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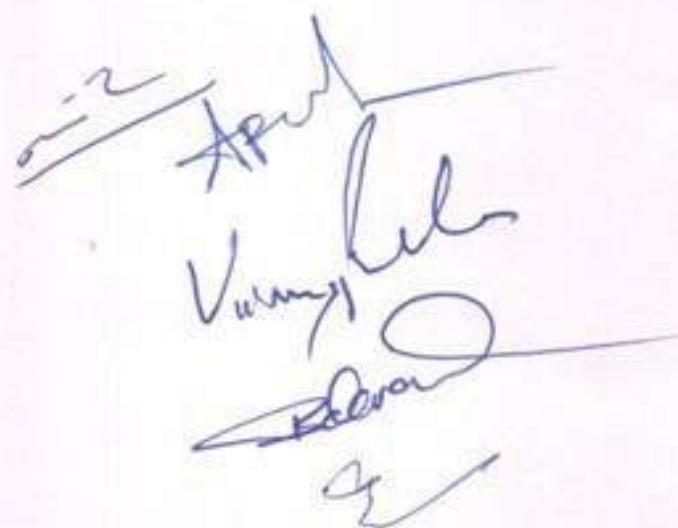


**Raja Mansingh Tomar Music & Arts University**  
**Gwalior, M.P.**

**Bachelor of Design**  
**Interior Design**

**Duration - 4 Years**

**Syllabus**



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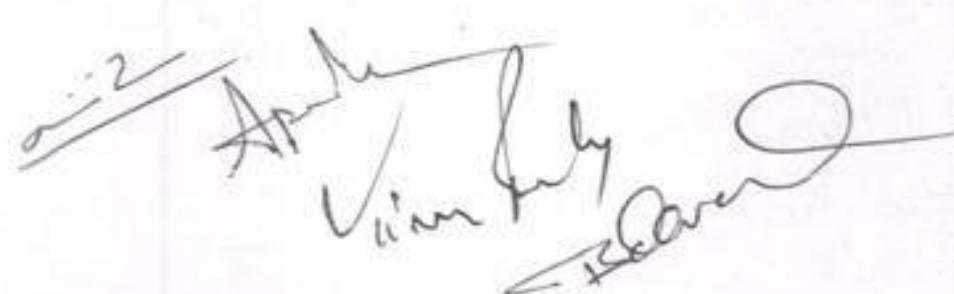
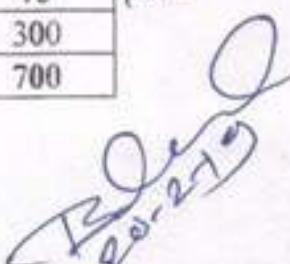
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Raja Mansingh Tomar Music & Arts University, Gwalior, M.P.Bachelor of Design Interior Design Syllabus (Four Years)**SUBMISSION DETAILS (PRACTICAL)****B. DESIGN INTERIOR DESIGN YEAR I**

SUBJECT	SIZE	MIN. ASSIGNMENT	MEDIUM
Sketching	1/4, A4	25	Pencil, Color Pencil, Poster Color
Basic Design	1/4, A4	20	Pencil, Color Pencil, Water Color, Poster Color, Different Materials
Graphics I	A2, A3	20	Pencil
Environmental Exposure	A3, A4	10	Pencil

**SCHEME OF EXAMINATION****B. DESIGN INTERIOR DESIGN YEAR I**

Paper	Time	Size	Ext. Marks	C.C.E.	Total
Color Theory	3 Hrs.	-	50 20	30 25	100 75
History of Art & Architecture I	3 Hrs.	-	70	30	100 75
Theory of Design Process	3 Hrs.	-	50 20	30 25	100 75
Form & Space	3 Hrs.	-	50 20	30 25	100 75
				Total	400
Practical			Ext. Marks	Internal Assignment	
Sketching	6 Hrs.	1/4, A4	70 45	30	75 100
Basic Design	6 Hrs.	1/4, A4	70 45	30	75 100
Graphics I	6 Hrs.	A2	70 45	30	75 100
Environmental Exposure	6 Hrs.	A3, A4	70 45	30	75 100
				Total	300
				Grand Total	700

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**Bachelor of Design Interior Design Syllabus (Four Years)**

**SUBMISSION DETAILS (PRACTICAL)**

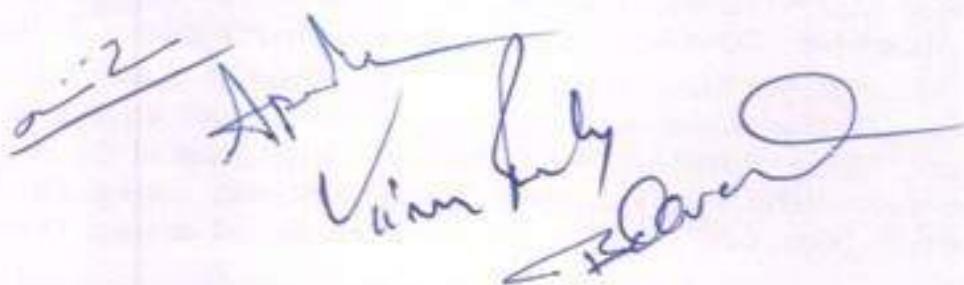
**B. DESIGN INTERIOR DESIGN YEAR I**

SUBJECT	SIZE	MIN. ASSIGNMENT	MEDIUM
Sketching	1/4, A4	25	Pencil, Color Pencil, Poster Color
Basic Design	1/4, A4	20	Pencil, Color Pencil, Water Color, Poster Color, Different Materials
Graphics I	A2, A3	20	Pencil
Environmental Exposure	A3, A4	10	Pencil

**SCHEME OF EXAMINATION**

**B. DESIGN INTERIOR DESIGN YEAR I**

Paper	Time	Size	Ext. Marks	C.C.E.	Total
Color Theory	3 Hrs.	-	70	30	100
History of Art & Architecture I	3 Hrs.	-	70	30	100
Theory of Design Process	3 Hrs.	-	70	30	100
Form & Space	3 Hrs.	-	70	30	100
			Total		400
Practical			Ext. Marks	Internal Assignment	
Sketching	6 Hrs.	1/4, A4	45	30	75
Basic Design	6 Hrs.	1/4, A4	45	30	75
Graphics I	6 Hrs.	A2	45	30	75
Environmental Exposure	6 Hrs.	A3, A4	45	30	75
			Total		300
			Grand Total		700



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**Bachelor of Design Interior Design Syllabus (Four Years)**

