

Diploma in Architecture

Diploma in Architecture is a Diploma level Architecture course. Building specialists assume a basic job in the interdisciplinary plan groups of the present assembled condition division and thus rank among the most generously compensated manufactured condition experts. The program considers low carbon building structure and the coordination of sustainable power source frameworks into structures. It manages administrations building issues, fabricating the aptitudes required to adapt to the difficulties in administration structure and usage which will be knowledgeable about the workplace, and gives understudies the best establishment for propelling or quickening a vocation as a design engineer.

Course Suitability

- The course is appropriate for the individuals who are keen on specialized perspectives can take up the course in different establishments that have Architectural Engineering.
- The course additionally helps those candidates the individuals who need to set up a business.
- They can likewise get utilized by businesses or private design firms.
- They can function as specialists and land creating firms.

DIPLOMA IN ARCHITECTURE
SEMESTER - Ist
SCHEME OF TEACHING AND EXAMINATION

Course : Diploma

Applicable for 2020 batch

Theory

S. No.	Subject Code	Subject Name	L	T	P	Credits Assigned
1	HISTORY OF ARCHITECTURE-I	DAR-111	2	0	0	2
2	ENVIROMENTAL SCIENCE	DAR-112	2	0	0	2
3	PSYCHOLOGY	DAR-113	2	0	0	2
Practical						
4	ARCHITECTURAL DESIGN-I	DAR-114	1	0	4	3
5	CONSTRUCTION TECHNOLOGY-I	DAR-115	1	0	4	3
6	ARCHITECTURAL DRAWING-I	DAR-116	1	0	4	3
7	GRAPHIC PRESENTATION-I	DAR-117	1	0	4	3
8	COMPUTER-I	DAR-118	1	0	2	2
			11	0	18	20

SEMESTER - IInd

Theory						
S. No.	Subject Code	Subject Name	L	T	P	Credits Assigned
1	HISTORY OF ARCHITECTURE-II	DAR-121	2	0	0	2
2	THEORY OF ARCHITECTURE	DAR-122	2	0	0	2
3	STRUCTURES-I	DAR-123	2	0	0	2
Practical						
4	ARCHITECTURAL DESIGN-II	DAR-124	1	0	4	3
5	CONSTRUCTION TECHNOLOGY-II	DAR-125	1	0	4	3
6	ARCHITECTURAL DRAWING-II	DAR-126	1	0	4	3
7	GRAPHIC PRESENTATION-II	DAR-127	1	0	4	3
8	COMPUTER-II	DAR-128	1	0	2	2
			11	0	18	20

SEMESTER - IIIrd

Theory

S. No.	Subject Code	Subject Name	L	T	P	Credits Assigned
1	HISTORY OF ARCHITECTURE-III	DAR-231	2	0	0	2
2	BUILDING SERVICES-I	DAR-232	2	0	0	2
3	SOCIOLOGY	DAR-233	2	0	0	2
4	STRUCTURES-II	DAR-234	2	0	0	2
Practical						
5	ARCHITECTURAL DESIGN-III	DAR-235	1	0	4	3
6	CONSTRUCTION TECHNOLOGY-III	DAR-236	1	0	4	3
7	SURVEYING & LEVELLING	DAR-237	1	0	2	2
8	COMPUTER-III	DAR-238	1	0	2	2
9	MODEL MAKING-I	DAR-239	1	0	2	2
			13	0	14	20

SEMESTER - IVth

Theory

S. No.	Subject Code	Subject Name	L	T	P	Credits Assigned
1	HISTORY OF ARCHITECTURE-IV	DAR-241	2	0	0	2
2	BUILDING SERVICES-II	DAR-242	2	0	0	2
3	ESTIMATING & COSTING-I	DAR-243	2	0	0	2
4	STRUCTURES -III	DAR-244	2	0	0	2
Practical						
5	ARCHITECTURAL DESIGN-IV	DAR-245	1	0	4	3
6	CONSTRUCTION TECHNOLOGY-IV	DAR-246	1	0	4	3
7	INTERIOR DESIGN	DAR-247	1	0	2	2
8	COMPUTER-IV	DAR-248	1	0	2	2
9	MODEL MAKING-II	DAR-249	1	0	2	2
			14	0	12	20

SEMESTER -Vth

Theory

S. No.	Subject Code	Subject Name	L	T	P	Credits Assigned
1	HISTORY OF ARCHITECTURE-V	DAR-351	2	0	0	2
2	BUILDING SERVICES-III	DAR-352	2	0	0	2
3	ESTIMATING & COSTING-II	DAR-353	2	0	0	2
Practical						
4	ARCHITECTURAL DESIGN-V	DAR-354	2	0	6	5
5	CONSTRUCTION TECHNOLOGY-V	DAR-355	1	0	4	3
6	WORKING DRAWING-I	DAR-356	1	0	4	3
7	SITE PLANNING	DAR-357	1	0	4	3
			11	0	18	20

SEMESTER -VIth

Theory

S. No.	Subject Code	Subject Name	L	T	P	Credits Assigned
1	PROFESSIONAL PRACTICE	DAR-361	2	0	0	2
2	BUILDING BYE LAWS	DAR-362	2	0	0	2
Practical						
3	ARCHITECTURAL DESIGN-VI	DAR-363	2	0	12	8
4	CONSTRUCTION TECHNOLOGY-VI	DAR-364	2	0	2	3
5	WORKING DRAWING-II	DAR-365	1	0	4	3
6	DISSERTATION	DAR-366	1	0	2	2
			10	0	20	20

Detailed Syllabus

Diploma in Architecture

(1st year-1st SEMESTER)

Course code	Course title	L	T	P	Credits
DAR- 111	HISTORY OF ARCHITECTURE- I	2	0	0	2

Course Objectives:

- Acquiring knowledge regarding various architectural styles of ancient India and their historic evolution with respect to factors influencing them e.g. climate, geographical location, culture, construction technology, etc. To develop the appropriate skills of reading, discussion and writing as well as understanding the physical experience of buildings in order to appreciate the complexity of the influences bearing on architecture, as reflected in the major historical periods.
- Critical appreciation characterized by technology, ornamentation, planning practices & influences in general..

UNIT-1: INTRODUCTION

Primitive Beginnings: Introduction to history and architecture with special emphasis on stone age to Neolithic settlements in Europe and around with examples from Carnac and Stonehenge.

UNIT-2:

Birth of Civilization: In reference to the Asia-minor region with nascent cities like Jericho, Catalhoyuk, and Hattasus etc.

UNIT-3:

Egyptian: Particularly in reference to early tomb architecture and later temple architecture with examples like Great pyramids of Cheops, Mastabas, Funery temples and, later temples like Khons etc.

UNIT-4:

Mesopotamian: With special attention to cities of Mesopotomian like Ninveh, Khorsahbad, Marie, Babylon, and architectural constructs like Ziggurat.

UNIT-5:

Aegean: With reference to cities in Aegean like Troy, Sparta, Mycenae, which formed the basic of Greek civilization.

REFERENCE BOOKS

1. History of Architecture -Sir Banister Fletcher
2. Prehistory to post modernism -Marvin & Isabel
3. Indian Architecture – Islamic -Grover Satish Vikas Publishing House

Course outcomes:

1. This central thought of the civilization has permeated the students in various related fields such as religion, arts, science, literature, social and economic setup, which in turn were instrumental to the evolution of architecture specific to the area
2. Prehistoric age and Early Civilizations, attempts at sensitizing the students to view architecture as one of the many products of the civilization.

Course code	Course title	L	T	P	Credits
DAR-112	ENVIRONMENTAL SCIENCE	2	0	0	2

Course Objectives:
<ul style="list-style-type: none"> ➤ Introduction to human activities influencing environment. ➤ Natural resources and their conservation. ➤ Disaster management with reference to buildings and sites.

UNIT-1:

Natural resources and associated problems: Role of an individual in conservation of natural resources. Equitable use of resources for sustainable lifestyles. Concept, Structure and function of an ecosystem.

UNIT-2:

Energy flow in the ecosystem: Introduction, types, characteristic features, structure and function of various ecosystems.

UNIT-3:

Biodiversity: Genetic, species and ecosystem diversity. Bio-geographical classification of India.

UNIT-4:

Value of biodiversity: Biodiversity at global, national and local levels. Hot spots of biodiversity. Threats to biodiversity: Endangered and endemic species of India. Conservation of biodiversity.

UNIT-5:

Environmental Pollution: Definition, Causes, effects and control measures of: Air pollution, Water pollution, Soil pollution, Marine pollution, Noise pollution, Thermal pollution, Nuclear pollution. Role of an individual in prevention of pollution.

REFERENCE BOOKS

Environmental Sciences
Cunningham

Miller T.G Jr.
W.P. Cooper

Course code	Course title	L	T	P	Credits
DAR-113	PSYCHOLOGY	2	0	0	2

Course Objectives:
<ul style="list-style-type: none"> ➤ To examines how architectural forms both influence and react to socio-cultural phenomena. ➤ To inform architecture students in all phases of the design process, including the pre-design and programming, design, construction, and post-construction phases.

UNIT-1:

INTRODUCTION TO SOCIOLOGY: Man and his social and physical environment; social groups and social structure; utility and relation with architecture;

UNIT-2:

CULTURE, SOCIETY & INDIAN COMMUNITIES: Meaning of culture and society, influence of socio-cultural patterns on architecture, case studies. Rural and urban communities; their social structures and problems; cultural heritage; rituals and community gathering etc.

UNIT-3:

URBANIZATION & COMPARISON OF URBANIZATION: Trend and characteristics; dynamics of urban growth and social change; urban attitude, value and behavior; patterns of urbanization in India; migration studies; problems arising out of urbanization etc. Comparison of urbanization in underdeveloped countries with that in the west – salient features and characteristics

UNIT-4:

SOCIAL ASPECT OF PHYSICAL ENVIRONMENT: Its implications and limitations in buildings; neighborhood planning; slum improvements and city fabric.

UNIT-5:

COMMUNITY PARTICIPATION: Significance of public opinion and participation

Note: Assignments would be in the form of case studies comprising the sociological study of communities with their habitat and built environment.

TEXT BOOK

Madan, G. R., “Indian Social Problems: Vol - 1 and 2”, Allied Publishers Pvt Ltd, 2003.

REFERENCE BOOKS

1. Rapoport, Amos, “House Form and Culture”, Prentice Hall, 1969
2. Broadbent, Geoffrey. “Design in Architecture: Architecture and the Human Sciences”, John Wiley and Sons, 1973
3. Prakasa Rao, VLS, “Urbanisation in India”, Concept Publishing Company, New Delhi, 1983.
4. Desai A.R., “Rural Sociology”, Popular Prakashan, Bombay, 1984.
5. Smelsa, “Sociology”, Prentice Hall, New Jersey, 1981.

