

SEMESTER 1

SDE4051	INTERIOR DESIGN STUDIO I	L	T	P	Credits	Total Marks
		0	0	8	6	300

COURSE OBJECTIVES:

- The studio aims at initiating the process of creativity and appreciation for design thinking. It promotes a workshop-based environment that will improve the thinking skills, investigative abilities, visualization, communication and graphical skills

MODULE 1 VISUAL PRINCIPLES**50 Hrs.**

Exposure to various elements and principles of art and design in 2D. Expressions and explorations using Points, Lines, Planes and Volumes. Its relation in context to nature and environment. Principles of colour theory and explorations. Understanding of the visual relationships – balance, proportion, order, symmetry, rhythm, etc. Study of visual principles of composition: grids, layouts, asymmetry, balance and asymmetry. Fundamentals of Symmetry and Patterns in Nature. Evolution of Form in Nature. Triangles, Hexagons and rigid structures.

MODULE 2 TWO DIMENSIONAL EXPRESSIONS**50 Hrs.**

Work by Buckminster fuller and concept of sustainable structures. Understanding Fibonacci series and the Golden ratio, Geometry of shapes, Exploration in mixed media & collage to convey a specific theme and meaning.

MODULE 3 THREE DIMENSIONAL EXPRESSIONS**50 Hrs.**

Exposure to various elements of 3D and principles of art and design in 3D . Expressions and explorations of spaces and Volumes. Experimentations with Form, Texture, Colour and space. Its relation in context to nature and environment, Radii Manipulation, Form Transition, Morphology Exposure to form and movement, Form and metaphors - inspirations from nature, geometry, study of precedents, origami, puzzles etc.

Max. 150 Hours**TEXT / REFERENCE BOOKS**

1. Farrelly, L. (2017). The Fundamentals of Architecture. United Kingdom: Bloomsbury Publishing.
2. Ching, F. D. K. (2014). Architecture: Form, Space, and Order. Germany: Wiley.
3. Jones, J. C. (1992). Design Methods. United Kingdom: Wiley.
4. Lawson, B. (2005). How Designers Think. (n.p.): Taylor & Francis.
5. Laseau, P. (2001). Graphic Thinking for Architects and Designers. United Kingdom: Wiley.
6. Ching, F. D. K., Juroszek, S. P. (2019). Design Drawing. United States: Wiley.
7. Weigand, J., Faimon, P. (2004). The Nature of Design. United States: F+W Media.
8. Pipes, A. (2003). Foundations of Art and Design. United Kingdom: Laurence King.
9. White, A. W. (2011). The Elements of Graphic Design. United Kingdom: Allworth.
10. Elam, K., Thompson, J. N. (2001). Geometry of Design: Studies in Proportion and Composition. New York: Princeton Architectural Press.

SDE4051	THEORY OF INTERIOR DESIGN	L	T	P	Credits	Total Marks
		2	0	0	2	100

COURSE OBJECTIVES:

- To introduce students to the basic elements of design, its principles, visual aspects, along with preparation, design vocabulary and thereby the application of these in design.
- To strengthen the students understanding of human factors and dimensions while designing interior spaces and accessories.
- To enable students to explore the design process by identifying the design parameters and formulating concepts while emphasizing function and aesthetics.

UNIT 1 INTERIOR SPACE**8 Hrs.**

Space-definition; elements of interior spaces, Interior space-spatial qualities: form, scale, outlook; structuring space with interior design elements; spatial form; spatial dimension – square, rectangle, curve linear spaces; height of space; spatial transitions – openings within wall planes, doorways, windows, stairways; horizontal and vertical circulation

UNIT 2 DESIGN VOCABULARY & PRINCIPLES**9 Hrs.**

Principles of perception, Form – point, line, volume, shape, texture and color – in relation to light, pattern, Ratio; proportions – golden section; relationships; scale; Balance – symmetrical, radial, occult; harmony; unity; variety; rhythm; emphasis, Synthesis of these elements evolves understanding of interior space, , static and dynamic aspects of spaces.

UNIT 3 ANTHROPOMETRICS**6 Hrs.**

Definition, body link system, static and dynamic anthropometry, theory of standard dimension based on human figures for activities, functions, circulation, furniture design, spatial requirements etc, relationship between human activities and anthropometrics, introduction to ergonomics, Design of Furniture for Living, Dining, Kitchen, Office etc.

UNIT 4 DESIGN PROCESS**7 Hrs.**

Design process-Design criteria-function and purpose, utility and economy, form and style; human factors-human dimensions, distance zones, activity relationships, function, aesthetics values, ways to incorporate exuberance in interiors.

Max. 30 Hours**COURSE OUTCOME:**

- CO1** Recognize the two-dimensional aspects of spatial elements and their applications in interior spaces.
- CO2** Develop an understanding of design vocabulary and thereby perceive the visual environment.
- CO3** Interpret the principles of design using spatial elements and compositions in interior space
- CO4** Comprehend the relationship between form, dimensions of interior space and human dimensions and also between human factors and activity relationships
- CO5** Understand the need and relationships between anthropometric requirements and various functions of a space
- CO6** Develop the ability to analyse the design problem, synthesize the response and critically evaluate the design thereby define the cyclic design process

TEXT / REFERENCE BOOKS

- Binggeli, C., Ching, F. D. K. (2012). Interior Design Illustrated. United Kingdom: Wiley.
- The Handbook of Interior Design. (2015). United Kingdom: Wiley.
- Linton, H. (2003). Color in Architecture: Design Methods for Buildings, Interiors, and Urban Spaces. United Kingdom: McGraw-Hill.
- Poore, J., Ragan, S. L. (1994). Interior Color by Design: A Design Tool for Architects, Interior Designers, and Homeowners. Hong Kong: Rockport Publishers.
- Whiton, S. (2013). Elements Of Interior Design And Decoration. United Kingdom: Read Books Limited.

END SEMESTER EXAM QUESTION PAPER PATTERN**Max. Marks : 100****Exam Duration: 3 Hrs.**

- PART A** : 2 questions each from unit 1 to unit 4, each carrying 5 marks : 08 x 05 = 40 Marks
- PART B** : 1 question each from unit 1 to unit 4 with an internal choice, each carrying 15 marks : 04 x 15 = 60 Marks

SDE4052	ART & CRAFT STUDIO I	L	T	P	Credits	Total Marks
		0	0	8	4	200

COURSE OBJECTIVES:

- Develop sketching and visual representation in different media of different 2-dimensional art forms, painting and interior decoration of walls and floors.
- Understand the three-dimensional art and craft forms, natural forms, structure and learn to model the same in different media.
- Investigate the properties and appropriate use of materials in different craft forms.

MODULE 1 TWO-DIMENSIONAL ART, CRAFT AND DESIGN**30 Hrs.**

Sketching and visual representations in various media -image-making, image manipulation and development - enlargement, cropping, reversing, abstraction, changes in colour and treatment - sequential imagery. Imagery from imagination, memory and direct observation. Knowledge of forms and their representation on 2d surface, light & shade, texture, colour variation, perspective etc.

MODULE 2 THREE-DIMENSIONAL ART, CRAFT AND DESIGN**30 Hrs.**

Selection of two outdoor objects /systems and observation of their natural occurrence, relationships with context form, structure, colour textures and functions- 3-dimensional modelling in appropriate medium - Clay, Paper, wire, Plastic, wax etc. Ceramic work- Sculpting techniques on a plane surface; Soap and wax- The cutting of material such as soap or wax to form a figure or design; Clay modelling- Clay modelling will be able to sculpt or make any kind of a model. Making of creative shapes.

MODULE 3 UNDERSTANDING MATERIALITY**30 Hrs.**

Selection of two materials used in everyday life – textiles, earthenware terracotta, metals, stone, plastic, paper, wax, glass, wood, wire, etc. and study its properties and materiality. Processes of additive, subtractive and constructional form-making in expressive and functional modes.

MODULE 4 VISUALIZATION TECHNIQUES AND STORYBOARDING**30 Hrs.**

Concept- A theoretical and practical approach in understanding an abstract or generic idea from Particular instances. Storyboard/ Cartoon making Graphical representation in the form of illustrations or images displayed in sequence for the purpose of pre-visualizing the area of student's interest. A series of drawings that tells a story. Expressive and Communicative aspects. Implementing abstract or generic ideas into a Visual Identity.

Max. 120 Hours**COURSE OUTCOME:**

- CO1** Understand and interpret different art forms in different media while appreciating artistic expressions
- CO2** Develop the ability to manipulate various types of images.
- CO3** Develop skills in image making, and development of sequential imagery
- CO4** Understand the various techniques of three-dimensional modelling using different mediums.
- CO5** Understand the properties and applications of any two materials in different craft forms like terracotta, metal craft
- CO6** Develop a narrative approach to their art work

TEXT / REFERENCE BOOKS

1. John W. Mills (1966). The Technique of Sculpture, B.T. Batsford Limited, New York - Reinhold Publishing Corporation, London.
2. C. Lawrence Bunchy. (1972). Acrylic for Sculpture and Design, New York
3. Ching, F. D. K. (2014). Architecture: Form, Space, and Order. Germany: Wiley.
4. Jones, J. C. (1992). Design Methods. United Kingdom: Wiley.
5. Lawson, B. (2005). How Designers Think. (n.p.): Taylor & Francis.
6. Ching, F. D. K., Juroszek, S. P. (2019). Design Drawing. United States: Wiley.
7. Pipes, A. (2003). Foundations of Art and Design. United Kingdom: Laurence King.
8. White, A. W. (2011). The Elements of Graphic Design. United Kingdom: Allworth.

SDE4053	INTERIOR GRAPHICS I	L	T	P	Credits	Total Marks
		1	0	3	3	200

COURSE OBJECTIVES:

- ☐ To outline the basic principles of drafting and rendering techniques
- ☐ To understand plane and solid geometry, isometric and axonometric view
- ☐ To familiarize with simple objects and building components through measured drawing.