**B. DESIGN INTERIOR DESIGN YEAR I**

**PAPER – I (THEORY) – COLOR THEORY**

- What is Color? – Physiology, how light gives objects colors, Factors in perception, Local, Optical and Arbitrary Colors
- Color Systems and Color Wheels – The Pigment Wheel, The Process Wheel, The Munsell Wheel, The Light Wheel, The visual Wheel,
- Coloring Agents – Additive Color Mixing, Subtractive Color Mixing
- Dimensions of Color – Hue, Value, Intensity, Temperature
- Color in Compositions – Rhythm, Balance, Proportion, Scale, Emphasis, Harmony, Transparency, Volume Color, Film Color, Intensity and Space, Line, Texture, Light, Contrast, Shadows
- The Influence of Color – Color Symbolism, How Color Influences Life, Color Association in Language and Emotion, Influences of the Dimensions of Color

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

- Buddha Period – Joggimara Caves, Paintings of Joggimara Caves & Their Importance. Paintings in Ramayana & Mahabharat. Mauryan Empire – Pillar Inscriptions, Sarnath Capital, Yaksha Figures, Lomasha Rishi Cave, Animal Carvings, Terracotta. Hinayana and Mahayana Buddhism – Ashokan School of Architecture – Examples – Ashokan Pillar at Sarnath, & Sanchi stupa. Buddhist rock cut architecture – Salient features of a Chaitya hall and Vihara, - Examples – Chaitya hall at Karli, Vihara at Nasik, Concept and evolution of Hindu Temple – Early shrines of the Gupta and Chalukyan periods – Tigawa temple, Ladh Khan temple and Durga Temple, Aihole – Development of the Indo-Aryan & Dravidian Style-Examples – Papanatha and Virupaksha temple at Pattadakal.
- Gupta Period – Sculpture & Paintings. Ajanta – Technique of Ajanta Mural, Subject Matter of Ajanta Caves, Painting of Ajanta Caves. All Caves (Chaityas & Viharas) Their Paintings, Relief Murals. Early Medieval Period: Bagh Caves, Elephanta Caves, Badami Caves, Ellora Caves, Mahabalipuram, Chola S, Pallava Dynasty. Dravidian style – Rock cut architecture of Pallavas – Mandapas & Rathas Example of masonry temples – Shore Temple, Mahabalipuram and Kailasanathar temple, Kanchipuram –Evolution of the Dravidian Orders – Example of the Chola style – Brihadeeswarar Temple, Tanjore – Evolution of Gopuram & temple complexes during Pandyan period –Examples – Meenakshi Amman temple, Madurai. Salient features of an Indo Aryan Temple –Examples at Orissa – Lingaraja Temple, Bhubaneswar & Sun Temple, Konarak – Example at central India – Kandariya Mahadeva temple, Khajuraho – Example at Gujarat – Surya Temple, Modhera.
- Influences on Islamic Architecture – Evolution of the Islamic Arch – Salient features of an Indian mosque Development of the Imperial style by the kings of the Slave dynasty-Example – Qutb Minar Complex, Varieties of squinch – Alai Darwaza, Delhi – Tomb of Ghiyasuddin Tughlaq & Khirki Masjid – Shish Gumbad & Purana Qila, Delhi. Development of the provincial styles in different regions – Example of Punjab style – Tomb of Shah Rukn-e-Alam – Example of Bengal style – Chota sona masjid. Gaur – Example of Jaunpur style – Atala masjid – Example of Gujarat style – Jami masjid, Ahmedabad – Examples of Deccan style – Gol Gumbaz, Bijapur, & Charminar, Hyderabad.
- Later Medieval Period: Miniature Paintings of Mughal School, Rajput School & Pahari School. Their Styles, Techniques, Subject Matter, Characteristics Etc. Folk & Tribal Art of India – Kalighat, Madhubani, Tanjore, Pattachitra, Warli, Phad Etc. Development of the Mughal style under the different rulers – Babur, Humayun, Akbar, Jahangir, Shahjahan, Aurangzeb – Important examples – Humayun's Tomb, Delhi, Fatehpur Sikri (lay out, Buland darwaza, Diwan-i-Khas, Tomb of

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Salim Chisthi & Jami masjid) Akbar's Tomb at Sikandara – The Taj Mahal, Agra – Red Fort, Delhi (Diwan-i-Am, Rang Mahal).

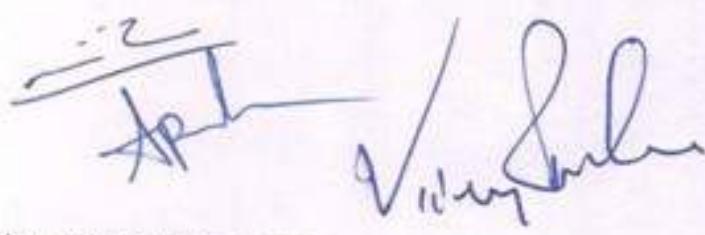
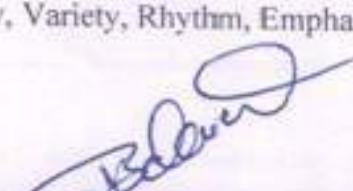
- INDIAN TRADITIONAL DESIGNS – Traditional Styles of design & decorations of homes & accessories across the states in India including Rajasthan, Gujarat, Andhra, Tamil Nadu, Madhya Pradesh etc.
- EARLY CLASSICAL PERIOD – Prehistoric Cave Paintings – Primitive Designs- Interiors during Egyptian, Greek, Roman, Gothic & Early Christian Periods.
- Cave Art, Catal huyuk, Mesopotamia, Ancient Egypt – Early Dynastic, Old Kingdom Architecture, Old Kingdom Sculpture & Painting, New Kingdom Architecture, Ramesside Art, Examples – Great Pyramids of Giza, Great Temples of Amun at Karnak. Evolution of Sumerian, Babylonian & Persian Culture – Ziggurat at Ur, Palace of Sargon at Khorsabad, Palace of Persepolis.
- The Greeks – The Male Nude, The Polis, The Parthenon, Naturalism & Idealization, Scythians & The Animal Style, Hellenistic and Roman art – Hellenistic Architecture, Hellenistic & Roman Paintings & Mosaics, Roman Architecture & Sculpture, Greek Architecture – Doric, Ionic & Corinthian. Example – Parthenon at Athens, Erechtheion at Athens, Theater of Epidaurus, Agora & Stoa. Roman Architecture Examples - The Colosseum, Pantheon, Baths of Caracalla & Circus Maximus
- Early Christian and Byzantine art – Early Christian Art, Byzantine Art, Ecclesiastical Architecture, Evolution of church forms – St. Clemente in Rome. Development of the dome & pendentive in Byzantium – St. Sophia, Constantinople. Romanesque Architecture in Italy & Northern Europe – Formation of Guilds – Pisa Group in Italy, Abbaye aux Hommes, Tower of London.
- Medieval Art – Gothic Art & Architecture, French Gothic – Evolution of vaulting & development of structural systems – Notre Dame in Paris. English Gothic – Westminster Abbey, Hampton court Palace in London, Doges Palace in Venice, Milan Cathedral.
- Interiors in Christian and Romanesque periods

