VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI.

Scheme of Teaching and Examinations and Syllabus
M. ARCH. INTERIOR ARCHITECTURE
(Effective from Academic year 2026-27)

INTERIOR DESIGN STUDIO - I (WITH TOA AND CAD)

Course Code:	**MAID101**	CIE Marks	50
Teaching Hours/Semester (L: P: SDA)	28:84:118	SEE [VIVA] Marks	50
Credits	08	TOTAL	100

Course Objectives

1. To Introduce the fundamentals of Interior Design, including ergonomics, anthropometry, and design principles.
2. To Develop an understanding of the interior design process, spatial planning, and user-centered design.
3. To Explore the factors influencing interior environments, material selection, and spatial quality.
4. To Develop graphic communication, digital representation, and presentation skills for interior design.
5. To Apply digital modelling, rendering, material specification, estimation, and BOQ preparation in interior design projects.

Revised Pedagogy (Method and Practice of Teaching, Self-Study)

1. The course shall integrate theory and studio-based learning through lectures, design exercises, discussions, and critiques.
2. Students shall undertake site visits, case studies, precedent studies, and documentation exercises to understand real-world interior environments.
3. Studio projects shall emphasize design development, material selection, digital visualization, quantity estimation, and BOQ preparation.
4. Digital tools for modelling, rendering, and presentation shall be incorporated into the design process.
5. Students shall be encouraged to use reference books, online repositories, material libraries, and industry resources for self-learning.

Module I

Ergonomics & Anthropometry in Interior Spaces

Studies and Introduction to human Dimensions and functions, Space Activity relationships

Module II

Understanding Application of Elements & Principles of Interiors Design (Theory of Aesthetics)

Discussion and Critique of Assigned Projects shall enable students to develop an understanding of 2D-3D design elements and principles that unify them in clear visual and conceptual organization.

Module III

Graphic Representation

Introduction to drawing for Interior Design, projections, perspectives, sketching Interior Environments, digital modeling and digital rendering, quick illustrations, manual sketching and digital Artwork. Presenting materials and Finishes, creating design templates, digital mood boards, digital design library, Digital Illustrations and rendering using Software's.

Module IV

Design Exercise - I

Design of multi-functional small space like studio apartment, loft apartments through the application of afore mentioned principles. Students are expected to follow the design process, programming, space planning, selection of finishes, furniture textures and preparation of professional presentations. Students shall incorporate materials studied in the IDMC course and prepare material specifications, quantity estimates, and BOQ for the proposed design.

Module V

Design Exercise - II

Design of large spaces like Exhibitions, AV/ Performance spaces, through the application of afore-mentioned principles. Students are expected to follow the design process, programming, space planning, and selection of

finishes, furniture textures and preparation of professional presentations. The project shall integrate materials covered in the IDMC course, along with detailed material specifications, cost estimation, and BOQ preparation.

Course outcomes:
At the end of the course the student will be able to:

1. Apply ergonomics, anthropometry and design principles in interior design projects.
2. Develop functional and aesthetically appropriate interior design solutions through systematic design processes.
3. Produce professional graphic, digital, and visual representations of interior spaces.
4. Integrate material selection, specifications, quantity estimation and BOQ preparation into design proposals.
5. Utilize digital modelling and rendering tools to effectively communicate interior design concepts.

Assessment Details (both CIE and SEE)
Continuous Internal Evaluation
The CIE will be progressive marking:
Each week discussion will be marked and considered for 50 + Internal Reviews for 50 + External Reviews for 50 + final Portfolio for 50.
Total 200 will be then reduced to 50

Semester End Examination
Will be a VIVA for 50 marks.
The VIVA VOCE examination will be conducted by one external examiner (from academics/profession) and one internal examiner for I and II Semesters.
The VIVA VOCE duration will be 20 minutes each per student for I and II Semesters

Sl. No.	Title of the Book	Author(s)	Publisher	Edition / Year
1	Interior Design Illustrated	Francis D.K. Ching & Corky Binggeli	Wiley	4th Edition, 2018
2	Time-Saver Standards for Interior Design and Space Planning	Joseph De Chiara, Julius Panero & Martin Zelnik	McGraw-Hill	2003
3	Human Dimension and Interior Space	Julius Panero & Martin Zelnik	Watson-Guptill	1979
4	The Interior Design Handbook	Frida Ramstedt	Clarkson Potter	2020
5	Interior Design Reference Manual	David Kent Ballast	Professional Publications Inc.	Latest Edition
6	Materials for Interior Environments	Corky Binggeli	Wiley	Latest Edition
8	Residential Interior Design: A Guide to Planning Spaces	Maureen Mitton & Courtney Nystuen	Wiley	Latest Edition