UNIT 1 INTRODUCTION**12 Hrs.**

Introduction to fundamentals of drawing/ drafting: Construction of lines, line value, line types, lettering, architectural notations & dimensioning. Basic rendering techniques, basics of sheet presentation drawing, drawing instruments, sheet layout. Use of scale, free hand and geometric construction of Lines

UNIT 2 GEOMETRICAL DRAWING - PLANE GEOMETRY**12 Hrs.**

Construction of shapes - angles, circles, tangents. Construction of Plane Curves: Ellipse, Parabola and Hyperbola. Principles of orthographic projections, Construction and multiview projection of - Points, lines, square, rectangle, polygon, etc.

UNIT 3 GEOMETRICAL DRAWING - SOLID GEOMETRY**16 Hrs.**

Multi-view projection of solids – cube, prism, pyramids, cones, cylinders etc.; Sections of solids, true shape of solids.

UNIT 4 MEASURED DRAWING**8 Hrs.**

Study of plan, section and elevation of simple objects, simple building components and furnitures through documentation exercises.

UNIT 5 ISOMETRIC AND AXONOMETRIC VIEW**12 Hrs.**

Isometric and Axonometric projection of planes, solids and combination of solid etc. Isometric and Axonometric projection of simple objects, building components etc.

Max. 60 Hours**COURSE OUTCOME:**

- CO1** Understand the concepts and fundamentals of architectural drawing.
- CO2** Develop representation skills and to generate geometrical forms and its projections.
- CO3** Ability to represent various solids and its sectional projection.
- CO4** Measure real objects and represent them graphically.
- CO5** Create three-dimensional solids and combination of solids
- CO6** Develop graphical skill to represent real time objects.

TEXT / REFERENCE BOOKS

- Ching, F. D. (2015). Architectural graphics. John Wiley & Sons.
- Reekie, R. F., & McCarthy, T. (1995). Reekie's architectural drawing. Edward Arnold.
- Morris, I. H. (1912). Geometrical drawing for art students. Longmans, Green.
- Martin L.C. (1978). Architectural Graphics, The Macmillan Company, New York.
- Dinsmore.G.A. (1968). Analytical Graphics, Van Nostrand, Company Inc., Canada.
- Elam, K., Thompson, J. N. (2001). Geometry of Design: Studies in Proportion and Composition. New York: Princeton Architectural Press.
- Laseau, P. (2001). Graphic Thinking for Architects and Designers. United Kingdom: Wiley.

SEMESTER 2

SDE4054	INTERIOR DESIGN STUDIO II	L	T	P	Credits	Total Marks
		0	0	12	8	400

COURSE OBJECTIVES:

- To understand the process of evolution from program and conditions to concept, design and graphical representation of the process.
- To comprehend the fundamentals of small functional spaces understanding the anthropology as well as sensitivity to materials.

MODULE 1**90 Hrs.**

Design of simple functional units with universal access compliance such as: Toilet for a physically handicapped person - hostel room, bed room, kitchen, Shop, Workshop, pavilions, snack bar.

MODULE 2**90 Hrs.**

Design of multiple spaces and understanding their inter-relationships, such as: Residence, petrol bunk, fire station, police station, Cottage for an elderly couple

Max. 180 Hours**TEXT / REFERENCE BOOKS**

1. Neufert E, Neufert P, (2012). "Neufert Architect's Data", Wiley Blackwell Publication, UK.
2. Dechiara J., Panero J., Zelnik M., (2011). "Time Saver Standards for Interior design and Space Planning", McGraw Hill, London.
3. Dechiara J., Panero J., (2011) "Standards for Interior Design and Space Planning", McGraw Hill Professional.
4. Jones, J. C. (1992). Design Methods. United Kingdom: Wiley.
5. Lawson, B. (2005). How Designers Think. (n.p.): Taylor & Francis.
6. Laseau, P. (2001). Graphic Thinking for Architects and Designers. United Kingdom: Wiley.
7. Weigand, J., Faimon, P. (2004). The Nature of Design. United States: F+W Media.
8. Pipes, A. (2003). Foundations of Art and Design. United Kingdom: Laurence King.

SDE4055	ART& CRAFT STUDIO II	L	T	P	Credits	Total Marks
		0	0	8	4	200

COURSE OBJECTIVES:

- To utilize models as technique for design presentations
- To construct models as a way of representation and experimentation
- To gain an ability to integrate all the technical aspects of sculpture, modelling, and storytelling as means to realize his creative ideas to shape in to concrete and significant art form.

MODULE 1 CREATIVE REPRESENTATIONS OF SPACES**50 Hrs.**

To introduce the techniques used in modelmaking. Need for architectural models. Role of scale-models in design. Processes of additive, subtractive and constructional form-making in expressive and functional modes - Developing of surfaces and solids viz. Cubes, prisms, cylinders, pyramids, cones, spheres, etc. Development of transition pieces using appropriate materials. Various materials and tools to be used in model making.

MODULE 2 MODELMAKING**40 Hrs.**

Representation of various building elements like Walls, Columns, Steps, Windows/glazing, Sunshades, Handrails, Furniture using materials viz. Paper/ Snow-white board / mount board / cardboard / Acrylic / Polystyrene (thermocole) / softwood / metals, etc. Various site elements – Contour representation, Roads/Pavements, Trees/Shrubs, Lawn, Water bodies, Street furniture, Fencing etc. Need for architectural models. Making models of the various interior spaces such as • Residences • Offices • Retail Spaces • Recreational Spaces. Scaled models of furniture.

MODULE 3 FINISHES**30 Hrs.**

Painting model surfaces with various finishes, development of topography and landscape elements, use of materials like cork, polyurethane foam, use of laser, acid etching, stereolithography for development building model surfaces. Representing various surface finishes like brick/stone representation, stucco finish etc. Exercise involving the design of simple furniture and making a model of the same.

Max. 120 Hours**COURSE OUTCOME:**

- CO1** Understand and interpret different art forms in different media while appreciating artistic expressions
CO2 Observe and interpret different forms and qualities in objects and environments
CO3 Communicate their personal thoughts and ideas through various mediums of art
CO4 Design and model craft forms using any medium
CO5 Develop a narrative approach to their art work
CO6 Interpret the different storied communicated through artwork of various types

TEXT / REFERENCE BOOKS

1. John W.Mills (1966). The Technique of Sculpture, B.T.Batsford Limited, New York - Reinhold Publishing Corporation, London.
2. Ching, F. D. K. (2014). Architecture: Form, Space, and Order. Germany: Wiley.
3. Jones, J. C. (1992). Design Methods. United Kingdom: Wiley.
4. Pipes, A. (2003). Foundations of Art and Design. United Kingdom: Laurence King.
5. White, A. W. (2011). The Elements of Graphic Design. United Kingdom: Allworth.
6. Smith H., (1982). The art of making furniture in miniature, E.P.Dutton Inc., New York.

SDE4056	INTERIOR GRAPHICS II	L	T	P	Credits	Total Marks
		1	0	3	3	200

COURSE OBJECTIVES:

- ☐ To outline the basic principles of perspective drawing and sociography.
- ☐ To measure and document the built form and represent it graphically.
- ☐ To develop the skill required for constructing a complete rendered three-dimensional simple built form.

UNIT 1 INTRODUCTION OF PERSPECTIVE DRAWING**8 Hrs.**

Study of concepts, types and terminologies such as picture plane, station point, vanishing point, eye level, ground level, Horizon line etc. Technical construction of one point, two point and three-point perspective drawings through exercises on simple objects like cube, prism, combination of shapes and views at various eye levels.

UNIT 2 PERSPECTIVE: SCIENTIFIC METHOD & OFFICE METHOD**16 Hrs.**

One point, two and three-point perspective of building interiors and exteriors. Adding figures, trees, furniture etc., shade and shadows. Introduction to office perspective method.

UNIT 3 SCIOGRAPHY**16 Hrs.**

Principles of shade and shadow- construction of shadow of simple geometrical shapes - point, line and planes. Construction of sciography on interior elements.

UNIT 4 MEASURED DRAWING: DOCUMENTATION**10 Hrs.**

Documentation of a complete building of a special interest in terms of history, building construction, architectural excellence or technology by using simple measuring tools like tapes, photographs etc.

UNIT 5 INTERIOR RENDERING**10 Hrs.**

Techniques of rendering for various interior drawings - Colour Pencils Rendering, Watercolor Rendering, Pen & Ink Rendering, Marker Rendering Techniques, Using Mixed Media Rendering Techniques - Plans, site plan, elevations, views etc.

Max. 60 Hours**COURSE OUTCOME:**

- CO1** Understand the concepts and fundamentals of perspective drawing.
- CO2** Construct the perspective drawings of the buildings and 3d views.
- CO3** Develop representation skills in three dimensional drawings and sciography.
- CO4** Develop the skill of architectural drawing through measured drawing of complex structures.
- CO5** Apply rendering techniques in architectural drawings.
- CO6** Construct a complete rendered three-dimensional drawing of a simple built form.

TEXT / REFERENCE BOOKS

1. Alkins B., (1986). Architectural Rendering, Walter Foster Art Books.
2. Batley C., (1954) Indian Architecture, D.B. Taraporevale Sons and Co. Ltd., Bombay
3. Norling E., (1986). Perspective drawing, Walter Foster Art Books, California.
4. Ching D.K., (2012) Architectural Graphics. United States: Wiley.
5. Dinsmore G., (1968). Analytical Graphics, Van Nostrand, Company Inc., Canada.
6. Holmes J., (1954). Applied Perspective, Sir Isaac Pitman and Sons Ltd., London.
7. Martin L., (1964). Architectural Graphics, The Macmillan Company, New York.
8. Gill R., (1974). Basic Perspective, Advanced Perspective, Thames and Hudson, London.