**Suggested Reading –**

1. A World History of Art by Hugh Honour
2. Sir Banister Fletcher's: History of Architecture
3. Modern Architecture: A Critical History (World of Art) by Kenneth Frampton
4. India (Modern Architectures in History) by Peter Scriven
5. Concise History of Modern Architecture in India by Jon Lang
6. The Art & Architecture of the Indian Subcontinent (The Yale University Press Pelican History of Art Series) by Harle, J C
7. History of Fine Arts in India & the West by Tomory E.
8. Indian Architecture: Buddhist and Hindu by Percy Brown
9. Indian Architecture: Islamic Period by Percy Brown

**PAPER – III (THEORY) – THEORY OF 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

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- 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. The Pattern Language by Christopher Alexander
2. Design for The Real World by Victor Papanek
3. Design Process: A Primer for Architectural and Interior Design by Sam F. Miller
4. Design Thinking Process and Methods 3rd Edition by Robert Curedale

**PAPER IV (THEORY) – FORM & SPACE**

- Primary Elements – Point, Two Point, Linear Elements Defining Space, Planar Elements, Volume & Volumetric Elements
- Form – Properties of Form, Primary Shapes, Regular & Irregular Forms, Transformation of Form, Different Forms – Additive, Centralized, Linear, Radical, Clustered, Grid, Rotated Grid
- What is space? Negative & Positive Space.
- Relationship Between Form & Space – Form Defining Space, Base & Overhead Planes, Vertical & Linear Elements Defining Space, L Shaped & U Shaped Plane, Openings in Space Defining Elements, Organization of Form & Space, Spatial Relationships, Space within a space, Organizations – Centralized, Linear, Radical, Clustered, Grid
- Proportion & Scale – Material, Structural & Manufactured Proportions, Proportioning Systems, Golden Sections, Renaissance Theories

**Suggested Reading –**

1. Architecture: Form, Space, and Order by Francis D.K. Ching





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**B. DESIGN INTERIOR DESIGN YEAR I**  
**PRACTICAL**

**PRACTICAL 1 – SKETCHING**

- Study of various objects in pencil & color
- Mannequin with Proportions – Male & Female
- Human Proportions - Front, Profile & Back View
- Human Gestures
- Fundamentals of perspective
- One point, Two Point & Three Point Perspective
- Eye Level & Vanishing Point
- Make free hand sketches of room interiors, etc.
- Types of colors, Study of warm & cool colors
- Primary, Secondary & Tertiary Colors
- Color Wheel, using color wheel to understand Hue, Value & Intensity
- Color Models (Additive Primary Colors & Subtractive Primary Colors)
- Color Harmony, Making Compositions to understand color

**Suggested Reading –**

1. Theory & Use of Color by Luigi De Grandis
2. Color by Betty Edwards
3. Design Elements, Color Fundamentals: A Graphic Style Manual for Understanding How Color Affects Design by Aaris Sherin
4. Human Dimension and Interior Space: A Source Book of Design Reference Standards by Julius Panero & Marin Zelnik
5. Bridgman's Complete Guide to Drawing from Life by George B Bridgeman
6. Perspective Drawing Handbook (Dover Art Instruction) by Joseph D Amelio
7. Perspective for Interior Designers by John Pile

**PRACTICAL 2 – BASIC DESIGN**

- Learning to use all the hand tools - basic cutting, chiseling, sawing, etc.
- Making installations using material creativity like Wood, POP, Polystyrene, Thermocol, Metal (aluminum or brass) & Clay using all the hand tools
- 2D & 3D Design – Exercises to understand elements & principles of design & how to apply them in a 2D Composition. Creating 3D Compositions using the same principles to understand rhythm, form, space (negative & positive space), balance, harmony, unity & contrast.
- Design Models on Basic Principles of Interior Design
- Study of illusion (2D & 3D) in both pencil & color
- PHOTOSHOP: Photoshop interface, creating and saving images, basic image editing, Photoshop tool box and tools, using layers, special effects.

**Suggested Reading –**

1. Drawing Visual Illusions by Natalie Sirett
2. Masters of Deception: Escher, Dali and the Artists of Optical Illusion by Al Seckel
3. Working with Hand Tools: Essential Techniques for Woodworking by Paul N. Hasluck

**PRACTICAL 3 – GRAPHICS I**

- Using Ruler, Scale, Set Square, Compass, etc.
- Lettering & Line Intensity Sheets
- 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
- Introduction to Drawing Table
- Plan, Elevation of Basic Objects – Lines & Planes
- Drawings in a format – A4, A3, A2.

**Suggested Reading –**

1. Working with Hand Tools: Essential Techniques for Woodworking by Paul N. Hasluck

**PRACTICAL 4 – ENVIRONMENTAL EXPOSURE**

- Choose a site in the city (Micro – Environment) like a busy tea stall, shop, temple, etc. and make observation sketches thereby learning unintentional use of design.
- List all activities & changes that are happening in that micro environment with timing
- List all the elements affecting the micro environment causing change
- Make live sketches of the changes happening at different timing during the day till night to study sciography (relation of space with light).
- Make sketches on different days but same timings and compare changes.

**Suggested Readings –**

1. Sciography: Or, Radical Projection of Shadows by R Campbell (Robert Campbell) Puckett



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**SUBMISSION DETAILS (PRACTICAL)**

**B. DESIGN INTERIOR DESIGN YEAR II**

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

**SCHEME OF EXAMINATION**

**B. DESIGN INTERIOR DESIGN YEAR II**

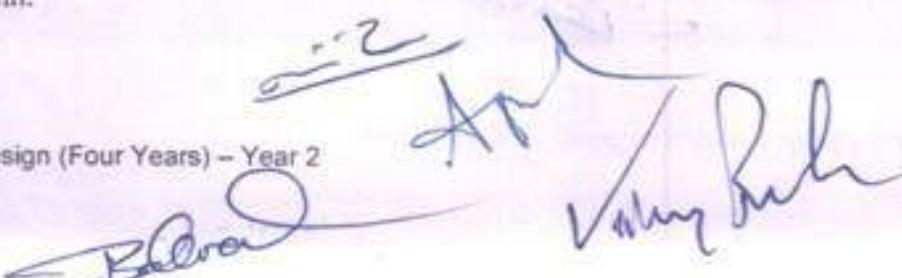
Paper	Time	Size	Ext. Marks	C.C.E.	Total
History of Art & Architecture II	3 Hrs.	-	70	30	100
Anthropometrics & Elements of Interior Space	3 Hrs.	-	70	30	100
Material & Construction I	3 Hrs.	-	70	30	100
Interior Services I	3 Hrs.	-	70	30	100
				Total	400
Practical			Ext. Marks	Internal Assignment	
Graphics II	6 Hrs.	A2, A3	45	30	75
Construction	6 Hrs.	A2, A3	45	30	75
Interior Design Studio I	3 Hrs.	A2, A3	45	30	75
AutoCAD & Sketchup	2 Days	-	45	30	75
				Total	300
				Grand Total	700

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**B. DESIGN INTERIOR DESIGN YEAR II**

**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 & Rocco 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 Chintamani Kar, 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 – Rashtrapati 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, Bouleau 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 Aalto, 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.


