DR.BABASAHEB AMBEDKAR MARATHWADA UNIVERSITY,

CHHATRAPATI SAMBHAJINAGAR.

NAAC- 'A+' Grade

CIRCULAR NO.SS/ Sci & Tech./ B.Voc /13 /2025.

It is hereby inform to all concerned that, on the recommendation of the Dean, Faculty of Sconce & Technology; **the Academic Council at its meeting held on 21 July, 2025 has been accepted *the "following Curriculum at UG Level* as per National Education Policy-2020" *for the implementation of all concerned affiliated colleges*** under the Faculty of Science & Technology.

Sr.No	Subject Name	Semester
1.	B.Voc in Plant Tissue Culture and Green House Technology (Pattern 2024)	I & II
2.	B.Voc in Renewable Energy Sources (Pattern 2024)	I & II
3.	B.Voc in Architectural Planning & Interior Design	III & IV
4.	IT Skills and Software Development	III & IV

This is effective from the Academic Year 2025-26 onwards under the Faculty of Science & Technology.

All concerned are requested to note the contents of the circular and bring notice to the students, teachers and staff for their information and necessary action.

University campus, 1428-22
Chhatrapati Sambhajinagar-431004.
Ref. No. S S/Sci & Tech/B.Voc./2025-26/
Date: 01/ 08/ 2025

Deputy Registrar,
Syllabus Section

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Copy forwarded and Information to necessary action:-

1] **The Head, concerned Department,**
2] **The Director, Board of Examination & Evaluation,**
3] **The Director,** University Network & Information Centre, UNIC, with a **request to upload this circular on University Website.**
Dr. Babasaheb Ambedkar Marathwada University **Chhatrapati Sambhajinagar.**

Dr. Babasaheb Ambedkar Marathwada University,

Chhatrapati Sambhajinagar- 431001

Three Year

B. Voc. Degree Program

Course Structure

(AS PER NEP-2020)

Subject (Major):

Architectural Planning & Interior Design

(Pattern 2024)

Second Year Syllabus

Effective from 2025-26

Coordinator
B.VOC. in Architectural Planning & Interior Design
S.B.E.S. College of Science,
Chh. Sambhajinagar - 431 001

I/C PRINCIPAL
S.B.E.S. College of Science
Chh. Sambhajinagar

1/7/2025

PREFACE

As we stand on the threshold of a new era in education, the dawn of the National Education Policy 2020 illuminates our path toward a holistic, inclusive, and progressive educational landscape. The Bachelor of Vocation in **Architectural Planning & Interior Design** curriculum outlined herein reflects the ethos and aspirations of this transformative policy, aiming to equip learners with the knowledge, skills, and values necessary to thrive in the dynamic world of the 21st century.

At its core, the National Education Policy 2020 envisions an educational framework that is learner-centric, multidisciplinary, and geared towards fostering creativity, critical thinking, and innovation. It emphasizes the integration of knowledge across disciplines, breaking down traditional silos to encourage holistic understanding and application of concepts. The Bachelor of Vocation in APID curriculum embodies these principles by offering a diverse array of courses spanning various scientific domains, while also incorporating interdisciplinary studies to nurture well-rounded graduates capable of addressing complex challenges with agility and insight.

Furthermore, the curriculum is designed to promote experiential learning, research, and hands- on exploration, recognizing the importance of practical engagement in deepening understanding and cultivating real-world skills. Through laboratory work, field experiences, internships, and project-based learning opportunities, students will have the chance to apply theoretical knowledge in practical settings, develop problem-solving abilities, and cultivate a spirit of inquiry and discovery.

Integral to the National Education Policy 2020 is the commitment to inclusivity, equity, and access to quality education for all. The Bachelor of Vocation in APID curriculum reflects this commitment by embracing diversity in perspectives, backgrounds, and experiences, and by fostering an inclusive learning environment where every student feels valued, supported, and empowered to succeed.

Moreover, the curriculum emphasizes the cultivation of ethical values, social responsibility, and global citizenship, instilling in students a sense of accountability towards society and the environment. By integrating courses on ethics, sustainability, and social sciences, the Bachelor of Vocation in APID program aims to produce graduates who are not only proficient in their respective fields but also compassionate, ethical leaders committed to making a positive impact on the world.

As we embark on this journey of educational transformation guided by the National Education Policy 2020, the Bachelor of Vocation in APID curriculum stands as a testament to our collective vision of a more equitable, inclusive, and enlightened society. It is our hope that through rigorous academics, innovative pedagogy, and unwavering dedication to excellence, we can inspire the next generation of scientists, scholars, and change-makers to realize their full potential and contribute meaningfully to the advancement of knowledge and the betterment of humanity.

PROGRAM OUTCOMES (ALIGNED WITH GRADUATE ATTRIBUTES) (PO)

At the end of this program, graduates will be able to

PO1	Integrate knowledge, skill and attitude that will sustain an environment of learning and creativity
PO2	Develop and integrate trends in interior design
PO3	Understand the design, technology and techniques to design spaces effectively
PO4	Understand building and safety codes, principles and practices for environmental and sustainable interior design
PO5	Develop an understanding of various tools, techniques and software.
PO6	Apply critical and contextual approaches across wide variety of subject matter.
PO7	Develop logical thinking to comprehend key facts leading to formulation of the solution process.
PO8	Engage a process of research and design for holistic contribution to the profession.
PO9	Develop self-confidence and awareness of general issues prevailing in the society
PO10	An ability to understand the market trends, client needs, project potentials and work with an inter disciplinary team
PO11	Develop an ability to create human responsive spaces and ensure project execution.

PSO

PSO 1:

Create an ability to conceptualize and coordinate design that follows a systematic process of analyzing alter- natives, ideas, theories by evaluating, and synthesizing ideas that include parameters on social, cultural, envi- ronmental and technological aspects of an Interior space.

PSO 2:

Demonstrate the ability to synthesize a wide range of variables into an integrated design solution. ID is done by applying appropriate building systems, building materials and construction practices on sound research and design decisions across varying scales of systems and levels of complexity.

PSO 3:

Utilize modern software tools & other appropriate and alterative innovative techniques in a wide range of documentation, presentation, analysis and applications for design development of interior spaces in a build- ing.

PSO 4:

Create a sustainable and responsive built environment by responding to the climate of the region, adapt appropriate technologies, conserve the ecology, environment and landscape to achieve a sustainable development for the future.

PSO 5:

Understand how history, art and culture have shaped the modern world, through many varied types of crea- tive works, human experiences and to raise questions on value and meaning.

Structure of Three Years Bachelor of Vocation (B. Voc.)
Subject (Major): Architectural Planning & Interior Design(APID)

Second Year 3rd Semester

Course Type	Course Code	Course Name	Teaching Scheme (Hrs./Week)		Credits Assigned		Total Credits
			Theory	Practical	Theory	Practical	
Major (Core) Mandatory	ID/DSC/T/200	Graphic Presentation-III	2		2		2+2+ 2+2=8
	ID/DSC/T/201	Interior Design Studio-III	2		2		
	ID/DSC/P/ 226	Graphic Presentation-III (practical)		4		2	
	ID/DSC/P/ 227	Interior Design Studio-III (Practical)		4		2	
Minor (Choose any two from pool of courses)	ID/Mn/T/ 200	1.Aptitude & Logical Reasoning	2		2		2+2=4
	ID/Mn/T/ 201	1.Principle of Management	2		2		
Generic/ Open Elective (GE/OE)	ID/GE/OE/T/200	Interior Design using AI-I	2		2		2
VSC	ID/VSC/T/ 200 ID/VSC/T/ 201	1.Building Construction –II 2.Sketchup with v-ray	1		1		2
	ID/VSC/P/ 226 ID/VSC/P/ 227	1.Building Construction – II Practical 2. Sketchup with v-ray practical		2		1	
AEC, VEC, IKS	AEC-II	Modern Indian Language (MIL-I)	2		2		2+2=4
	VEC -2	Environmental Studies	2		2		
OJT/FP/CP/ RP	CC-3	Cultural Activity / NSS, NCC		4		2	2
			15	14	15	07	22

Minor ID/Mn/T/ 200 -1.Aptitude & Logical Reasoning
ID/Mn/T/ 201 -2.Principle of Management

Generic /Open Elective Courses for other faculty
ID/GE/OE/T/200 Interior Design using AI-I

Coordinator
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Aurangabad - 431 001

B. Voc. APID
Semester-III

ID/DSC/T/200 : GRAPHIC PRESENTATION – III

Total Credits: 2 **Total Hours: 30 Hrs.**

Maximum Marks – 50

Learning Objectives of the Course: The objective of the subject is to enable students to:

1. Develop foundational skills in 3D drawing techniques applicable to interior design.
2. Understand and apply perspective drawing using measuring point methods to represent spatial concepts accurately.
3. Interpret and render sciography (shadow and light) in both 2D and 3D for realistic visualization.
4. Utilize a variety of presentation techniques and media to communicate design ideas effectively.
5. Create scaled models of interior design schemes, including material selection and model-making processes.

