawing Handbook	•
National Building Code, 2005	5

UG/PG: UG		Department: Architecture & Planning
Course Code: A	RP409	Course Name: Architectural Design-VI
Credit: 8		L-T-P/S: 0-0-8
Version:		Approved on:
Pre-requisite c	ourse: ARP309 Architectura	l design-IV
Syllabus		
<b>Objective:</b> To	orient the student to study	various design problems with understanding functions,
structure and se	rvices in buildings.	
	should be on structure, se and planning controls.	ervices, site planning and landscape in relation to traffic
Exercises:	Design exercises such as shopping malls, multiplexes, hotel, interstate bus terminals, metro stations, railway stations, hospitals should be undertaken.	
<b>References</b> :		
		Commercial Buildings - Dechiara
	and Healthcare Facility Desi	-
Architecture of Tall Buildings – Council of Tall buildings and Urban Habitat		
The best in Industrial Architecture – Alan Philips		
<ul> <li>The best</li> </ul>	in Trade & Exhibition Trade	Design – Stattord Cliff

UG/PG: UG	Department: Architecture & Planning
Course Code: ART501	<b>Course Name:</b> Building Services-III (Mechanical Services)
Credit: 2	L-T-P/S: 1-1-0
Version:	Approved on:

### Syllabus

**Objective**: To develop an understanding of different mechanical services used in buildings

# **Contents**:

Terminology & general requirements. Basic principles of refrigeration, refrigeration cycle & system components.

Air cooling & air conditioning, planning & design considerations, psychometric chart & its use.

Mechanical equipment. & Installation, Lifts and Escalators & Acoustical insulation for these systems.

Introduction to basics of fire detection, Fire fighting measures and fire fighting systems.

# **Exercises:**

Preparation of reports, visits to construction sites and documentation. Paper presentation based on above.

- Building services- mechanical, electrical, firefighting and protection, vertical transportation, HVAC, BAS and parking; Codes for these services
- Construction Technology for Tall Buildings -Lin, C.F.
- High Rise Security & Fire Life Safety- Craighead G.
- Handbook of Designing and Installation of services in Building complex, Highrise Buildings V.K.Jain
- National Building Code, 2005

UG/PG: UG	Department: Architecture & Planning
Course Code: ART503	Course Name: Housing
Credit: 3	L-T-P/S: 1-0-4
Version:	Approved on:
Pre-requisite course:	
Gullahua	

#### Syllabus

**Objective:** To impart comprehensive knowledge about housing design and planning.

## **Contents:**

Housing situation: Impact of industrialization and urbanization; slums and squatters; Case studies from India and abroad; Housing for poor; Sites and Services, Self –help housing. Housing for new communities- Norms and standards for living, shopping, education, health facilities, leisure and cultural activities. Neighborhood-concept- Densities and their optimization. Cost Reduction in housing, Techniques and related issues. Residential environment – Users' satisfaction and behavioral aspects; evaluation of housing developments.

# **Exercises:**

Exercises based on understanding of norms through case studies. Design areas related to residential neighborhood or community. Site visits of housing areas.

- Housing Sector in India; Issues, Opportunities and Challenges Balaji V. & Rajmanohar.
- High Density Housing; Concepts, Planning, Construction Christian Schittich.
- Introduction to Social Housing Reeves P.
- Key Urban Housing of the Twentieth Century French H.
- The Architecture of Affordable Housing Davis S.

Template for	<b>Course Details</b>
--------------	-----------------------

Department: Architecture & Planning
Course Name: Department Elective- IV
(Urban Design)
L-T-P/S: 2-0-1
Approved on:

### **Syllabus**

**Objective:** To introduce the student to the various concepts and principles of urban design.

## **Contents**:

Introduction to the role and scope of urban Design. Comparison with architecture and Town Planning. Determinants of urban forms such as landform, climate, symbolism, activity patterns, socio-cultural factors, materials and techniques and other contextual references. Case examples from various periods in history and different parts of the world. Vocabulary of Urban Design, urban Patterns, Grain, texture, Density etc,

Concepts of image ability. Elements of the city's image, Paths, nodes, landmarks, edges and districts – their characteristics, role and interrelationship.