SEMESTER 3

SDE 1301	CREATIVE THINKING PROCESS AND METHODS	L	T	P	Credits	Total Marks
		2	0	0	2	100

COURSE OBJECTIVES:

- To introduce 'design' as an integral feature and a product of larger socio-cultural issues and practices.
- To familiarize the young minds with the nature of design problems, methodology, creative techniques and the outcomes
- To explore the various channels to creativity and the directions through which they are expressed in the built form and the environment.

UNIT 1 INTRODUCTION TO DESIGN**6 Hrs.**

Definition of Design, Understanding of Design, Purpose and nature of good design, evaluation of design, types of Design classifications, role of a designer, Scale, process and production; Context for design problems, design process, stages in the design processes, from different considerations - Broadbent, Christopher Alexander, Wade.

UNIT 2 DESIGN PROBLEMS AND DIRECTIONS**4 Hrs.**

Context for the rise of the Design Methodology Movement, Different approaches in design- synchronous and asynchronous approaches, regression and escalation, participatory approach to design, design as process involving time and people, problem solving or intuitive, formulation of problems, nature of creative design problems, goals in design, different types of designs and the thrust given to the various solutions.

UNIT 3 DESIGN THINKING**8 Hrs.**

Understanding the terms creativity, imagination etc. Theories on thinking, convergent & divergent thinking, lateral & vertical thinking, six hat thinking by Edward de Bono. Creative techniques like checklists, brainstorming, diagramming, mapping, parametric exploration, etc, design puzzles & traps, blocks in creative thinking. Introduction to various theories in Design such as aesthetic theory, proxemic theory. Theory related to human behaviour and environmental design.

UNIT 4 CHANNELS TO CREATIVITY**8 Hrs.**

Types of concepts, process of creativity, tangible and intangible channels to creativity in Architecture and Design - the obscure, metaphors, transformation, paradox, precedents, nature, association with other arts, literal interpretation, materials, geometry, origami, literature and poetry etc. Philosophies of famous Architects and Designers.

UNIT 5 CONSTRUCTIVE ASSIGNMENTS**4 Hrs.**

Demonstrate comprehensive understanding through accompanying assignments, group discussions, and site visits.

Max. 30 Hours**COURSE OUTCOME:**

- CO1** Understand the types of design problems, need to decode the brief to evolve 'problem driven outcomes.'
CO2 Understand, compare and synthesize mapped design methodologies in various contexts.
CO3 Critically analyze the different types of thinking.
CO4 Comprehend the various creative techniques in design related fields
CO5 Investigate techniques to identify new directions in design thinking.
CO6 Identify the various channels to creativity and critically analyze the direction through which the ideas are translated in architectural domain

TEXT / REFERENCE BOOKS

- Alexander C., (1977). Pattern Language, Oxford University Press.
- De Bono E., (1970) Lateral Thinking: Creativity step by step, Harper & Row.
- Broadbent G., (1973) Design in Architecture, Architecture & Human Sciences, John Wiley & sons, New York
- Thackara J., (2005). In the Bubble: Designing in a Complex World, The MIT Press.
- Hanington B., Martin B., (2012) Universal Methods of Design: 100 Ways to Research Complex Problems, Develop Innovative Ideas, and Design Effective Solutions, Rockport Publishers.
- Whitten J., Bentley L., (2005). Systems Analysis and Design Methods, McGraw-Hill/Irwin.

END SEMESTER EXAM QUESTION PAPER PATTERN**Max. Marks : 100****Exam Duration: 3 Hrs.****PART A : 2 questions each from unit 1 to unit 4, each carrying 5 marks****: 08 x 05 = 40 Marks****PART B : 1 question each from unit 1 to unit 4 with an internal choice, each carrying 15 marks****: 04 x 15 = 60 Marks**

SDE1302	COMMUNICATING DESIGN	L	T	P	Credits	Total Marks
		2	0	0	2	100

COURSE OBJECTIVES:

- To develop methods for critical thinking and analysis.
- To help the students develop opinions on various design related topics.
- To develop new platforms and formats for their writing.
- To examine how space is conceived and conceptualised
- To evaluate texts
- To investigate “visual language”, symbolism, and some of the pictorial devices, materials, and techniques employed by designers to tell stories visually

UNIT 1 COMMUNICATION PRINCIPLES**6 Hrs.**

Process of Communication. Transmission of ideas, facts & figures from one person to another. Kinds of Communication: Oral and Written, Verbal and Non-Verbal. Levels of Communication: Intrapersonal, Interpersonal, Group, Mass Communication.

UNIT 2 READING DESIGN**4 Hrs.**

Reading skills: Model of reading to learning, reading tactics and strategies, reading purposes – associated apprehensions, reading for meaning, reading outcomes; Reading Space and its qualities; Presentations and writings of great design theorists

UNIT 3 DESIGN STORYTELLING AND NARRATIVES**8 Hrs.**

Elements of a good story: facts, situation, characters, plot and resolution of a design project; Building context in the design process: Emotional, Environmental, Social context; Organising ideas- Personas, storyboards, and flowcharts; Documenting processes through writing

UNIT 4 REPRESENTATION OF SPACE**8 Hrs.**

Innovation with orthographic drawings- beyond the plan, elevation, section; Perspectives and Montages; Maps and Models; Interior space and its occupation, experience and perception; Constructing and interpreting layers of meaning within interior spaces.

UNIT 5 CONSTRUCTIVE ASSIGNMENTS**4 Hrs.**

Demonstrate comprehensive understanding through accompanying assignments, group discussions, and site visits.

Max. 30 Hours**COURSE OUTCOME:**

- CO1** Explore innovative ways of researching and writing about contemporary design and culture.
- CO2** Create valid arguments and to argue for and against ideas
- CO3** Analyse structure of oral and written arguments
- CO4** Critically evaluate design ideas.
- CO5** Understand and apply various spatial representations for their own designs.
- CO6** Produce a booklet of the ideas and themes discussed.

TEXT / REFERENCE BOOKS

1. Cottrell, S. (2005). Critical Thinking Skills: Developing effective analysis and argument. New York: Palgrave McMillan.

END SEMESTER EXAM QUESTION PAPER PATTERN**Max. Marks : 100****Exam Duration: 3 Hrs.****PART A : 2 questions each from unit 1 to unit 4, each carrying 5 marks****: 08 x 05 = 40 Marks****PART B : 1 question each from unit 1 to unit 4 with an internal choice, each carrying 15 marks****: 04 x 15 = 60 Marks**

SDE2301	MATERIALS AND CONSTRUCTION - I	L	T	P	Credits	Total Marks
		2	0	2	3	200

COURSE OBJECTIVES:

- To identify the components of a building including the structural systems.
- To understand the properties and uses of varied natural, synthetic materials.

UNIT 1 NATURAL MATERIALS**14 Hrs.**

Natural building materials – renewable and nonrenewable resources - Definitions, types and applications - soil, sand, aggregate, clay, gravel, timber, coconut leaf, reed, bamboo, Palmyra leaf, lime – Fencing and temporary shelters. Wood-Soft and hardwood. Fabrics – textile, Jute, leather etc. different types and their uses.

UNIT 2 SYNTHETIC MATERIALS**16 Hrs.**

Synthetic Materials–Different types of Glass, their properties, manufacturing processes and uses. Plastics – injection moulding& other manufacturing methods, etc. Plywood, laminated wood and particleboards–properties, manufacture & uses.

UNIT 3 BUILDING COMPONENTS**20 Hrs.**

Introduction to the fundamental components of a building (sub-structure & superstructure) indicating - Foundation –brick footing, stone footing & rcc column footing; concrete flooring, plinth beam & floor finish; superstructure- brickwork with sill, lintel, windows& sunshade, Flat rcc roof with weathering course, parapet & coping.

UNIT 4 STRUCTURAL SYSTEMS**10 Hrs.**

Principles of load bearing Construction – Components of a load bearing wall & rcc slab roof system-rcc beams, columns and framed structure - simple brick footing - principles of bonding.

Max. 60 Hours**COURSE OUTCOME:**

- CO1** Understand the properties and uses of natural materials like wood and fabrics, synthetic materials like glass and plastics and their appropriate application techniques.
- CO2** Select and specify materials based on the its properties and requirements
- CO3** Understand the components of a building and methods of construction including foundation, plinth, superstructure, floorings, openings, roofs and finishes.
- CO4** Get familiarized with the varied load bearing systems.
- CO5** Able to design interior elements that go with the existing architectural and structural components
- CO6** Have an overview of the various structural systems for architectural and interior spaces.

TEXT / REFERENCE BOOKS

1. Parker, Harry, (1957). Materials and Methods of Architectural Construction, John Wiley & Sons, London
2. Rangwala S.C., (1987). Engineering Materials, Charotar Publishing House, Anand.
3. Reid, E. (2013). Understanding Buildings, a Multidisciplinary Approach. United Kingdom: CRC Press.
4. Spence R.J., Cook D.J., (1983). Building Materials in Developing Countries, John Wiley and Sons.

SDE2302	INTERIOR SERVICES 1	L	T	P	Credits	Total Marks
		2	0	2	3	200

COURSE OBJECTIVES:

- To develop an understanding of building services such as water supply, drainage and plumbing system.
- To familiarize them with the advanced service integration system and their applications in building.
- Evolving understanding in students to choose appropriate systems and integrate the same in their design projects.

UNIT 1 WATER SUPPLY IN BUILDINGS**10 Hrs.**

Standard of portable water and methods of removal of impurities, Consumption order of water for domestic purposes, distribution system, service connection from mains, house-service design, tube well, pumping of water, types of pumps, cisterns for storage

UNIT 2 BUILDING DRAINAGE**10 Hrs.**

Layout, Principles of drainage, Trap type, materials and functions, Inspection chambers, Design of Septic tanks and soak pits, Ventilation of house drains; Anti-siphonage or vent pipes, One and two pipe systems Sinks, bath tub, water closets, flushing cisterns, urinals, wash basins, bidet, shower panel etc.

