

**SCHEME OF EXAMINATION**

**CERTIFICATE IN INTERIOR DESIGN**

**PRACTICAL**

<b>TOPIC</b>	<b>TIME</b>	<b>MARKS</b>
Anthropometrics & Elements of Interior Space	6 Hrs.	50
Autocad & Sketchup	6 Hrs.	50
	<b>TOTAL</b>	<b>100</b>

**THEORY**

<b>TOPIC</b>	<b>TIME</b>	<b>MARKS</b>
Form, Space & Design Process	3 Hrs.	50
	<b>TOTAL</b>	<b>50</b>
	<b>GRAND TOTAL</b>	<b>150</b>

## **SYLLABUS**

### **CERTIFICATE IN INTERIOR DESIGN**

#### **PRACTICAL**

##### **GRAPHICS**

- Introduction to Drafting Table
- Using Ruler, Scale, Set Square, Compass, etc.
- Drawings in a format – A4, A3, A2.
- Basic Geometry Shapes with Measurements & Angles – such as Hexagon, Pentagon, Octagon, Triangle, etc.
- Isometric Grids – Learn to make isometric grids
- Isometric projections of platonic solids (Cube, cuboid, hexagonal prism, pyramids, cone, sphere, etc.)
- Using isometric grids to make 3D Drawings like tables, chairs, cylinders, spherical elements, etc. (using light table)
- Axonometric Drawings of Interior Views
- Introduction to Orthographic projections
- Advanced orthographic projections
- Plan, elevation & end view - Solids
- Section & Dimensions.
- Rendering – Shadow & Light.

##### **Suggested Reading**

1. Drawing: A Creative Process by Francis D.K. Ching
2. Drawing Geometry: A Primer of Basic Forms for Artists, Designers and Architects by Jon Allen
3. Architectural Graphics by Francis D.K. Ching
4. Orthographic Projection Simplified Paperback by Charles Quinlan
5. Engineering Drawing by V.M. Panchal, Pramod R. Ingle, N.D. Bhatt

##### **PERSPECTIVE SKETCHING**

- Fundamentals of perspective
- One point & Two Point Perspective for Interiors
- Study of picture plain, Station Point, Vanishing Point, Eye Level, etc.
- Make free hand sketches of room interiors, etc.
- Measured Perspective – Principles & Visual Effects of three dimensional objects. Measured drawing to scale of furniture pieces, rooms, doors, windows etc. Drawing by method different polygons, circle, ellipse, hyperbola, parabola, and spiral.
- Draw 3D geometric solids
- Mannequin with Proportions – Male & Female
- Front, Profile & Back View

##### **Suggested Reading**

1. Creative Perspective by Robert W. Gill
2. Perspective for Interior Designers by John Pile
3. Drawing Geometry : A Primer of Basic Forms for Artists, Designers and Architects by Jon Allen

**ANTHROPOMETRICS & ELEMENTS OF INTERIOR SPACE**

- ANTHROPOMETRICS - Definition, theory of standard dimension based on human figures for activities and functions. Anthropometrics data and application, elderly and physically disabled people and anthropometrics of seating, Human dimensions.
- INTERIOR SPACE AND BASIC DESIGN REFERENCE STANDARDS – Residential spaces, office spaces, mercantile spaces, eating & drinking spaces, health care spaces, pleasure & recreation space, public spaces & audio visual spaces. Study of Ergonomics.
- WALL PLANES – Use of wall planes to create architectural effects, Natural patterns and textures obtained in masonry walls, articulation of openings in wall planes, effect of tilting the vertical axis of wall planes, niches and alcoves, cornices and moldings
- ROOF PLANES – Different types and their visual impact – articulation of skylights and roof apertures, false ceiling, materials, finishes & patterns, types of false ceiling, various types of lighting.
- FLOOR PLANES – Various types of flooring – Mosaic, tile, stone, aesthetic effect created by flooring material and pattern, graphic patterns and their visual effects, construction details, skirting, molding, embossing Floor finishes and floor coverings.
- DOORS, WINDOWS AND VENTILATORS, ETC – Doors – types, flush doors, paneled doors, braced doors, carved wooden doors, metal embossed doors, glazed doors and their relevance, various materials and articulation. Windows – Various types (casement, horizontal sliding, vertical sliding, hopper, pivoted), various shapes (arched, circular, triangular etc) various materials (wood, aluminum, steel, pvc) and their suitability to that space, ventilators, louvered, paneled.
- CASE STUDIES – Case studies for manipulation of wall, floor and roof planes to create various architectural effects, case studies of various doors, windows and ventilators, case studies of columns, beams for interior effects.