Designing parts of the city: Systems of communication and utility, visual expression, accent and contrast, urban character, landscape features and city extension areas.

Types of urban spaces – streets, square, precinct, piazza, mall etc.

Various elements of urban spaces through history. Role of public places in the contemporary city.

Design principles – scale and Enclosure

Case studies of well known urban spaces from various periods of history to illustrate their design and performance aspects.

**Exercises:** Urban 'Space Activity' studies and seminars/reports on seminars Studio Work.

- People Places Design guidelines for urban open spaces Marcus & Francis
- Urban Design Green Dimensions Moughtin
- Urban Architecture, City Planning Arco colour collection
- The Heritage of Urban design P. Sperigan
- Image of a City Kevin Lynch Beautiful I
- The Urban Pattern-City Planning & Design Arthur B. Gallion & Simon Eisner
- Building drawing with an integrated approach to Built environment Shah, Patki & Kale
- Architects Handbook Ready Reckoner Charanjit S.Shah

UG/PG: UG	Department: Architecture & Planning
Course Code: ART505	Course Name: Departmental Elective- IV
	(Architectural & Development Legislation)
Credit: 3	L-T-P/S: 2-0-1
Version:	Approved on:

### **Syllabus**

**Objective**: To make the student understand the importance of law and byelaws and their relationship to the profession of Architecture.

#### **Contents**:

Significance of law and its relationship to the profession of Architecture & allied fields, Sources of law constitution, Acts of Central/state legislature, procedures, Law jurisprudence & Sources of law.

An overview of laws related to the profession of Architecture and Physical Development.

The Architects Act 1972, The Law of Contract, The Partnership Act, The Law of Easements, The Arbitration Law and law related to different building types.

Introduction to Land Acquisition Acts. Municipal Corporation Law & Law related to legislation monuments & Architectural Sites.

Study of Building Bye-Laws and related provisions for National Building Code (NBC).

## **Exercises:**

Paper presentation, understanding the application of regulation in spatial context through case studies.

## **Books:**

- Development Controls/ Building Byelaws of various Development Authorities of Indian cities.
- Bureau of Indian Standards, National Building Code (NBC).
- Compendium of Delhi Building Bye-laws and Development regulations as per Master Plan of Delhi 2021- Puri V.K.
- UDPFI Guidelines.
- Model Building Byelaws.

UG/PG: UG	Department: Architecture & Planning
Course Code: ART505	Course Name: Departmental Elective- IV (Earthquake
	Resistant Architecture)
Credit: 3	L-T-P/S: 2-0-1
Version:	Approved on:
a 11 1	

#### **Syllabus**

**Objectives:** To let the students understand the terminology used in Earthquake and its effects on structural and non-structural elements.

# **Contents:**

Comprehension of technical term, related to seismic design. Seismic zones in India.

Seismic forces, behavior of structure under seismic forces, failure patterns.

Design Considerations: form, materials, and structural system and construction techniques.

Study of IS codes and local building by laws related to seismic design.

**Exercise:** A studio based design exercise incorporating all the relevant seismic resistant details.

- IS codes related to earthquake engineering
- Seismic Design of Reinforced Concrete and Masonry Buildings Pauley, T. and Priestley.
- Masonry Structure: Behaviour and Design Drysdale, R.G. Hamid, A. H. and Baker, L.R.
- Reinforced Masonry Design Schneider, R.R. and Dickey, W.L.
- Concrete Structure in earthquake regions Design & Analysis Edmund Booth.
- Earthquake Resistant Concrete Structures Penelis, George G., and Kappos, Andreas J., E & F. N., Spon.