Course outcomes:	
1.	Students familiarize with basic concepts/ theories of sociology/ psychology as relevant to architecture.
2.	Develop a language and vocabulary for discussions/ analysis on the sociological/ psychological dimensions of architecture

Course code	Course title	L	T	P	Credits
DAR-114	ARCHITECTURE DESIGN-I	1	0	4	3

Course Objectives:

- Introduction to Built environment, through seminars and visuals.
- To create the understanding and sensitivity about human proportions with space.
- Identify activities for the assigned body posture and enact them, with experience of comfort and discomfort.
- Understanding live architectural projects, architects and work of the area.

COURSE CONTENT:-

Design studio is application of all the subjects. It deals with understanding the human body in space, activities and their relationship with spaces. The students should also have knowledge of different building components and their measurements. Exposure to architecture, architects and their works should be enhanced. Skills to draw and develop plans, elevations and sections of both buildings as well as the layout of the furniture inside, using appropriate scale. Session work based on the basis of above.

PRACTICAL

- 1 To Design Sheets for human body in space, activities and the relationship with spaces.
- 2 The students would like to present sheets on different building components and their Measurements.
- 3 An exposure of architecture, architects and their works should be enhanced.
- 4 Skills to draw and develop plans, elevations and sections of both buildings as well as the layout of the furniture inside, using appropriate scale.

REFERENCE BOOKS

- | | | |
|---|-----------------------|---|
| 1 | Form Space & Order | D.K.Ching John Wiley & Sons |
| 2 | Building Construction | Ringwald S.C. Charotar Publishing House |
| 3 | Building Drawing | Shah, Kale, Patki Tata McGraw Hill Publishing |

Course outcomes:	
1.	The most initial stage of designing this exercise teach compositions, colors contrast and various design elements and other fundamentals of designing.
2.	Application of design principles in two dimensional and three dimensional compositions.

Course code	Course title	L	T	P	Credits
DAR-115	CONSTRUCTION TECHNOLOGY-I	1	0	4	3

Course Objectives:

- Introduction to types of building materials – natural and manmade and their choices in terms of properties, structural and non-structural. To acquaint the students with all building components

CONSTRUCTION:

- Introduction to the various components of building like floors, roofs, openings, staircase etc. Preparing a wall section to understand the components. Study of all the types of masonry in Brick and Stone construction Detail Study of brick masonry.

Understanding the concept of load bearing & framed structures & composite structures Study of building components such as foundations, walls, floors, openings etc. in Load bearing & framed structures.

Introduction of basic foundations strip, pad etc.

MATERIALS:

Study of basic materials of construction such as sand cement lime aggregates; brick, stone their

structural & physical behavior with respect to its properties & application in building. Study through practical site visits, presentations, case studies & workshop based on the application of theory to construction field.

PRACTICAL	
1	Introduction to the basic building materials, their manufacturing process and properties.
2	Understanding of basic building materials, basic building components in construction, building systems and related construction technology.
3	Study of basic materials of construction such as sand cement lime aggregates; brick, stone, their structural & physical behavior with respect to its properties & application in building.

REFERENCE BOOKS

1	Building Construction	Ringwald S.C Charotar Publishing House
2	Building Construction	S.P. ,Bindra Dhanpat Rai Publications
3	Building Construction	Mackey W.L

Course code	Course title	L	T	P	Credits
DAR-116	ARCHITECTURAL DRAWING -I	1	0	4	3

Course Objectives:

- To introduce the students to the fundamental techniques of architectural drawings by practice on drawing board by conventional method. Detailed understanding terminologies like plan, elevation, side elevation, drawing in first angle method and of projection by drawing plans, elevations and side elevations of plane, geometrical and complex objects. Measure drawing of the residential building.

COURSE CONTENT:-

1. Introduction to the basic principles of drawing, sign conventions (Line types, Materials, Graphical presentation on arch drawings, Landscape, furniture etc.)
2. Practice in lettering, lettering used in architectural drawings, including different fonts.
3. Introduction to plane geometry and exercises in lines and angles, construction of triangles, quadrilaterals and regular polygons.
4. Construction of plane curves (ex: ellipse and ovals), arches- typical arch forms (ex: segmental, semicircular, three centered, four centered arches) and methods of drawing them.
5. Orthographic projection (first angle projection). Principles of orthographic projection, projection of points, lines, planes, and solids.
6. Three-dimensional representation, isometric and axonometric projection of solids.
7. Measure drawing of the residential building, making proper plans elevations and sections of the same.

PRACTICAL	
1	To draw plane geometry and exercises in lines and angles, construction of triangles, quadrilaterals and regular polygons.
2	Introduction to the basic principles of drawing, sign convention.
3	Orthographic projection (first angle projection). Principles of orthographic projection, projection of points, lines, planes, and solids.

REFERENCE BOOKS

1. Engineering Drawing N D Bhat
2. Engineering Drawing Vol I and II KR Gopalkrishna
3. Geometrical Drawing for Arts Students IH Morris

Course code	Course title	L	T	P	Credits
DAR-117	GRAPHIC PRESENTATION-1	1	0	4	3

Course Objectives:
<ul style="list-style-type: none"> ➤ Introducing the student to free-hand drawing of object/ building, with the help of site visits, they are able to express their ideas through free-hand sketches. Developing visual literacy and basic expressional skills that involve the ability to perceive, abstract and create as a process of the design of objects and spaces. Knowledge of color schemes & compositions helps the student to instill life into their drawings/sketches.

COURSE CONTENT:-

1. Compositions of positive and negative, 2D compositions based on geometrical forms and other object.
2. Design exercises for developing abstract reasoning, model making and volumetric compositions.
3. Principles of 2D and 3D composition and introduction of basic terminologies related to it,
4. Introduction to the Color theories, Elements of Composition,
5. Explorations of various materials and mediums, developing visual literacy through the process oriented exercises and lateral thinking.
6. Different types of Model making techniques.

PRACTICAL	
1	Design exercises for developing abstract reasoning, model making and volumetric compositions.
2	Explorations of various materials and mediums, developing visual literacy through the process. oriented exercises and lateral thinking.

REFERENCE BOOKS

1. Meaning of Art: Herbert Read Faber & Faber
2. Art in everyday life Hetta Gol'stir
3. Free Hand Drawing & Self Taught Arthur Guptill

Course code	Course title	L	T	P	Credits
DAR-118	COMPUTER - I	1	0	2	2

Course Objectives:

- This course will enable the students to understand the basics of computer and to know the basics of MS Office, enabling the student prepare simple and interactive presentations using computers.

COURSE CONTENT:-

1. To introduce and study about the basics of computer hardware and software components; computer terminology.
2. To introduce and study about windows and its applications.
3. To learn the concepts of Internet, server types, connectivity; applications of internet-using e-mail, browsing etc.
4. To understand the concepts of e-commerce.
5. To study in detail Microsoft Word; To Create a document with all formatting effects.
6. Exercises on document preparation using MS Word
7. Create a document with tables, labels in MS word and to create a document to send mails using mail merge option.
8. To learn about the concept of spreadsheet/ worksheets, charts, formulas, functions etc using MS Excel.
9. To Create an Excel File to analyze the student's performance. Create a chart for the above data to depict it diagrammatically.
10. Create Excel sheet to use built-in-function.
11. To prepare slide shows and presentations using MS PowerPoint;
12. To create architectural presentations using computers: communicating information, presentation sequence, symbols, lettering and presentation formats etc.
13. To Create a Power Point presentation with varying animation effects with timer.

TEXT BOOKS/REFERENCE BOOKS:

1. Wallace, Wang, "Office 2010 for Dummies", Wiley, 2010
2. Rajaraman, V., "Fundamentals of Computer", Prentice Hall, 2004
3. Icon, Alexis and Leon, Mathew, "Internet for Everyone" Leon Techworld, 1997
4. Press, Barry and Press, Marcia, "Teach Yourself all about Computers", IDG Books India,
5. Mansfield, R., "The Compact Guide to Microsoft Office", BPB Publishers,1994

Course outcomes:

1.	Introduction to basic software and hardware, and detail understanding of Microsoft power point presentations
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Diploma in Architecture

(Ist year-IIInd SEMESTER)

Course code	Course title	L	T	P	Credits
DAR- 121	HISTORY OF ARCHITECTURE- II	2	0	0	2

Course Objectives:

- Acquiring knowledge regarding various architectural styles of ancient India and their historic evolution with respect to factors influencing them e.g. climate, geographical location, culture, construction technology, etc. To develop the appropriate skills of reading, discussion and writing as well as understanding the physical experience of buildings in order to appreciate the complexity of the influences bearing on architecture, as reflected in the major historical periods.
- Critical appreciation characterized by technology, ornamentation, planning practices & influences in general.

UNIT-1:

Introduction: Introduction and understanding of 'Islam's' philosophy and its interpretation in building type e.g. mosque, tomb, fort and their elements like domes, minarets, arch, squinch etc.

The Sultanate Style: With reference to the Slave, Khalji, Tughlaq, Sayyid, Lodhis and Shershah Suri regimes (who ruled from Delhi) and their architecture.

UNIT-2:

Provincial Architecture: Development of colloquial styles in various provinces of India like - Punjab, Jaunpur, Gujrat, Bengal, Bijapur, Bidar and Deccan.

UNIT-3:

Cities and Citadels: Morphology of fortified cities of Jaisalmer, fort/ palaces like Mandu, Chittorgarh, Orchha, Datia, Jodhpur etc. with an overview on architectural types like havelis, stepwells, gates, baradaris etc.

UNIT-4:

Mughal Architecture: The architecture of the Timurids in India-abur, Hamayun, Akhbar, Jahangir and Shahjahan.

The Later Moghuls: The Oudh architecture in Lucknow and its surroundings briefly outlining the Lucknow city.

UNIT-5:

Colonial Architecture: The British architecture of the colonial days in India- the capitol at Delhi and the residency at Lucknow emphasizing on their planning criteria and architectural features.

REFERENCE BOOKS

1. History of Architecture -Sir Banister Fletcher
2. Prehistory to post modernism -Marvin & Isabel
3. Indian Architecture – Islamic -Grover Satish Vikas Publishing House

Course code	Course title	L	T	P	Credits
DAR- 122	THEORY OF ARCHITECTURE	2	0	0	2

COURSE OBJECTIVES

- To understand various concepts that lead to define “Theory of Architecture”. To develop ability to evaluate/understand our ‘built environment’.