Course Outcome (COs): With the successful completion of the course student will able to:

CO1: Demonstrate proficiency in constructing accurate 3D drawings for interior environments.
CO2: Apply one-point and two-point perspective techniques to communicate spatial depth and form.
CO3: Integrate light and shadow (sciography) effectively into visual compositions to enhance realism.
CO4: Present interior design concepts using appropriate media including manual and digital techniques.
CO5: Design and construct scaled architectural models that reflect interior design concepts with appropriate materials.

Module No	Topic/Content of the syllabus	Hours
I	**Introduction** **1.Proficiency in 3-D Drawing** :Understanding 3D Drawing Principles **Types of 3D Drawing Techniques**: Perspective Drawing, Oblique Drawing **Components of 3D Interior Drawings:** • Spatial zoning and layout: Floor plan to 3D translation, • Ceiling design and levels • Wall treatments, partitions, • Furniture and accessory placement • Lighting fixtures and effects **Techniques for Enhancing 3D Drawings** :Tools & Mediums **2.Perspectives with measuring point methods** • a) one point three wall • b)two point two wall • c) two point three wall • d) planometric	06
II	**DRAWING** **3.Sciography in 3D and 2D drawings for interior schemes** • What is Sciography ? • Basic Concepts of Light and Shadow • Sciography in 2D Drawings • Sciography in 3D Drawings (Isometric/Perspective Views) • Application in Interior Design	06
III	4.**PRESENTATION DRAWING WITH DIFFERENT MEDIA** • **(Dry Media:** Pencil (graphite and colored),Charcoal, Pastels (soft and oil) • **Wet Media:** Watercolors, Markers (alcohol-based like Copic) , Inks and brush pens • **Mixed Media Techniques:** Combining markers with pencil for texture Ink + watercolor for architectural rendering	06

IV	**SCALE DRAWING** • **5.Model making of interior scheme, material use in model, model making process**	06
V	**6.Types of views, Use of view in interior , Ant eye view, bird eye view and human eye view**	06

Text Books / Reference Books:

1. Engineering drawing, R.K. DHAVAN
2. ENGINEERING DRAWING, N.D.BHATT
3. ENGINEERING DRAWING, Shah, Kale, Patki
4. Interior Design Visual Presentation: A Guide to Graphics, Models, and Presentation Techniques Author: Maureen Mitton
5. Basics Interior Architecture 01: Form + Structure Author: Graeme Brooker and Sally Stone

Major 2: ID/DSC/T/: Interior Design Studio – III
Total Credits: 2 Total Hours: 30 Hrs. Maximum Marks – 50

Learning Objectives of the Course: The objective of the subject is to enable students to:

1. Understand and apply the principles of space planning, including zoning, adjacency, and circulation, to create functional and user-friendly interior layouts.
2. Analyze spatial requirements and circulation clearances based on ergonomic standards for residential and commercial interiors.
3. Develop efficient layouts for multi-room residential spaces, incorporating zoning strategies, natural light orientation, and modular kitchen designs.
4. Identify and differentiate between natural, engineered, and synthetic interior materials based on their physical properties, aesthetics, cost, and functionality.
5. Evaluate the suitability of various materials (wood, stone, glass, tiles, metals, fabrics, paints, etc.) for specific interior applications such as flooring, paneling, cladding, and furniture.
6. Explore and integrate sustainable and innovative materials into design projects, understanding their environmental benefits and role in achieving green building certifications (LEED, GRIHA).

Course Outcome (COs): With the successful completion of the course student will able to:

CO1: Apply principles of zoning, adjacency, and circulation to create functionally efficient and user-friendly interior layouts for both residential and commercial spaces.

CO2: Evaluate and implement space standards and clearances for furniture placement, circulation, and accessibility in interior layouts.

CO3: Design multi-room residential layouts with appropriate day/night zoning, orientation, and efficient kitchen planning.

CO4: Identify and select suitable interior materials, including natural, engineered, and soft materials, based on their properties, aesthetics, cost, and application.

CO5: Incorporate innovative and sustainable materials into interior spaces, understanding their contribution to environmental sustainability and green certification standards like LEED and GRIHA.

Module No	Topic/Content of the syllabus	Hours
I	**Principles of Space Planning** **Zoning:** Division of space into public, semi-private, and private zones. Example: Living room (public), bedroom (private), kitchen (semi-private). Functional zones based on activity: sleeping, cooking, hygiene, entertainment. **Adjacency:** Logical placement of rooms based on usage and convenience. Example: Dining should be adjacent to kitchen; bedroom near a toilet. **Circulation:** Horizontal and vertical movement through a space. Minimize travel distance; avoid crossing paths between unrelated zones. Circulation space standards (widths for passageways, door clearance).	06
II	**Space Standards and Clearances** Minimum room sizes for bedrooms, kitchens, toilets, etc. Circulation clearances: Between furniture and walls (e.g., 750 mm clearance near beds). Door swing zones, furniture movement areas. Commercial spaces: office cabins, reception areas, small shops, cafes.	06

III	**Planning Multi-Room Residential Spaces** • Functional layout of rooms (bedroom, living, kitchen, toilets) • Day vs. Night zoning (private vs. public spaces) • Orientation based on natural light and ventilation • Flow of movement: entry → living → private spaces • Modular kitchen layouts: L-shape, U-shape, parallel • Compact vs. spacious layouts for same area	06
IV	**Classification & Selection of Interior Materials** • Natural Materials: **Wood , Stone ,Glass , Veneers & Laminates , Fabric & Soft Materials Upholstery fabrics, Curtains, blinds, and cushions** • **Engineered Materials:** Plywood & MDF: Grades (BWR, MR), veneers vs. laminates, strength, cost, water resistance. • Tiles ,**Metal, Paints & Coatings, Wallpaper,**	06
V	**Innovative & Sustainable Materials in Interiors** • **New & Emerging Materials:** Acrylic solid surfaces (Corian), 3D wall panels, epoxy resin, bamboo composites • Smart glass (switchable glass), acoustic panels, terrazzo • Green/Sustainable Materials: Recycled wood/plastic composites • Low-VOC paints, organic fabrics • Cork flooring, bamboo panels, hempcrete • Role of materials in achieving green certifications (LEED, GRIHA)	06

Reference Books:

1. Time-Saver Standards for Interior Design and Space Planning" Authors: Joseph DeChiara, Julius Panero, Martin Zelnik
2. Human Dimension and Interior Space" Authors: Julius Panero and Martin Zelnik
3. "Interior Construction & Detailing for Designers and Architects" Author: David Kent Ballast
4. Green Interior Design" Author: Lori Dennis

ID/DSC/P/226: GRAPHIC PRESENTATION – III
Total Credits: 2 Total Hours: 30 Hrs. Maximum Marks – 50

Learning Objectives of the Course: The objective of the subject is to enable students to :
1. Understand the principles of 3D drawing and spatial representation for interior environments.
2. Apply various perspective techniques using measuring point methods to accurately represent interior spaces.
3. Illustrate the behavior of light and shadow (sciography) in 2D and 3D forms, enhancing realism in presentations.
4. Explore and experiment with different presentation media (dry, wet, and mixed) to convey texture, mood, and material.
5. Develop scaled interior models using appropriate materials and techniques to understand volume and form.
6. Analyze interior spaces through multiple viewpoints (ant-eye, bird-eye, and human-eye) for design visualization and communication.

Course Outcome (COs): With the successful completion of the course student should have capability to :
CO1: Create accurate 3D drawings and visualizations of interior layouts using axonometric and perspective drawing techniques.
CO2: Apply sciography principles to interior drawings to represent light and shadow logically.
CO3: Demonstrate proficiency in rendering interior spaces using various presentation media for professional communication.
CO4: Construct scaled physical models that represent spatial planning, material use, and functional zoning.
CO5: Assess interior spaces from different eye-level views to enhance design articulation and user experience.
CO6: Present comprehensive interior schemes through technical and creative visual formats suitable for academic and industry contexts.

