

Raja Mansingh Tomar Music & Arts University, Gwalior, M.P.
Bachelor of Design Interior Design Syllabus (Four Years)

SUBMISSION DETAILS (PRACTICAL)

B. DESIGN INTERIOR DESIGN YEAR II

Semester – III

SUBJECT	SIZE	MIN. ASSIGNMENT	TOPIC & MEDIUM
Orthographic Projections	A2	6 3 3 5 Total - 17	Plan, Elevation & End View – Solids Sections & Dimensions Rendering Full Final Sheet Medium – Pencil, Color Pencil, Water Color, Poster Color
Geometrical Construction (3D) & Perspective	A3 - A1 A1 A3	10 10 15 2 5 Total - 32	3D Geometric Solids 3D Models Measured Perspective Room Interior 3D Illusions Medium – Pencil, Color Pencil, Water Color, Poster Color
AutoCAD	-	2	On Computer
Skill Project II	-	10	Wood & Metal

SCHEME OF EXAMINATION

B. DESIGN INTERIOR DESIGN YEAR II

Semester – III

Paper	Time	Size	Ext. Marks	C.C.E.	Total
Anthropometrics & Elements Of Interior Space	3 Hrs.	-	70	30	100
History of Interior Design	3 Hrs.	-	70	30	100
Material & Construction I	3 Hrs.	-	70	30	100
				Total	300
Practical			Ext. Marks	Internal Assignment	
Orthographic Projections	6 Hrs.	A2	60	40	100
Geometrical Construction (3D) & Perspective	6 Hrs.	A1, A3	60	40	100
AutoCAD	6 Hrs.	-	60	40	100
Skill Project II	6 Hrs.	-	60	40	100
				Total	400
Grand Total					700

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PAPER – I (THEORY) - ANTHROPOMETRICS & ELEMENTS OF INTERIOR SPACE

- 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.
- 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.

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

PAPER – II (THEORY) – HISTORY OF INTERIOR DESIGN

- EARLY CLASSICAL PERIOD – Prehistoric Cave Paintings – Primitive Designs- Interiors during Egyptian, Greek, Roman, Gothic, Early Christian & Renaissance Periods.
- MIDDLE AGES – Interiors in Romanesque, Gothic, and renaissance periods
- COLONIAL TO THE BEGINNING OF THE 20TH CENTURY – Colonial, Victorian designs, Arts & Crafts movement, Art Nouveau, Eclectism, Frank Lloyd Wright.
- BAUHAUS TO POST MODERNISM – Walter Gropis/ Bauhaus, De Stijl, Mies Van Der Rohe, Le Corbusier, Art Deco, Postwar Modernism.

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- RECENT DIRECTIONS – Design movements such as Late Modernism, High Technology, Post Modernism, and De constructivism and Minimalism
- NON EUROPEAN TRADITIONS – Interiors in China, Japan & the Islamic World – Influences of Pre Columbian American art & culture, African influences in interiors
- SCANDINAVIAN TRADITIONS – Interior Design in Sweden, Finland, Norway. Contributions of Architects such as Alvar Alto, etc.
- INDIAN TRADITIONAL DESIGNS – Traditional Styles of design & decorations of homes & accessories across the states in India including Rajasthan, Gujarat, Andhra, Tamil Nadu, Madhya Pradesh etc.
- CONTEMPORARY INTERIOR DESIGNERS - Works of Charles Rennie Mackintosh, Antonio Gaudi, Gerrit Rietveld. Interiors of Le Corbusier, Frank Llyod Wright, Louis Khan, Kenzo Tange and Oscar Niemeyer. The works of Alvar Aalto, Phillip Johnson, Charles and Ray Eames, Eero Saarinen, Eero Aarnio, Arne Jacobsen. Interiors of Zaha Hadid, Santiago Calatrava, Frank Gehry and Peter Eisenmann.

Suggested Readings –

1. A History of Interior Design by John Pile

PAPER – III (THEORY) – 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

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B. DESIGN INTERIOR DESIGN YEAR II

Semester – III

PRACTICAL

PRACTICAL 1 – ORTHOGRAPHIC PROJECTIONS

- Advanced orthographic projections
- Uses of scale & set square.
- Plan, elevation & end view - Solids
- Section & Dimensions.
- Rendering – Shadow & Light.
- Full final sheet – Design a House - Plans, elevation, end view & sections

Suggested Readings –

1. Architectural Graphics by Francis D.K. Ching
2. Orthographic Projection Simplified Paperback by Charles Quinlan
3. Engineering Drawing by V.M. Panchal, Pramod R. Ingle, N.D.Bhatt

PRACTICAL 2 – GEOMETRICAL CONSTRUCTION (3D) & PERSPECTIVE

- Draw 3D geometric solids
- Making 3D models with ivory card sheets
- 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.
- Study of picture plain, Station Point, Vanishing Point, Eye Level, etc.
- One Point Perspective for Interiors
- Two Point Perspective for Interiors
- Draw simple objects & room interiors using measured 1-point & 2-point perspective
- 3D Illusions
- Sciography – Principles of Shade & Shadow, Shade & Shadow of Architectural Elements in Interiors, Shadows of Circular/ Cylindrical/ Spherical Elements