UNIT-1:

The proposed course primarily focuses on identifying various underlying covert, overt concepts, which are responsible to create our built environment.

UNIT-2

The question to be debated throughout the duration of the course is ‘whether there is anything like theory of architecture? Or is there an absolute theory of architecture?’

UNIT-3:

The attempt will be made to understand various theories, namely, spatial concepts such as existential space, Euclidian space, physical space, perceptual space, conceptual space,

UNIT-4

Behavioral space, interwoven space, space, positive/negative space, directional space, non-directional space etc., theory of aesthetics, theory of semiotics, theories of human behavior (from behavioral sciences),

UNIT-5

Theories of form, morphology, normative theory, positive theory and also Kantian concept of beauty.

REFERENCE BOOKS

1. Creating Architectural Theory Jon Lang
2. The Theory of Architecture Paul-Alan Johnson
3. Personal space- the behavioral basis of design Robert Sommer

Course code	Course title	L	T	P	Credits
DAR- 123	STRUCTURES-I	2	0	0	2

COURSE OBJECTIVES

- To give an introduction to the basic principles governing structural systems. Concept of direct force mechanism in structures, concept of resultant force, tension and compression. Equilibrium of forces, concept of structure and tie.

UNIT-1:

Introduction-: Introduction Fundamental principles of Engineering Mechanics, Newton's laws of motion, law of parallelogram of forces, principle of transmissibility, concept of rigid body, particle.

Natural forms-: Understanding Nature- a creative base for understanding structure, correlation between natural & manmade structure.

UNIT-2:

Forces-: Introduction to types of forces, Static loading, Time dependent loading, Impact loading, Cause & effect of various forces like Dead load, Imposed load, Wind load, Earthquake load, Hydrostatic load, erection force etc. on building. Effect of physical form on load transfer i.e. Forces acting through point, distributed forces on line, & area.

Force systems-: Free body diagram, Resolution of forces into components, Types of force systems, concurrent, coplanar, non-concurrent etc. forces in plane & space. Calculation of resultant for coplanar parallel & coplanar concurrent force system,

UNIT-3:

Equilibrium-: Introduction to Equilibrium, Conditions of equilibrium for the coplanar parallel & coplanar concurrent force system, Types of supports, Determinacy, & Stability, Basic behavior of elements in load transfer i.e. bending, torsion, shear, tension, compression etc.

UNIT-4:

Tension and Compression-: Introduction as a flexural element, simply supported, overhanging & cantilever beams, determinacy, calculation of Reaction at supports for beam, Application.

Introduction, Types of truss, Analysis of a plane truss. Use of graphical method. Introduction to space truss, Application.

UNIT-5:

Simple Stresses and Strains-: Concept of Deformable Bodies, Types of Stress (compressive, tensile, bending, shear) and strain (axial, shear, volumetric). Simple problems.

Bending Moment and Shear Force Diagrams-: Concept of Shear force and bending moment. BMD and SFD for statically determinate beams subjected to combinations of concentrated and uniformly distributed load. Relationship among Load, Shear force and Bending Moment.

REFERENCE BOOKS

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|----|---|--------------------------------|
| 1. | Strength of Material | RK Bansal, Laxmi Publications, |
| 2. | Application Mechanics and Strength of Materials | IB Prasad |
| 3. | Applied Mechanics | Junarkar & H.J. Shah |

Course code	Course title	L	T	P	Credits
DAR- 124	ARCHITECTURAL DESIGN-II	1	0	4	3

COURSE OBJECTIVES

- Learning and applying fundamentals of space, form and design methodology. To develop the ability to translate abstract principles of design into architectural solutions for simple problems. Understanding the relation between form and function. Understanding and applying the learning of anthropometry by making a model with furniture layout.

COURSE CONTENT:

- Basic human functions and their implications for space requirements. Minimum and optimum areas for various functions.
- User's data, movement and circulation diagrams. Spatial interpretations – various activities and their relationship with spaces. Design methodology.
- Case study analysis of small volume buildings, analysis of form, function, clarity. Design of a Single volume building should be given from the following:
- Telephone booth, Food Kiosk, Milk booth, Watch man's cabin with compound gate, Bus Stop, Public Toilets, etc.
- 1 major and 1 minor exercise, along with time problem should be aimed for the semester.
- Any one project from the above to be given as Time Problem.
- Site plans, design developments, final presentation drawings, models to be expected.

PRACTICAL-:

1. To draw Basic human functions and their implications for space requirements. Minimum and optimum areas for various functions.
2. To design of a Single volume building should be given from the following: Telephone booth, Food Kiosk, Milk booth, Watch man's cabin with compound gate, Bus Stop, Public Toilets, etc.
3. Draw any one project, its site plans, design developments, final presentation drawings, models to be expected.

REFERENCE BOOKS

1. Time Saver Standards for Architectural Design Data John Hanock,
2. Architectural Graphic Standard Ramsay and Sleeper
3. Architecture –Form, Space & Order Francis D.K.Ching

Course code	Course title	L	T	P	Credits
DAR- 125	CONSTRUCTION TECHNOLOGY-II	1	0	4	3

COURSE OBJECTIVES

- Introduction to types of building materials – natural and manmade and their choices in terms of properties, structural and non-structural. To acquaint the students with all building components.

COURSE CONTENT:

MATERIALS:-

Timber – Quality of timber used in building, defects, seasoning and preservation of timber, types – Natural, hard and softwood, uses of timber for aesthetic & structural purpose.

Uses of commercial wood in building i.e., plywood, block boards, particleboards, veneers and laminates and other types. Manufacturing processes in brief, their properties and application.

Introduction to types, properties, uses and application of non – ferrous metals and glass.

CONSTRUCTION:-

Types of footings and shallow foundations.

Timber Floors:- Single, double and framed floors with joints between joist with wall plate, joist with beam and sub beam with main beam, strutting of joists, use of templates, for support.

Walls: Different types of walls and their Construction details.

Various types of wall finishes, like plastering, painting, cladding, jointing, & pointing etc. and their applications.

Staircases: Types & construction details of staircases in different materials.

Openings: Different types of doors, windows, ventilations and skylights in different materials. and their operational and fixing details.

Types & details of building elements like weather shed, balcony, canopy & pergolas.

Timber Trusses:- King post and queen post trusses with details of joints, alternative arrangements for tile and sheet roof covering, detail of eaves projection with soft boarding, Alternative detail of gutter at eaves, sprocket joint.

PRACTICAL:-

1. To draw a sheet Single, double and framed floors with joints between joist with wall plate, joist with beam and sub beam with main beam, strutting of joists, use of templates, for support.
2. Draw Different types of walls and their Construction details.
3. Various types of wall finishes, like plastering, painting, cladding, jointing, & pointing etc. and their applications.
4. Different types of doors, windows, ventilations and skylights in different materials. and their operational and fixing details.

REFERENCE BOOKS

1. Construction Building I , R. Barry
2. Building Materials and Components CBRI Roorkee
3. Building Construction Arora S.P. & S.P Bindra

Course code	Course title	L	T	P	Credits
DAR- 126	ARCHITECTURAL DRAWING-II	1	0	4	3

COURSE OBJECTIVES

- To introduce the students to the fundamental techniques of architectural drawings by practice on drawing board by conventional method. Detailed understanding terminologies like plan, elevation, side elevation, drawing in first angle method and of projection by drawing plans, elevations and side elevations of plane, geometrical and complex objects. Measure drawing of the residential building.

COURSE CONTENT:

Metric Drawing: Types, uses and advantages. Isometric, axonometric and pictorial view. Metric Drawing and projection and their dimensioning. Metric of plane figures composed of straight lines. Metric of circles. Metric of simple and complex blocks.

Perspective Drawing: Purpose and use. Differences with metric projections. Anatomy of a perspective –cone of vision, station point, picture plane, eye level, horizon line, ground line, vanishing point, etc. Types of perspective- One point, two points, and three point perspectives. Perspectives of simple and complex box blocks. Perspective of simple curved surface. Perspective of simple household furniture items.

Shades and shadows: Values in Shades and shadows. Constructing plan shadows (point, line and plane). Constructing shadows in elevations (point, line and plane). Short –cut methods for Constructing shadows Presentation techniques in Sciography.

Solid Geometry-: Construction of section, intersection and interpenetration of solids.

PRACTICAL-:

1. The emphasis will be on drawing in the studio and different mediums will be used.
2. The sun-path model would be used as a teaching aid while teaching shades and shadows.

REFERENCE BOOKS

1. Engineering Drawing N D Bhat
2. Engineering Drawing Vol I and II KR Gopalkrishna
3. Geometrical Drawing for Arts Students IH Morris

Course code	Course title	L	T	P	Credits
DAR- 127	GRAPHIC PRESENTATION-II	1	0	4	3

COURSE OBJECTIVES

- Understanding and analyzing spatial configuration. To understand the character and component of elements of space/ void as spatial composition. Development of basic design abilities, and learning the Fundamentals of Visual perception and Expressional skills.

COURSE CONTENT:

Study of various textures and colors with its inherent expressions and effects. Study of natural forms like leaf, shell, tomato etc.

Application of various materials like Clay, Paper Mache, Timber, Steel etc.

Application of various graphic techniques and development of abstract reasoning.

Understanding Principles of visual compositions i.e., Unity, Harmony, Rhythm, Balances etc., scales and proportions.

Introduction to volume, understanding the character if solids and void, 3 dimensional compositions.

PRACTICAL-:

1. Understanding Principles of visual compositions i.e., Unity, Harmony, Rhythm, Balances etc., scales and proportions.
2. Understanding and analyzing spatial configuration. To understand the character and component of elements of space/ void as spatial composition. Development of basic design abilities, and learning the Fundamentals of Visual perception and Expressional skills.

REFERENCE BOOKS

- | | | |
|----|------------------------------|----------------|
| 1. | Meaning of Art: Herbert Read | Faber & Faber |
| 2. | Art in everyday life | Hetta Gol'stir |
| 3. | Art & Visual Perception | Rudocy Arhhim |

Course code	Course title	L	T	P	Credits
DAR- 128	COMPUTER-II	1	0	2	2

COURSE OBJECTIVES

- To develop skills required for preparation of two-dimensional drawings with the use of computer as a digital media for architectural design drawings.

Understanding AutoCAD:

Learn various 2D commands their functions and application. Understanding coordinate systems.

Working on Layers and Colours Drawing plans, Elevations, Sections using Auto- Cad.