Module No	Topic/Content of the syllabus	Hours
I	**Practical 1: Translating Floor Plan into 3D Drawings** **Title:** *3D Visualization of a Residential Space* Take a simple 2BHK apartment plan. 1.Draw isometric views. Detail spatial zoning, ceiling design, and furniture layout.	06
II	**Practical 2: Perspective Drawing Using Measuring Point Methods** **Title:** 2.Interior Space in Perspective Views Use the same room for: One-point (3-wall view) Two-point (corner room) A3 or A2 size, include ceiling fan, window, furniture	06
III	**Practical 3: Sciography Application in Interior Design** **Title:** *Light and Shadow Study on Interior Forms* 3.Create elevation + plan of a living room with furniture Apply 45° light source in both 2D and 3D views 4.Two 2D elevations with shadows 5.One 3D isometric view with full sciography	06
IV	**Practical 4: Media Exploration for Interior Presentation** **Title:** Mixed Media Rendering of an Interior View *6.Select a single interior space (residential/commercial) &Create 3 renderings:* *Dry media (charcoal/pencil/pastel) &Wet media (watercolor/marker)* *Mixed media (ink + watercolor or pencil + marker)*	06

V	**Practical 5: Scaled Model Making** **Title:** *Interior Scheme Model of a Designed Room* *Visualize the spatial form and materials through physical modeling* *7..Create a scale model (1:20 or 1:25) of a bedroom or office* *Include walls, partitions, floor, furniture, ceiling levels* *Scaled model + report explaining materials used*	06

Major 2: ID/DSC/P/ 227: Interior Design Studio – III		
Total Credits: 2	**Total Hours: 30 Hrs.**	**Maximum Marks – 50**

Learning Objectives of the Course: The objective of the subject is to enable students to :

1. Understand and apply the principles of space planning, including zoning, adjacency, and circulation, to create functional and user-friendly interior layouts.
2. Analyze spatial requirements and circulation clearances based on ergonomic standards for residential and commercial interiors.
3. Develop efficient layouts for multi-room residential spaces, incorporating zoning strategies, natural light orientation, and modular kitchen designs.
4. Identify and differentiate between natural, engineered, and synthetic interior materials based on their physical properties, aesthetics, cost, and functionality.
5. Evaluate the suitability of various materials (wood, stone, glass, tiles, metals, fabrics, paints, etc.) for specific interior applications such as flooring, paneling, cladding, and furniture.
6. Explore and integrate sustainable and innovative materials into design projects, understanding their environmental benefits and role in achieving green building certifications (LEED, GRIHA).

Course Outcome (COs): With the successful completion of the course student will able to:

CO1: Apply principles of zoning, adjacency, and circulation to create functionally efficient and user-friendly interior layouts for both residential and commercial spaces.

CO2: Evaluate and implement space standards and clearances for furniture placement, circulation, and accessibility in interior layouts.

CO3: Design multi-room residential layouts with appropriate day/night zoning, orientation, and efficient kitchen planning.

CO4: Identify and select suitable interior materials, including natural, engineered, and soft materials, based on their properties, aesthetics, cost, and application.

CO5: Incorporate innovative and sustainable materials into interior spaces, understanding their contribution to environmental sustainability and green certification standards like LEED and GRIHA.

Module No	Topic/Content of the syllabus	Hours
I	**Zoning and Adjacency** 1. Sketch a 1BHK floor plan and highlight public, semi-private, private zones with color codes. **Functional Adjacency** 2. Draw bubble diagrams and block diagrams for a 2BHK residence showing logical room placement	06
II	**Space Standards** 3. Create room templates (bedroom, toilet, kitchen) using standard sizes. Annotate minimum clearances. **Commercial Planning** 4. Design a small café or office cabin layout including furniture placement and circulation.	06

III	**Natural Materials** 5. Create a **material board** with samples/images of wood, stone, and glass. Add labels for types, textures, and uses. **Engineered Materials** 6. Prepare a **comparison chart** of Plywood vs. MDF vs. Particleboard. Include grades, uses, pros & cons. **Surface Finishes** 7.Make a **physical or digital collage** showing combinations of laminates, veneers, tiles, paints, and wallpapers	06
IV	**Fabrics & Soft Materials** 8. Collect or present swatches of upholstery fabrics. Discuss flame resistance, light filtering, durability **Metal & Glass Usage** 9. Study and sketch **metal/glass furniture/joinery** from live or online examples. Annotate material specification.	06
V	**Emerging Materials Case Study** 10. Visit one project using **smart glass / Corian / resin panels** and present material behavior, cost, and benefit. **Upcycling/DIY Exercise** 11. Create a **decorative or functional interior element** using recycled or natural materials (e.g., bottle planter, bamboo tray).	06

Subject (ID/Mn/T/ 250): Aptitude & Logical reasoning		
Total Credits: 2	**Total Hours: 30 Hrs.**	**Maximum Marks – 50**

Learning Objectives of the Course: The objective of the subject is to enable students to :

1. Understand and interpret different types of data presentation formats such as bar charts, pie charts, line charts, and tables.
2. Apply logical reasoning to solve problems involving number series, blood relations, odd one out, and directions.
3. Develop foundational arithmetic skills including operations with number systems, simplifications, and root extractions.
4. Solve real-world mathematical problems involving averages, percentages, profit and loss, ratios, and proportions.
5. Apply concepts of probability, permutations, and combinations in practical and theoretical scenarios.
6. Enhance analytical thinking and problem-solving capabilities required for competitive and aptitude-based assessments.

Course Outcome (COs): After completing this course, students will be able to:

CO1: Analyze and interpret data from visual formats like bar graphs, pie charts, line graphs, and tables.

CO2: Solve problems based on logical reasoning including number series, blood relations, and direction-based reasoning.

CO3: Perform arithmetic operations using number systems, surds, indices, and decimal fractions with accuracy.

CO4: Calculate averages, percentages, and handle problems related to profit and loss, partnership, and ages.

CO5: Apply ratio and proportion concepts in mathematical and real-life situations.

CO6: Solve problems based on HCF, LCM, square roots, and cube roots efficiently.

CO7: Use principles of probability, permutation, and combination to solve quantitative reasoning problems.

CO8: Demonstrate improved speed and accuracy in solving aptitude questions, applicable in academic and professional examinations.

Module No	Topic/Content of the syllabus	Hours
I	**Reasoning Ability:** Data interpretation (bar chart, pie chart, line chart, tables), number series, blood relations, odd series, Distance and Direction etc.	10
II	Arithmetic: Number System, Simplification, Square root & Cube root, Surds and Indices, HCF, LCM Decimal fraction, Average.	10
III	Percentage, Problem on Ages, Partnership, Profit & loss, Ratio & proportion, Probability, Permutation and combination.	10

Reference Books:

1. A Modern Approach to Verbal and Non-Verbal Reasoning – R.S. Aggarwal
2. Quantitative Aptitude for Competitive Examinations – *R.S. Aggarwal*
3. Fast Track Objective Arithmetic – *Rajesh Verma*

ID/Mn/T/ 201: Principles of Management

Total Credits : 02 Hours : 30 Hrs
Maximum Marks : 50

Learning Objectives

- Principles of management have mainly objective of Coordination and proper administration of businesses.
- Management is an essential function of Businesses.
- It allows for ensuring that the work done by the individual elements of the firm are combined for the furtherance of the collective objective of the firm.

Course Outcomes (COs) : After completion of the course, students will be able to –

- Describe the primary functions of management and the roles of managers.
- Describe the work of major contributors to the field of management
- Describe the work of major contributors to the field of management

Module No.	Topics / actual contents of the syllabus	Contact Hours
I	Introduction to Management, Meaning & Definition of Management, Significance of Management, Functions of Management, Principles of Management	**10 Hrs**
II	Management V/S Administration, Levels of Management, Roles and Skills of Manager. Planning and Organizing, Meaning & Definition of Planning, Characteristics and Importance of Planning, Planning Process, Types of Plans,	**10 Hrs**
III	Meaning & Definition of Organization, Guiding Principles of Organisation, Process of Organisation, Centralisation V/S Decentralisation, Forms of Organisation Structure :(Line, Functional, Line Staff, Limited Liability Partnership (LLP), One Person Company)	**10 Hrs**

Text Books

1. Elements of Discrete MathematiCA-A Computer Oriented Approach C. L Liu, D.P. Mohapatra, 3rd edition Tata McGraw Hill.
2. Discrete Mathematical Structures with Applications to Computer Science,J. P.Tremblay and P. Manohar,Tata McGraw Hill
3. Foundations of Computer Science, A. Aho and J. Ullman- W. H. Freeman, 1992.