UNIT 3 PLUMBING**20 Hrs.**

Common hand tools used for plumbing and their description and uses, Joints for various types of pipes, Sanitary fitting standards for public conveniences; Different types of pipes and accessories for water supply, controlling fixtures like valves, taps, etc. Fittings and Choice of materials for piping: cast iron, steel, wrought iron, galvanized lead, copper, cement; concrete and asbestos pipes, PVC pipes; Sizes of pipes and taps for house drainage.

UNIT 4 SERVICES STUDIO**20 Hrs.**

Preparation of plumbing layout of a single storey building & working drawing of various fittings and fixtures of water supply and sanitary installations. Components of Plumbing – sanitary ware -w.c, wash basin, bidet, bathtub, jacuzzi etc Sanitary fittings – taps, mixers, shower units, etc.

Max. 60 Hours**COURSE OUTCOME:**

- CO1** Understand the basic principles of water supply and sanitation
- CO2** Describe the various components in a building drainage system.
- CO3** Attain knowledge about the drainage system for different types of buildings.
- CO4** Classify various sanitary fixtures and its applications.
- CO5** Possess skills and techniques necessary for the selection of various systems and their installation
- CO6** Prepare drainage and plumbing layout for a building.

TEXT / REFERENCE BOOKS

1. Water Supply and Sanitary Installations. (2005). India: New Age International (P) Limited.
2. Rangwala, S. C. (2005). Water Supply and Sanitary Engineering. India: Charotar Publishing House.
3. Basak, N. N. (2003). Environmental Engineering. India: Tata McGraw-Hill.

SDE 9301	INTERIOR DESIGN STUDIO III	L	T	P	Credits	Total Marks
		0	0	14	9	400

COURSE OBJECTIVES:

- To develop a sensitivity to design the interiors of public spaces incorporating services and the principles of place making.

The primary focus is on Anthropometry, Design methodology, Conceptual exploration and representation, Creativity, Scale/proportion, Documenting space, Graphic design, Concept evolution, Application of design principles and elements, design process, Portfolio development. There will be at least one major and one minor design exercise. The faculty can take up the exercises as per their order of preference. The order should be common across all sections. The faculty may achieve the stated minimum outcomes using appropriate strategies.

The list of suggested topics to be covered as design problems: Doctor's clinic, Kindergarten school, Architect's studio, Small cafeteria, Bank extension counter, Departmental store, local police station, local post office, products used by architects in the studio, products for children in kindergarten etc.

Max. 210 Hours

TEXT / REFERENCE BOOKS

1. Karlen, M. (2009). Space Planning Basics, 3rd ed. John Wiley & Sons
2. Dechiara J., Panero J., Zelnick M., (2011). "Time Saver Standards for Interior design and Space Planning", McGraw Hill, London
3. Binggeli, C., Ching, F. D. K. (2018). Interior Design Illustrated. United Kingdom: Wiley.
4. Panero J., Zelnick M., (1979). Human Dimension & Interior Space: A source book of Design Reference standards, Watson – Guptill.
5. Mitton M., (2003). Interior Design Visual Presentation: A Guide to Graphics, Models, and Presentation Techniques. John Wiley and Sons.
6. Rengel R, (2002). Shaping Interior Space, Fairchild Books & Visuals.

SDE 9302	MODELMAKING WORKSHOP	L	T	P	Credits	Total Marks
		1	0	3	3	200

COURSE OBJECTIVES:

- Modelmaking and carpentry as techniques for design
- Models as a way of representation and experimentation

MODULE 1 INTRODUCTION**20Hrs**

To introduce the tools, techniques and finishes used in carpentry using different materials (wood, metal, terracotta, paper and board, thermocol, soap/wax, POP, recycled materials). Introducing the techniques of planning, sawing, chiselling & jointing in timber, Selection of timber for different kinds of joints.

MODULE 2 TOOLS & MACHINERY**30 Hrs.**

Introduction to hand tools – classification, nomenclatures and uses. Material working machines types, sizes, parts and their functions and operations and safety precautions and maintenance. Practical techniques- Sawing, Chiselling, Boring, Joining, Widening, Fixing, Fitting, Carving

MODULE 3 FINISHES**10 Hrs.**

Surface & finishing- sanding, staining, varnishing, polishing, etc. materials & methods. Painting surfaces with various types of finishes. Surface finish materials- Putty, Wax, Sawdust, Colour powders, POP, etc; Laminated sheets, OST sheets, Block boards, Sun mica, Veneers, etc.

Exercises to Hand-on Product designs through carpentry, glass painting & other model making techniques. 3D sculptures involving platonic solids, wooden sculptures applying different types of carpentry joints, design and execution of POP made objects such as: cornices, moldings, brackets, etc., Metal and terracotta sculptures.

Max. 60 Hours**TEXT / REFERENCE BOOKS**

1. Haun, L. (1999). Carpentry. United Kingdom: Taunton Press.
2. Taylor, J. D. (1996). Tools of the Trade: The Art and Craft of Carpentry. United States: Chronicle Books.
3. Jannsen, (1973). Constructional Drawings & Architectural models, Karl Kramer Verlag Stuttgart.
4. Smith W.H., (1982). The art of making furniture in miniature, E.P.Dutton Inc., New York.

SEMESTER 4

SDE2401	MATERIALS AND CONSTRUCTION II	L	T	P	Credits	Total Marks
		2	0	2	3	200

COURSE OBJECTIVES:

- To introduce the building materials and the construction techniques used for the walls, floors and ceilings.
- To expose the different types of wall panelling systems and false ceilings.
- To give an insight to the various finishes and the applications.

UNIT 1 WALLS-TYPES OF MASONRY**14 Hrs.**

Different types-Stonewalls-random rubble, coursed rubble, square rubble, polygonal rubble & Ashlar etc., Brick masonry-Types of bonds-single & double Flemish bond, header bond, stretcher bond, rattrap bond, ornamental bonding

UNIT 2 FLOORS**14 Hrs.**

Flooring: rammed earth, Natural stones like Shahabad, Tandur, Kota, Kadappa, Marble, Granite, etc., athangudi tiles, red oxide, terracotta tiles (Laying details), brick paving, glazed ceramic tiles, Vitrified tiles - Finishes: pointing, grouting, pavement, mud plastering, PCC. Floor coverings - softwood, hardwood-resilient flooring-linoleum, asphalt tile, vinyl, rubber, cork tiles- terrazzo, marble & granite- properties, uses & laying. Floor tiles – ceramic glazed, mosaic and cement tiles - properties, specification for barrier free floors Drawings indicating various types.

UNIT 3 FALSE CEILING & WALL PANELING**16 Hrs.**

Construction of various kinds of false ceiling such as thermocol, plaster of paris, gypboard, metal sheets, glass and wood. Construction of domes, vaults, & other special ceilings; Paneling Using wooden planks, laminated plywood, cork sheets, fibre glass wool & fabric for sound insulation and wall paneling for thermal insulation.

UNIT 4 FINISHES**16 Hrs.**

Paints- enamels, distempers, plastic emulsions, cement based paints- properties, uses and applications- painting on different surfaces – defects in painting, clear coatings & stains-varnishes, lacquer, shellac, wax polish & stains- properties, uses and applications. Special purpose paints-bituminous, luminous, fire retardant and resisting paints- properties, uses and applications, low VOC paints

Max. 60 Hours**COURSE OUTCOME:**

- CO1** Gain comprehensive knowledge on various types of masonry walls.
- CO2** Classify and understand the different materials for floor finishes in interior design.
- CO3** Select and specify flooring materials based on its properties and intended use.
- CO4** Understand the construction techniques of false ceiling in interior spaces planning.
- CO5** Design and specify appropriate false ceiling and wall panelling materials for the design context.
- CO6** Comprehend the various types of finishes and the respective maintenance.

TEXT / REFERENCE BOOKS

1. Punmia, B. C. (2008). Building Construction. India: Laxmi Publications Pvt Limited.
2. Jeffries, D. (2004). The Flooring Handbook: The Complete Guide to Choosing and Installing Floors. United States: Firefly Books.

SDE2402	INTERIOR SERVICES II	L	T	P	Credits	Total Marks
		2	0	2	3	200

COURSE OBJECTIVES:

- To give an insight to basic concepts and various components in air conditioning.
- To introduce the fundamentals of fire safety measure and design principles in the interiors.
- To understand the principles of acoustics and the associated materials.
- To give an overview of electrical wiring systems in interiors.

UNIT 1 BASIC CONCEPTS AND SYSTEM COMPONENTS IN AIR CONDITIONING**16 Hrs.**

Vapour compression cycle – Compressors – Evaporators –Refrigerant control devices – Electric motors – Air handling units – Cooling towers. Window type and packaged air conditioners–Chilled water plants–Fan coiled systems–Water piping– Cooling load - Air-conditioning systems for different types of buildings – Duct layout etc.

UNIT 2 FIRE SAFETY AND ELECTRICAL SYSTEMS**18 Hrs.**

Mechanism of fire spread in building and prevention – Fire safety standards – Concepts in fire protection – Firefighting installation and requirements - Heat sensitive detectors –Smoke detectors –Automatic water sprinkler system- Foam systems, Single/Three phase supply– Protective devices in electrical installation – ISI Specifications - Types of wires, Wiring systems and their choice –Planning electrical wiring for building interiors – Main and distribution boards- Typical Electrical layout for interiors.

UNIT 3 ACOUSTICS AND SOUND INSULATION**16 Hrs.**

Room acoustics - resonance, reverberation, echo, reverberation time, simple exercise using Sabine's formula - Acoustical requirements of different types of building. – Sound absorption, absorption co-efficient and their measurements, Absorbing materials used and their choices, exercises involving reverberation time and absorption co-efficient. Sound insulation materials

UNIT 4 SERVICES STUDIO**10 Hrs.**

Preparation of air conditioning layouts and electrical systems in a building.