INTERIOR DESIGN MATERIALS & CONSTRUCTION I

Course Code	**MAID102**	CIE Marks	50
Teaching Hours/Semester (L: P: SDA)	28:28:64	SEE [VIVA] Marks	50
Credits	04	TOTAL	100

Course Objectives

The course aims to:

1. To introduce the properties, characteristics, and applications of materials used in interior design.
2. To develop an understanding of wood, engineered wood, stone, and finishing materials, including their construction techniques and detailing.
3. To familiarize students with joineries, fixtures, fittings, partition systems, and surface finishes used in interior projects.
4. To enable the selection and specification of appropriate materials based on functional, aesthetic, and sustainability criteria.
5. To develop skills in quantity estimation, costing, and BOQ preparation for interior design projects.

Pedagogy (Method and Practice of Teaching, Self-Study)

1. The course shall integrate lectures, demonstrations, material studies, construction detailing, and studio-based exercises.
2. Students shall undertake site visits, market surveys, case studies, and documentation of material applications and construction techniques.
3. Practical exercises shall include preparation of material boards, construction details, working drawings, specifications, quantity estimates, and BOQs.
4. Students shall be encouraged to explore material libraries, manufacturer catalogues, digital resources, and contemporary industry practices.
5. Integration of material selection and construction detailing with Interior Design Studio projects shall be emphasized.

Module-I

Introduction to Interior Design Materials

Classification of Interior Materials: Natural, Engineered, Composite, and Finishing Materials
Overview of Materials Used in Interior Design: Wood, Stone, Metals, Glass, Ceramics, Polymers, Textiles, Laminates, and Surface Finishes. Sustainable Materials and Emerging Trends in Interior Design Materials. Applications of Materials in Interior Spaces

Module-II

Wood: Physical properties – growth rings, knots, heart wood and sap wood. Colour, water content, Structure. Hard wood and soft wood: Characteristics and Applications. Bamboo and cane: properties and joineries and Applications. Engineered Wood Products: Plywood, MDF, HDF, Particle Board, Block Board, Veneers, Laminates. Interior Partitions, Panelling Systems, Fixtures, and Fittings. Joinery details: dovetail, scissor joint etc., Uses & defects of wood. Carpentry finishes, Engraving and carving of wood, polishing and painting of wood.

Module-III

Stone: Natural & engineered stones.

Granite –types of granite – based on composition, finishes. Uses of granite.
Marble – composition & physical characteristics, finishes. Uses & applications of marble. Engineered stones – composition, properties. Uses & applications.
Stone Cladding, Flooring, Countertops, and Wall Treatments. Detailing, Installation Methods, and Maintenance of Stone Surfaces

Module-IV

Interior Finishes and Sustainable Material Technologies

Laminates, veneers, cork, rubber, leather, textiles, paper-based materials and composite materials. Paints, coatings, varnishes, wall finishes and decorative surface treatments. Floor finishes including epoxy,

micro-topping, vinyl, linoleum and other sustainable flooring systems. Smart materials, sustainable materials, low-carbon interior materials and emerging material technologies for interior applications.

Module-V

Estimation, Costing, and BOQ Preparation: Preparation of detailed estimates, costing, and Bill of Quantities (BOQ) for the Interior Design Studio project, incorporating the materials covered in the syllabus and their application in the proposed design.

NOTE: Woking drawing of furniture and or object designed to be completed for the topics covered where relevant

Course outcomes:

At the end of the course the student will be able to

1. Understand the properties, performance characteristics, and applications of materials used in interior design.
2. Apply appropriate construction techniques, joineries, fixtures, fittings, and detailing in interior projects.
3. Evaluate and select materials based on functional, aesthetic, sustainability, and maintenance requirements.
4. Prepare material specifications, construction details, and working drawings for interior applications.
5. Develop quantity estimates, costing, and BOQs for interior design projects and integrate them into studio documentation.