Reference Books

1. Business Organization & Management by C B Gupta
2. Principles & Practices of Management by L M Prasad
3. Management by Koontz and Weighrich

ID/GE/OE/T/200: Interior Design Using AI-I

Total Credits: 2 Total Hours: 30 Hrs. Maximum Marks – 50

Learning Objectives of the Course: The objective of the subject is to enable students to:

1. To introduce students to the fundamental concepts, elements, and principles of interior design.
2. To develop a theoretical understanding of space planning, ergonomics, materials, lighting, and color theory.
3. To build awareness about the typologies of interior spaces and their functional needs.
4. To provide a foundational understanding of how AI can support and enhance traditional design practices.
5. To encourage critical thinking about the role of technology in the evolving design profession.

Course Outcomes: By the end of this course, students will be able to:

CO1: Describe key elements and principles of interior design with contextual examples.
CO2: Analyze human-centered design through ergonomic and spatial theories.
CO3: Identify material properties and their relevance to various interior applications.
CO4: Explain the psychological effects of color and lighting in interior environments.
CO5: Evaluate the ethical considerations and opportunities of AI in creative disciplines.

Module No	Topic/Content of the syllabus	Hours
I	**Fundamentals of Interior Design** • Definition, origin, and evolution of interior design • Design vs. decoration: key differences • Importance of interiors in quality of life and productivity • Career opportunities and future trends **Design Elements and Principles** • Elements: Space, line, form, shape, texture, light, color • Principles: Balance, rhythm, emphasis, contrast, proportion, harmony, unity • Case studies demonstrating theory in real interiors	06
II	**Human Factors and Ergonomics** • Anthropometry and human scale in interiors • Ergonomics in furniture and space planning • Cultural and contextual influences on space usage **Interior Spaces and Typologies** • Residential: living, bedroom, kitchen, bath • Commercial: retail, offices, clinics • Hospitality: hotels, restaurants • Spatial characteristics and functional requirements	06
III	**Materials and Finishes Theory** • Classification: natural vs. synthetic materials • Properties and uses of wood, metal, glass, stone, fabrics • Environmental and sustainable material choices • Role of AI in recommending eco-conscious materials **Color, Light, and Visual Perception**	06

	• Color theory: hue, value, saturation • Emotional and psychological impact of color • Lighting: intensity, direction, temperature • Theoretical foundations of daylight and artificial light	
IV	**Space Planning Theory** • Concept of zoning and circulation • Adjacency and proximity matrices • Principles of efficient layout and flow • Traditional vs. AI-augmented planning methods	06
V	**Introduction to AI Tools and Platforms** • Introduction to AI tools: Planner 5D, Midjourney, Foyr Neo, Homestyler, RoomGPT, Interior AI	06

Reference Books :

1. **"Interior Design Illustrated"** by *Francis D.K. Ching*
2. **"Human Dimension and Interior Space"** by *Julius Panero & Martin Zelnik*
3. **"Materials for Interior Environments"** by *Corky Binggeli*
4. **"Color in Interior Design"** by *John Pile*
5. **"Lighting for Interior Design"** by *Malcolm Innes*

Subject ID/VSC/T/200: Building Construction-II		
Total Credits: 1	**Total Hours : 15 Hrs.**	**Maximum Marks – 50**

Learning Objectives of the Course: The objective of the subject is to enable students to :

1. Classify buildings based on use, structural system, and materials.
2. Identify and describe the basic components of a building: substructure (foundation, plinth) and superstructure (walls, floors, roofs, openings).
3. Identify structural components like columns, beams, slabs, and footings in RCC and steel frame construction.
4. Understand integration of non-load-bearing partitions in framed buildings.
5. Understand steps involved in foundation and superstructure erection.
6. Coordinate interior design decisions with MEP systems and conduct safety audits.

Course Outcome (COs): Upon successful completion of the course, students will be able to:

CO1: Classify and evaluate various building types and their components for architectural or interior design applications.

CO2: Distinguish between load-bearing and framed structures and explain their construction processes.

CO3: Demonstrate understanding of site-level construction activities from survey to superstructure.

CO4: Make informed and safe design decisions when integrating interior elements within structural systems.

CO5: Select and apply appropriate finishes (wall, floor, wood, color) considering durability, function, and aesthetics.

CO6: Coordinate effectively with allied services (MEP) in interior design projects without compromising structural integrity.

Module No	Topic/Content of the syllabus	Hours
I	**Introduction to Building Types & Elements** • Classification of Buildings (by use, structure, materials) • Basic Building Elements: • Substructure: Foundation, Plinth, Superstructure: Walls, Floors, Roofs, Openings • Design Considerations **Load-Bearing Construction& Framed Structure Construction** • Principles of Load Distribution • Materials used: Brick, Stone, Stabilized Earth • Construction Process and Sequencing • Limitations and Application Areas • RCC & Steel Frame Construction • Components: Columns, Beams, Slabs, Footings • Structural Grids and Floor Systems • Integration with Non-load-bearing Partitions	05
II	**Structural Components & Interior Design Integration** • Identification of Load-Bearing vs. Non-Load-Bearing Elements • Guidelines for Interior Changes (Wall Cutting, Service Routing) • Structural Safety Audits • Coordination with MEP (Mechanical, Electrical, Plumbing)	05

III	**Building Finishes** • Wall and Surface Finishes • Plaster, Paints, Cladding, Wall Panels • Floor Finishes • Stone, Tiles, Concrete, Wood, Vinyl, Carpet • Wood Finishes • Polishes, Laminates, Veneers, PU, Melamine • Color & Aesthetic Finishes • Color Theory, Paint Types, Decorative Coatings	05

Reference Books:

1.B.C. Punmia – Building Construction

2.S.K. Duggal – Building Materials

3. National Building Code (NBC) of India

4.IS Codes – IS 456, IS 875, etc.

ID/VSC/T/ 251: Sketchup using Vray

Total Credits: 1 Total Hours: 15 Hrs. Maximum Marks – 50

Learning Objectives of the Course: The objective of the subject is to enable students to :

1. Understand the user interface, tools, and workflows of SketchUp for 3D modeling.
2. Apply drawing, editing, grouping, and component tools to develop detailed architectural and interior models.
3. Develop realistic interior and exterior models from 2D floor plans and references.
4. Explore lighting, texturing, and material creation using V-Ray for SketchUp.
5. Produce high-quality photorealistic renders for interiors and exteriors using V-Ray settings and render passes.
6. Demonstrate post-production techniques using Photoshop to enhance rendered output for client presentations.

Course Outcomes (COs): Students will be able to :

CO1: Create well-structured 3D models for residential and commercial interior/exterior spaces using SketchUp.
CO2: Import 2D architectural plans and convert them into accurate 3D environments.
CO3: Apply and customize materials and textures using both SketchUp and V-Ray libraries.
CO4: Configure and control different lighting types (natural and artificial) in a 3D scene using V-Ray.
CO5: Generate optimized, realistic renders using V-Ray settings, cameras, and environments.
CO6: Post-process final renders in Photoshop for professional-level visual presentation and portfolios.
CO7: Execute independent modeling and rendering projects suitable for academic, freelance, or client-based work.

Module No	Topic/Content of the syllabus	Hours
I	Introduction to Sketchup • Basic Drawing Tools(Line, Rectangle, Circle, Arc, Push/Pull), • Modifying Tools (Move, Rotate, Scale, Offset, Follow Me) • Groups & Components Grouping(creating components, dynamic components)	05
II	• Materials & Paint Bucket - Applying/editing materials, creating new textures • 2D to 3D Modeling -Importing floor plans, creating 3D models • Furniture & Fixture Modeling Beds, sofas, modular kitchen, wardrobes	05
III	• V-Ray Interface Overview Asset Editor, VFB, toolbars, render settings overview • V-Ray Basic Materials Diffuse color, bump, reflection, opacity • V-Ray Lighting Spot, Omni, Dome, IES, Sunlight lighting setups	05

Reference books-

1.SketchUp Workflow for Architecture -Michael Brightman Wiley
2 Architectural Design with SketchUp -Alexander C. Schreyer Wiley
3 SketchUp for Interior Design -Lydia Sloan Cline

Subject ID/VSC/P/226: Building Construction-II (Practical)
Total Credits: 1 Total Hours: 30 Hrs. Maximum Marks – 50

Learning Objectives of the Course: The objective of the subject is to enable students to :
1. Classify buildings based on use, structural system, and materials.
2. Identify and describe the basic components of a building: substructure (foundation, plinth) and superstructure (walls, floors, roofs, openings).
3. Identify structural components like columns, beams, slabs, and footings in RCC and steel frame construction.
4. Understand integration of non-load-bearing partitions in framed buildings.
5. Understand steps involved in foundation and superstructure erection.
6. Coordinate interior design decisions with MEP systems and conduct safety audits.