Max. 60 Hours**COURSE OUTCOME:**

- CO1** Classify of the different types of air conditioning system and ability to apply the same.
- CO2** Understand the need and applications of various electrical systems
- CO3** Understand the mechanism of fire safety systems and the respective installation
- CO4** Understand the fundamental principles of acoustics and its importance in architectural design
- CO5** Solve the acoustical design problems in a space by acoustic treatments
- CO6** Exposure to various fixtures and fittings of HVAC, fire protection and acoustical systems

TEXT / REFERENCE BOOKS

1. Langley, B. C. (2000). Fundamentals of Air Conditioning Systems. United States: Fairmont Press.
2. Jain, V. K. (2007). Fire Safety in Buildings. India: New Age International (P) Limited.
3. Lord, P., Templeton, D. (2019). Detailing for Acoustics. United Kingdom: Taylor & Francis.

SDE 9401	INTERIOR DESIGN STUDIO IV	L	T	P	Credits	Total Marks
		0	0	14	9	400

COURSE OBJECTIVES:

- To incorporate the various forms of thematic space making with traditional art and crafts from various parts of India.
- To create a thematic space making with Art and craft forms of our own culture in India – East, West, North, Central.

MODULE 1

Design of living units of various geographical locations and culture by involving historical periods, styles and use of craft in its inherent quality and form – craft and living environment. Response to today's situation of urban society – For a given building create contemporary homes of modern society – needs, realities, value system etc.

MODULE 2

Applications of art / craft at public level spaces- lounge (hotel), restaurant of specific ethnic characteristics. Spatial and service standards for star hotels – integration of interior design schemes for rooms, restaurants, bars, health clubs, shopping arcade and other guest areas with the general theme of the hotel. Special ideas for suites and banquet halls – contemporary interior schemes to integrate new concepts in lighting and materials.

Max. 210 Hours**TEXT / REFERENCE BOOKS**

1. Karlen, M. (2009). Space Planning Basics, 3rd ed. John Wiley & Sons
2. Dechiara J., Panero J., Zelnik M., (2011). "Time Saver Standards for Interior design and Space Planning", McGraw Hill, London
3. Binggeli, C., Ching, F. D. K. (2018). Interior Design Illustrated. United Kingdom: Wiley.
4. Julius Panero & Martin Zelnick, Human Dimension & Interior Space : A source book of Design Reference standards, Watson – Guptill, 1979.
5. Mitton, M. (2003). Interior Design Visual Presentation: A Guide to Graphics, Models, and Presentation Techniques. Germany: Wiley.
6. Lin M., (1993). Drawing and Designing with Confidence: A step-by-step guide, Wiley and Sons.
7. Rengel R., (2002). Shaping Interior Space, Fairchild Books & Visuals.
8. Pile. J., (2005). A history of interior design, Laurence King Publishing.
9. Jones R., (2008). Interiors of Empire: Objects, Space and Identity within the Indian Subcontinent, Manchester University Press.

SDE 9402	COMPUTER APPLICATIONS I	L	T	P	Credits	Total Marks
		0	0	6	3	100

COURSE OBJECTIVES:

- To provide the student of Interior Design a foundation in the techniques of drafting using computer as a tool.
- To introduce computer operation principles and explore image editing through a visual composition using graphics.
- To impart training in computer aided 2D drafting and 3D modelling.
- To expose the students to visual composition using computer tools.

UNIT 1 2D DRAWING OUTPUT IN AUTOCAD**30 Hrs.**

Understanding the use of various drawing tools and object editing, setting up units, scales, limits, drawing tools, drawing objects, object editing and text, dimensioning in CAD. Transparent overlays, hatching utilities, line type, line weight and colour, Multiline, Polyline, etc. Styles, blocks and symbol library in ACAD, File management, retrieving data, attributes, Layout and plotting.

UNIT 2 PRODUCTIVE TECHNIQUES USING COMPUTER TOOLS**10 Hrs.**

Introduction to tools of productivity – Blocks, slide facilities, script files and attributes. Understanding concepts of View port, concept of object linking and editing session.

UNIT 3 INTRODUCTION TO 3D MODELLING**30 Hrs.**

Importing AutoCAD drawing File, Introduction to software interface; Basic Tools for Editing and Creating 3d models- Material application, using material editor, material browser, mapping textures, Lighting, cameras and render effects, environment mapping, fogs and atmospheres.

UNIT 4 INTRODUCTION TO IMAGE EDITING**20 Hrs.**

Basic Tools for Editing and Creating Graphics in image editing software - Layers (layer styles opacity-adjustment layers) Basic Retouching (Colour, manipulations, Levels, Curves, Seeing Colour accurately, Patch tool, Cropping, Reading palettes, Dust and scratches) - Advanced Retouching (smoothing skin, smoothing wrinkles, special colour effects: black and white, sepia, grainy). Software Interface, creating and saving images, tool box and tools, special effects.

Max. 90 Hours**COURSE OUTCOME:**

- CO1** Possess the skills and techniques for editing and creating graphics.
- CO2** Visualize complicated forms
- CO3** Understand in producing photo realistic image of 3D forms
- CO4** Demonstrate effective communication of drawings through software techniques
- CO5** Understanding the work flow/design process through Autocad, 3D, and image editing software
- CO6** Apply the knowledge of Computer application for development of projects

TEXT / REFERENCE BOOKS

1. Watt A.,(1989). Fundamentals of Three-Dimensional Computer Graphics, Addis Wesley, Massachusetts
2. Tikoo, S., (1999) AutoCAD 2000: A Problem-Solving Approach, Thomson Learning.
3. Mccelland D., (2007) Photoshop 7 Bible Professional Edition, Wiley John & Son INC, New York

SEMESTER 5

SDE1502	ESTIMATION AND COSTING IN INTERIORS	L	T	P	Credits	Total Marks
		2	0	0	2	100

COURSE OBJECTIVES:

- To have a detailed understanding of the business principles, practices & procedures for Interior Designers.
- To know of the various facets of design formation and management, professional ethics and organizations, certification and licensing issues, design liability, project management, and portfolio development.

UNIT 1 INTRODUCTION**8 Hrs.**

Estimation – definition, purpose, types of estimate, and procedure for Estimating the cost of work in order to implement an interior design project or to make products related to interior design like furniture, artefacts etc. Specification – Definition, purpose, procedure for writing specification for the purpose of calling tenders, types of specification. Specification for different item related to interior design project – woodwork for furniture window frames & pelmets, partitions etc. also of materials like steel aluminium glass of various kind. Wall panelling & false ceiling of materials like aluminium, steel, wood, electrical, plumbing, airconditioning & firefighting equipment.

UNIT 2 RATE ANALYSIS & ESTIMATION FORMAT**6 Hrs.**

Rate Analysis – definition, method of preparation, quantity & labour estimate for woodwork, steelwork, Aluminium work, glass & its rate for different, thickness & sections, finishing (enamel paint, duco paints, melamine, DU coats, Hand polishing, veneering and laminating) for walls & ceilings. Electrical & plumbing products, wiring, ducting etc., and laying of tiles & wall panelling in the estimate format of the project.

UNIT 3 DETAILED ESTIMATE**6 Hrs.**

Detailed Estimate – data required, factors to be considered, methodology of preparation, abstract of Estimate, contingencies, labour charges, bill of quantities, different methods of estimate for interior design works, methods of measurement of works.

UNIT 4 COSTING OF FIXTURES & FITTINGS**8 Hrs.**

Cost of the following items: electrical fitting like, luminaries, fan, cables, switches etc., tiles in skirting & dado, cement plaster, joinery in wood, steel & aluminium, painting to walls – cement paint, oil paints, distemper acrylic emulsion, enamel paint painting to joinery, varnishing, French polishing plumbing equipment like piping, shower panels, cubicles, tubs, Jacuzzis, taps, motors, fountains, false ceiling of aluminium panels, steel & wooden frame work, thermocol etc. wall panelling of ceramic tiles & other tiles of materials suitable for the same, partitions made of materials like aluminium wood, steel etc.

UNIT 5 CONSTRUCTIVE ASSIGNMENTS**4 Hrs.**

Demonstrate comprehensive understanding through accompanying assignments, group discussions, and site visits.

Max. 30 Hours**COURSE OUTCOME:**

- CO1** Prepare the Estimate in order to foresee the cost of the work to implement an interior design project.
- CO2** Understand the tools and techniques used to monitor / control project cost.
- CO3** Analyse concepts, selection and application of construction processes, materials and finishes including introduction to codes, working drawings and model building.
- CO4** Understand the rate analysis of different work items and the factors affecting rate of an item
- CO5** Prepare detailed specification writing for materials and works used in the built environment.
- CO6** Write specification for works designed for special situation, like non-conventional use of materials

TEXT / REFERENCE BOOKS

1. Allison, D. (2014). Estimating and Costing for Interior Designers: A Step-by-Step Workbook. Philippines: Bloomsbury Academic.
2. Rangwala S.C., Rangwala K.S., (1990). Elements of Estimating and costing, Charoter publishing House, Anand, India
3. Kesavan, R. (2004). Process, Planning And Cost Estimation. India: New Age International (P) Limited.
4. Dodsworth, S., Anderson, S. (2015). The Fundamentals of Interior Design. United Kingdom: Bloomsbury Publishing.
5. Riggs R., (1995). Materials and Components of Interior Architecture - 4th Edition, Prentice Hall Professional Technical

END SEMESTER EXAM QUESTION PAPER PATTERN**Max. Marks : 100****Exam Duration: 3 Hrs.****PART A : 2 questions each from unit 1 to unit 4, each carrying 5 marks****: 08 x 05 = 40 Marks****PART B : 1 question each from unit 1 to unit 4 with an internal choice, each carrying 15 marks****: 04 x 15 = 60 Marks**

SDE1503	VISUAL IDENTITY & BRANDING	L	T	P	Credits	Total Marks
		2	0	0	2	100

COURSE OBJECTIVES:

- To have a detailed understanding of building successful brands.