UG/PG: UG		Department: Architecture & Planning
<b>Course Code:</b>	ARS507	Course Name: Thesis Preparatory Seminar and
		Group Discussion
Credit: 3		<b>L-T-P:</b> 1-0-3
Version:		Approved on:
Pre-requisite o	course:	
Syllabus		
<b>Objective:</b>		
	Research study of Architectural project leading to design problem to be taken up as Thesis Project	
<b>Contents</b> :		
	Detailed study of non-design topic related to architectural and urban context is to be chosen by the student individually in the area of interest and approved by Department. The work will be carried out under the guidance of faculty member and ultimately help the student in deciding Thesis Project.	
Exercises:	Presentation through ca	se studies and report submission.
<b>References:</b>	Not Applicable	

UG/PG: UG		Department: Architecture & Planning
<b>Course Code:</b>	ARS509	Course Name: Assessment of Practical Training
Credit: 5		L-T-P: 0-0-2
Version:		Approved on:
Pre-requisite	course:	
Syllabus		
<b>Objective:</b>	To expose student to Ar	chitectural practice and profession of Architecture.
<b>Contents :</b>		
	Student shall undertake practical training for the period of 140 days in an office of Architect of repute registered with Council of Architecture and approved by department. Documentation of the architectural details and projects on which he/she has worked in architect's office, critical appraisal of built projects and site visits of built project shall form the part of training report.	
Exercises:	Presentation of the projon above.	jects involved during training report submission based
<b>References:</b>	Not Applicable	

UG/PG: UG	Department: Architecture & Planning
Course Code: ARP511	Course Name: Architectural Design-VII
Credit: 8	L-T-P/S: 0-0-8
Version:	Approved on:
Pre-requisite course: ARP409 Architectu	ral Design-VI
Syllabus	
<b>Objective:</b> To orient the student to stud urban level.	dy various design problems of building complexes at
Contents:	
individual buildings. Group pro facilities, urban housing, high r schemes. Field trip may be orga <b>Exercises:</b> Design exercises such as recreati	roject for layout design and follows up with design of ojects will include Commercial complexes, community ise/low rise high-density slum clearance & urban design anized for design related case studies. on centres, high rise buildings, group housing, hospitals, lopment schemes, should be undertaken.
References:	
"Mane" A New Initiative in Public Ho	
<ul> <li>Housing and Urbanization – Charles C</li> <li>Time saver standards for Housing and</li> <li>Commercial Building Design – Burt Ko</li> <li>Handbook of Architectural Details for</li> <li>Hospitals and Healthcare Facility Desi</li> <li>Public Municipal and Community buil</li> <li>Commercial Spaces - Cerver Franscis</li> </ul>	d Residential development – De Chiara, Panero & Zelnik osar Rittelmann r Commercial Buildings – Dechiara ign – Miller & Swensson Idings – Charles K. Hoyt
Commercial Spaces - Cerver Franscis	co Asensio

UG/PG: UG	Department: Architecture & Planning
Course Code: ART502	Course Name: Professional Practice & Management
Credit: 2	L-T-P/S: 1-1-0
Version:	Approved on:

### Syllabus

**Objective**: To make the students aware of professional, vocational and legal aspects of architectural practice.

# **Contents**:

The architect & his office, relationship with clients, consultants, contractors. Legal responsibilities of architects, code of professional practice, fees, architectural competition & architect registration act 1972.

Control of constructional operations. Introduction to Principles of business management, project programming & monitoring. PERT & CPM network & their analysis. Human relation & personnel management.

Brief idea about accounting & book keeping, business correspondence, information storage & retrieval systems.

# Exercises:

Paper presentation on above topics. Analytical application of PERT or CPM in buildings through case studies.

- Handbook on Professional Practice. The Indian Institute of Architects.
- Professional Practice Roshan Namavati
- Directory of Architects, List of Architects and Professional documents Council of Architecture
- Architects Handbook, A Ready Reckoner Charanjit S.Shah
- Handbook of Professional Documents Council of Architecture
- PERT and CPM Dr. P. N. Todi