Dimensioning Drawings Connecting from one file format to another. Various file formats & their Usefulness.

PRACTICAL:-

- To present various 2D commands their functions and application and Understanding coordinate systems.
- Working on Layers and Colors, Drawing plans, Elevations, Sections using Auto- Cad, dimensioning Drawings, Connecting from one file format to another., Various file formats & their Usefulness.

REFERENCE BOOKS

- A primer on computer aided engineering drawing VTU

(IIInd yr – 3rdSEMESTER)

Course code	Course title	L	T	P	Credits
DAR- 231	HISTORY OF ARCHITECTURE-III	2	0	0	2

COURSE OBJECTIVES:-

- Understanding of the period in terms of its context of location, climate as well as the socio-cultural, historical, economic and political influences of the time.
- Study of the building 'types' and the development of architectural form and character based on the developments in construction and technology exemplified through specific building examples that identify, the works of the period

UNIT-1:

Greek Architecture: Classical orders as constituent element of Architecture. Column Orders and the articulation of temples. Classification of temples. Geometry and symmetry of individual buildings and their relationship with others based on different organizing principles and conditions of site. Study of important acropolis, agora, temples, theatres, tombs and house forms.

UNIT-2:

Roman Architecture: Multiple building types to correspond the complex social functions and structure. Complex axial organizations of Forums. Concrete and construction of walls, vaults and domes. Use of Classical Orders in surface articulation. Study of important forums, temples, basilicas, thermos, theatres, amphitheaters, tombs, triumphal arches, palaces, houses and villas.

UNIT-3:

Early Christian Architecture: Development of early church from Roman basilica. The concept of center and path of Christianity manifested through centralized and longitudinal church. Interiority of churches and the articulation of interiors to create spiritualized space. Study of different basilica churches in Italy.

UNIT-4

Gothic Architecture: Continued integration of centralized and longitudinal plans. Spatial and formal integration of Romanesque churches. Integration of wall and vault. Ribbed vault and the dissolution external wall to allow light. Sensitivity to light and use of stained glass for mysterious interiors. Need and development of different external buttressing. Study of important cathedrals and churches in France.

UNIT-5

Art and architecture of Mesopotamia-: Factors affecting the development of art and architecture of Mesopotamia; spatial planning and characteristic features of the architecture of Sumerian, Babylonian, Assyrian and Persian periods; Ziggurats etc.

REFERENCE BOOKS

1. History of Architecture Sir Banister Fletcher
2. Prehistory to post modernism Marvin & Isabel
3. Indian Architecture – Islamic Grover Satish Vikas Publishing House

Course code	Course title	L	T	P	Credits
DAR- 232	BUILDING SERVICES-I (Water supply & Drainage System)	2	0	0	2

Course Objectives:

- It is imperative that architects and all those who are concerned with the construction of buildings have a knowledge and appreciation of the subject.

UNIT-1:

WATER SUPPLY AT CITY AND BUILDING LEVEL: demand of water for various purposes as per bis standards, per capita demand, detection of leakage and wastage of water and its preventive measures; sources and method of water supply - brief of catchment areas, reservoirs, and their location; system of water supply- continuous, intermittent, their advantages and disadvantages; water purification systems, control systems, supply for a neighborhood and town. tapping of water; storage and distribution of water in premises; boosting water, gravity and pressure distribution by storage tanks of individual buildings; service connections, types and sizes of pipes, piping network, materials, joinery, water supply fixture and installations, installation of network both open and concealed; water supply for multi storied buildings.

UNIT-2:

HOT WATER SUPPLY: Direct and indirect systems of hot water supply, their components and equipment's used for the same; insulation of piping work and safety devices; solar heating.

UNIT-3:

SITE DRAINAGE AND SANITATION SYSTEMS: Site planning from drainage point of view; storm water drains, details of construction OF DRAINS, water entrances, gully Trapes, open drains, gradients, rainfall maintenance; storm water and roof drainage systems and their installations; underground drainage systems with application of ventilation, self cleansing velocity, laying of drains to required gradients and testing of drains. Study of sanitary fittings with reference to use, materials and functions; traps and their uses, classification of traps as per use and shape; pipes and piping systems, various types of vent and anti-siphonage systems, jointing and installations; disposal of sewage within the premises using septic tanks, inspection chambers, effluent treatment plants, their function and layouts; sewage and sewage treatment plants; connection of house sewers to municipal sewers, ventilation of sewers;

UNIT-4:

SOLID WASTE DISPOSAL: Collection, treatment and disposal of organic and inorganic waste, urban solid waste treatment systems, traditional methods, garbage chutes, sanitary landfills, vermicomposting, incineration, pyrolysis-advantages and limitations etc; garbage disposal in multi –storied buildings, dry and wet treatment; treatment of industrial refuse; and pollution problems.

UNIT-5:

DESIGNING PLUMBING AND SANITARY LAYOUTS: Designing of toilet blocks in residential buildings, showing both Indian and European W.Cs and in public buildings; preparation of working drawings showing complete details of fittings and plumbing required for water supply and drainage; with all required calculations.

Note: Assignments can be in form of compiling required information from site visits, market surveys and other sources.

TEXT BOOKS/REFERENCE BOOKS:

- Rangwala, S.C., “Water Supply and Sanitary Engineering”, Charotar publishing house.
- Shah, Charanjit, “Water Supply and Sanitary Engineering”, Galgotia publishers.
- Wise, A.F.E., &Swaffield, J.A., “Water Sanitary Services for Buildings”, Longman Scientific and Technical, Harlow, 1995.
- Greeno, Roger, “Building Services Technology and Design”, Longman Scientific and Technical, Harlow, 1997.
- Chatterjee, A.K., “Water Supply and Sanitary Engineering”, Khanna publishers, New Delhi, 1986.
- “Hand Book on Water Supply and Drainage (with special emphasis on plumbing)”, Bureau of Indian standards, New Delhi .

Course outcomes:

1.	Knowledge of environmental support systems as they apply to human habitat, with special reference
2.	Students have thorough understanding on water supply and waste water management, in residential unit, small campus, commercial buildings.

Course code	Course title	L	T	P	Credits
DAR- 233	SOCIOLOGY	2	0	0	2

Course Objectives:
➤ To develop the knowledge about the society, culture and process of development

UNIT-1:

Sociology: Nature, Scope and Significance; Relationship with History, Economics, Political Science, Anthropology and Psychology.

UNIT-2:

Basic Concepts: Society, Community, Association, Social Structure, Status & Role, Norms and Values

UNIT-3:

Social Groups & Processes: Definition, Nature and types of Groups- Primary Secondary & Reference Group; Processes- Co-operation,

UNIT-4

Societies: Types and Characteristics- Tribal, Rural, Urban, Industrial and Post-Industrial. **Culture:** Definition and Nature; Types- Material and Non- Material. **Socialization:** Its importance, Process and Stages. **Social Control:** Its Types and Means.

UNIT-5

Processes of Social Change: Characteristic Features of Industrialization, Modernization, Globalization and Secularization

REFERENCE BOOKS

1	Introductory Rural Sociology	J B Chitambar
2	An Invitation to Environmental Sociology	Michael Mayerfeld Bell
3	Themes in Sociology of Education	R Indira

Course code	Course title	L	T	P	Credits
DAR- 234	STRUCTURES-II	2	0	0	2

Course Objectives:
➤ To give an introduction to the basic principles governing structural systems. Concept of direct force mechanism in structures, tension and compression. Equilibrium of forces, concept of structure a tie.

UNIT-1

Concrete: Composition, Basics of mix design, water cement ration, strength, durability workability requirements.

UNIT-2

Relevance of RCC in Architectural practice Advantages of RCC over other conventional structural practices. Steel for RCC – Plain & Twisted bars, IS 456 code provisions.

UNIT-3

Working Stress method of design – Basic concept, types of loads, assumptions, calculation of MR for singly RC beam (only).

UNIT-4

Basic concepts of pre-stressed concrete, pre-stressing systems, materials, behavior of pre-stressed concrete beams and losses in pre-stress.

UNIT-5

Introduction to special structural form and basic structural concepts about: shells, folded plates domes, grid structures, flat slabs (RCC), space frames tensile structures and pneumatic structures

REFERENCE BOOKS

1. RCC H. J. Shah, Bhavikatti, Jain and Jaikrishna

Course code	Course title	L	T	P	Credits
DAR- 235	ARCHITECTURE DESIGN-III	1	0	4	3

Course Objectives:

- Evolving an appropriate design for specific users and context. Appropriate choice and use of the material based on the context, with all explorations of the material – in terms of construction and details.
- The studio includes 1 major and 2 minor exercise, and 1 time problem.

CONTENTS

Program formulation on the basis of functional needs and users' requirements, understating site context, environmental conditions, social life and cultural values as determinants of architectural design, developing conceptual positions based on the interpretations of the program.

Developing systems of construction and material details relevant to the conceptual positions, development of functional and aesthetical construction details and fenestration design.

Individually students can select a material suitable to the context and explore all construction possibilities and technical details.

Design of a dwelling unit based in a specific context, relevant case studies and their analysis, area volume diagrams, literature review, exercises and time problem to develop innovative thinking, exercises related to relevant or appropriate construction details and materials.

Proper presentation drawings along with model to be aimed at the end of the studio.

PRACTICAL	
1	To develop systems of construction and material details relevant to the conceptual positions, development of functional and aesthetical construction details and fenestration design.
2	Design of a dwelling unit based in a specific context, relevant case studies and their analysis, area volume diagrams, literature review, exercises and time problem to develop innovative thinking, exercises related to relevant or appropriate construction details and materials.

3	Proper presentation drawings along with model to be aimed at the end of the studio.
4	Evolving an appropriate design for specific users and context. Appropriate choice and use of the material based on the context, with all explorations of the material – in terms of construction and details.

REFERENCE BOOKS

- | | | |
|---|-----------------------|---|
| 1 | Form Space & Order | D.K.Ching John Wiley & Sons |
| 2 | Building Construction | Ringwald S.C. Charotar Publishing House |
| 3 | Building Drawing | Shah, Kale, Patki Tata Mcgraw Hill |

Course code	Course title	L	T	P	Credits
DAR- 236	CONSTRUCTION TECHNOLOGY-III	1	0	4	3
Course Objectives:					
➤ To acquaint the students with construction practices pertaining to RCC & steel elements, construction practices pertaining to RCC floors, roofs and flooring with different materials and plastering					

CONTENTS

Study of steel foundations and columns, types of foundations – isolated, combined, Raft, Base slab, Grillage, pile foundations.