Course Outcome (COs): Upon successful completion of the course, students will be able to:
CO1: Classify and evaluate various building types and their components for architectural or interior design applications.
CO2: Distinguish between load-bearing and framed structures and explain their construction processes.
CO3: Demonstrate understanding of site-level construction activities from survey to superstructure.
CO4: Make informed and safe design decisions when integrating interior elements within structural systems.
CO5: Select and apply appropriate finishes (wall, floor, wood, color) considering durability, function, and aesthetics.
CO6: Coordinate effectively with allied services (MEP) in interior design projects without compromising structural integrity.

Module No	Topic/Content of the syllabus	Hours
I	**Session 1: Substructure & Superstructure Elements** Practical: Sketch and label building sections with foundation, plinth, walls, roofs, and openings Model Making: Create a sectional model using basic materials (cardboard or foam)	06
II	**Session 2: RCC Framed Structures** Practical: Prepare component drawings – columns, beams, slabs, footings, arches, lintels. Demo: Video or site visit to understand reinforcement and formwork	06
III	**Session 3: Load-Bearing vs. Non-Load-Bearing Elements** Practical: Identify elements from floor plans and mark them accordingly Activity: Design a layout with minimal structural intervention	06
IV	**Session 4: Guidelines for Interior Alterations** Simulation: Practice planning for service routing (electrical/conduits/plumbing) Worksheet: Dos and Don'ts for structural safety during renovations **Session 5: MEP Coordination & Safety Checks** Group Task: Prepare an MEP checklist for a bathroom or kitchen design Demo: Safety audit exercise using a sample floor plan	06
V	**Session 06: Wall Finishes** Samples: Plaster, cladding, wall panels Activity: Wall finish moodboard	06

	Session 07: Floor Finishes Material Board: Prepare samples for different flooring types Site Photo Identification: Annotate flooring finishes from images **Session 08: Wood Finishes & Color Theory** Practical: Finish chart with polish, laminate, veneer samples Color Application: Apply color theory to a sample room using swatches	

ID/VSC/P/ 227: Sketchup with Vray

Total Credits: 1 Total Hours: 30 Hrs. Maximum Marks – 50

Learning Objectives of the Course: The objective of the subject is to enable students to :

1. Understand the user interface, tools, and workflows of SketchUp for 3D modeling.
2. Apply drawing, editing, grouping, and component tools to develop detailed architectural and interior models.
3. Develop realistic interior and exterior models from 2D floor plans and references.
4. Explore lighting, texturing, and material creation using V-Ray for SketchUp.
5. Produce high-quality photorealistic renders for interiors and exteriors using V-Ray settings and render passes.
6. Demonstrate post-production techniques using Photoshop to enhance rendered output for client presentations.

Course Outcomes (COs): Students will be able to :

CO1: Create well-structured 3D models for residential and commercial interior/exterior spaces using SketchUp.

CO2: Import 2D architectural plans and convert them into accurate 3D environments.

CO3: Apply and customize materials and textures using both SketchUp and V-Ray libraries.

CO4: Configure and control different lighting types (natural and artificial) in a 3D scene using V-Ray.

CO5: Generate optimized, realistic renders using V-Ray settings, cameras, and environments.

CO6: Post-process final renders in Photoshop for professional-level visual presentation and portfolios.

CO7: Execute independent modeling and rendering projects suitable for academic, freelance, or client-based work.

Module No	Topic/Content of the syllabus	Hours
I	**Basic 3D Modeling** 1.Draw and extrude 2D shapes using drawing & Push/Pull tools 2.Create a simple table & chair model **Modeling from 2D Floor Plan** 3.Import 2D plan (JPEG or DWG) and scale it. Trace and model a 1BHK layout	06
II	**Interior Wall, Flooring & Ceiling** 4.Apply partition logic and construct ceiling layers & Complete living room envelope 5.Also make a modeling layout of bedroom and modular kitchen **Exterior Façade Modeling** 6.Add doors, windows, overhangs to walls Render a small house facade	06
III	**Material Application & Editing** 7.Apply textures and customize materials in SketchUp. 8. Apply wood, tile, and glass materials **V-Ray Interface Familiarization** 9.Navigate Asset Editor, VFB, and light tools and Render a simple cube with default lighting **Basic Lighting Setup (Sunlight)** 10.Set up V-Ray sunlight and change its intensity Daytime room render 11.Add V-Ray rectangular lights to simulate tube or panel lights Render kitchen at night	06

IV	**Material Mapping with V-Ray** 12.Apply reflective, bump, and emissive materials, Create and apply a glowing lamp. 13. Rendering an Interior Scene Combine lighting and materials into a scene Final render of bedroom **Exterior Rendering with HDRI** 14.Add HDRI dome lighting for natural exterior ambiance Full render of house front	06
V	**Using Render Elements (AO, Z-depth, Lighting)** 15.Extract passes for compositing Export and save render elements **Camera Setup and Depth of Field** 16.Set up physical camera with DoF Focus on object, blur background **Interior Render Optimization** 17.Reduce render time without quality loss Compare render times at different settings	06

B.VOC. Architectural Planning & Interior Design

Second Year – IV Semester

Course Type	Course Code	Course Name	Teaching Scheme (Hrs/Week)		Credits Assigned		Total Credits
			Theory	Practical	Theory	Practi-cal	
Major (Core) Mandatory	ID/DSC/T/250	Working Drawing & Tenders	2		2		2+2+ 2+2=8
	ID/DSC/T/ 251	Computer CAD	2		2		
	ID/DSC/P/ 276	Working Drawing & Tenders based practical		4		2	
	ID/DSC/P/ 277	Computer CAD Practical's using AI		4		2	
Minor (Choose any two from pool of courses)	ID/Mn/T/250	1.Campus to corporate	2		2		2+2=4
	ID/Mn/T/ 251	1. Enterprise Resource Planning	2		2		
Generic/ Open Elective (GE/OE)	ID/GE/OE/T/250	Interior Design using AI-II	2		2		2
SEC (Skill Enhancement Courses)	ID/SEC/T/250	1.Interior in Commercial Spaces (Restaurant/ Clinic/ Office) 2.Photoshop in interior	1		1		2
	ID/SEC/T/ 251	1.Interior in Commercial Spaces Practical (Market Survey) 2. Photoshop in interior practical		2		1	
AEC, VEC, IKS	AEC-4	Modern Indian Language (MIL-I)	2		2		2
OJT/FP/CEP/ RP	FP-1	Field Project		4		2	2+2=4
	CC-3	Cultural Activity/ NSS, NCC		4		2	
			13	18	13	09	22
Exit Option: Award of Adv. Diploma in major							

Generic /Open Elective Courses for other faculty

ID/GE/OE/T/250 **-Interior Design using AI-II**

Coordinator
B.VOC. In Architectural Planning & Interior Design
B.B.E.S. College of Science, Aurangabad - 431 001

ID/DSC/T/250: Working Drawing & Tender

Total Credits: 2 Total Hours: 30 Hrs. Maximum Marks – 50

Learning Objectives of the Course: The objective of the subject is to enable students to :

1. Understand the structure and components of tender and contract documents in the context of interior design.
2. Comprehend execution procedures for interior design projects based on working drawings.
3. Develop professional communication through reports, meeting notes, and appreciative writing.
4. Gain knowledge of legal and financial obligations including insurance, tax liabilities, and valuation methods.
5. Maintain basic accounts and bookkeeping systems relevant to interior design practice.

Course Outcomes (COs): Students will be able to

CO1: Prepare and analyze tender and contract documents specific to interior projects.
CO2: Coordinate with consultants and contractors through proper documentation and meetings.
CO3: Write professional reports, meeting minutes, and project evaluations.
CO4: Understand and apply tax regulations, insurance policies, and valuation techniques.
CO5: Manage project-based accounts, budgeting, and financial records for design practices.

Module No	Topic/Content of the syllabus	Hours
I	**Tender Documents** • Types of tenders (open, selective, negotiated) • Contents of tender documents (BOQ, technical specs, drawings)	06
II	**Contract Documents** • Contract types (lump-sum, item-rate, cost-plus) • Legal aspects and clauses (termination, arbitration, liability)	06
III	**Execution Procedures** • Pre-execution: approvals, mobilization • Site execution based on working drawings • Quality control and progress reporting	06
IV	**Insurance, Tax, and Valuation** • Insurance interior practice (workman's comp, project insurance) • Understanding GST, TDS, and income tax liabilities	06
V	**Accounts & Bookkeeping for Interior Designers** • Basics of accounting: journal, ledger, trial balance • Billing, invoicing, and payment tracking • Budgeting and financial planning for design firms	06

Reference Books: 1. Professional Practice for Interior Designers" by Christine M. Piotrowski
2. Interior Design: A Professional Guide" by Jenny Gibbs
3. Estimating and Costing in Interior Design" by M. Chakraborty
4. Tendering and Contracting for Interior Designers" by Sylvia Leydecker

ID/DSC/T/251: Computer CAD

Total Credits: 2 Total Hours: 30 Hrs. Maximum Marks – 50

Learning Objectives of the Course: By the end of this course, students will be able to:

1. Understand the Windows operating system and its importance in design workflow.
2. Navigate Windows-based applications with proficiency using pointing devices.
3. Master 2D CAD drawing tools used in interior drafting and detailing.
4. Organize CAD drawings using layers, blocks, hatching, and scaling relevant to interior design.