UNIT 1 BRANDING**6 Hrs.**

What is Branding? Overview of a Framework for Building Iconic Brands (Corporate Mission, Brand Vision, Brand Positioning, Brand Belief, Brand Personality, Brand Values, Brand Iconography, Brand Experience and Innovation Principles); Interior Design and its role in fostering a powerful brand; Challenges of creating global Brands; Brand Dynamics, Effective strategies for increasing brand value.

UNIT 2 POSITIONING**6 Hrs.**

Brand Identity- Understanding the Competitive + Cultural Context in Which a Brand Operates (Situational Assessment), Defining + Exploring Consumer Needs, Aspirations + Perceptions, Behaviours (Consumer Discovery), Uncovering Enlightening Thoughts about the Category + the Consumer (Fresh Insights) and Brand Selling Ideas. Brand Ideals- Vision, Meaning, Authenticity, Coherence, Flexibility, Commitment, Value, Differentiation, Sustainability, Differentiating types of brand architecture, brand names, and taglines.

UNIT 3 VISUAL IDENTITY**8 Hrs.**

Visual world of a Brand- Graphics, Typography, Colour Palette, Imagery. Sound, Animation, Presentation. Types of Images- Logo, Packaging, Retail Experience, Advertising (Print, Tv, Digital) and Website. Personality of a brand. Types of Brandmarks, Sequence of Cognition, Identity Design process & Branding tools and techniques; Common industry practices. Standards and guidelines, Design of Interiors to reflect Brand Image- Logo, Surfaces, Colour, Material, Furniture & Layout, Lighting, Case Studies

UNIT 4 STRATEGIES**6 Hrs.**

Consumer Target + Mindset, Competitive Positionings, Primary Research, Positioning Territories, Insights + Perceptual Mapping, Segmentation & Iceberg Model, Brand Innovations, Role of Interior Design in Customer's Perception, Case Studies

UNIT 5 CONSTRUCTIVE ASSIGNMENTS**4 Hrs.**

Demonstrate comprehensive understanding through accompanying assignments, group discussions, and site visits.

Max. 30 Hours**COURSE OUTCOME:**

- CO1** Communicate the difference between a brand and an identity
- CO2** Assess the tools and techniques used in the brand identity process to develop brand positioning
- CO3** Demonstrate understanding of colour and typographic theory
- CO4** Create effective logos and corporate identities
- CO5** Showcase best practices in creation of an original visual brand identities
- CO6** Categorize the various elements of brand identity through interior space.

TEXT / REFERENCE BOOKS

1. Airey, D. (2019). Identity Designed: The Definitive Guide to Visual Branding. United States: Rockport Publishers.
2. Slade, C. (2016). Creating a Brand Identity: A Guide for Designers. United Kingdom: Laurence King Publishing. Brand Bible: The Complete Guide to Building, Designing and Sustaining Brands- DEBBIE MILLMAN
3. Klanten, R. (2013). Brand Spaces: Branded Architecture and the Future of Retail Design. Germany: Prestel Pub.
4. Internet Links-
Interbrand: www.interbrand.com
Landor: www.landor.com
Prophet: www.prophet.com
Pentagram: www.pentagram.com
IDEO: www.ideo.com
Wolff Olins: www.wolffolins.com

END SEMESTER EXAM QUESTION PAPER PATTERN**Max. Marks : 100****Exam Duration: 3 Hrs.****PART A : 2 questions each from unit 1 to unit 4, each carrying 5 marks****: 08 x 05 = 40 Marks****PART B : 1 question each from unit 1 to unit 4 with an internal choice, each carrying 15 marks****: 04 x 15 = 60 Marks**

SDE 9501	INTERIOR DESIGN STUDIO V	L	T	P	Credits	Total Marks
		0	0	16	10	400

COURSE OBJECTIVES:

- To introduce the basics of designing for office interiors and to develop skills required for the same.

MODULE 1**80**

Developing visually literate students who are proficient at analytical thinking, conceptualization and the problem-inquiry, solution cycle. Examining the connection between abstract design principles and the physical and visual environments. Consulting office for professional practitioner- Planning for small office – office of architects, interior designers, lawyer, and auditor – individual layouts, Modular units. play with levels. Lighting & colour scheme – natural & artificial light.

MODULE 2**160**

Interior designing for multi-functional, multi-level planning, design and detailing of various work spaces, interactions zones. Design of corporate Environments such as BPO, corporate office.

Max. 240 Hours**TEXT / REFERENCE BOOKS**

1. Meyer B., Klanten R., Lovell S., (2007). Furnish: Furniture and Interior Design for the 21st Century. Germany: Prestel Pub.
2. Bennett, W., Diamonstein, B., Diamonstein. (1982). Interior Design, the New Freedom. United States: Rizzoli.
3. Forino, I., Postiglione, G., Basso Peressut, L., Scullica, F. (2008). Places & Themes of Interiors.: Contemporary Research Worldwide. Italy: Franco AngeliEdizioni.
4. Grieco, L. (2018). The Other Office 3: Creative Workspace Design. Netherlands: Frame Publishers.
5. Zhang, C. (2018). Rethinking Workspace Design: A Workplace Design for Employees to Feel Engaged and Happy. United States: Boston Architectural College.

SDE 9502	COMPUTER APPLICATIONS II	L	T	P	Credits	Total Marks
		0	0	6	3	100

COURSE OBJECTIVES:

- To enhance the visualizing skills of the students by exposing them to the latest modelling software.

UNIT 1 VISUALIZATION TECHNIQUES**20 Hrs.**

Photorealistic Visualization Rendering objects by observation, Rapid sketching techniques; Visual compositions of objects

UNIT 2 MATERIALS AND LIGHTING**20 Hrs.**

Using material editor, material browser, mapping textures, Lighting, cameras and render effects, environment mapping, fogs and atmospheres. Interaction with Light Highlights, shadow and reflection study of objects; Direct and indirect illumination;

UNIT 3 ADVANCED 3D SOFTWARE**20 Hrs.**

An overview of GUI, types of modeling, transforming objects, Compound objects, modifiers & modifier stack. Lathing, displacement, lofting, Boolean operations using standard and compound primitives, modeling with lofts, low polygon modeling and nurbs modeling.

UNIT 4 ADVANCED ILLUSTRATION AND PHOTO MONTAGE**30 Hrs.**

Image Processing Migration of forms and Image manipulation, Manipulation of lighting, exposure and colour of rendered images, Creating cutouts of humans, buildings and objects to add to context of renders, Creating photo montages using cutout images using layers and special effects to enhance the rendered image.

Max. 90 Hours**COURSE OUTCOME:**

- CO1** Develop the ability to quickly visualize ideas
- CO2** Ability to do visual design explorations
- CO3** Ability to create compelling visuals of ideas before they come to reality for every stakeholder's proper understanding
- CO4** Create various effects in atmosphere using lighting effects and material mapping
- CO5** Experiment with forms, rendering and presentation techniques
- CO6** Construct photo montages alongside 3d render to effectively communicate their design ideas

TEXT / REFERENCE BOOKS

1. McKim R., (1980). Experiences in Visual Thinking, Brooks/Cole Publishing Company.
2. Missal S., (2003) Exploring Drawing for Animation (Design Exploration Series), Thomson Delmar Learning.
3. Ching, F. D. K., Juroszek, S. P. (2019). Design Drawing. United States: Wiley.
4. Porter T., (1991). Design Drawing techniques for architects, graphic designers and artists, Oxford Architectural Press.
5. Dalley T., (1980). The complete guide to illustration & design, Phaidon, Oxford.

SEMESTER 6

SDE1601	PROFESSIONAL PRACTICE	L	T	P	Credits	Total Marks
		2	0	0	2	100

COURSE OBJECTIVES:

- To have a detailed understanding of the business principles, practices & procedures for Interior Designers.
- To know of the various facets of design formation and management, professional ethics and organizations, certification and licensing issues, design liability, project management, and portfolio development.

UNIT 1 ROLE OF INTERIOR DESIGNER IN SOCIETY**6 Hrs.**

Interior Design Profession as compared to other professions. Difference between profession and business. IIDD and other organizations related to interior design profession. Interior Designers approach to works, ways of getting works: types of works, works partly executed by other Interior Designers.: various precautions to be taken before taking up the work, conditions of engagement between interior Designer and client: commencement of work.

UNIT 2 PROFESSIONAL CONDUCT**6 Hrs.**

Code of professional conduct: scale of charges: units and mode of measurements, clerk of work and his duties, inspection of work, certificate of payment to contractor, bill of quantities, schedule of rates, tenders, public, limited and negotiated tender documents and allied formalities. Preliminary knowledge of Consumer protection Act and other related acts on Interior Designers.

UNIT 3 ISSUES OF PROFESSIONAL PRACTICE**6 Hrs.**

Issues of professional practice: Professional behaviour, Ethics, Types of clients, Contracts, Tenders, Arbitration etc. as defined in terms of Interior Design field and current day context. Career opportunities, styles of interior design practice, relationship between client and professional, type of fees, process of fees negotiations, billing methods, tax liabilities, contracts – types of contracts – item rate, labour, lump sum, cost plus percentage etc.

UNIT 4 CORRESPONDENCE IN DESIGN**8 Hrs.**

Types of offices for interior design practice: staff structure, filing of records, correspondence and drawings, maintenance of accounts, presentations in meetings, recording minutes of meeting. Knowledge of role of consultants and coordination between different consultants on a big project. Interior Designer's duties : drawings to be prepared : Interior Designer's relation with other parties connected with works such as client, contractor, sub-contractors, consultants and authorities.

UNIT 5 CONSTRUCTIVE ASSIGNMENTS**4 Hrs.**

Demonstrate comprehensive understanding through accompanying assignments, group discussions, and site visits.

Max. 30 Hours**COURSE OUTCOME:**

- CO1** Understand of how modern businesses start and run
- CO2** Supervise and manage live design projects
- CO3** Understand the basic skillset and duties of a design business owner.
- CO4** Record the rules and regulations of professional practice in interior design
- CO5** Compare various types of interior design offices and the needs they cater to
- CO6** Evaluate the importance of correspondence in design with various stakeholders.

