

**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**

<b>SUBJECT</b>	<b>SIZE</b>	<b>MIN. ASSIGNMENT</b>	<b>TOPIC &amp; MEDIUM</b>
Graphics II	A2, A3	25	Pencil, Color Pencil
Construction II	A2, A3	10	Pencil, Color Pencil
Interior Design Studio I	A2, A3	5	Pencil
AutoCad & Sketchup	-	10	On Computer

**SCHEME OF EXAMINATION**

**B. DESIGN INTERIOR DESIGN YEAR II**

<b>Paper</b>	<b>Time</b>	<b>Size</b>	<b>Ext. Marks</b>	<b>C.C.E.</b>	<b>Total</b>
History of Art & Architecture II	3 Hrs.	-	50	25	75
Anthropometrics & Elements of Interior Space	3 Hrs.	-	50	25	75
Material & Construction I	3 Hrs.	-	50	25	75
Interior Services I	3 Hrs.	-	50	25	75
				Total	300
<b>Practical</b>			<b>Ext. Marks</b>	<b>Internal Assignment</b>	
Graphics II	6 Hrs.	A2, A3	70	30	100
Construction	6 Hrs.	A2, A3	70	30	100
Interior Design Studio I	3 Hrs.	A2, A3	70	30	100
AutoCAD & Sketchup	2 Days	-	70	30	100
				Total	400
				<b>Grand Total</b>	<b>700</b>

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**PAPER – I (THEORY) – HISTORY OF ART & ARCHITECTURE II**

- The Renaissance through The Rococo – Beginnings of Italian Renaissance, Architecture & Sculpture in Italy, The High Renaissance in Italy, The Venetian High Renaissance, Mannerism, Baroque Art & Architecture. Features of a typical Renaissance palace – Palazzo Medici Riccardi. Study of contribution of the following architects – Brunelleschi, Michelangelo, Andrea Palladio - St. Peter in Rome, Villa Capra in Vicenza. French & English Renaissance – Architectural Characters in the classical & Rococo Period – Chateau de Chambord, Louvre in Paris. Study of works of Sir Christopher Wren & Inigo Jones – St Paul’s Cathedral in London, Banqueting House, Whitehall.
- Renaissance in India – (Patna) Company School – Raja Ravi Verma. Bengal School – Abanindranath Tagore, Nandalal Bose, Jamini Roy, Rabindranath Tagore. Art Centers – Bombay, Calcutta, Baroda, Abanindranath Tagore Delhi, Madras. M.F. Hussain, Bendre, Souza, Raza Chintamanikar, Dhanraj Bhagat Etc. Contemporary Art & Artists – Amrita Shergil, Kshitindra Nath Majumdar, Asit Kumar Haldar, D.P. Roy Chowdhury, M.F. Hussain, Ramkinkar Baij, Shanku Choudhary, Shri Madan Bhatnagar. Their Work of Style, Technique, Medium, Subjects & Paintings.
- Famous Artists – Donatello, Sandro Botticelli, Leonardo da Vinci, Michelangelo Buonarroti, Peter Paul Rubens, Gian Lorenzo Bernini, Francisco de Goya, Edouard Manet, Edgar Degas, Winslow Homer, Oscar Claude Monet, Pierre Auguste Renoir, Henri Rousseau
- COLONIAL TO THE BEGINNING OF THE 20<sup>TH</sup> CENTURY – Colonial, Victorian designs, Arts & Crafts movement in Europe and America; Art nouveau, and the works of Horta, Guimard, Gaudi and Mackintosh; Organic Architecture – Early works of F.L. Wright, Chicago school.
- Art deco Architecture in Europe and America.
- Monumental buildings of Early colonial period – Examples – St. Paul’s Cathedral, Calcutta & Bombay Town Hall – Architectural character of Indo-Saracenic and Classical revival – University of Madras Senate House & Victoria Memorial hall, Calcutta – Later Colonial period – Contribution of Edwin Lutyens & Herbert Baker to the lay-out and Architecture of New Delhi – Rashtrapathi Bhavan & Parliament House.
- BAUHAUS TO POST MODERNISM – Mies Van Der Rohe, Le Corbusier, Art Deco, Postwar Modernism. De Stijl and their influence on Architecture. Bauhaus school & Walter Gropius, Modernism and the International style. Contribution of Frank Lloyd Wright, Charles Eames.
- Reasons for the evolution of Modern Architecture, Origins-Neo Classicism-Enlightenment, Social revolutions, Historiography, Revivalism-Works of Soane, Ledoux, Boulee Durrand & Schinkel. Industrial revolution and its impact – Emergence of new building typologies-New Materials and Technologies: history of steel, glass and concrete.
- Vienna Secession, Adolph Loos and debates on ornamentation; Futurism, Expressionism works of Mendelssohn & Taut, Cubism, Constructivism, Criticisms of Modern Architecture, Collage, Technology and new science, Pop art Deconstruction, Critical Regionalism with examples from works of 2nd & 3rd generation architects.
- RECENT DIRECTIONS – Design movements such as Late Modernism, High Technology, Post Modernism, and De constructivism, Minimalism & Eclecticism.
- SCANDINAVIAN TRADITIONS – Interior Design in Sweden, Finland, Norway. Contributions of Architects such as Alvar Alto, etc.
- CONTEMPORARY INTERIOR DESIGNERS - Works of Charles Rennie Mackintosh, Antonio Gaudi, Gerrit Rietveld. Interiors of Le Corbusier, Frank Lloyd 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.