  
*Valley Books*

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### Bachelor of Design Interior Design Syllabus (Four Years)

- 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, Raoul Dufy. 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, hinged 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 –**

- Human dimension & interior Space: A Source Book of Design Reference Standards by Julius Panero & Martin Zelnik.
- Interior Design and Decoration: Whiton: Interior Design Décor by Augustus Sherrill Whiton
- The Interior Design Reference & Specification Book: Everything Interior Designers Need to Know Every Day by Linda C'Shea, Chris Grimley, Mimi Love
- The Elements of Style: Encyclopedia of Domestic Architectural by Stephen Calloway, Dennis Curran, Sheila Curran
- Architects' Data by Ernst Neufert and Peter Neufert

**PAPER – III (THEORY) – MATERIAL & CONSTRUCTION I**

- INTRODUCTION TO MATERIALS –
  - 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
  - Tiles, Marbles & Stones
  - Glass, Bricks, Mortar & Concrete - Properties, Manufacturing & Qualities
  - Synthetic Materials – Different types of Glass, their properties, manufacturing processes and uses.
  - Plastics – Injection molding & other manufacturing methods, etc. Acrylic Sheers
  - Fabrics – Textile fibre, leather etc. different types and their uses.
- BUILDING COMPONENTS – Drawings of the components of a building 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.
- 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 –**

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



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

### **Bachelor of Design Interior Design Syllabus (Four Years)**

- Artificial Lighting – Electric Lamps – Lamp Bases, Filaments, Incandescent, Fluorescent, Sodium Vapor, Mercury, Halogen & Neon. Different types of lights in interior & exterior or – 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 Wilhite
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 plane, 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 of wardrobes, TV cabinet and showcase, crockery shelves, cabinet, 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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**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 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

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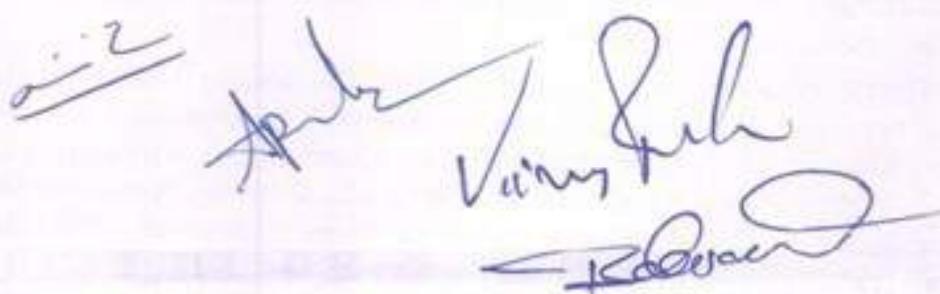
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**SUBMISSION DETAILS (PRACTICAL)**  
**B. DESIGN INTERIOR DESIGN YEAR III**

SUBJECT	SIZE	MIN. ASSIGNMENT	TOPIC & MEDIUM
Construction II	A2, A3	11	Pencil Color Pencil
Interior Design Studio II	A2, A3	7	Pencil Color Pencil, On Computer
Interior Design Studio III	A2, A3	12	Pencil Color Pencil, On Computer
3DS MAX	-	5	On Computer

**SCHEME OF EXAMINATION**  
**B. DESIGN INTERIOR DESIGN YEAR III**

Paper	Time	Size	Ext. Marks	C.C.E.	Total
Material & Construction II	3 Hrs.	-	70	30	100
Interior Services II	3 Hrs.	-	70	30	100
Interior Landscape Design	3 Hrs.	-	70	30	100
Furniture Design	3 Hrs.	-	70	30	100
				Total	400
Practical			Ext. Marks	Internal Assignment	
Construction II	6 Hrs.	A2, A3	45	30	75
Interior Design Studio II	3 Hrs.	A2, A3	45	30	75
Interior Design Studio III	3 Hrs.	A2, A3	45	30	75
3DS MAX	2 Days	-	45	30	75
				Total	300
				Grand Total	700



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**Bachelor of Design Interior Design Syllabus (Four Years)**

**B. DESIGN INTERIOR DESIGN YEAR III**

**PAPER – I (THEORY) – MATERIAL & CONSTRUCTION II**

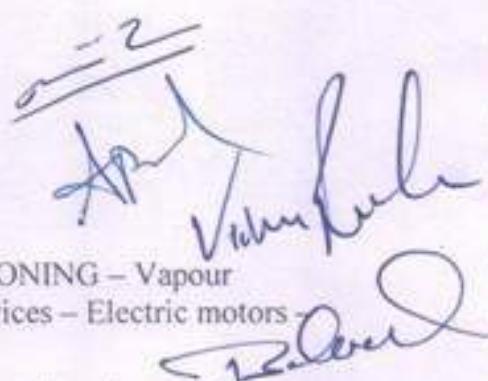
- FLOORS - Floor coverings – Softwood, hardwood, resilient flooring, linoleum, asphalt tile, vinyl, rubber, cork tiles, terrazzo, marble & granite, properties, uses & laying. Floor tiles – Ceramic glazed, mosaic and cement tiles, properties, uses and laying, details for physically handicapped.
- FALSE CEILING – Construction of various kinds of false ceiling such as thermacol, plaster of paris, gypsum board, metal sheets, glass and wood. Construction of domes, vaults, & other special ceilings.
- WALL PANELING – Paneling- Using wooden planks, laminated plywood, cork sheets, fibre glass wool & fabric for sound insulation and wall paneling for thermal insulation.
- FINISHES – Paints- enamels, distempers, plastic emulsions, and cement based paints, properties, uses and applications. Fainting on different surfaces – defects in painting, clear coatings & strains, varnishes, lacquer, shellac, wax polish & strains, properties, uses and application. Special purpose paints- bituminous, luminous, fire retardant and resisting paints- properties, uses and applications.
- PARTITIONS – Details of fixed, sliding and folding partitions with wood, steel and aluminum frames & panels in glass, particle board, MDF, gypsum board and plywood.
- WINDOWS IN STEEL AND ALUMINIUM – Details of sliding and openable windows in aluminum and steel frames with glazed panels
- STAIRCASE – Types according to profile – straight flight, doglegged, quarter turn, half turn, bifurcated, spiral & helical. Types based on materials (timber, wood, steel, synthetic materials). Details of handrails & balusters. Designing and detailing for physically handicapped.