**Suggested Readings**

1. Human Dimension & Interior Space : A Source Book of Design Reference Standards by Julius Panero & Martin Zelnik.
2. Interior Design and Decoration : Interior Design Décor by Augustus Sherrill Whiton
3. The Interior Design Reference & Specification Book : Everything Interior Designers Need to Know Every Day by Linda O'Shea, Chris Grimley, Mimi Love
4. The Elements of Style: Encyclopedia of Domestic Architectural by Stephen Calloway, Dennis Curran, Sheila Curran

**AUTOCAD & SKETCHUP**

- INTRODUCTION TO COMPUTER AIDED 2D DRAFTING: Understanding the use of drawing tools, object editing, drawing objects, filing and setting drawing units, scales, limits that size and dimensioning, lettering. Setting up of drawing of various simple objects with complete text and dimensioning.
- ADVANCE COMPUTER AIDED 2D DRAFTING: Advance command programming – Transparent overlays, hatching utilities, assigned colour and line type, use of multi-line, style, block, symbol library, manipulation for accurate drawings, incorporating the above mentioned utilities.
- PRODUCTIVITY TOOLS: Introduction to tools of productivity – Blocks, slide facilities, script files and attributes. Understanding concepts of view port, concept of object linking and editing session.
- INTRODUCTION TO 3D DRAFTING: Introduction to 3D modeling techniques and construction planes, drawing objects, 3D surfaces, setting up elevation and thickness, and use of dynamic projections. Solid modeling with driving, primitive command and boolean operations. Use of region modeling & solid modifiers.
- INTRODUCTION TO SKETCHUP & ITS TOOLS : Starting a drawing – Concepts – Principal tools for drawing, modification, construction, camera, walkthrough, sandbox etc – breaking edges, google toolbar.

# **Raja Mansingh Tomar Music & Arts University, Gwalior, M.P.**

## **Certificate in Interior Design Syllabus**

- USE & MANAGEMENT OF SKETCHUP : Model setting and managers – colours and materials – entities – making input & output – technical information – common tasks – applications
- INTRODUCTION TO 3D HOME ARCHITECT: Starting a drawing – Drawing walls, windows, doors, staircases, columns, roof etc. modifying the properties of doors, windows etc. – applying materials, colour
- APPLICATIONS OF 3D HOME ARCHITECT: Adding furniture, fittings, etc. – camera positions & viewing angles – rendering views with trees, cars, people, etc. – Choosing a suitable walkthrough path & creation of the same

### **Suggested Readings**

1. Engineering Drawing and Graphics Using Autocad by T. Jeyapoovan
2. Autocad 2015 For Engineers and Designers 21st Edition (3D And Advanced), (2 volumes Set) by Sham Tickoo (Author)
3. Rendering in SketchUp: From Modeling to Presentation for Architecture, Landscape Architecture, and Interior Design by Daniel Tal

### **SCHEME DETAILING**

- BUILDING COMPONENTS - Working drawing of different types of doors and windows.
- BUILDING SURFACES - Working drawing of wall murals, reflected ceiling plans and flooring patterns.
- FURNITURE - Working drawing of work station, living room furniture, bedroom furniture and dining tables.
- DETAILING OF SPECIAL AREAS - Working drawing for toilets with plumbing diagram – working drawing of kitchen with detailing of shelves and cupboards
- DETAILING OF STORAGE AREAS - Working drawing of wardrobes, TV cabinet and showcase, crockery shelves, cadenza, chest of drawers, dressing table, etc.

### **Suggested Readings**

1. Construction Drawings and Details for Interiors: Basic Skills by Rosemary Kilmer, W. Otie Kilmer
2. Architectural Detailing: Function, Constructability, Aesthetics by Edward Allen, Patrick Rand
3. Construction and Detailing for Interior Design by Drew Plunkett

### **INTERIOR DESIGN STUDIO I**

- KITCHENS – Work triangle, planning for activity, anthropometrics, types of kitchen, Modular kitchens. Materials used in counters, shelves, worktops, washing areas & their comparative study. Lighting & colour scheme-natural & artificial light.
- TOILETS – Anthropometry – Various types of sanitary ware and their use, types of layouts, concepts in modern day toilet interiors, materials & finishes, colour, texture & pattern.
- BEDROOMS & LIVING ROOMS – Concepts in bedroom & living room interiors – various layout of these spaces, the use of furniture and accessories to create a certain type of ambience, materials & finishes, lighting, colour & texture.
- RESIDENCE – Holistic concepts in residential interiors – ability to integrate various individual spaces into one theme, treatment of patios, courtyards, verandahs & other semi sheltered spaces, integration of built form and open spaces.