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- NON-EUROPEAN TRADITIONS – Interiors in China, Japan & the Islamic World – Influences of Pre Columbian American art & culture, African influences in interiors.
- Corbusier's works in India – Chandigarh and the Ahmedabad buildings – their influence on the modern rationalists; Louis Kahn's works in India – their influence on the empiricists; Post-Nehruvian modernist architecture – modernism, utilitarian modernism and neo-modernism, brutalism. Criticisms on the modern community architectural movement; integrating the new and the old; revivalism in religious and secular buildings; revivalism and post-modernism.
- Realism and Impressionism – Romanticism, Historicism & Realism, Impressionism, Neo Impressionism, Symbolism, Art Nouveau & New Architecture
- Fauves & Expressionism - Andre Derain, Henri Matisse, Raul Duffy. Cubism – Pablo Picasso, George Braque, Fernand Leger, Picasso & Braque – Analytical & Synthetic Cubism, Futurism
- Dada & Surrealism – Salvador Dali, Magritte & Miro, Welded Metal a revolution in sculpture, Constructivism, De Stijl & International Style – The Bauhaus, Art Deco, Mondrian, Memphis
- Post Art to Post Modern – Abstract Expressionism, Pop Art, Photographic Imagery, Minimal Art, Conceptual Art, Arte Povera, Body Art & Process Art, Earth & Land Art, Modernism & Post Modernism – Vincent Van Gogh.

#### **Suggested Reading –**

1. History of Interior Design by John Pile.
2. A World History of Art by Hugh Honour
3. Sir Banister Fletcher's: History of Architecture
4. The Collins Big Book of Art: From Cave Art to Pop Art by David G Bilkins

### **PAPER – II (THEORY) - ANTHROPOMETRICS & ELEMENTS OF INTERIOR SPACE**

- Types of Spaces – Open, Semi open, Closed, Private & Public
- 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, openable, sliding, folding pivoted Lodged and braced, paneled doors, glazed doors, Joinery details for doors. 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. Report on types of doors & windows.
- 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 study related to design project.
- 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.

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- 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: Whiton: 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
5. Architects' Data by Ernst Neufert and Peter Neufert

**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. Laminates & Veneers
2. Tiles, Marbles & Stones
3. Glass, Bricks, Mortar & Concrete - Properties, Manufacturing & Qualities
4. Synthetic Materials – Different types of Glass, their properties, manufacturing processes and uses.
5. Plastics – Injection molding & other manufacturing methods, etc. Acrylic Sheers
6. 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. Shafts & Shafts Covering

• STRUCTURAL SYSTEMS – Structures - Components of a load bearing & non load bearing wall & rcc slab roof system – rcc beams, columns and framed structure.