**Suggested Readings –**

1. Building Construction by B.C. Punmia
2. Engineering Materials by RANGWALA
3. Building Construction: Metric - Vol. 1 – 3 by W.B. McKay
4. Interior Design Illustrated by Francis D. K. Ching
5. Contemporary Ceilings Vol 1- 3 by IAG
6. Building Construction: Metric - Vol. 1 – 3 by W.B. McKay

**PAPER II (THEORY) – INTERIOR SERVICES II**

- BASIC CONCEPTS AND SYSTEM COMPONENTS IN AIR CONDITIONING – Vapour compression cycle – Compressors – Evaporators – Refrigerant control devices – Electric motors – Air handling units – Cooling towers.
- AIR-CONDITIONING SYSTEM AND APPLICATIONS – Window type and packaged air conditioners – chilled water plants – Fan coil systems – Water piping – Cooling load. Air-conditioning systems for different types of buildings – Duct layout. Codes for Ventilation – Ventilation rates – air changes per hour – relative humidity – cross ventilation, stack effect, recommended ventilation rates for kitchen, toilet.
- 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 points, power points and light points – PVC sheathed wiring system – protective earthing – earth electrode.


  
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**PAPER – III (THEORY) – INTERIOR LANDSCAPE DESIGN**

- INTERIOR LANDSCAPING – Definition, classification of plants, indoor plants and their functions, layout & components, Floriculture, commercial ornamental, Selection of plants & pest control.
- PHYSICAL REQUIREMENTS OF PLANTS – Physical requirements of plants – light, temperature, water, planting medium, soil separator, weight of plants, acclimatization & maintenance. Techniques to meet physical requirements.
- INTERIOR LANDSCAPING ELEMENTS & PRINCIPLES – Various interior landscaping elements, water bodies, pools, fountains, cascades, plants, rocks, artifacts, paving & lighting. Design guidelines- plant texture & colour, plant height, plant spacing.
- ROOF AND DECK LANDSCAPE – Protection of the integrity of the roof and structure, provisions for drainage, light weight planting medium, irrigation, selection of materials, water proofing, provision for utilities and maintenance.
- EXERCISE ON INTERIOR LANDSCAPE –
  1. Courtyard design
  2. An outdoor room design
  3. Terrace garden

**Suggested Readings –**

1. The Professional Practice of Landscape Architecture: A Complete Guide to Starting and Running Your Own Firm by Walter Rogers
2. Foundations of Landscape Architecture: Integrating Form and Space Using the Language of Site Design by Norman Booth
3. Residential Landscape Architecture: Design Process for the Private Residence by Norman K. Booth (Author), James E. Hiss

**PAPER – IV (THEORY) – FURNITURE DESIGN**

- HISTORY OF FURNITURE DESIGN – Furniture designs during Egyptian, Greek, Roman, Romanesque, Gothic, Renaissance, Industrial Revolution. Contributions in the beginning of the 20<sup>th</sup> century by the four pioneer architects in furniture design, Bauhaus, De Stijl & other modern furniture designs.
- HUMAN FACTORS – Study of Anthropometry & Design criteria involved in the design of
  1. Sofa, settee, couch, etc.
  2. Cot, bedside lockers, wardrobes
  3. Cupboards, shelves
  4. Bunk beds, study table
  5. Display furniture
  6. Furniture for the physically challenged
- PRINCIPLES OF DESIGN & DETAILINGS
  1. Form – Colour, Symbols
  2. Materials & finishes – Wood, Glass, Metal, Plastics and Upholstery, include various finishes.
  3. Fabrication Techniques involved
  4. Multiple Utility Oriented Approaches to Furniture Design.
- ROOM PLANS AND FURNITURE ARRANGEMENT – Types of furniture, Built in furniture, Movable furniture, Systems furniture, Specially Designed furniture, Readymade furniture, Modular,

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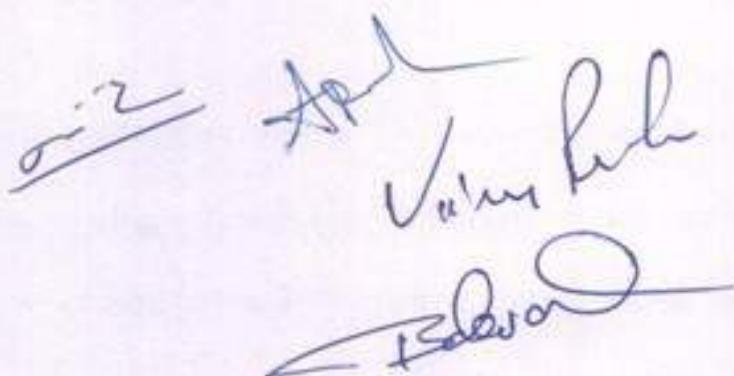
Knockdown & Economy Furniture. Traffic pattern and furniture layout for residence, commercial and office areas.

• DESIGN & DETAILING

1. Residential Furniture – Seating, Sleeping, Storage & Children's furniture
2. Commercial furniture – Showcases, Counters, Display units, Restaurant furniture, Bar furniture
3. Office furniture – Adjustable desks & storage, Mobile & Resilient chairs, Portable chairs, Movable Tables, Lounge seating.

**Suggested Readings –**

1. Furniture: World styles from classical to contemporary by David Linley (Foreword), Judith Miller
2. The Encyclopedia of Furniture: Third Edition - Completely Revised by Joseph Aronson
3. Design of the 20th Century by Charlotte & Peter Fiell
4. Interior Design and Decoration: Whiton : Interior Design Décor by Augustus Sherrill Whiton

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**B. DESIGN INTERIOR DESIGN YEAR II**  
**PRACTICAL**

**PRACTICAL 1 – CONSTRUCTION II**

- Construction details of wooden flooring and ceiling. Skirting detail.
- Working Drawing of a 1 bhk residence showing:
  - Kitchen counter details (all civil counter details)
  - Flooring details
  - False ceiling detail with electrical & AC layout.
  - Construction details of all furniture units.
  - All toilet details.
- SKILL PROJECT 3: Model Making - Make an actual 1:10 scale furniture model for the 1 bhk. Residence designed by the student in 2<sup>nd</sup> year.