Study of principles and methods of construction of RCC, one way, two way slabs – cantilever slabs, sloping RCC roof, retaining walls, vaults, domes.

Hollow clay blocks roofing techniques (filler slab)

Shoring & underpinning, form-work techniques and reinforcement details for RCC Construction.

Expansion joints – Necessity, location and detailing

Insulation materials – Thermal and sound insulation materials: mineral wool, unbounded rock and slag wool, polyurethane forms (PUF) etc.,

Introduction to the study of acoustics – nature of sound. Understanding of basic terminology like – frequency, pitch tone, sound pressure, sound intensity, loudness, threshold of audibility and pain, masking, sound distance.

Behavior of sound in enclosed spaces – reflection of sound, nature of reflection from plane, convex and concave surfaces, sound diffraction, absorption of sound, sound absorption coefficient, reverberation, sound absorbents, porous materials, panel or membrane absorbers and cavity or Humboldt resonators, role of functional absorbers.

PRACTICAL	
1	Study of steel foundations on site and draw columns, types of foundations – isolated, combined, Raft, Base slab, Grillage, pile foundations on sheets.
2	To understand and draw Shoring & underpinning, form-work techniques and reinforcement details for RCC Construction.

REFERENCE BOOKS

- | | | |
|----|---------------------------|-------------|
| 1. | Construction Technology | Chudley |
| 2. | Construction of Buildings | Barry |
| 3. | Building construction | Frank Ching |

Course code	Course title	L	T	P	Credits
DAR- 237	SURVEYING AND LEVELIING	1	0	2	2

Course Objectives:
➤ To develop the knowledge and skill relative to surveying and leveling principles and practice

CONTENTS

Introduction of subject, basic terms, definition and terminologies. Classification and Division of survey, units of measurements. Compass Survey: Introduction to traversing, principle used, types of meridian, WCB & RB system.

Methods of Area and Volume Measurements: Introduction to various methods of measuring area between chain line & boundary, calculation of area using trapezoidal & Simpson's formula, use of planimeter to calculate area, other approximate methods.

Introduction to Leveling & Contour: Introduction to leveling & RL, How to get the RL.

Understanding of contours, basic characteristics & uses of contour, study of contour map- identification of ridge line, valley line, etc. Calculation of volume for cutting & filling using contour map.

Setting out of Building: Setting out of building on the ground- Methods for setting out buildings by horizontal and vertical control.

Introduction to Remote sensing and GIS: Introduction to various terminology & reading of map.

PRACTICAL	
1	On site survey to understand various methods of measuring area between chain line & boundary, calculation of area using trapezoidal & Simpson's formula, use of planimeter to calculate area, other approximate methods
2	Setting out of building on the ground- Methods for setting out buildings by horizontal and vertical control

REFERENCE BOOKS

1	Surveying Vol -1	Dr. B. C Punmia
2	Surveying and Leveling (Vol -1)	Kanetkar TP and Kulkarni SV
3	Surveying and Leveling	S C Rangwala

Course code	Course title	L	T	P	Credits
DAR-238	COMPUTER -III	1	0	2	2

Course Objectives:
➤ Communicating design concepts and project status to clients, regulators, and colleagues can be challenging.
➤ This course will enable the students to understand the basics of Photoshop, the professional image-editing standard

COURSE CONTENT:-

- 1.To study the basics of Adobe Photoshop; Selection, Slice, Painting tools
2. To scan an image into Photoshop CS3; check the scan quality and resolution; crop the image to final size and orientation.

3. To adjust the brightness, contrast and tonal range of the image; sharpen the overall focus of the image etc.
4. To learn working with Layers and use layers to create a logo or collage for a PowerPoint presentation.
5. Exercises on Basic and Advanced Retouching: - Color manipulations, - levels, curves, patch tool, cropping, special color effects: black and white, sepia, grainy
6. Exercises on designing simple Web Pages by using Slice Tool.
7. Exercises involving the designing of Logos by using Texts and Paints professionally.
8. To transfer CAD drawings into Photoshop while preserving graphic scale.
9. To enhance drawings using patterns, strokes, color overlays, fill layers, inner and drop shadows, clipping groups, adjustment layers etc.
10. Exercises on rendering plans, elevation and sections using Photoshop
11. To render elements from 3ds Max as layers in Photoshop and learn how to create realistic auto-blending color-matched skies, greenery, trees etc.
12. Exercises on rendering 3D views using Photoshop.
13. Presentation techniques for portfolio, design sheets etc. using Photoshop

TEXT BOOKS/REFERENCE BOOKS:

1. Galer, M. & Andrews, P., “Photoshop CS3 Essential Skills”, Elsevier, 2007

Course outcomes:	
1.	Exposure to CAD and Photoshop will help students to produce their operation and critical parameters.
2.	Presentations for large gatherings, corporate clients-using CAD drawings, pictures, 3D images, text etc

Course code	Course title	L	T	P	Credits
DAR-239	MODEL MAKING WORKSHOP - I	1	0	2	2

Course Objectives:
➤ Modeling allows an architect to explore an idea in a three dimensional form, allowing communication of the idea in an accessible way.

COURSE CONTENT:-

1. To introduce the carpentry tools, processes, joints and wood working machines.
2. To prepare simple three dimensional objects like cubes pyramids etc.
3. To create complex three dimensional forms for models using carpentry methods.
4. To demonstrate the use of carpentry tools in making joints such as dovetail joint, mortise and tenon joint, lap joint, butt joint etc. to be used for making furniture.
5. To demonstrate fixing of plywood, blockboards, commercial boards etc.
6. To study the application of plywood, blockboards, commercial boards etc. in furniture.
7. To introduce the various welding equipments, processes and its applications.
8. To introduce to metallic sections, joinery tools, joinery processes and working with them.

9. To prepare joints (Lap and butt) by metal arc welding.
10. To learn and use various painting methods-brush, spray, hot spray etc.

TEXT BOOKS/REFERENCE BOOKS:

1. Raghuwanshi, B.S., “A Course in Workshop Technology - Vol. I and II”, Dhanpat Rai and Co, 2001.
2. Hazra and Chaudhary, “Workshop Technology - Vol. I and II”, Asian Book Comp, 1998.

Course outcomes:	
1.	Along with introduction to carpentry tools, fixing, and preparation of joints in detail and understanding.

(IInd Year – 4 th SEMESTER)

Course code	Course title	L	T	P	Credits
DAR-241	HISTORY OF ARCHITECTURE-IV	2	0	0	2

Course Objectives:
<ul style="list-style-type: none"> ➤ Understanding of the period in terms of its context of location, climate as well as the socio-cultural, historical, economic and political influences of the time. ➤ Study of the building ‘types’ and the development of architectural form and character based on the developments in construction and technology exemplified through specific building examples.

UNIT-1

Baroque Architecture: Dynamism and systemization of Baroque architecture. Vitality and spatial richness with underlying systematic organization.

UNIT-2

Space as constituent element of architecture, as a complex totality and indivisible figure, comprising of interacting spatial elements based on inner and outer forces. Sensitivity to effects of texture, color, light and water. Study of important urban spaces and churches in Italy and Germany.

UNIT-3

Renaissance Architecture: Break with medieval churches for sources from Roman antiquity. Spatial centralization through simple addition of independent spatial elements.

UNIT-4

Use of elementary geometrical forms unified through symmetry and simple mathematical ratios. Reintroduction of anthropomorphic Classical Orders. Study of palazzos and development of centralized church form through specific examples from Italy.

UNIT-5

Byzantine Architecture: Centralization in Byzantine churches. Centrality and interiority of both cross-domed and cross in square planned church. Indistinct exterior of churches and the domed 'heavenly' interior. Construction of dome over polygonal compartments through the use of pendentives. Study of important churches in Constantinople.

REFERENCE BOOKS

- | | | |
|----|-------------------------------|-----------------------|
| 1. | History of Architecture | Sir Banister Fletcher |
| 2. | Prehistory to post modernism | Marvin & Isabel |
| 3. | Architecture Through the Ages | Talbot Hamlin |

Course code	Course title	L	T	P	Credits
DAR-242	BUILDING SERVICE-II (Vertical Circulation)	2	0	0	2

Course Objectives:

- To create awareness about the importance of electrical services in buildings and to develop technical and practical knowledge in these services

UNIT-1: VERTICAL TRANSPORTATION

Brief history-types of Elevators like traction, Hydraulic etc., Double-decker, sky lobby, lift lobby, lift interiors etc., Definition and building with Elevators: environmental considerations i.e., location in building, serving floors, grouping, size, shape of passenger car, door arrangement etc.

UNIT-2: LIFTS :

Lifts, moving walkways and escalators, their layouts; Lifts: types of lifts, dimension of lifts; traffic analysis, calculation of round trip time and selection of lifts. Hoist way/shaft/well, machine room & pit, arrangement of lifts; Service requirements: Quality of service, quantity of service, time, passenger handling capacity, space and physical requirements, machine room spaces and their typical layout

UNIT-3 DESIGN CONSIDERATION (VERTICAL CIRCULATION):

Introduction to passenger elevator codes; Express & Local Elevators, Sky lobbies etc., ; Study of elevator equipment's , control systems and spatial requirements ; Escalators and Capsule elevators ;Travelators, Stairways & Ramps . Escalators - characteristics, dimensions and arrangements of escalators. transformer & generator rooms, Preparation of electrical layouts for tall buildings – Spatial requirements of electrical rooms and ducts – Intelligent systems for electrical and illumination.

UNIT-4: SANITATION IN HIGH RISE

Sanitation arrangements in high rise structures; Service floors; Ducts and vertical shafts ; Waste treatment etc., In context to hotels, hospitals and multistoried residential properties

UNIT-5: DESIGN LAYOUT:-

Designing of Lifts, Staircase, ramps and electrical layout in High Rise buildings, preparation of working drawings showing complete details.

TEXT BOOKS/REFERENCE BOOKS:

1. Hopkinson, R.G., "Architectural Physics: Lighting", London, 1963.
2. "Philips Lighting in Architectural Design", McGraw Hill, New York, 1964.

Course code	Course title	L	T	P	Credits
DAR-243	ESTIMATING & COSTING-I	2	0	0	2

Course Objectives:
➤ To develop the necessary skills for estimation and writing specifications for various types of buildings and developmental work, to achieve the best in terms of cost efficiency and standards.

UNIT-1

Percentage of various materials used in building items like cement, steel, rubble, metal sand brick, tiles etc.

UNIT-2

Abstract and detailed specifications for various materials and items of work used in building

UNIT-3

Understanding of importance of specification in contract document and execution purpose.