**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

**PAPER IV (THEORY) – INTERIOR SERVICES I**

- Introduction to Lighting – Nature of light- wavelength, photometric quantities – Visual Efficiency, Sources of Light, Day Light Factor Concept, Design Sky Concept, Day Lighting Requirements, Light & Psychology, Emotional Impact, Degrees of Stimulation

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- 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, Task Lighting & Accent Lighting
- 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 – Different luminaries for lighting, Impact of lighting, fixture types – free standing or portable, fixed, light fixture control. Glare Control, Recommended Illuminance Values, Surface Reflectance, Switch Control, Dimming Control, Digital Lighting Control
- Lighting Accessories – Switches, sockets, Fused Connection Units, Lamp holders, Ceiling Roses, etc.
- Lighting Layout, Lighting & electrical looping, Legend for electrical sockets & Fixtures
- Case Study – Study of projects based on different lighting concepts used in interiors & exteriors.
- 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-syphonage 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

**Suggested Readings –**

1. Water Supply Engineering: Environmental Engineering by S. K. Garg
2. Electrical Systems Design by M. K. Giridharan
3. Lighting by Design (Decor Best-Sellers) by Salley Storey
4. The Architecture Of Light (2nd Edition) by Sage Russell
5. Lighting: A Design Source by Elizabeth Wilhide
6. An Introduction to Energy Efficiency Lighting Upgrades for Buildings by J. Paul Guye

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**B. DESIGN INTERIOR DESIGN YEAR II**

**PRACTICAL**

**PRACTICAL 1 – GRAPHICS II**

- Advanced orthographic projections
- Plan, elevation & end view - Solids
- Section & Dimensions.
- Rendering – shadow & light.
- Full final sheet – A House plans, elevation, end view & sections
- Draw 3D geometric solids
- 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.
- Draw simple objects & room interiors using measured 1-point & 2-point perspective

**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
4. Creative Perspective by Robert W. Gill
5. Rendering in Pen and Ink by Arthur L. Guptill
6. Perspective for Interior Designers by John Pile
7. Drawing Geometry: A Primer of Basic Forms for Artists, Designers and Architects by Jon Allen
8. Sciography: Or, Radical Projection of Shadows by R Campbell (Robert Campbell) Puckett
9. A Text Book of Perspective and Sciography by Shankar Mulik

**PRACTICAL 2 – CONSTRUCTION I**

- Wood joinery details i.e. Lap joint, Butt joint, Tongue and groove joint and dovetail joint.
- Types of Brick Masonry- Stretcher bond, Header bond, English bond and Single and Double Flemish bond, Rat-Trap bond, Ornamental Bond.
- Types of Stone Masonry- Rubble Masonry and Ashlar Masonry.
- 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.
- DRAINAGE AND PLUMBING DETAILS - Working drawing for toilets with plumbing diagram – working drawing of kitchen with detailing of shelves, cabinets and wardrobes.
- DETAILING OF STORAGE AREAS - Working drawing o wardrobes, TV cabinet and showcase, crockery shelves, cadenza, chest of drawers, dressing table, etc.
- Material Reports – Brick Masonry, Stone Masonry, Wood Finishes, Cladding Materials and Translucent Materials
- SKILL PROJECT: wood workshop – Making installations using various types of wood joinery details i.e. Lap joint, Butt joint, Tongue and groove joint and dovetail joint.

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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 3 – 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.
- Design a Studio Apartment for an Artist & Residential Kitchen or Residential Toilet. Provide Conceptual sketches, Presentation drawings - Make the plan, elevation & end view, Large scale details of furniture items. Provide Section drawings for kitchen.

**Suggested Readings –**

- 150 Best Minimalist House Ideas by Alex Sanchez
- Interior Design Illustrated by Francis D. K. Ching
- The Color Scheme Bible: Inspirational Palettes for Designing Home Interiors by Anna Starmer
- Residential Interior Design: A Guide To Planning Spaces by Maureen Mitton, Courtney Nystuen
- Interior Graphic Standards: Student Edition by Corky Binggeli
- Detail in Contemporary Residential Architecture by Virginia McLeod
- Designs for 20th Century Interiors by Fiona Leslie

**PRACTICAL 4 – 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.

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- 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