TEXT / REFERENCE BOOKS

1. Piotrowski, C. M. (2013). Professional Practice for Interior Designers. Germany: Wiley.
2. How to Run a Successful Design Business: The New Professional Practice. (2012). United Kingdom: Ashgate Publishing Limited.
3. Ravindra, S., Krishnamurthy, K. (2014). PROFESSIONAL PRACTICE. India: PHI Learning.
4. Coleman, C. (2001). Interior Design Handbook of Professional Practice. United States: McGraw-Hill Education.

END SEMESTER EXAM QUESTION PAPER PATTERN**Max. Marks : 100****Exam Duration: 3 Hrs.****PART A : 2 questions each from unit 1 to unit 4, each carrying 5 marks****: 08 x 05 = 40 Marks****PART B : 1 question each from unit 1 to unit 4 with an internal choice, each carrying 15 marks****: 04 x 15 = 60 Marks**

SDE1602	INTERIOR DESIGN MANAGEMENT	L	T	P	Credits	Total Marks
		2	0	0	2	100

COURSE OBJECTIVES:

- To provide an insight into management of building involving finance and human resource
- To learn about concepts and application of management in interior design
- To gain knowledge about the methodology of executing a Project

UNIT 1 INTRODUCTION**6 Hrs.**

Project planning and project scheduling and project controlling, Role of Decision in project management, Method of planning and programming, Human aspects of project management, work breakdown structure, Life cycle of a project, disadvantages of traditional management system, defining precedence relationships among activities, estimating activities duration, estimating resource requirement for work activities

UNIT 2 ELEMENTS OF NETWORK**6 Hrs.**

Event, activity, dummy, network rules, graphical guidelines for network, numbering of events; Knowledge Management, Feedbacks, Information loops, Updates; Record Keeping Activity Documentation and Reporting Scope of Work Induction, Work distribution, Task Assignments Time management, Scheduling; Construction schedule (related to interior design field) labour schedule, material schedule, financial schedule, equipment schedule, organization schedule.

UNIT 3 PROJECT TIME REDUCTION AND OPTIMIZATION**8 Hrs.**

Project cost, Indirect project cost, direct project cost, slope of the direct cost curve, total project cost and optimum duration, contracting the network for cost optimization, steps in cost-time optimization, Pre-tender planning, planning during tendering. Post tender advantage, bar chart - advantages and limitations, mile stone chart, CPM network analysis & PERT time estimates, time computation & network analysis

UNIT 4 PROJECT UPDATING AND ALLOCATION**6 Hrs.**

When to update? Data required for updating, steps in the process of updating Resource usage profile: Histogram, Resource smoothing and Resource levelling, Computer applications in project management.

UNIT 5 CONSTRUCTIVE ASSIGNMENTS**4 Hrs.**

Demonstrate comprehensive understanding through accompanying assignments, group discussions, and site visits.

Max. 30 Hours**COURSE OUTCOME:**

- CO1** Understand the currently prevalent techniques in the planning, programming and management of a project.
- CO2** Communicate novel Ideas Briefs, Detailed Briefs and Concept Notes to general stake holders
- CO3** Apply various documentation methods for the smooth organization of a project.
- CO4** Understand system changes to improve cost-effectiveness of a project
- CO5** Discuss and apply usage of various project management tools
- CO6** Ability to Approximate Scale of Work, Cost Estimation, and other skills required in establishing an independent design office

TEXT / REFERENCE BOOKS

1. Punmia et al., (2002). Project Planning and Control with PERT & CPM. India: Laxmi Publications Pvt Limited.,
2. Wiest J., Sevy F, (1982). A Management Guide to PERT, CPM, prentice Hall of India Pub, Ltd., New Delhi
3. Burgess R.A., G.White, (1975). Building production and project Management, The construction press, London.
4. Best K., (2010). The Fundamentals of Design Management, AVA Publishing.
5. Mozota B., (2004). Design Management: Using Design to Build Brand Value and Corporate Innovation, Allworth Press.

END SEMESTER EXAM QUESTION PAPER PATTERN**Max. Marks : 100****Exam Duration: 3 Hrs.****PART A : 2 questions each from unit 1 to unit 4, each carrying 5 marks****: 08 x 05 = 40 Marks****PART B : 1 question each from unit 1 to unit 4 with an internal choice, each carrying 15 marks****: 04 x 15 = 60 Marks**

SDE2601	ADVANCED COMPUTERS AND FABRICATION DESIGN	L	T	P	Credits	Total Marks
		2	0	4	4	100

COURSE OBJECTIVES:

- To reinforce the concepts of 3D modelling.
- To enable them to experiment with forms, mapping, rendering and presentation techniques.
- To prepare the student for mass production of furniture for various classes of people with the parameters of economy and culture

UNIT 1 MATERIAL AND PROCESSES IN DESIGN**15 Hrs.**

Material Deposition Processes Laser Deposition, Micro-Plasma Powder Deposition, Chemical vapour Deposition, Micro Welding, Powder Casting Metal 3D Printing, Powder Deposition 3D printing;

UNIT 2 SUBTRACTIVE MANUFACTURING**20 Hrs.**

Subtractive Processes Electrochemical machining, Electro-Discharge machining, Ultrasonic Machining, Laser Beam Machining, Water jet machining, Abrasive Jet Machining, Plasma Arc machining; Cutting and Removal Water Jet Cutting, Plasma Cutting, Laser Cutting, Electro-Discharge Wire Cutting; Abrasive Jet Cutting

UNIT 3 ADDITIVE MANUFACTURING**20 Hrs.**

Additive Extrusion Processes Extruded Filament 3D printing, Clay 3D printing, Stereo lithography; Special Purpose Manufacturing processes- Rot molding, Layer Compression, Sheet contouring, Friction Welding

UNIT 4 SURFACE TREATMENT PROCESSES**20 Hrs.**

Surface Treatment Processes Laser Etching, Acid/Base Etching, Electro Chemical Etching, Sand Blast Etching, Ultraviolet Etching, Photochemical Machining Electro Chemical Polishing

UNIT 5 CONSTRUCTIVE ASSIGNMENTS**15Hrs.**

Demonstrate comprehensive understanding through accompanying assignments, group discussions, and site visits.

Max. 90 Hours**COURSE OUTCOME:**

- CO1** Understand the various subtractive manufacturing processes frequently used in Interior and furniture design.
- CO2** Compare the various new technologies being incorporated into manufacturing processes
- CO3** Comprehend the various subtractive manufacturing processes frequently used in Interior and furniture design.
- CO4** Discuss the various additive manufacturing processes frequently used in Interior and furniture design.
- CO5** Analyse the various surface treatment processes in the manufacturing of interior design elements.
- CO6** Develop systematic design approach and space planning through manufactured furniture as elements of design.

TEXT / REFERENCE BOOKS

1. Jain V., (2007). Advanced Machining Processes. Allied Publishers, New Delhi.
2. P. C. Pandey, H.S. Shan, (2007). Modern Machining Processes, Tata McGraw-Hill, New Delhi.
3. G.F. Benedict, (1987). Nontraditional Manufacturing Processes, Marcel Dekker Inc., New York.
4. McGeough, (1998). Advanced Methods of Machining, Chapman and Hall, London.
5. Garmo P., J.T. Black, Kohser R., (2001) Material and Processes in Manufacturing, Prentice Hall India.

SDE 9601	INTERIOR DESIGN STUDIO VI	L	T	P	Credits	Total Marks
		0	0	16	10	400

COURSE OBJECTIVES:

- To study and develop innovative schemes for complex interior spaces like hospitals and auditorium. Extensive knowledge of working drawings is also intended.

MODULE 1**100 Hrs.**

Spatial and environmental standards for various types of auditorium spaces- performing arts, cinema, and convention centre. Detail schematics of wall panelling, false ceiling and carpeting to satisfy acoustic requirements. Lighting study to develop ideas for foyer, auditorium and stage requirements.

MODULE 2**140 Hrs.**

Hospital Interior Design- Efficient utilization of space based on study ;Emergency, different wards, pathological rooms, radio logical rooms, operation theatres, etc. keeping in mind Technical requirements, Rigid functional relationships between different medical departments, aspects of psychology of both patients and staff. Managing service requirements- lighting, acoustics, plumbing and drainage, operational flow, etc.

Max. 240 Hours**TEXT / REFERENCE BOOKS**

1. Leslie, F. (2000). Designs for 20th-century interiors. London: Harry N. Abrams.
2. Diamonstein., Bennett, W., Diamonstein, B. (1982). Interior Design, the New Freedom. United States: Rizzoli.

SEMESTER 7

S102APT1	PRACTICAL TRAINING	L	T	P	Credits	Total Marks
		0	0	0	12	600

FOCUS

To offer students an opportunity to work in an interior design office / firm and get acquainted with the demands of the profession.

CONTENT

The duration of the Practical Training shall be for a minimum period of sixteen weeks and shall cover various aspects of the interior design profession.

During this period, the candidate shall submit a report covering the following:

- (i) Report of project study that shall consist of various drawings, observations, field-notes, technical data pertaining to issues of design, material, construction and detailing of the project / building under study undertaken beyond office hours.
- (ii) Report of work done in office covering routine/ day to day work during the training period.

NOTE

The training should be undertaken with an Interior Design Firm/ Office having a minimum professional experience of 5 years. A Practical Training Examination will be conducted at the end of the training period, in which the work done by the trainee will be assessed through a viva voce.

ELECTIVE 1

SDE 3502	PRODUCT DESIGN	L	T	P	Credits	Total Marks
		2	0	0	2	100

COURSE OBJECTIVES:

- To get an insight of various products and accessories used in Interior Spaces.
- To understand relevant products designed according to user's needs.
- To know about the role of accessories in interiors. Integration of accessories in interior design and stylistic development.
- To learn about the practical aspects of product design processes

UNIT 1 INTRODUCTION**4 Hrs.**

An brief introduction to Product Designing – Various elements – History of Product Design – Definition of Product Design, understanding of Product Design - Purpose of Product Design – Role of Product Designers. Design approaches in product and lifestyle accessories design with a focus on functionality, ergonomics, aesthetics, multiple usages etc.