Suggested Readings –

1. Creative Perspective by Robert W. Gill
2. Rendering in Pen and Ink by Arthur L. Guptill
3. Perspective for Interior Designers by John Pile
4. Drawing Geometry : A Primer of Basic Forms for Artists, Designers and Architects by Jon Allen
5. Sciography : Or, Radical Projection of Shadows by R Campbell (Robert Campbell) Puckett
6. A Text Book of Perspective and Sciography by Shankar Mulik
7. Drawing Visual Illusions by Natalie Sirett
8. Masters of Deception : Escher, Dali and the Artists of Optical Illusion by Al Seckel

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PRACTICAL 3 – AUTOCAD

- 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.
- Make 2D Plan of House (From Practical 1, Semester 3) with Furniture Details
- Make 3D Plan of House (From Practical 1, Semester 3)

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)

PRACTICAL 4 – SKILL PROJECT II

- Learning & making joineries of wood & metal using hand tools & power tools like Butt Joint, Bridle Joint, Dowel Joint, Dovetail joint, etc.
- Traditional & Non Traditional Joineries
- Materials used for joining
- Strength & Stability of different woods.

Suggested Readings -

1. The Joint Book : The Complete Guide to Wood Joinery by Terrie Noll

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SUBMISSION DETAILS (PRACTICAL)

B. DESIGN INTERIOR DESIGN YEAR II

Semester – IV

SUBJECT	SIZE	MIN. ASSIGNMENT	TOPIC & MEDIUM
Scheme Detailing	A1	4 3 4 5 4 Total - 20	Building Components Building Surfaces Furniture Detailing of Special Areas Detailing of Storage Areas Medium – Pencil, Color Pencil, Water Color, Poster Color
Design Project I	A1, A2	According to Project Specifications	Medium – Pencil, Color Pencil, Water Color, Poster Color & on computer
3D Max & Photoshop	-	2	On Computer
Skill Project III	-	3 6 3 Total - 12	Making Functional Objects Wood Turning Effects of Light Medium – Wood & Metal

SCHEME OF EXAMINATION

B. DESIGN INTERIOR DESIGN YEAR II

Semester – IV

Paper	Time	Size	Ext. Marks	C.C.E.	Total
Textile Design	3 Hrs.	-	70	30	100
Interior Design Studio I	3 Hrs.	-	70	30	100
Lighting I	3 Hrs.	-	70	30	100
				Total	300
Practical			Ext. Marks	Int. Assignment	
Scheme Detailing	6 Hrs.	A1	60	40	100
Design Project I	6 Hrs.	A1. A2	60	40	100
3D Max & Photoshop	6 Hrs.	-	60	40	100
Skill Project III	6 Hrs.	-	60	40	100
				Total	400
Grand Total					700

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Semester – IV

PAPER – I (THEORY) – TEXTILE DESIGN

- INTRODUCTOIN TO FABRICS – Fabric, yarn and fiber structure, Fabric structure- woven-warp, weft, selvedge, knitted- course, non-woven, Fabric types and classification- woven, including plain, twill, satin, Jacquard, crepe and pile weaves, knitted- including single knit, double knit, tricot knit, pile knit, lace and net, non-woven-including felts webs and films, identification and properties of fabrics, yarns and fibres.
- APPLICATOIN OF ELEMENTS AND PRINCIPLES – Application of elements and principles of design across a range of textiles. Describe and analyze elements and principles of design – furnishing, textile arts, non-apparel. Functional and aesthetic requirements and features of textile range.
- COLOUR ON FABRICS – Fabric coloration and decoration- Principles of applying color to fabrics. Textile arts and crafts in interiors, traditional and modern materials and methods. Preparing samples on tie and die printing, batik printing, appliqué, macramé and braiding.
- FURNISHINGS – Furnishings-classification, types of curtain, curtain construction, selection criteria relation to backgrounds in walls, floors and ceilings. Slip covers, cushion covers, bed linen & table linen. FLOOR COVERINGS – Rugs & carpets, types, selection, care & maintenance, installation of floor coverings.
- OTHER NATURAL MATERIALS – Jute or hessian – dyed jute fabric and its applications, Various kinds of processed leather, its application in interior design.