### **Suggested Readings**

1. Residential Interior Design : A Guide To Planning Spaces by Maureen Mitton, Courtney Nystuen
2. Interior Graphic Standards : Student Edition by Corky Binggeli
3. Detail in Contemporary Residential Architecture by Virginia McLeod
4. Designs for 20th Century Interiors by Fiona Leslie

## **MATERIAL & CONSTRUCTION I**

- INTRODUCTION TO MATERIALS –
  1. Wood – Wood as a building material: Identification, selection, application, types of wood, commercial Classification, nomenclature, structure Anatomy and Ultra structure, Conversion figure and natural defects, availability of wood products, wood based panels such as plywood, MDF, HDF, Particle board, pre laminated boards, etc.
  2. Synthetic Materials – Different types of Glass, their properties, manufacturing processes & uses.
  3. Plastics – Injection molding & other manufacturing methods, etc.
  4. Fabrics – Textile, Jute, leather etc. different types and their uses.
- BUILDING COMPONENTS – Drawings of the components of a building indicating
  1. Foundation – brick footing, stone footing & RCC column footing
  2. Concrete flooring, plinth beam & floor finish
  3. Superstructure – brickwork with sill, lintel, windows & sunshade
  4. Flat RCC roof with weathering course, parapet & coping.
- TILED ROOFS – Drawing indicating various types of sloped & hipped roof, Types of sloping roof – lean to & couple roof with Mangalore tiles, country tiles & pan tiles.
- STRUCTURAL SYSTEMS – Structures - Components of a load bearing wall & RCC slab roof system – RCC beams, columns and framed structure.
- BASIC SERVICES – Components of a toilet & bathroom – sanitary ware – W.C., wash basin, bidet, bathtub, Jacuzzi, etc. Sanitary fittings – taps, mixers, shower units

### **Suggested Readings**

1. Engineering Materials by RANGWALA
2. Building Construction Illustrated by Francis D. K. Ching
3. Building Construction: Metric - Vol. 1 by W.B. McKay
4. Building Construction: Metric - Vol. 3 by W.B. McKay

## **INTERIOR SERVICES I**

- WATER SUPPLY IN BUILDINGS – Standard of portable water and methods of removal of impurities, Consumption or demand of water for domestic purposes, Service connection from mains, House-service design, tube well, pumping of water, types of pumps, cisterns for storage
- BUILDING DRAINAGE – 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.
- PLUMBING – 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, testing drainage pipes for leakage – smoke test, water test etc, CI pipes for soil disposal and rain water drainage, Wrought iron, steel and brass pipes. Rain water disposal drainage pipes spouts, sizes of rainwater pipes.
- SOLID WASTE DISPOSAL – Solid wastes collection and removal from buildings. On-site processing and disposal methods. Aerobic and Anaerobic decomposition
- ELECTRICAL 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. Codes for Electrical Layout – Typical electrical layout for a building – location requirement for switch rooms and distribution panels – codes for fan pints, power points and light points – PVC sheathed wiring system – protective earthing – earth electrode.

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**Suggested Readings**

1. Water Supply Engineering: Environmental Engineering by S. K. Garg
2. Electrical Systems Design by M. K. Giridharan

**DESIGN PROJECT I**

Design problem – One full scheme of residential interior having maximum types of residential activities upto 3 bedroom units in two floors. Submit -

- Conceptual sketches
- Presentation drawings - Make the plan, elevation & end view using isometric view, perspective view & axonometric view
- Large scale details of furniture items
- Make working of different types of doors & windows.
- Scheme Detailing of Flooring and Ceiling.
- Electrical & Plumbing Layouts
- Computer Drafting (AutoCAD or Sketchup) or Hand Drafting
- Rendering on computer or by hand using water color, poster color, Rotring pen, Hatching, Stippling

**Suggested Readings**

1. Contemporary Houses by Indian Architects by IAG (Author)

**THEORY PAPER**

**FORM, SPACE & DESIGN PROCESS**

- What is Design? How to Design?
- Problem Solving Process
- Information Required to Start Design.
- How to get information?
- Design Principles – Ratio, Proportions – Golden section, relationships, scale
- Balance – Symmetrical, Radical, Occult, Harmony, Unity, Variety, Rhythm, Emphasis
- Design Process- Analysis, Synthesis, Design Evaluation
- Design Criteria – Functions & purpose, Utility & Economy, Form & Style
- Human Factors – Human Dimensions, Distance Zones, Activity Relationships,
- Fitting the space – Plane Arrangements, Function, Aesthetics
- What is Interior Design?
- Difference between Interior Designer & Decorator

**Suggested Reading**

1. Design for The Real World by Victor Papanek
2. Design Process: A Primer for Architectural and Interior Design by Sam F. Miller
3. Design Thinking Process and Methods 3rd Edition by Robert Curedale
4. Architecture: Form, Space, and Order by Francis D.K. Ching