**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 –INTERIOR DESIGN STUDIO II**

- SHOPS – Planning for retail activity – anthropometrics, types of Shop layouts Modular units. Materials used in counters, shelves, worktops, their comparative study. Lighting & colour scheme – natural & artificial light.
- COMMERCIAL SPACES – The art of selling-displays/products/marketing, design of display units, design of boutiques, showrooms. Concepts in modern day Retail interiors – materials & finishes, colour, texture & pattern.
- SHOPPING MALLS – Product display – windows/internal displays/hierarchy of product display/power of visual communication/graphics. Exhibition spaces – display for exhibition, Lighting design for commercial spaces – task/display/atmospheric/focal lighting. Coloring commercial spaces – coding/decoding/visual communication. Design of commercial Environments such as Malls, Shopping Arcades, etc.
- 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.
- CORPORATE OFFICE - 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.
- CODES FOR BARRIER FREE ENVIRONMENT – Requirement of toilets, corridors, for handicapped person – wheel chair clearance – ramps for handicapped, according to ISO 9001 Standards.

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- Design problem – Small commercial office accommodating 10 to 15 people. Area – 1500 sq. ft. Built Up Area
  - Case Study
  - Site Analysis
  - Conceptual sketches, Zoning Plan
- Make the plan, elevation & sections
  - Large scale details of furniture items
  - Scheme Detailing of Flooring and Ceiling.
  - Working Drawings of Toilets, Sanitary Details, etc.
  - Computer Drafting or Hand Drafting
  - Final Presentation drawings using different views

**Suggested Readings –**

1. Designs for 20th Century Interiors by Fiona Leslie
2. Building Codes Illustrated: A Guide to Understanding the International Building Code by Francis D. K. Ching
3. Interior Graphic Standards: Student Edition by Corky Binggeli
4. The Interior Design Course: Principles, Practices and Techniques for the Aspiring Designer by Tomris Tangaz
5. Interior Color by Design by Jonathan Poore
6. Designing Commercial Interiors by Christine M. Piotrowski
7. Commercial Space: Boutiques by Francisco Asensio Cerver, Lawrence Mc Allister
8. Designing Commercial Interiors by Christine M. Piotrowski

**PRACTICAL 3 – INTERIOR DESIGN STUDIO III**

- Design a 3BHK Residential apartment.
  - Case Study
  - Site Analysis
  - Conceptual sketches, Zoning Plan
  - Make the plan, elevation & sections
  - Large scale details of woodwork – paneling & furniture items
  - Scheme Detailing of Flooring and Ceiling.
  - Working Drawings of Kitchen, Toilets
  - Complete electrical plus AC & plumbing drawings
  - Fabrication drawings for gate, stair railing, parapet railing, etc.
  - Basic Landscaping
  - Computer Drafting or Hand Drafting
  - Final Presentation drawings using different views



**Suggested Readings –**

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

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**PRACTICAL 4 – 3DS MAX**

- 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

**Suggested Readings –**

1. Autodesk 3ds Max 2014 Bible by Kelly J. Murdock
2. Mastering Autodesk 3ds Max 2013 by Jeffrey M. Harper



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**SUBMISSION DETAILS (PRACTICAL)**  
**B. DESIGN INTERIOR DESIGN YEAR IV**

SUBJECT	SIZE	MIN. ASSIGNMENT	TOPIC & MEDIUM
Interior Design Studio IV	A2, A3	12	Pencil, Color Pencil, On Computer
Interior Design Studio V	A2, A3	12	Pencil, Color Pencil, On Computer
Professional Training	-	1	-
Final Design Project	A2, A3	1	Pencil, Color Pencil, On Computer

**SCHEME OF EXAMINATION**  
**B. DESIGN INTERIOR DESIGN YEAR IV**

Paper	Time	Size	Ext. Marks	C.C.E.	Total
Estimation & Costing	3 Hrs.	-	70	30	100
Sustainable Design	3 Hrs.	-	70	30	100
Project Management	3 Hrs.	-	70	30	100
Acoustics	3 Hrs.	-	70	30	100
				Total	400
Practical			Ext. Marks	Internal Assignment	
Interior Design Studio IV	3 Hrs.	A2, A3	45	30	75
Interior Design Studio V	3 Hrs.	A2, A3	45	30	75
Professional Training	3 Hrs.	-	45	30	75
Final Design Project	3 Hrs.	A2, A3	45	30	75
				Total	300
				Grand Total	700

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**B. DESIGN INTERIOR DESIGN YEAR IV**

**PAPER – I (THEORY) – ESTIMATION & COSTING**

- INTRODUCTION TO ESTIMATION – 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, artifacts.
- RATE ANALYSIS & ESTIMATION FORMAT – Rate Analysis – definition, method of preparation, quantity & labour estimate for woodwork, steelwork, Aluminum work, glass & its rate for different, thickness & sections. Finishing (enamel paint, duco paints, melamine, DU coats, Hand polishing, veneering and lamination) for walls & ceiling. Electrical & plumbing products, wiring, ducting, and laying of tiles & wall paneling in the estimate format of the project.
- DETAILED ESTIMATE – 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.
- COSTING OF FIXTURES & FITTINGS – Cost of the following items: electrical fitting like, luminaries, fan, cables, switches, tiles in skirting & dado, cement plaster, joinery in wood, steel & aluminum, painting to walls – cement paint, oil paints, distemper acrylic emulsion, enamel paint painting to joinery, vernishing, French polishing plumbing equipments like piping, shower panels, shower panels, cubic etc, tubs, Jacuzzis, taps, motors, fountains, false ceiling of aluminum panels, steel & wooden frame work, thermocol. Wall paneling of ceramic tiles & other tiles of materials suitable for the same, partitions made of materials like aluminum wood, steel.
- INTRODUCTION TO SPECIFICATION – 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 also of materials like steel aluminum glass of various kind. Wall paneling & false ceiling of materials like aluminum, steel, wood, electrical, plumbing, air conditioning & fighting equipments.

**Suggested Readings –**

1. Estimating and Costing in Civil Engineering: Theory and Practice Including Specifications and Valuations by UBS Publishers & Distributors
2. The Interior Designer's Guide to Pricing Estimating and Budgeting by Theo Stephan Williams

**PAPER II (THEORY) – SUSTAINABLE DESIGN**

- NEED FOR ADAPTIVE REUSE: Cultural inheritance – heritage buildings and old structures – ascertaining the structural stability – estimation of the prolonged life of the building – strategies of adaptive reuse – investigation into material finishes, etc
- NEED FOR RECYCLING OF MATERIALS: The logic behind recycling – recycling of steel, wood, glass etc – estimation of the quality of recycled timber – criteria for recycling of steel, glass, etc
- CONCEPT OF SUSTAINABILITY: Earth summit declaration – definition of sustainability – economic, social and environmental issues – green rating of buildings – criteria for LEED rating.
- RECYCLING OF WASTE WATER: Sullage and sewage – techniques of water purification for sullage – treatment plant for sewage – techniques of biological and chemical purification.
- ENERGY EFFICIENCY – Reasons for Energy Crisis - Need for the Energy Conservation – Concept of conventional, non-conventional, renewable, non-renewable energy sources – Global Energy use – Impacts of energy use – Merits and demerits of both conventional and non-conventional Energy sources.