Suggested Readings –

1. Inside Today's Home Paperback by R.N. Faulkner, S. Faulkner
2. Fabrics - A Handbook for Interior Designers & Architects (Norton Professional Books for Architects & Designers) by Marypaul Yates
3. Interior Design and Decoration : Whiton: Interior Design Décor by Augustus Sherrill Whiton
4. Textile Designs : 200 Years of Patterns for Printed Fabrics Arranged by Motif, Colour, Period and Design by Susan Meller (Author), Joost Elffers
5. Color in Interior Design CL Hardcover by John Pile
6. Textiles for Residential and Commercial Interiors by Amy Willbanks (Author), Nancy Oxford (Author), Dana Miller

PAPER – II (THEORY) – 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

PAPER – III (THEORY) – LIGHTING

- Introduction to Lighting – Nature of light - wavelength, photometric quantities – Intensity, Flux, Illumination & Luminescence, Visual Efficiency, Sources of Light, Day Light Factor Concept, Design Sky Concept, Day Lighting Requirements, Light & Psychology, Emotional Impact, Degrees of Stimulation
- Artificial Lighting – Electric Lamps –Lamp Bases, Filaments, Incandescent, Fluorescent, Sodium Vapor, Mercury, Halogen & Neon. Different types of lights in interior & exterior – task lighting, special purpose lighting, Ambient Lighting, Lighting 3 Dimensional Objects. Calculation of artificial lighting, guidelines for lighting design, glare in artificial lighting, Sustainable Design –. Integrating Light & Architecture, Visual Clarity, Architectural Surfaces, Balance of Brightness
- Effects of Color in Lighting – Colors, Color Schemes – Monochromatic, analogous, complementary color schemes, triadic & tetradic schemes, effects of color in different areas, color temperature, psychological effect of colors in interiors, factors affecting color, Prang Theory – Color wheel, Munsell System & Oswald System
- Luminaries & Fixtures – Definition, Different luminaries for lighting, lighting control system – Benefits & application, Impact of lighting, fixture types – free standing or portable, fixed, light fixture control. Glare Control, Recommended Illuminance Values, Surface Reflectance, Illuminance Calculation, Switch Control, Dimming Control, Digital Lighting Controls, Energy Management Controls
- Lighting Accessories – Switches, sockets, Fused Connection Units, Lamp holders, Ceiling Roses, etc.
- Case Study – Study of projects based on different lighting concepts used in interiors & exteriors.

Suggested Readings –

1. Lighting by Design (Decor Best-Sellers) by Salley Storey
2. The Architecture Of Light (2nd Edition) by Sage Russell
3. Lighting: A Design Source by Elizabeth Wilhide
4. An Introduction to Energy Efficiency Lighting Upgrades for Buildings by J. Paul Guye

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B. DESIGN INTERIOR DESIGN YEAR II

Semester – IV

PRACTICAL

PRACTICAL 1 – 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

PRACTICAL 2 –DESIGN PROJECT I

Design problem – Studio Apartment including pantry (30ft X 15ft) with attached bathroom (6ft X 9ft)

- Conceptual sketches
- Presentation drawings - Make the plan, elevation & end view using isometric view, perspective view & axonometric view
- Large scale details of furniture items
- CAD Drafting

Suggested Readings –

1. 150 Best Minimalist House Ideas by Alex Sanchez
2. Interior Design Illustrated by Francis D. K. Ching
3. The Color Scheme Bible: Inspirational Palettes for Designing Home Interiors by Anna Starmer

PRACTICAL 3 – 3DS MAX & PHOTOSHOP

- INTRODUCTION TO 3DS MAX: An overview of GUI, types of modeling, transforming objects, Compound objects, modifiers & modifier stack.
- MODELLING TECHNIQUES: Lathing, displacement, lofting, Boolean operations using standard and compound primitives, modeling with lofts, low polygon modeling and nurbs modeling.
- TEXTURES AND TEXTURE MAPPING: Using material editor, material browser, mapping textures
- RENDERING: Lighting, cameras and render effects, environment mapping, fogs and atmospheres

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- PHOTOSHOP: Photoshop interface, creating and saving images, basic image editing, Photoshop tool box and tools, using layers, special effects.
- Do 3D Drafting of Design Project I in 3DS Max
- Make exterior of house in Design Project I in Photoshop

Suggested Readings –

1. Autodesk 3ds Max 2014 Bible by Kelly L. Murdock
2. Mastering Autodesk 3ds Max 2013 by Jeffrey M. Harper
3. “Adobe Photoshop CC 2015 Release Classroom in a Book” by Andrew Faulkner (Author), Conrad Chavez

PRACTICAL 4 – SKILL PROJECT III

1. MAKING FUNCTIONAL OBJECTS & WOOD TURNINGS
 - Learn to use machine tools like bandsaw, drill machines, Ara machine, Sanding Machine, Thickness Planer, Milling Machine, Lathe Machine, etc.
 - Use machine tools & hand tools to make simple objects like pen holder, etc. in wood & metal.
 - Do different kinds of wood turnings.
2. EFFECTS OF LIGHT
 - Daylight Photography – Take photos of different objects, buildings, rooms, etc. at different times during the day showing the effect of light.
 - Artificial Lighting Photography – Take photos of different objects & rooms using artificial light source from different angles.
 - Take photos & compare differences between natural & artificial light effects.
 - Case study – Take photos of projects based on different lighting concepts used in interiors.