UNIT 2 HUMAN FACTORS**8 Hrs.**

Application of human factors data. Human activities, their nature and effects. Human response to climate. Visual, Auditory, Tactual, Olfactory human mechanisms, Physical space and arrangement. Evolving the strategy of design with integration of technical complexities and lifestyle influences. Development of the design of products and accessories to specific interiors and prevailing trends.

UNIT 3 DESIGN APPROACH**8 Hrs.**

Design approach with limited constraints inherent in accessory products. Broad based approach towards innovative design and application to multi products and multi materials in manufacturing interior products and lifestyle accessories. Study of materials and processes adopted in accessories design. Stylistic development of interior products from the past to present with insight into technological advances and the influences of social, economic and political factors on their design. Form, Colour, Texture, Symbols, User specific criteria, Material, Technology and recyclability, Packaging. Multiple Utility oriented approach to Product Design.

UNIT 4 PRACTICAL ASPECTS**6 Hrs.**

Consumer Motivations Identification of user needs and Driving Factors; Emotional Design, Sensibility, Social Ethics and Concerns; Market Gaps, Market Oriented Innovation; Business Evolution Product Planning for the future, Disruptive Innovation; Basic understanding of construction principles, modelling, rapid prototyping, with broad orientation to socio-cultural and historical context of the sector. Orientation to Indian as well as global context of interiors, trends and market.

UNIT 5 CONSTRUCTIVE ASSIGNMENTS**4 Hrs.**

Demonstrate comprehensive understanding through accompanying assignments, group discussions, and site visits.

Max. 30 Hours**COURSE OUTCOME:**

- CO1** Understand the role of product design and designers for our everyday environment.
- CO2** Analyse the various approaches to Product and accessories design for Interior Environments.
- CO3** Apply various human factors in design of products and accessories.
- CO4** Develop approaches to design keeping practical aspects in mind.
- CO5** Approach towards Product Design in relation with various spaces
- CO6** Distinguish various design trends in the Indian and Global market.

TEXT / REFERENCE BOOKS

1. Slack L., (2008) What is Product Design? Roto Vision publishers.
2. Crochet T., Vleck D., (2008) Designer's Guide to Decorative Accessories, Prentice Hall, 1st edition.
3. Ashby M., Johnson K., (2002). Materials and Design: The Art and Science of material selection in product design, Butter Worth Heinemann, 1st edition.
4. Product Design and Development. (2003). United States: McGraw-Hill Education (India) Pvt Limited.
5. Stark J., (2011) Product Lifecycle Management: 21st Century Paradigm for Product Realisation, Springer.

END SEMESTER EXAM QUESTION PAPER PATTERN**Max. Marks : 100****Exam Duration: 3 Hrs.****PART A : 2 questions each from unit 1 to unit 4, each carrying 5 marks****: 08 x 05 = 40 Marks****PART B : 1 question each from unit 1 to unit 4 with an internal choice, each carrying 15 marks****: 04 x 15 = 60 Marks**

ELECTIVE 2

SDE 3601	COMMERCIAL AND RETAIL INTERIORS	L	T	P	Credits	Total Marks
		2	0	0	2	100

COURSE OBJECTIVES:

- To learn about the importance, techniques, and design applications for commercial and retail interiors.

UNIT 1 INTRODUCTION**4 Hrs.**

Introduction to commercial interior space design- types of commercial interior spaces – factors influencing designing of commercial interior spaces – materials used in designing commercial interior spaces. Collection of materials used for designing interior space. Application of codes, accessibility guidelines, and policies and procedures. Concepts, themes, ambience and aesthetics in designing commercial and retail interiors.

UNIT 2 COMMERCIAL ART**8 Hrs.**

Concept of commercial art – Meaning and Definition, Development of commercial art. Art in Commercial space Designing and planning space for various commercial purposes – Restaurants and Hotels. Public utility services – Airport, Educational Institutions, Hospitals, Shopping complex, Exhibition, Schools, Malls, Universities and Trade Fairs.

UNIT 3 COMMERCIAL DISPLAYS**8 Hrs.**

Commercial display and Techniques – Interior Display – general Arrangement, principles and factors, types and merchandise display, types of lighting arrangements in commercial buildings. Window display – meaning and concept, Basic principles and techniques, types of window display, window arrangement.

UNIT 4 CONTEMPORARY TRENDS**6 Hrs.**

Study of user types, user behaviour concepts relevant to commercial interiors. Functional aspects related to circulation and integration of different spaces. New trends in commercial Architecture- design in commercial building. Basic concepts of commercial buildings. Features of Departmental stores and Shopping complex.

UNIT 5 CONSTRUCTIVE ASSIGNMENTS**4 Hrs.**

Demonstrate comprehensive understanding through accompanying assignments, group discussions, and site visits.

Max. 30 Hours**COURSE OUTCOME:**

- CO1** Analyse Commercial interior space design using different materials
- CO2** Develop art in commercial space designing and planning based on various purposes.
- CO3** Identify the role of lighting in commercial displays and techniques involved
- CO4** Understand the Concept of window display and window arrangement
- CO5** Synthesize various user behaviour concepts relevant to retail and commercial space.
- CO6** Discuss the Recent trends in commercial architecture.

TEXT / REFERENCE BOOKS

1. Gupta, C.B., Dr. Nair, Rajan (2003), Marketing Management, Sultan Chand & Sons, New Delhi.
2. Joseph, D.C., Julies, P. and Martiv, Z. (1992), Time saver standards for Interior Design and space Planning, New York.
3. Nair, R. (2002), Marketing, Sultan Chand and Sons Publisher, New Delhi.
4. Pattanchetti, C.C. Reddy, P.N. (1995), Marketing, Rainbow publishers, Coimbatore.

END SEMESTER EXAM QUESTION PAPER PATTERN**Max. Marks : 100****Exam Duration: 3 Hrs.****PART A : 2 questions each from unit 1 to unit 4, each carrying 5 marks****: 08 x 05 = 40 Marks****PART B : 1 question each from unit 1 to unit 4 with an internal choice, each carrying 15 marks****: 04 x 15 = 60 Marks**

ELECTIVE 3

SDE 3801	ENERGY EFFICIENT INTERIORS	L	T	P	Credits	Total Marks
		2	0	0	2	100

COURSE OBJECTIVES:

- To sensitize students about need for environmental design
- To study the various factors involved in environmental and sustainable buildings
- To understand functional approaches in designing sustainable and energy efficient interiors.

UNIT 1 CONTROL OF ENVIRONMENT**6 Hrs.**

Environment control – meaning of environment, importance of environment control, advantages, elements to be controlled in the interiors – Temperature, air quality, sound, sanitation, light. Passive strategies and technologies.

UNIT 2 HVAC AND LIGHTING**8 Hrs.**

Ventilation – Definition, importance, Types of ventilation – Natural and mechanical Guidelines for natural ventilation. Heating – Need for room heating, types of heating system – central, radiant, forced air; solar system – Active solar system and passive solar system. Air conditioning – Meaning, Principles, need for conditioning, air conditioning applications, Humidity control, types of air conditioning - central air conditioning, and packaged. Eco lighting - Introduction, types, materials and application of LED and solar. Recommended level of illumination, guidelines for lighting design, lumen method of design

UNIT 3 SUSTAINABLE MATERIALS**8 Hrs.**

Study of sustainable materials available and its application in the building construction. Certification systems and certification authority- IGBC, GRIHA, BEE. For E.g. Mud bricks, AAC, fly ash blocks, UPVC, WPC boards, paints, glass etc.

UNIT 4 CASE STUDIES**4 Hrs.**

Study of existing case studies of green buildings, adapting the principles of sustainable designs to interior design projects, involving market survey, user reviews and experts opinion. Detail study of techniques, methods and limitations involved in designing green spaces, using renewable energy.

UNIT 5 CONSTRUCTIVE ASSIGNMENTS**4 Hrs.**

Demonstrate comprehensive understanding through accompanying assignments, group discussions, and site visits.

Max. 30 Hours**COURSE OUTCOME:**

- CO1** Understand passive design strategies and technologies to help control the quality of interior environment
- CO2** Gain knowledge about the various types of heating and cooling systems that consume less energy
- CO3** Classify the various low energy materials used in interior construction
- CO4** Review the various rating and certification systems for sustainable design
- CO5** Analyse sustainable design principles and techniques used in various green space case studies.
- CO6** Understand tools, materials and techniques adopted in green buildings.

TEXT / REFERENCE BOOKS

1. Abbaszadeh, S, L. Zagreus, D. Lehrer, and C. Huizenga, (2006) "Occupant Satisfaction with Indoor Environmental Quality in Green Buildings", University of California, Berkeley, Center for the Built Environment.
2. Michael J, (1997) "Biodiversity and Conservation", Routledge Taylor & Francis Group, 2nd edition.
3. Miles Keeping, David Shiers, (2017) "Sustainable Building Design: Principles and Practice", WileyBlackwell, 1st edition.
4. Susan M Winchip, (2011) "Sustainable Design for Interior Environment", Fairchild Publication, 2nd revised edition.
5. Koeinsberger, O.H. and others, (2003) Manual of Tropical Housing and Building. OrientLongman, Chennai.
6. Markus, T.A and Morris. E.N. (1986) Buildings. Climate and Energy, Pitman Pub Ltd., London.

END SEMESTER EXAM QUESTION PAPER PATTERN**Max. Marks : 100****Exam Duration: 3 Hrs.****PART A : 2 questions each from unit 1 to unit 4, each carrying 5 marks****: 08 x 05 = 40 Marks****PART B : 1 question each from unit 1 to unit 4 with an internal choice, each carrying 15 marks****: 04 x 15 = 60 Marks**