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### **Bachelor of Design Interior Design Syllabus (Four Years)**

- NEED FOR CONSERVATION: Architectural conservation – conservation of heritage and important buildings – levels of intervention – structural, construction related, finishes etc. Revival of old building techniques and finishes.
- VERNACULAR ARCHITECTURE - Urban and rural vernacular architecture, role of sustainability in vernacular architecture, Environment & Resource Management, Vernacular building materials- Recognize the different ways in which these materials were used at different times and in different parts of the country. Case studies of Vernacular towns within Kerala. Knowledge of vernacular architecture in contemporary regional designs.

#### **Suggested Readings –**

1. Sustainable Design: A Critical Guide (Architecture Briefs) by David Bergman
2. Sustainable Construction: Green Building Design and Delivery by Charles J. Kibert
3. Solid Waste Management by Sasikumar K
4. Handmade Houses and Other Buildings: The World of Vernacular Architecture by John May
5. Lessons from Vernacular Architecture by Willi Weber, Simos Yannas

### **PAPER – III (THEORY) – PROJECT MANAGEMENT**

- INTRODUCTION – 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.
- ELEMENTS OF NETWORK – Event, activity, dummy, network rules, graphical guidelines for network, numbering of events.
- CRITICAL PATH METHOD AND PERT ANALYSIS – CPM network analysis & PERT time estimates, time computation & network analysis.
- PROJECT TIME REDUCTION AND OPTIMIZATION – 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.
- PROJECT UPDATING AND ALLOCATION – When to update? Data required for updating, steps in the process of updating, Resource usage profile: Histogram, Resource smoothing and Resource leveling, Computer applications in project management.

#### **Suggested Readings –**

1. Professional Practice for Interior Designers by Christine M. Piotrowski
2. Project Management for the Design Professional: A Handbook for Architects, Engineers and Interior Designers by David Burstein (Author), Frank A. Stasiowski
3. Time Management for Architects & Designers by Thorbjørn Mann

### **PAPER IV (THEORY) – ACOUSTICS**

- INTRODUCTION TO ACOUSTICS – Definition, Theory of sound generation, transmission – reception of sound – Terms related to acoustics – sound waves, frequency, intensity, wavelength – measurement of sound.
- ROOM ACOUSTICS – Characteristics of speech – Making of sound – Human ear characteristics – Behaviour of sound in enclosed space – Reverberation, RT, Optimum reverberation, simple exercise using Sabine's formula, Echo.

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- SOUND ABSORPTION, INSULATION, SOUND REINFORCEMENT – Sound absorption, absorption co-efficient and their measurements – sound absorbing materials – sound insulation – materials – sound amplification and sound reinforcement.
- NOISE CONTROL – Sources and types of noise – effect on human behavior, noise curves, transmission of noise – noise control – materials and techniques.
- ACOUSTICS IN BUILDINGS – Design and detailing – Basic principles in designing of lecture halls, auditorium theatres, cinema halls, broadcasting studio, recording studio. Acoustical requirements of different types of building.
- FIRE SAFETY – Mechanism of fire spread in building and prevention – Fire safety standards – concepts in fire protection- Fire fighting installation and requirements – Heat sensitive detectors – Smoke detectors – Automatic water sprinkler system- Foam systems. Fire Safety Codes – Fire-combustibility – NBC – fire resistant rating of materials – fire fighting requirements – wet riser, dry riser, fire zones, fire escape stair case, fire alarms, smoke detectors and fire lifts.

**Suggested Readings –**

1. Master Handbook of Acoustics, Sixth Edition Paperback by F. Alton Everest, Ken C Pohlmann
2. Acoustic Design (Architectural Press library of design & detailing) by Duncan Templeton, David Saunders

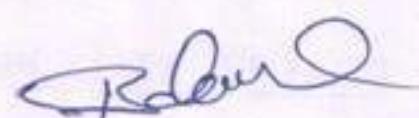


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**B. DESIGN INTERIOR DESIGN YEAR II**  
**PRACTICAL**

**PRACTICAL 1 – DESIGN PROJECT IV**

- RESTURANT INTERIORS – Interior designing for multi-functional Restaurants and Banquet halls, multi-level planning, design and detailing of various work spaces, interactions zones. Design of hospitality spaces such as theme-based restaurants, corporate banquet venues etc
- HEALTH CARE INTERIORS - The design of Health care spaces, such as hospitals, consulting, treatment rooms, Diagnostic facilities – study of special acoustics and functional materials and furniture detailing.
- AUDITORIUM – Spatial and environmental standards for various auditorium – performing arts, cinema, convention centre. Detail schematics of wall paneling, false ceiling and carpeting to satisfy acoustic requirements. Lighting study to develop ideas for foyer, auditorium and stage requirements.
- FIVE STAR HOTELS – Spatial and service standards for five-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.
- ENTERTAINMENT SPACES: Study of interiors for entertainment buildings such as clubs, multiplex and amusement parks – schemes for video games par our, food court areas and exclusive indoor game areas of clubs.
- EDUCATIONAL SPACES: Study of interiors for class rooms, seminar halls and AV halls – schemes for library, smart class rooms and discussion areas.
- SPORTING SPACES: Study of interior requirements for gymnasium, indoor stadium and aquatic complex – schemes for interiors of stadium with focus on lighting requirements and visibility.
- COMMERCIAL SPACES: Study of interiors in salons, pubs, discotheque and banks, etc – schemes for the same.
- TRANSPORTATION SPACES: Study of interiors for airports, MRTS, railway stations and bus terminals – schemes for the same
- Design problem – Design a 3-star hotel. Plot Area – 1 acre. Construction – 50,000 Sq. ft. The hotel should include 100 rooms (divide into single bed, double bed, triple bed & suits), 2 restaurants, gym, spa, parking, landscape, swimming pool, 2-3 kitchens. Submit –
  - a) Case Study
  - b) Site Analysis
  - c) Conceptual sketches, Zoning Plan
  - d) Make the plan, elevation & sections
  - e) Electric & Plumbing Layouts
  - f) Large scale details of woodwork – paneling & furniture items
  - g) Scheme Detailing of Flooring and Ceiling.
  - h) Working Drawings of Commercial Kitchen, Toilets
  - i) Scheme Detailing (Any 4) –
    1. Lobby
    2. Swimming Pool
    3. Suite
    4. Gym & Spa
    5. Banquet