Course Outcomes (COs): After completing this course, students will be able to:

CO1: Operate Windows environment efficiently to manage design files and software.

CO2: Create and edit accurate 2D drawings using CAD for interior layouts, furniture detailing, and working drawings.

CO3: Apply advanced CAD tools like layers, blocks, hatching, and dimensions for professional presentation.

CO4: Organize and output CAD drawings for print and digital presentation.

CO5: Interpret scale, line types, fonts, and CAD documentation standards for design communication.

Module	Topic/Content of the syllabus	Hours
I	**Introduction to Windows** • Purpose and advantages for designers • Graphical interface vs. command-based interface **Pointing Devices** Types: mouse, stylus, touchpad; navigation techniques	06
II	**Parts of Windows**-Desktop, taskbar, start menu, file explorer **Tab Work Concept**-Working with multiple windows/tabs in design workflow **Data Interchange**-Copy-paste, drag-drop, file formats (DWG, JPEG, PDF), integration between software (AutoCAD to Photoshop, etc.)	06
III	**Creating and organizing 2D drawings** **- All 2D dimensional drawing commands** **- All 2D dimensional edit commands** **- Inquiry commands** **- Settings for drawing**	06
IV	**Concept of layers, line types** **- Dimension** **- Drawing and different scales** **- Introduction to block and its applications.** **- Text and fonts**	06
V	**Output of the drawing through printers or plotters (Print :Plot)** **- Different setting of drawing and mode etc.** **- Hatch, its patterns**	06

Reference Books: 1. AutoCAD for Interior Design and Space Planning" by Beverly L. Kirkpatrick & James M. Kirkpatrick

ID/DSC/P/276: Working Drawing & Tenders

Total Credits: 2 Total Hours: 30 Hrs. Maximum Marks – 50

Learning Objectives of the Course: The objective of the subject is to enable students to :

1. Understand the structure and purpose of various tender and contract documents used in interior design projects.
2. Identify different types of contracts and their applications, including legal implications such as arbitration and liabilities.
3. Interpret and prepare Bills of Quantities (BOQ), technical specifications, and working drawings in a tender context.
4. Apply execution procedures from pre-approval to on-site implementation based on working drawings.
5. Evaluate the importance and application of insurance in interior design projects (e.g. workman's compensation, site insurance).
6. Understand and calculate taxation liabilities such as GST, TDS, and income tax for interior design practices.

Course Outcomes (COs): Students will be able to

CO1: Prepare professional tender and contract documents aligned with interior design projects.
CO2: Apply legal understanding in interpreting contracts, clauses, and handling disputes professionally.
CO3: Demonstrate procedural knowledge of project execution on-site using working drawings.
CO4: Evaluate insurance and taxation implications for design projects and calculate applicable liabilities.
CO5: Accurately perform valuation and cost estimation of design schemes using industry-standard methods.
CO6: Create and maintain financial records, journals, and invoices relevant to interior design business operations.

Module No	Topic/Content of the syllabus	Hours
I	**Tender and Contract Documents** select working drawing (e.g., residential/commercial interior space), prepare : 1.Tender Notice (Open or Selective) 2.BOQ Sheet (Manual or Excel-linked CAD) 3.Specification Sheet (material, make, brand)	06
II	**Execution Procedures** Visit a site where execution is ongoing or recently completed. **Identify and document:** 4.Contract Document Draft (choose from lump sum, item-rate, cost-plus) 5.Manual or CAD-generated sheets (with tables and texts formatted professionally)**Site visit report with photographs, sketches, and notes** **Progress chart or timeline in Excel/CAD with observations**	06
III	1. Visit any residential/commercial site 2. Write a Site Visit Report 3. Prepare Minutes of Meeting (MOM) 4. Write a Design Appreciation Note / Justification	06
IV	Prepare a Valuation Sheet using: 1.Cost-Based method (material + labor) 2.Market-Based method (rate comparison)	06

V	**Accounting & Bookkeeping** – Journal & Budget Sheet 1.Prepare a Journal Entry Sheet for project-related transactions: Material Purchase, Payment to Contractor, Tax Paid, etc. 2.Create a Trial Balance 3. Prepare a Budget Sheet forecasting full execution cost, overhead, and contingency.	06
	4. Manual ledger format sheets or Excel 5.Cover page indicating the client/project name	

ID/DSC/P/277: Computer CAD Practicals using AI

Total Credits: 2 Total Hours: 30 Hrs. Maximum Marks – 50

Learning Objectives of the Course: The objective of the subject is to enable students to understand:

1. To develop technical proficiency in 2D drafting and space planning using CAD software.
2. To introduce basic 3D modeling tools for interior visualization and walkthrough creation.
3. To familiarize students with key AI tools used in interior design concept development and visualization.
4. To demonstrate how AI can be integrated with CAD workflows to optimize layouts and enhance presentations.
5. To empower students to complete a comprehensive interior design project using both CAD and AI platforms.

Course Outcomes (COs): Students will be able to

CO1: Draft accurate 2D interior layouts including furniture, lighting, and electrical plans using CAD software.

CO2: Identify and apply standard CAD symbols, annotations, and conventions for interior documentation.

CO3: Model and visualize basic interiors in 3D using tools like SketchUp .

CO4: Utilize AI tools (e.g. Midjourney, RoomGPT, Foyr Neo) to generate concept boards, moodboards, and layout suggestions.

CO5: Integrate AI-generated designs into CAD software for further development and refinement.

CO6: Create professional-quality presentation boards using a combination of CAD outputs and AI visual enhancements.

CO7: Execute a complete interior design project, including 2D drawings, 3D models, AI concepts, and final presentation boards.

Module No	Topic/Content of the syllabus	Hours
I	• 2D Drafting and Space Planning , Room layout, furniture layout, lighting & electrical plans • Symbols and annotations used in interior CAD drafting • **Practical: Drafting a 2D residential layout (Living + Bedroom + Toilet)**	06
II	• 3D Modeling and Visualization • Introduction to 3D modeling in Sketch Up / Revit • Furniture and interior elements modeling • Walkthrough creation basics • **Practical: Convert2D plan to 3D and apply materials**	06
III	• Introduction to AI in Interior Design • Overview of AI applications in design • Tools like Midjourney, DALL·E, and interior-specific platforms (e.g. Planner 5D, Homestyler AI, Foyr) • AI for moodboards and concept visualizations • **Practical: Generate a concept board using AI tools**	06
IV	• CAD + AI Integration (5 Hours) Using AI to optimize layouts (e.g. RoomGPT, AI Sketch Assistants) • AI-based rendering enhancements (e.g. Lumion AI features, Enscape, D5 Render) • AI for generating design alternatives • **Practical: Import AI-generated design into CAD and refine**	06

V	• Presentation & Documentation Using AI + CAD (4 Hours) Layout sheets, title blocks, printing & plotting in CAD • Enhancing presentation with AI-powered tools (e.g. Canva AI, Photoshop AI) • Practical: Create a full interior layout presentation (Plan + 3D + Concept board) • Final Practical Project (3 Hours) Task: Develop a small interior design project using CAD and at least two AI tools • Submission: Full 2D Plan, 3D Model, AI-generated visuals, and a compiled presentation board	06

ID/Mn/T/250: Campus to Corporate

Total Credits : 02 Hours : 30 Hrs
Maximum Marks : 50

Learning Objectives of the Course:

1. Understand essential business etiquette for corporate communication and behavior.
2. Learn ethical practices related to communication, confidentiality, and company resources.
3. Develop awareness of professional behavior, including dressing, conduct, and interpersonal interactions at the workplace.
4. Identify issues such as nepotism, discrimination, workplace bullying, and customer engagement with appropriate responses.
5. Explore the concepts of professional ethics, including personal vs. professional values, ethical dilemmas, and emotional intelligence.
6. Understand the nature of professionalism, professional roles, associations, accountability, and balancing ambition with ethics.
7. Gain insights into the transition from college to the corporate world, including expectations and preparation strategies.