UG/PG: UG		Department: Architecture & Planning
Course Cod	<b>e:</b> ART504	<b>Course Name:</b> Department Elective- V (Urban Conservation)
Credit:3		<b>L-T-P/S:</b> 1-0-3
Version:		Approved on:
Syllabus		
Objective:	To make students ser to theories of con	nsitive to Heritage and Architectural Conservation and introduce servation.
Contents:		
	etc. Role of Cons	estoration, Rehabilitation, Reproduction, Reconstruction servation Architects. Introduction to various charters like: Burra Charter, COMOS Charter. Urban Conservation: agement.
	Case studies of Building . Report on Heritage/Co	s, Sites, Precincts, Stretches etc. of Historic and Cultural onservation area
References	:	
<ul> <li>Urba</li> <li>The Punt</li> <li>Urba</li> </ul>	an Design Guidance by U Design Dimension of Pl ter, J. and Carnoma, M. an Design; Architecture	n Space Design -Broadbent, G JD Group- Cowan, R. lanning-Theory, Content and Best Practices for Design Policies- of Towns & Cities-Spreiregen, P. D. ban Design- Watson D. et. al (ed)

UG/PG: UG	Department: Architecture & Planning
Course Code: ART504	<b>Course Name:</b> Departmental Elective- V( Campus Planning)
Credit: 3	L-T-P/S:1-0-3
Version:	Approved on:
Syllabus	
Obiective. To develop on energy	and to the mohleme of Commus Diamains
<b>Objective:</b> To develop an appro	oach to the problems of Campus Planning
Contents:	
Patterns Diagnosis, (	us Design, Organic Order, Participation Incremental growth, Campuses in India and Abroad, Planning Process, Site Analysis, The
	ampus Master Plan, Landscape Design, Road Networking, Parking, es etc. related to campus design.
Exercises:	
Paper presentation, understand	ding through case studies and documentation of campuses.
References:	
	Christopher Alexander
	a: an experience of developing nations – A.P. Kanvinde
-	ng – Christopher Alexander
• A Pattern Language – C	
<ul> <li>Campus Planning – Dob</li> </ul>	ber

UG/PG: UG	Department: Architecture & Planning
Course Code: ART504	<b>Course Name:</b> Departmental Elective- V (Building Economics & Estate Management)
Credit: 3	L-T-P/S: 1-0-3
Version:	Approved on:

# Syllabus

**Objective**: To develop the economic base for Architecture.

# **Contents**:

Building economics in general as relevant to architects. Creative economics as relevant to creative design and creative building. Emerging concepts in building economics e.g. Life Cycle Costing (LCC), Net Benefit (NB), Net Saving (NS), Benefitto-Cost Ratio (BCR), Saving-to Investment Ratio (SIR), Internal Rate of Return (IRR), Overall Rate of Return (ORR), Payback (PB), Using interest and discounting tables. Formulating Projects, Estimating Costs and Benefits, Selecting a discount rate of Minimum Acceptable Rate of Return (MARR).

# **Exercises:**

Paper presentation and understanding of these concepts through building examples.

- Modern Economic theory K.K. Dewett
- Economic for Engineers M.L. Gupta
- Micro economic theory Samuelson
- Rural Sociology in India A.R.Desai
- The Urban World J. John Palen
- Model of Urban and Regional systems in Developing Countries George Chadwick

UG/PG: UG		Department: Architecture & Planning
Course Code: ARD506 Credit: 16		Course Name: Thesis Project L-T-P: 0-0-16
Pre-requisite course: ARP310 Architectural Design V		
Syllabus		
<b>Objective:</b>	To study in detail architectural project individually as Thesis Project	
<b>Contents</b> :		
	study will reflect the individual's understanding of architectural theory, philosophy and skills acquired of architecture. The student will undertake the study of approved architectural project of his choice under the guidance of the faculty member as guide. Program formulation, site analysis, case studies and development of architectural design from conceptualization to final design will form the scope of work for thesis project. The advance objective based on thrust area and nature of project undertaken should be clearly addressed.	
Exercises:	Project selected by student and approved by department submission in the form of report, drawing and model.	
<b>References:</b>		
	Time saver standards : Building Types	
	Time saver standards : Landscape Architecture	
	Neufert Architect's day	ta
	Journals of Architectur	re