UNIT-4

Estimation of
 Load bearing and RCC framed structure with one example for each
 b) Various types of roofs like steel and wood including roofing materials like Mangalore tiles, AC, GI sheet etc.,
 c) Water supply and sanitary works
 A typical layout plan with roads, culverts etc.,

UNIT-5

Study through practical site visits, presentations, case studies, tutorial, study of BOQ & workshop based on the application of theory to construction field.

REFERENCE BOOKS

- | | | |
|----|------------------------|------------|
| 1. | Estimating and Costing | S.K. Dutta |
| 2. | Estimating | S.C. Ranga |

Course code	Course title	L	T	P	Credits
DAR-244	STRUCTURES-III	2	0	0	2
Course Objectives:					
➤ To give an insight into the structural behavior of columns and beams. To provide an introduction to design of reinforced concrete structures. Role of Structures in architecture should be taught					

UNIIT-1

FIXED END BEAMS:

Continuous Beams: Introduction, Analysis of continuous beams. Reactions at the supports. Effects of sinking of supports.

UNIIT-2

Elastic Theorems and Energy Principles: Introduction, Potential energy,

UNIIT-3

General Principles, Principles of superposition

UNIIT-4

Slope Deflection & Moment Distribution Method

UNIIT-5

Introduction, Analysis of indeterminate beams and continuous beams.

REFERENCE BOOKS

1. RCC

H. J. Shah, Bhavikatti, Jain and Jaikrishna

Course code	Course title	L	T	P	Credits
DAR-245	ARCHITECTURAL DESIGN-IV	1	0	4	3

Course Objectives:

- To understand the use of technologies developed in other fields as a precursor to creating architecture. The design shall deal with multiple functions resulting in complex form. The design shall be sensitive to the needs of disabled, aged people and children Design emphasis shall also be laid on structural feasibility and use of innovations in materials and techniques of construction for achieving the thermal comfort and energy efficiency for a given context.

CONTENTS

Studio project shall include problems involving above considerations such as institutes, Residential schools, Shopping malls (medium size), Single function Sports Complex, medium rise buildings, apartments etc. (G+3).

One major project and one minor project and a time problem to be tackled in the semester. Detailing of architectural features of the major project has to be attempted

Study of various building techniques and planning methods adopted in building for achieving thermal comfort and energy efficiency.

Study of structural system adopted

Case study, data collection, literature survey Design

proposal including study model
 Detailing of architectural features involved shall be attempted

PRACTICAL	
1	Practical on studio project shall include problems involving considerations such as institutes, Residential schools, Shopping malls (medium size), Single function Sports Complex, medium rise buildings, apartments etc. (G+3).
2	One major project and one minor project and a time problem to be tackled in the semester. Detailing of architectural features of the major project has to be attempted.
3	Design proposal including study model and detailing of architectural features.
4	Formal, informal and interactive spaces and their hierarchies in built Environment.

REFERENCE BOOKS

- | | | |
|----|--|--------------------|
| 1 | Time Saver Standards for Architectural Design Data | John Hanock |
| 2. | Architectural Graphic Standard | Ramsay and Sleeper |

Course code	Course title	L	T	P	Credits
DAR-246	CONSTRUCTION TECHNOLOGY-IV	1	0	4	3
Course Objectives:					
➤ To study the construction systems of roofing for large span and complex buildings. To study construction systems with focus on modern & contemporary building elements. Understanding of specialized construction system.					

CONTENTS

Materials and Construction Technology for large span structures(Temporary/Permanent):

- Modular unit system
- Space frame system Tensile structures
- Shell structures, folded plate, geodesic domes
- Pneumatic structures
- Flat slab , Waffle slab , Coffe Flat slab

PVC & FRP, frameless glass doors and windows and partitions. Wooden/ steel/ Aluminum sliding and folding doors and partitions.

Steel doors for garages and workshops.

Remote control systems of doors and gates.

Structural glazing, aluminum composite panel. Cladding

Plastics: types, properties and uses of plastics such as polycarbonates, acrylics, PVC polymer films, fiber reinforced plastic. Rubber and Asbestos cement products. Water proofing elements, construction chemicals and additives, adhesives, plaster of Paris, gypsum, Polystyrenes, sealants.

Glass: its types like plate, tinted, decorative reinforced, laminated glass block, fiber glass, glass murals, partially colored glass, etching of glass and its applications in building industry for both exterior and interiors, functional and decorative, and fixing details.

Understanding of Precast and Prestressed concrete components and their applications in building /construction industry.

PRACTICAL	
1	To construct sheets on Modular unit system, Space frame system, Tensile structures, Shell structures, folded plate, geodesic domes, Pneumatic structures, Flat slab, Waffle slab, Coffe slab
2	Practical on prepared sheets on PVC & FRP, frameless glass doors and windows and partitions. Wooden/ steel/ Aluminum sliding and folding doors and partitions, Steel doors for garages and workshops, Remote control systems of doors and gates, Structural glazing, aluminum composite panel. Cladding
3	Understanding of Precast and Pre-stressed concrete components and their applications in building /construction industry.

REFERENCE BOOKS

- | | | |
|----|---------------------------|-------------|
| 1. | Construction Technology | Chudley |
| 2. | Construction of Buildings | Barry |
| 3. | Building construction | Frank Ching |

Course code	Course title	L	T	P	Credits
DAR-247	INTERIOR DESIGN	1	0	2	2

Course Objectives:

- To understand various concepts that lead to define “Theory of Architecture”. To develop ability to evaluate/understand our ‘built environment’.

CONTENTS

Designing the size and form of interior spaces using user – activity analysis and anthropometrics, effect of enclosure, fenestration, color and lighting on perception of interior space, application of scale, proportion to enhance the quality of interior space, psychological effects of space.

Elements of interior space – design for comfort – climatic comfort, natural and artificial lighting, air conditioning and acoustics. Services – air conditioning ducts, electrical wiring, water supply and removal of waste water, elements of furnishing and surface treatment and the need and scope.

Applied decoration – color, texture, plane and fixtures in relation to emphasis of background of space through change of levels and structural form modulation through artificial and natural lighting, emphasis of focal points and unity in interior design.

Furniture design – Role of furniture, ergonomic factors of furniture design and materials used. Matching furniture to decorative style, fitted furniture, its characteristics and application. Functional classification of space, barrier free design.

Surface treatment – decorative material for ceiling, walls, floors drapery upholstery for openings and furniture respectively and matching them with overall color scheme and composition, source and collection of information, elements of indoor plants and interior landscape and use of water. Interior landscaping; Plant species, specification, etc. texture, height grouping and layout.

Study of different materials used in interior design like steel, glass, pop, aluminum, timber, fabrics, plastic, composite materials, etc.

The class work shall include two interior design projects (one major and one minor) to be handled with complete design, detailing furniture layout, specification for the materials, and their application. The projects shall relate to residential, commercial educational or interiors of other public spaces of smaller scale. Collection of samples,

Study & submission of portfolios relating to individual aspect like furniture, accessories, special lighting schemes and upholstery Use of hand skills and computers should be encouraged equally.

PRACTICAL	
1.	Designing the size and form of interior spaces using user – activity analysis and anthropometrics ,effect of enclosure, fenestration, color and lighting on perception of interior space, application of scale, proportion to enhance the quality of interior space, psychological effects of space.

REFERENCE BOOKS

- | | | |
|---|------------------------------------|-----------------------------|
| 1 | Human Dimension and Interior Space | PaneroJulious&Zelink Martin |
| 2 | Design of Interior Environment | Alexander and Mercourt |

Course code	Course title	L	T	P	Credits
DAR-248	COMPUTER - IV	1	0	2	2

Course Objectives:
<ul style="list-style-type: none"> ➤ The objective of introducing this course is to promote computer knowledge and applications in architecture. ➤ This course will familiarize the students to the concepts of parametric modeling, or BIM, through Autodesk REVIT or similar software, ➤ Enable them to create Computer Aided rendered Architectural Drawings in 3D.

COURSE CONTENT:-

1. To introduce the new features of REVIT, editing and working with families in a Project.
2. To introduce the concepts of REVIT, creating a shared Family, Project and System settings.
3. To create the basic model, creating the basic structural system – walls, columns, beams, roofs etc.
4. To add doors, windows, openings, stairs, railings, curtain systems etc

5. To create drawings, creating detail from building model, scheduling, annotating and dimensioning.
6. To study about Viewing the Model
7. Exercises on Applying Materials and textures and creating a perspective views
8. Exercises on rendering an exterior view and an interior view.
9. Exercises on applying lights in an Interior and creating shadows
10. Exercises on creating and recording Walkthroughs, creating 3D cutaways with Section Boxes
11. To create an Interior of a given architectural drawing by using the above mentioned tools and commands.
12. To apply the above mentioned tools and commands to create rendered exterior views of a given architectural drawing.

REFERENCE BOOKS

1. Fox & Balding, “Introducing and Implementing Revit Architecture”, Cengage Learning, 2008
2. Autodesk REVIT 9.1 Manual, Autodesk publications
3. REVIT 9.1 Tutorials, Autodesk publications

Course code	Course title	L	T	P	Credits
DAR-249	MODEL MAKING - II	1	0	2	2

Course Objectives:

- Modeling allows an architect to explore an idea in a three dimensional form, allowing communication of the idea in an accessible way.

COURSE CONTENT:-

1. To introduce the various materials used in architectural model making.
2. To introduce the various techniques of model making.
3. To model with paper, card board, mount board, thermocol, styrofoam, softwood, acrylic sheets and wire.
4. To study the development of simple and composite form, experiments on three dimensional forms such as cubes, pyramids, tetrahedron and forms to understand the spaces conceived by them.
5. To create organic forms by using clay, plaster of paris, metal scrap, jute fiber etc. for study of forms.
6. To study about murals.
7. To introduce and make various types of architectural models – concept models; development models etc.
8. To introduce the concept of illuminated models.
9. To work on sectional models.
10. To study and make presentation models using various materials etc.

Note: Students are required to prepare block models of groups of buildings including roads and landscaped open spaces and detailed models of buildings from given set of drawings.