Course Outcomes (COs) :

After successfully completing this course, students will be able to:

- **CO1:** Demonstrate appropriate business etiquette in verbal, written, and electronic communication within a corporate setting.
- **CO2:** Apply ethical principles related to workplace conduct, including confidentiality, use of company assets, and respect for others.
- **CO3:** Exhibit awareness of personal grooming, professional attire, and workplace decorum.
- **CO4:** Recognize and respond constructively to unethical practices like nepotism, discrimination, and bullying.
- **CO5:** Analyze ethical dilemmas and apply life skills and emotional intelligence in resolving professional conflicts.
- **CO6:** Understand the meaning of professionalism and the importance of professional accountability and integrity.
- **CO7:** Prepare for the transition from campus to corporate by aligning with employer expectations and industry standards.

Module No.	Topics / actual contents of the syllabus	- Hours
I	Business Etiquettes, Etiquette Starts on the Phone, No Solicitation, Personal and Mass Emailing, Confidentiality and the Use of Company Funds and Equipment, Employee Theft – Though Shalt Not Steal	10 Hrs
II	Dressing for work Nepotism in the Workplace, Disturbances, Insensitivity and Discrimination, Office Bullying, Entertaining Customer Professional Ethics : Introduction, Terminology, Governing Edicts, Contextual Aspects, Personal Ethics, Professional Ethics, Ethical Dilemmas, Life Skills, Emotional Intelligence, Thoughts on Ethics, Value Education, Dimensions of Ethics, Setting Goals in Life.	10 Hrs
III	Profession And Professionalism : Profession, Professional, Professionalism, Professional Associations, Roles of a Professional, Professional Risks, Professional Accountability, Professional Success, Ambition and Satisfaction, Ethics and Profession, Image of a Profession Putting Things In Perspective: Introduction and Need for Transition, Corporate Expectations Scenario, Business Schools Scenario.	10 Hrs

Text Books

1. Campus to Corporate: Your Roadmap to Employability by Gangadhar Joshi

Reference Books:

1. Office Etiquette: The Unspoken Rules in the Workplace by Sonja L. Traxler
2. Campus To Corporate by Ashutosh Sharma.

ID/MN/T/251: Enterprise Resource Planning (ERP)
Total Credits: 2 Total Hours: 30 Hrs. Maximum Marks – 30

Learning Objectives of the Course: The objective of the subject is to enable students to understand:

1. Understand the basic concepts, architecture, and evolution of ERP systems.
2. Analyze the benefits, risks, and challenges associated with ERP implementation.
3. Explore how ERP integrates with various functional modules like finance, HR, manufacturing, and SCM.
4. Examine related technologies such as BPR, data warehousing, data mining, OLAP, CRM, and PLM.
5. Understand ERP implementation methodologies, life cycles, and strategies.
6. Recognize the roles of vendors, consultants, and users in successful ERP projects.
7. Learn post-implementation tasks including project monitoring, training, and change management.

Course Outcomes: On successful completion of this course, students will be able to:

1. Describe the structure and components of an ERP system and its evolution.
2. Evaluate the strategic role of ERP in improving organizational efficiency and integration.
3. Identify how ERP supports various business functions including supply chain, finance, HR, and customer relations.
4. Analyze implementation methodologies and assess factors that affect successful ERP deployment.
5. Apply knowledge of ERP-related technologies to real-world business processes.
6. Address challenges such as employee resistance, data migration, and training during ERP implementation.
7. Demonstrate an understanding of ERP post-implementation activities and system maintenance.

Module No	Topic/Content of the syllabus	Hours
I	Basic ERP Concepts, Enterprise-An overview, Benefits & Risk, Evolution and Structure: Conceptual Model of ERP, The Evolution of ERP, The Structure of ERP.	06
II	**ERP & Related Technologies:** Business Process Reengineering (BPR) ,Data Warehousing and Data Mining, OLAP, Product Life Cycle Management, Supply Chain management, CRM.	06
III	**ERP Functional Module:** Introduction, Finance, Manufacturing, Human Resource, Plant maintenance, Material Management, Integration of ERP, Supply Chain and Customer Relationship Application.	06
IV	**ERP Implementation:** Implementation Challenges, ERP Implementation Strategies, ERP Implementation Life Cycle, Implementation Methodologies, ERP Projects Teams.	06
V	Vendors and Consultants, Dealing with employee resistance, Training and Education, data migration, Project Management and monitoring, Post Implementation Activities.	06

Reference Books: 1.Enterprise Resource Planning" by Alexis Leon
2.ERP: Tools, Techniques, and Applications for Integrating the Supply Chain" by Carol A. Ptak & Eli Schragenheim
3.Practical and supply-chain-focused approach to ERP.

ID/GE/OE/T/250: Interior Design Using AI-II

Total Credits: 2 Total Hours: 30 Hrs. Maximum Marks – 50

Learning Objectives of the Course: The objective of the subject is to enable students:

1. To explore AI platforms used in interior design, focusing on their theoretical logic and workflows.
2. To examine the process of design thinking and concept development aided by AI.
3. To understand the theory behind AI-generated mood boards, space planning, rendering, and color design.
4. To introduce prompt engineering and the ethical implications of AI usage in design.
5. To prepare students for the future of AI integration in smart interiors, visualization, and professional practice.

Course Outcomes: By the end of this course, students will be able to:

1. Explain how AI tools interpret and generate design layouts, palettes, and visualizations.
2. Theorize the development of conceptual and mood boards using AI assistance.
3. Differentiate between traditional and AI-assisted rendering methods.
4. Apply prompt engineering principles to optimize AI-generated design outputs.
5. Analyze AI's impact on the design process and its alignment with human creativity and ethics.
6. Predict future roles and applications of AI in interior design practice, including immersive and smart technologies.

Module No	Topic/Content of the syllabus	Hours
I	**Design Thinking and Concept Development** • Design process: ideation to execution • Empathy mapping, problem definition • Role of AI in early-stage ideation **Introduction to AI Tools and Platforms** • Detailed study of tools: Planner 5D, Midjourney, Foyr Neo, Homestyler, RoomGPT, Interior AI • Categorization of tools: planning, visualization, rendering, project management • Tool comparison and limitations	06
II	**Virtual Mood Boards and Conceptualization** • Theoretical structure of a concept board • Role of color, texture, style references • AI's role in concept curation and simulation **AI-based Space Planning Logic** • Algorithms behind AI layout suggestions • AI interpretation of anthropometric and functional data • How AI 'learns' space typologies	06
III	**Visualization and Rendering Theory** • What is rendering? Types of render engines • Photorealism vs. artistic rendering • AI-based rendering theory (generative diffusion models like DALL·E, Midjourney) **AI in Lighting and Color Design** • AI logic in optimizing lighting based on time, location, use	06

	• Generating color palettes using algorithms • Psychological theory in AI-generated designs	
IV	**Prompt Engineering & Ethical AI Use** What is a prompt? How to write effective ones Language, keywords, and structure Intellectual property and ethical use of AI outputs	06
V	**Future of AI in Interior Design** • AI's potential in VR/AR integrations • Smart homes and responsive environments • Challenges ahead: copyright, personalization, creativity	06

Reference Books:

1. Artificial Intelligence for Designers" by Jonathan Peters
2. "Designing with Artificial Intelligence: A Guide for Architects and Designers" by Phil Bernstein (Yale School of Architecture)
3. "Generative Design: Visualize, Program, and Create with JavaScript in p5.js" by Hartmut Bohnacker et al.

ID/SEC/T/250: Interior in Commercial Spaces

Total Credits: 1 Total Hours: 15 Hrs. Maximum Marks – 50

Learning Objectives of the Course: The objective of the subject is to enable students to understand:

1. Understand the unique design requirements of various commercial spaces including restaurants, clinics, and offices.
2. Analyze user behavior, circulation patterns, and functional zoning specific to each type of commercial interior.
3. Identify appropriate materials, lighting, furniture, and technology for use in high-traffic commercial environments.
4. Interpret and apply standards and regulations including safety, accessibility, and hygiene in commercial interior projects.
5. Develop skills in space planning, conceptualization, and presentation specific to commercial interiors.
6. Conduct market surveys and site visits to connect theoretical knowledge with real-world applications.
7. Create working drawings and design proposals that demonstrate an integration of design and technical understanding.

Course Outcomes (COs): Students will be able to

CO1: Demonstrate proficiency in planning and designing interior spaces for restaurants, clinics, and office environments.

CO2: Produce professional working drawings including space planning, lighting layout, furniture design, and service integration.

CO3: Apply ergonomics, zoning, material selection, and building services knowledge in commercial design scenarios.

CO4: Conduct effective market research for interior materials and finishes suitable for commercial use.

CO5: Assess commercial spaces through site visits and prepare analytical reports linking design theory with real-life functionality.