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- Landscaping drawings
- Computer Drafting on AutoCAD
- Final Presentation drawings using different views
- 3D views on 3DS Max or Sketchup

**Suggested Readings –**

1. Interior Graphic Standards: Student Edition by Corky Binggeli
2. Hospitality and Restaurant Design 2 (Hospitality & Restaurant Design) by Roger Yee
3. Bar and Restaurant Interior Structures by Lorraine Farrelly
4. The Best of Hospitality Architecture and Design: v. 1 by Cindy Allen
5. 21st-Century Interiors by Beth Browne
6. Architecture on Sports Facilities by Carles Broto
7. Planning: Buildings for Administration, Entertainment and Recreation by Edward David Mills
8. New Transport Architecture by Will Jones
9. Building Type Basics for Transit Facilities by Kenneth W. Griffin
10. Stations (Architecture in Focus) by Chris Van Uffelen
11. Hotel Design, Planning and Development by Richard H. Penner, Lawrence Adams, Walter Rutes
12. Hospitality and Restaurant Design 2 (Hospitality & Restaurant Design) by Roger Yee

**PRACTICAL 2 – DESIGN PROJECT V**

- ❖ Design problem –
  1. Lounge with disco.
  2. Restaurant.
- Site Area – 5000 sq ft. Design should cater minimum 150 people.
- Case Study
- Site Analysis
- Conceptual sketches with acoustical measures, Zoning Plan
- Submit –
  - a) Make the plan, elevation & sections
  - b) Final Presentation drawings using different views
  - c) Electric & Plumbing Layouts
- Computer Drafting on AutoCAD
- 3D views on 3DS Max or Sketchup



**Suggested Readings –**

1. Bars, Clubs and Lounges by Sibylle Kramer
2. Restaurant & bar design by Julius Wiedemann
3. Night Fever: Interior Design for Bars and Clubs by Frame (Compiler)

**PRACTICAL 3 – PROFESSIONAL TRAINING**

- Develop Resumes & Portfolios
- Apply for internships at Interior Design Firms, Architectural Firms, Civil Contractor Office or under any professional interior designer or architect.

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- At the end of the training period, the student will have to produce a certificate of experience and satisfactory performance from the concerned office in the prescribed format as proof of them having finished the required minimum 45 days full time or 90 days part time internship.

**The practical marks shall be awarded based on the following works to be submitted by the student and presented during the practical exam –**

1. Training Report: This shall contain copies of various drawings done by the student either drafted or designed. It shall also contain other works like photographs of sites visited, models done, computer output produced etc.
2. Building Study – This shall be a detailed critical study of a building designed by the architect with whom the student has worked. It shall include the study of function, aesthetics, context, structure, etc. This shall be presented through drawings, photographs, write ups, etc.
3. Building Material Study – This shall be a detailed study of a new or relatively new building material available in the market. A study of its properties, uses, cost, maintenance, etc. is expected to be done. Samples of materials shall also be obtained and presented.
4. Detailing study – This shall be a study of any interesting detail done in the field where the student has undertaken training. This shall include sketches and photographs of the detail.

### **PRACTICAL 4 – FINAL DESIGN PROJECT**

Final Design projects can be of any scale and size (in terms of built areas) as long as the required rigor and depth is demonstrated by the student to merit consideration as a final project. Very large campus projects can be avoided as the work tends to be repetitive and more often ends with a large number of structures but with minimal variations and content. It is expected that all genre of projects (study > design) would end with a design solution; in fact all projects should be grounded in some kind of critical enquiry. The depth of enquiry can be extended and the time spent on design can be reduced in a specific case, but such a project should demonstrate clarity in terms of research design. The following stages have been identified as a generic model of the studio. The stages can be fine-tuned depending on the resources. It is expected that this project will be run as a studio with individual guidance under a project coordinator.

**Pre-Project** – This stage should ideally be accomplished in the previous semester. The work involves students to discuss with the faculty to identify an area of interest or specific types of buildings. The pre-project stage should end with a project proposal giving routine information on site, location, need, broad requirements and scale. In addition, proposal should clearly indicate the “project question” or an area (or areas) of interest.

**Project Seminar** – Student shall present a seminar on the project topic which would include the following –

- Precedents of similar projects, either actual visit to such projects or through literature reviews.
- Cultural, contextual, historical, technological, programmatic concerns of the project.
- Prevalent or historical models of architectural approach to such projects and a critique of such models and
- A rhetorical or a speculative statement that would be the basis of further investigation. (For example: Architecture in the information age: Design of libraries in the new virtual reality regime). Documentation which is a part of this presentation shall be taken as completion of “case study” part of the final requirement.

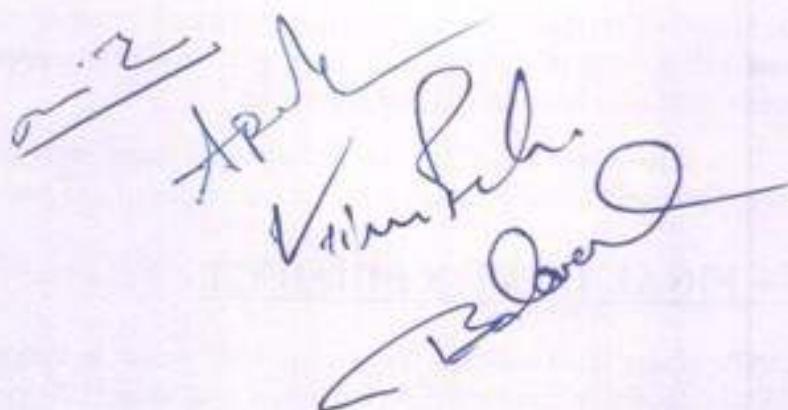
**Mid Review** – There shall be a review to clarify the conceptual statements and assumptions of the students. Students shall present a clearly articulated response to context, program and users. Conceptual framework and preliminary architectural scheme shall be the end products of this stage.

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**Final Review** – Final review should consist of all the works which would be presented at the viva. Mode of presentation shall be tentative. Number of sheets shall be limited to maximum of 15 plus two case study sheets. Study Models are expected to be presented

**The final output shall include a report, all drawings, study models and a presentation model. The report in typed or computer printed form shall discuss the program, site- analysis, literature review, case studies, design criteria, concept and detailed design. Three copies of the reports shall be submitted along with drawing and models.**

**Note** – The requirements pertaining to the handicapped and elderly people and children are to be addressed in design and detailing.

A handwritten signature in blue ink, appearing to read "Vaishali Patel".