TEXT BOOKS/REFERENCE BOOKS:

1. Morris, M., “Architecture and the Miniature: Models”, John Wiley and Sons, 2000
2. Sutherland, Martha, “ Model Making: A Basic Guide”, W.W. Norton and Co, 1999
3. Mills, Criss B., “Designing with Models : A Studio Guide to Making and Using Architectural Models”, Thomson and Wadsworth, 2000

(3rd year - 5th SEMESTER)

Course code	Course title	L	T	P	Credits
DAR- 351	HISTORY OF ARCHITECTURE-V	2	0	0	2

COURSE OBJECTIVES
<ul style="list-style-type: none"> • Understanding of the period in terms of its context of location, climate as well as the socio-cultural, historical, economic and political influences of the time. • Study of the building ‘types’ and the development of architectural form and character based on the developments in construction and technology exemplified through specific building examples that identify, the works of the period. • Understanding the intentions of the period and architects as a solution to the need or demands of the period.

UNIT-1:

Romanesque Architecture: Massiveness and verticality of medieval churches. Combination of the five towered structures and longitudinal basilica.

UNIT-2

Gradual integration of tower from early to later examples. Integration of centralized and longitudinal plans. Articulation of external wall like arcaded interiors resulting in dematerialization of exterior. Study of important cathedrals and churches from Italy and France.

UNIT-3:

Mannerism: Conflict and tension in Mannerism in place of harmony and order of Renaissance. Dynamic interplay of contrasting elements as against static addition of independent units of Renaissance church.

UNIT-4:

Interplay between manmade and nature in villas. Dynamism of urban spaces. Centralized longitudinal and the elongated central church plans. Study of important villas, churches and urban spaces in Italy.

UNIT-5:

Persian architecture: Substantial history and knowledge of Persian Architecture. Broad range of architecture, and landscape architecture. The methodology of Persian architectural research. Studying non-western architecture and civilization.

REFERENCE BOOKS

1. History of Architecture Sir Banister Fletcher
2. Prehistory to post modernism Marvin & Isabel
3. Architecture Through the Ages Talbot Hamlin

Course code	Course title	L	T	P	Credits
DAR- 352	BUILDING SERVICES-III	2	0	0	2

UNIT-1: INTRODUCTION TO ACOUSTICS & SOUND ABSORBING MATERIALS

General principles of sound, its origin, propagation and sensation; behavior of sound with

Respect to various surfaces and in an enclosed space. Reflection of sound and their applications; reverberation time and sound levels and their calculations. Absorption of sound, sound absorption coefficient; sound absorbing materials - porous materials, panel / membrane absorbers & cavity / Helmholtz resonators; absorption coefficients of indigenous acoustical materials; space / functional absorbers; mounting conditions and its impact on sound absorption.

UNIT-2: ACOUSTICAL DESIGN OF AUDITORIUMS

Adequate loudness, uniform distribution of sound energy, optimum reverberation time & elimination of acoustical defects. Methods of raking the auditorium floor and the balcony. Shape & Acoustical consideration of various spaces such as- class room , Library , Auditorium , Concert halls , Office spaces etc.

UNIT-3 NOISE

Outdoor & indoor noise(air traffic, rail traffic, road traffic and sea shore & inland water traffic), Planning & Design against Outdoor Noise - for air traffic, road traffic and rail traffic, airborne noise & structure borne noise /impact noise, community noise, & industrial noise; transmission of noise & transmission loss; maximum acceptable noise levels; means of noise control & sound insulation. Sources of industrial noise.

UNIT-4:

PRINCIPLES OF ILLUMINATION AND LIGHTING DESIGN :

Light – Definition , property & behavior , modern theory of light and colour; synthesis of light, additive and subtractive synthesis of colour; luminous flux, candle, solid angle illumination, utilization factor, depreciation factor, MSCP, MHCP; laws of illumination: Illumination from point, line and surface sources; environment and glare. Standards of Lighting and Visual comfort; different illumination systems such as direct, indirect, diffused; classification of lighting: daylight, artificial light sources; incandescent, fluorescent; arc lamps and lasers; spectral energy distribution, luminous efficiency, colour temperature, colour rendering.

UNIT-5:

ELECTRICAL SYSTEMS & INSTALLATIONS :

Basic of electricity, single/Three phase supply, generation and distribution of electric power in urban areas, Electric substations for small schemes in industrial units or residential societies ; Protective devices in electrical Installation; earthing for safety, types of earthing, ISI Specifications.

NOTE: Assignments can be in the form of compiling of required information collected from site visits, market surveys and finding out latest trends and materials for the same.

Prepare working drawings for lighting & Acoustics for an office / Class room / Seminar hall/Auditorium.

TEXT BOOKS/REFERENCE BOOKS:

1. Hopkinson, R.G., "Architectural Physics: Lighting", London, 1963.
2. "Philips Lighting in Architectural Design", McGraw Hill, New York, 1964.
3. Hopkinson and Kay, "The Lighting of Buildings", Faber and Faber, London, 1969.

Pritchard, D.C., "Lighting", Longman Scientific & Technical, Harlow, 1995

TEXT BOOKS / REFERENCE BOOKS:

1. Egan, M. David, "Architectural Acoustics", J. Ross Publishing 2007.
 2. Templeton, Duncan & Saunders, David, "Acoustic Design", The Architectural Press, London, 1987.
2. Templeton (ed.), "Acoustics in the Built Environment", Butterworth, London, 1993.
3. Mehta, Johnson & Rocafort, "Architectural acoustics: principles and design", Prentice Hall, 1999.

Course outcomes:	
1.	Understanding the advanced service requirements of buildings- Acoustics and lighting
2.	To teach the schematic layout for Acoustics
3.	To teach the importance and emphasis on lighting in buildings

COURSE OBJECTIVES

- To introduce and familiarize the students with advanced and speedy building construction techniques.

Course code	Course title	L	T	P	Credits
DAR- 353	ESTIMATING & COSTING-II	2	0	0	2

COURSE OBJECTIVES

- To develop the necessary skills for estimation and writing specifications for various types of buildings and developmental work, to achieve the best in terms of cost efficiency and standards.

UNIT-1:

Percentage of various materials used in building items like cement, steel, rubble, metal sand brick, tiles etc.

UNIT-2:

Abstract and detailed specifications for various materials and items of work used in building.

UNIT-3:

Understanding of importance of specification in contract document and execution purpose.

UNIT-4:

- Estimation of Load bearing and RCC framed structure with one example for each
- Various types of roofs like steel and wood including roofing materials like Mangalore tiles, AC, GI sheet etc.,
- Water supply and sanitary works.

UNIT-5:

Study through practical site visits, presentations, case studies, tutorial, study of BOQ & workshop based on the application of theory to construction field.

REFERENCE BOOKS

- Estimating and Costing S K Dutta
- Estimating SC Ranga

Course code	Course title	L	T	P	Credits
DAR- 354	ARCHITECTURAL DESIGN-V	2	0	6	5

COURSE OBJECTIVES

- Determinants of space making on housing or house forms in rural and urban context and their relevance.
- Developing an appreciation of Housing as a process evolving itself with changes in people-place-time.

COURSE CONTENT:

Identification of the cultural factors of space making such as notion of privacy and territoriality, family structure and hierarchy, gender roles, occupational associations, traditional values and their continuity etc., interpretations of socio-cultural factors in the built form in terms of spatial organization, orientation, open, semi open and closed spaces correlation, scales and proportions Climate and topography, local construction system and use of materials, bye laws. Design of various typologies such as dwelling-cluster and neighborhood in a specific community and context, relevant case studies and their analysis, literature review, exercises related to relevant or appropriate construction systems and materials.

One major Studio Project aimed at developing an appropriate design of housing cluster suitable to the site, one mini Studio Project aiming at methodology for qualitative assessment of existing/chosen housing site for identification of characteristics & problems therein; and suggests strategies related to suitable interventions and management of the housing; one time problem.

PRACTICAL

1. Design of various typologies such as dwelling-cluster and neighborhood in a specific community and context, relevant case studies and their analysis, literature review, exercises related to relevant or appropriate construction systems and materials.
2. One major Studio Project aimed at developing an appropriate design of housing cluster suitable to the site, one mini Studio Project aiming at methodology for qualitative assessment of existing/chosen housing site for identification of characteristics & problems therein; and suggests strategies related to suitable interventions and management of the housing; one time problem.
3. Determinants of space making on housing or house forms in rural and urban context and their relevance. Developing an appreciation of Housing as a process evolving itself with changes in people-place-time.
4. Interpretations of socio-cultural factors in the built form in terms of spatial organization, orientation, open, semi open and closed spaces correlation, scales and proportions etc.

REFERENCE BOOKS

1. House Form and Culture Rapoport, Amos
2. Architecture without Architects Rudofsky, Bernard
3. Contemporary Architecture in India Joglekar, M. N.

Course code	Course title	L	T	P	Credits
DAR- 355	CONSTRUCTION TECHNOLOGY-V	1	0	4	3

COURSE OBJECTIVES

- To introduce and familiarize the students with advanced and speedy building construction techniques.

COURSE CONTENT:

Prefabrication:

Systems open prefab system, large panel prefab system, joints, pro-casting methods, materials, on-site and off-site prefabrication, components etc.

Pre-stressed Concrete:

Introduction, methods of pre-stressing and their application to large-space structures.

Speedy Construction:

Methods, Types of floor construction: Beam & Slab, Waffle Grid Slab, Drop Beam & Slab, Flush Slab. Lift Slab Construction: Cast-in-situ service & stair cores; Cross wall & Box frame construction.

PRACTICAL

1. To prepare and give viva-voce on prepared sheets on Prefabrication Systems open prefab system, large panel prefab system, joints, pro-casting methods, materials, on-site and off-site prefabrication, components etc.
2. Introduction, methods of pre-stressing and their application to large-space structures.
3. Methods, Types of floor construction: Beam & Slab, Waffle Grid Slab Drop Beam & Slab, Flush Slab. Lift Slab Construction: Cast-in-situ service & stair cores; Cross wall & Box frame construction.

REFERENCE BOOKS

- | | | |
|----|---------------------------|---------|
| 1. | Construction Technology | Chudley |
| 2. | Construction of Buildings | Barry |
| 3. | Building construction | McKay |

Course code	Course title	L	T	P	Credits
DAR- 356	WORKING DRAWING-I	1	0	4	3

COURSE OBJECTIVES

- To understand design limitations due to authority guidelines and making drawing/details necessary for final execution of a project.

COURSE CONTENT:

Familiarizing with Building Bye-laws through Local Developments Authority Guidelines, National Building Codes. Interpretation of the Bye Laws applicable to residence in plotted developments, Group Housings, Commercial Buildings, Educational Buildings and other Public Institutions.

Making a complete Local Development Authority drawing for a small two storied residence that may have been designed in any of the previous semesters with desired modifications needed as per Local Authority and NBC guidelines.