CO6: Present a complete interior design proposal with concept boards, material boards, cost estimates, and relevant technical documentation.

CO7: Work collaboratively and independently to solve design problems while understanding client and user needs.

Module No	Topic/Content of the syllabus	Hours
I	**Introduction to Commercial Interiors** • Definition, need, and significance of commercial interiors • Key differences between residential and commercial design • Space programming and planning principles	03
II	**Interior Design for Restaurants** • Functional zoning (kitchen, dining, service areas) • Ambience creation through lighting, acoustics, materials, and color • Ergonomics and circulation in seating layouts • Ventilation, fire safety, and hygiene regulations	04
III	**Interior Design for Clinics** • Zoning: Reception, waiting, consultation, diagnostics, storage • User behavior and privacy • Sterilization and sanitation requirements • Material selection for hygiene and durability	04

	• Barrier-free design and accessibility norms	
IV	**Interior Design for Offices** • Space utilization (open plan, cubicles, cabins, meeting rooms) • Workstation design, lighting and HVAC integration • Smart office trends: modularity, sustainability, and technology • Branding and corporate identity through interiors	04

Reference Books & Resources:

1. Time-Saver Standards for Interior Design and Space Planning – Joseph DeChiara & Julius Panero
2. Interior Design Illustrated – Francis D.K. Ching
3. Commercial Interior Design – Maureen Mitton
4. Materials for Interior Environments – Corky Binggeli
5. National Building Code & Local Municipal Guidelines
6. Journals like Interior Design, Architectural Digest, Frame

Subject - ID/SEC/T/ 201 : Photoshop in interior
Total Credits: 1 Total Hours: 15 Hrs. Maximum Marks – 50

Learning Objectives of the Course: The objective of the subject is to enable students to :
1. Understand and navigate the Photoshop interface, tools, panels, and workspaces tailored to interior design tasks.
2. Set up design documents with appropriate dimensions and resolutions for digital and print-based interior presentation boards.
3. Apply basic and advanced selection tools to isolate, modify, and compose interior elements such as furniture, textures, and materials.
4. Color, Texture & Material Representation Simulate wall, floor, furniture, and ceiling finishes using color correction tools, texture overlays, and custom brushes.
5. Export professional-quality layouts in various formats (JPEG, PNG, and PDF) for use in print portfolios, client presentations, or digital submissions.

Course Outcome (COs): Upon successful completion of the course, students will be able to:
CO1: Understand and use Photoshop's core tools and interface.
CO2: Create design and presentation boards for architecture or interior projects.
CO3: Perform image retouching, enhancement, and composition.
CO4: Develop visually appealing layouts with integrated text and graphics.
CO5: Export optimized files for digital or print portfolios.

Module	Topic	Hours
I	**Introduction to Photoshop** - Interface & Workspace- File formats: PSD, JPEG, PNG, TIFF- Image Resolution & Size **Selection Tools & Layers** - Move Tool, Marquee, Lasso, Magic Wand- Layer concept & blending modes- Layer mask basics **Color & Brush Tools** Color Picker, Swatches- Brush, Gradient, Paint Bucket- Eyedropper Tool	05
II	**Image Adjustments** - Brightness/Contrast- Hue/Saturation, Color Balance- Levels, Curves **Text & Shape Tools** - Adding & styling text- Vector shapes and paths- Smart Objects	05
III	**Filters & Effects** - Filter Gallery- Blur, Sharpen, Distort- Layer styles: Drop shadow, stroke, glow **Exporting & Output** File formats for print & web- Exporting slices- Optimization tips **Photoshop in Design & Presentation** Applications in architecture, interior, and graphic design	05

ID/SEC/P/276: Interior in Commercial Spaces
Total Credits: 1 Total Hours: 30 Hrs. Maximum Marks – 50

Learning Objectives of the Course: The objective of the subject is to enable students to :

1. Understand the unique design requirements of various commercial spaces including restaurants, clinics, and offices.
2. Analyze user behavior, circulation patterns, and functional zoning specific to each type of commercial interior.
3. Identify appropriate materials, lighting, furniture, and technology for use in high-traffic commercial environments.
4. Interpret and apply standards and regulations including safety, accessibility, and hygiene in commercial interior projects.
5. Develop skills in space planning, conceptualization, and presentation specific to commercial interiors.
6. Conduct market surveys and site visits to connect theoretical knowledge with real-world applications.
7. Create working drawings and design proposals that demonstrate an integration of design and technical understanding.

Course Outcomes (COs): Students will be able to

CO1: Demonstrate proficiency in planning and designing interior spaces for restaurants, clinics, and office environments.

CO2: Produce professional working drawings including space planning, lighting layout, furniture design, and service integration.

CO3: Apply ergonomics, zoning, material selection, and building services knowledge in commercial design scenarios.

CO4: Conduct effective market research for interior materials and finishes suitable for commercial use.

CO5: Assess commercial spaces through site visits and prepare analytical reports linking design theory with real-life functionality.

CO6: Present a complete interior design proposal with concept boards, material boards, cost estimates, and relevant technical documentation.

CO7: Work collaboratively and independently to solve design problems while understanding client and user needs.

Module No	Topic/Content of the syllabus	Hours
I	Space planning and layout design for: Restaurant • Market Survey for restaurant • Drawings to include: 1. Floor plan, reflected ceiling plan 2. Furniture layout 3. Electrical and HVAC layout 4. Wall elevations and key section details 5. Concept board with materials and finishes 6. Ergonomics and circulation in seating layouts 7. Ventilation, fire safety, and hygiene regulations	10
II	Space planning and layout design for: Clinic • Market Survey for restaurant • Drawings to include: 1. Floor plan, reflected ceiling plan 2. Furniture layout 3. Electrical and HVAC layout 4. Wall elevations and key section details	10

	5. Concept board with materials and finishes and color 6. Ergonomics and circulation in seating layouts 7. Ventilation, fire safety, and hygiene regulations	
III	Space planning and layout design for: Office • Market Survey for restaurant • Drawings to include: 1. Floor plan, reflected ceiling plan	10
	2. Furniture layout 3. Electrical and HVAC layout 4. Wall elevations and key section details 5. Concept board with materials and finishes and color 6. Ergonomics and circulation in seating layouts 7. Ventilation, fire safety, and hygiene regulations	

ID/VSC/P/277: Photoshop in interior

Total Credits: 1 Total Hours: 30 Hrs. Maximum Marks – 50

Learning Objectives of the Course: The objective of the subject is to enable students to :

1. Understand and navigate the Photoshop interface, tools, panels, and workspaces tailored to interior design tasks.
2. Set up design documents with appropriate dimensions and resolutions for digital and print-based interior presentation boards.
3. Apply basic and advanced selection tools to isolate, modify, and compose interior elements such as furniture, textures, and materials.
4. Color, Texture & Material Representation Simulate wall, floor, furniture, and ceiling finishes using color correction tools, texture overlays, and custom brushes.
5. Export professional-quality layouts in various formats (JPEG, PNG, and PDF) for use in print portfolios, client presentations, or digital submissions.

Course Outcome (COs): Upon successful completion of the course, students will be able to:

CO1: Understand and use Photoshop's core tools and interface.
CO2: Create design and presentation boards for architecture or interior projects.
CO3: Perform image retouching, enhancement, and composition.
CO4: Develop visually appealing layouts with integrated text and graphics.
CO5: Export optimized files for digital or print portfolios.

Module	Topic	Hours
I	**Interface & Workspace** 1.Create and save files for print/web using proper resolutions and formats 2.Workspace overview, file types (PSD, JPEG, PNG, TIFF), resolution, canvas setup	06
II	**Brightness & Color** 3.Edit a room image to enhance lighting and apply a specific color theme **Tonal Adjustments** 4.Create a day and night version of the same room using tone correction **Image Cleanup** 5.Remove unwanted items from a room and extend surfaces using content-aware	06
III	**Text & Typography** 6.Design a title slide for an interior project using image + text **Shapes & Smart Objects** 7.Layout a modular board template with design zones and icons **Layer Styles & Filters** 8.Apply effects to a material board or furniture collage for emphasis	06
IV	**Moodboards** 9.Design a living room moodboard with labels and visual balance **Finish Visualization** **10.** Apply tiles and paint to walls/floors of a kitchen/bathroom	06

	layout **Lighting Effects** **11.** Add ambient and directional lighting effects to a rendered interior	
V	**Exporting Work** **12.** Export project board in PDF for print and JPEG for web	06
	~~Presentation Boards~~ 13. Design an A3 board layout showing project info and visuals **Final Submission** **Submit final moodboard + A3 board; present and explain design logic**	