PRACTICAL

1. To Make a complete Local Development Authority drawing for a small two storied residence that may have been designed in any of the previous semesters with desired modifications needed as per Local Authority and NBC guidelines.
2. Interpretation of the Bye Laws applicable to residence in plotted developments, Group Housings, Commercial Buildings, Educational Buildings and other Public Institutions.

REFERENCE BOOKS

- | | | |
|----|--|------------------------|
| 1. | Arbitration | Dr. Roshan H. Namavati |
| 2. | Estimating and costing in Civil Engineering Theory and Practice. | |

Course code	Course title	L	T	P	Credits
DAR- 357	SITE PLANNING	1	0	4	3

COURSE OBJECTIVES
<ul style="list-style-type: none"> To develop sensitivity to factors influencing site design. To develop understanding of principles and techniques of site planning and apply them to actual situation. To emphasize the role of site planner in site design.

COURSE CONTENT:

Introduction to site planning, definition of site planning, site planning in history, Site planning process, Site analysis - understanding various factors influencing site, site selection and resource analysis

Site planning in urban area, Site planning in natural area.

Site planning standards, sources of information for site data and site information Contour map and interpretation, Grading plan and grading process.

Drainage system in site planning.

Land use and circulation, zoning, service systems in site planning.

Formation of site plan, Site planning for residential projects, Site planning for institutions and public areas, Site planning for resorts, parks and tourist complexes.

There will be two projects in a semester. The first project will be introductory and students will take up an existing site for detail analysis and study of various issues related to site planning. The second project will be the major project whereas the information and techniques of site planning will be applied in detail.

PRACTICAL

1. Formation of site plan, Site planning for residential projects, Site planning for institutions and public areas, Site planning for resorts, parks and tourist complexes.

REFERENCE BOOKS

- | | |
|-----------------------|---------------------|
| 1. Site planning | Lynch, Kevin |
| 2. Campus Planning | Dober, Richard P |
| 3. The Granite Garden | Spirn, Anne Whiston |

(3rd year - 6th SEMESTER)

Course code	Course title	L	T	P	Credits
DAR- 361	PROFESSIONAL PRACTICE	2	0	0	2

COURSE OBJECTIVES
<ul style="list-style-type: none"> Develop understanding of building bye laws and its implementation in reference to building design. To develop an understanding of basic professional skills to practice of various type of projects and its complexity.

COURSE CONTENT:

Unit-1

Role and responsibilities of a professional Prevailing pattern of professional practice.

Unit-2

Comparison and inter relationship with other professionals and professional bodies. Various professional associations and registering body; their responsibilities,

Unit-3

Detail understanding of professional ethics; fee structure Office organization and management skills.

Unit-4

Detail understanding of office day to day responsibilities towards staff and other government bodies.

Unit-5

Understanding of contract and its management, site supervision, Role, responsibilities, liabilities.

REFERENCE BOOKS

- | | | |
|----|---|----------------------------------|
| 1. | Arbitration | Dr. Roshan H. Namavati |
| 2. | Estimating and costing in Civil Engineering Theory and Practice | B.N. Datta |
| 3. | Hand book on professional practice | Indian Institute of Architecture |

Course code	Course title	L	T	P	Credits
DAR- 362	BUILDING BYE-LAWS	2	0	0	2

COURSE OBJECTIVES

- Develop understanding of building bye laws and its implementation in reference to building design.
- To develop an understanding of basic professional skills to practice of various type of projects and its complexity.

Unit-1

Zoning of areas: residential, institutional,

Unit-2

Industrial agricultural entertainment etc.

Unit-3

Introduction to city, town and village bye laws,

Unit-4

Evolution of GDCR (Mumbai municipal act, town planning act and GDCR)

Unit-5

Need of bye laws other prevailing laws (environment law etc.).

REFERENCE BOOKS

- | | | |
|----|--------------------|---------------------------------|
| 1. | GDCR | Margareta Pecovska-Gjorgjevich |
| 2. | BPMC Act | K.Puj |
| 3. | GTP and GDCR rules | Shri P.K Bansal and D.T Garasia |

Course code	Course title	L	T	P	Credits
DAR- 363	ARCHITECTURAL DESIGN-VI	2	0	12	8

COURSE OBJECTIVES

- Learn about reading and documenting urban contexts and to understand the idea of urban space. To understand the difference between urban designs as opposed to urban development.
- To understand the role of architecture in shaping urban fabric and create design which fits into urban fabric.
- To understand the needs of privacy, community spaces, efficiency of open spaces and idea of extended living areas.

COURSE CONTENT:

Studio projects shall be based on considering the principals involved in community architecture.

Concepts of sustainable architecture and energy efficient buildings reuse recycled and recharging resources such as water, solar bio-resources; can be introduced in the studio design. The design can also be sensitive to the needs of disabled, aged people and children.

The role of urban space as a public realm needs to create such spaces as extension of private domain.

The public building shall be investigated and shall become one of the architectural goals of the project.

Some of the prerequisites of the project shall be; Multiple functions.

Public access to majority of the space, Large-gathering areas, which are open and extendable to the immediate urban context. Analyzing structural feasibility of the project to adopt various structural systems for spanning.

High-rise building Projects like transport interchanges, large retail areas with entertainment areas, transport terminals with commercial areas, performing art center with museums and such multiple functions shall be taken.

E.g. of projects: Large group housing with other amenities, large retail areas with entertainment areas, Bus Terminal, Sports terminals, Community areas etc.

PRACTICAL

1. To design high-rise building Projects like transport interchanges, large retail areas with entertainment areas, transport terminals with commercial areas, performing art center with museums and such multiple functions shall be taken.
2. To design and analyzing structural feasibility of the project to adopt various structural systems for spanning.
3. To understand the role of architecture in shaping urban fabric and create design which fits into urban fabric. To understand the needs of privacy, community spaces, efficiency of open spaces and idea of extended living areas.
4. Large group housing with other amenities, large retail areas with entertainment areas, Bus Terminal, Sports terminals, Community areas etc.

REFERENCE BOOKS		
1.	Garden Cities: Theory & Practice of Agrarian Urbanism	Andrés Duany and Duany Plater- Zyberk
2.	Pocket Neighborhoods: Creating Small-Scale Community in a Large-Scale World	Ross Chapin Taunton Press

Course code	Course title	L	T	P	Credits
DAR- 364	CONSTRUCTION TECHNOLOGY-VI	2	0	2	3

COURSE OBJECTIVES

- The understanding the construction equipment and defects in the building industry.

COURSE CONTENT:

Construction Equipment:

Electric hand tools, Vibrators, Power Floats, Pumps, Rollers, Earth Moving & Excavation: Dozers, Scrapers, Graders, Shovels, Skimmers. Backactor, Dragline, Trenchers. Transportation: Lorries. Tracks, Dumpers, Elevators, Conveyors, Hoist, Cranes (mobile, static, tower). Concrete Mixers, Pumps etc.

Defects and Remedies-:

The study of various defects in buildings and their remedies.
Defects caused by dampness, applied forces and changes in size.

PRACTICAL

- To prepare Sheets on Construction Equipment like electric hand tools, Vibrators, Power Floats, Pumps, Rollers, Earth Moving & Excavation: Dozers, Scrapers, Graders, Shovels, Skimmers. Dragline, Trenchers. Transportation: Lorries. Tracks, Dumpers, Elevators, Conveyors, Hoist, Cranes (mobile, static, tower).Concrete Mixers, Pumps etc.
- To study of various defects in buildings and their remedies. Defects caused by dampness, applied forces and changes in size.

REFERENCE BOOKS

- Construction Technology Chudley
- Construction of Buildings by Barry
- Building construction McKay

Course code	Course title	L	T	P	Credits
DAR- 365	WORKING DRAWING-II	1	0	4	3

COURSE OBJECTIVES

- To understand design limitations due to authority guidelines and making drawing/details necessary for final execution of a project.

Making complete set of working Drawings and Details for the residence presented earlier or any other small project designed in any of the previous semester. The drawings to also incorporate electrical and plumbing details complete with schedule and all specifications. The Working Drawings and details to include:

1. Site plan
2. Foundation layout with details of foundations.
3. Ground floor Plan , First Floor Plan. ,Terrace Plan
4. Sections ,Elevations.
5. Doors and Windows ,Doors and Windows details
6. Electrical Layout in at least one of the two Floors.
7. Plumbing Layout in at least one of the two Floors.
8. Toilet & Kitchen details complete with all fixtures and their specifications.
9. Flooring pattern on either of the two Floors.
10. Staircase Details including railings.
11. Details of Grills, Parapet or railings.

Typical wall section showing foundation, DPC, skirting, sill, lintel slab and terracing details.

PRACTICAL

1. To Make complete set of working Drawings and Details for the residence presented earlier or any other small project designed in any of the previous semester. The drawings to also incorporate electrical and plumbing details complete with schedule and all specifications.
2. To prepare detail working drawing of a building containing Site plan, Foundation layout with details of foundations, Ground floor Plan, First Floor Plan, Terrace Plan, Sections, Elevations, Doors and Windows, Doors and Windows details, Electrical Layout in at least one of the two Floors, Plumbing Layout in at least one of the two Floors, Toilet details complete with all fixtures and their specifications, Kitchen details complete with all fixtures and their specifications, Flooring pattern on either of the two Floors, Staircase Details including railings, Details of Grills, Parapet or railings, Typical wall section showing foundation, DPC, skirting, sill, lintel slab and terracing details.

REFERENCE BOOKS

- | | |
|-----------------------|---------------------------------|
| 1. GDCR | Margareta Pecovska-Gjorgjevich |
| 2. GTP and GDCR rules | Shri P.K Bansal and D.T Garasia |
| 3. Arbitration By | Dr. Roshan H. Namavati |

Course code	Course title	L	T	P	Credits
DAR- 366	DISSERTATION	1	0	2	2

Objective of Course:

Dissertation is intended to enlighten students on the fundamentals of research methods. The students are expected to choose topics, which are of special interest to them and prepare a report after research.

It is possible that in keeping with the School's commitments from time to time certain themes may be permitted and students encouraged choosing their subject matter for study or research accordingly.

Module-1 Introduction Learning the formulation of research question or hypothesis

Module-2 Writing a Technical Paper

- Writing a paper of 5000 words in following stages:
- Formulation of an original research issue by ascertaining the gaps in research. Synopsis with clear heads of Intent, Background, Aims and Objectives, Scope, Methodology.
- Structuring the body of the paper in detail.
- Ascertaining Primary and Secondary Sources.
- Utilizing the sources to reach to the desired objectives. Editing the paper.

NOTE- Follow Chicago manual style for writing.