Assessment Details (both CIE and SEE)

Continuous Internal Evaluation

The CIE will be progressive marking:
Each Plate will be marked for 10 [80 total] + Viva (for every CIA) 50 + Case Study Presentation 20 + final Portfolio for 50.
Total 200 will be then reduced to 50

Semester End Examination

Will be a VIVA for 50 marks.
The VIVA VOCE examination will be conducted by one external examiner (from academics/profession) and one internal examiner for I and II Semesters.
The VIVA VOCE duration will be 15 minutes each per student for I and II Semesters

Reference Books

Sl. No.	Title of the Book	Author(s)	Publisher	Edition / Year
1	Materials for Interior Environments	Corky Binggeli	John Wiley & Sons	Latest Edition
2	Interior Design Materials and Specifications	Lisa Godsey	Fairchild Books	Latest Edition
3	Interior Construction and Detailing for Designers and Architects	David Kent Ballast	Professional Publications Inc.	Latest Edition
4	Building Construction Illustrated	Francis D. K. Ching	John Wiley & Sons	Latest Edition
5	Architectural Detailing: Function, Constructibility, Aesthetics	Edward Allen & Patrick Rand	John Wiley & Sons	Latest Edition
6	Fundamentals of Building Construction: Materials and Methods	Edward Allen & Joseph Iano	John Wiley & Sons	Latest Edition

THEORY AND HISTORY OF AESTHETICS & INTERIOR DESIGN

Course Code	**MAID103**	CIE Marks	50
Teaching Hours/Semester (L: P: SDA)	42:0:48	SEE [THEORY] Marks	50
Credits	03	Exam Hours	03

Course Objectives

1. To Understand the evolution of aesthetic thought and its influence on architecture and interior design.
2. To Interpret Western and Indian aesthetic traditions and their relationship with architectural and interior spaces.
3. To Understand the principles of colour, perception, and colour psychology in creating meaningful interior environments.
4. To Examine the evolution of international and Indian design movements and their influence on architecture and interior design.
5. To Apply historical and aesthetic knowledge to critically analyze and adapt design concepts in contemporary interior design.

Pedagogy (Method and Practice of Teaching, Self-Study**)**

1. Lectures supported by visual presentations, case studies, and multimedia resources to explain theories of aesthetics, colour, and design movements.
2. Comparative study of Indian and Western aesthetic traditions through discussions and visual analysis.
3. Classroom discussions and seminars to encourage critical thinking and interpretation of aesthetic concepts.
4. Analysis of historical and contemporary architectural and interior projects to understand the evolution of design movements.
5. Self-directed learning through literature review, visual documentation, and presentations on selected aesthetic theories and design styles.

Module-I

Introduction To Aesthetics

Concept and meaning of aesthetics. Evolution of aesthetic thought. History of aesthetics – Greek, Indian, African, Arab & Western medieval aesthetics. Modern aesthetics – AG Baungarten, Fredrick Wilhelm, Joseph, Schelling, Adolf Loos. Aesthetic realism. Relationship between aesthetics and science.

Module-II

Aesthetic Principles in Architecture and Interior Design

Western and Indian aesthetic traditions relating to architecture and interior spaces. Relationship between architecture, interior design, spatial organization, surfaces, materials, and aesthetics. Study of the relationship between architectural traditions and aesthetic values. Critical judgement in design. Design-related cognitive learning and perception.

Module-III

Advanced Study on Colour

Physics of colour, spectral colours, colour of objects. Perception.
Theories of colour – Trichromatic theory. Additive & Subtractive colours. Traditional colour theories, colour wheel, RYB colour model, Warm & cool colours, tint and shades, colour harmony.
Psychology of colour, colour and emotion, branding, lighting and colour interaction, and application of colour in interior environments.

Module-IV

Universal Design Movements

Landmark events in the history of international design movement, historical development of artifact, overview of major styles like Regency, Victorian, Colonial, Arts and Crafts, Art Nouveau, Eclecticism, Modernism, Art Deco, Late 20th century and Post Modernism, Deconstructivism and Late modernism

Module-V

Modern Design Movements in India

Industrialization, technological advancements, and changing production systems. Their impact on lifestyle, architecture, and interior environments. The Modern Movement and its influence on Indian architecture and interior design. Transition from traditional to modern methods of spatial planning and interior expression. Indian concepts of space making, traditional symbols, and spatial organization. Adaptive reuse and reinterpretation of architectural built forms in contemporary interior design.

Course outcomes:

At the end of the course the student will be able to:

1. Understand the evolution of aesthetic thought and its relationship with architecture and interior design.
2. Interpret Western and Indian aesthetic traditions and analyze their influence on architectural and interior spaces.
3. Apply principles of colour, perception and colour psychology in evaluating interior environments.
4. Analyze the characteristics and influence of international and Indian design movements on architecture and interior design.
5. Evaluate historical and aesthetic concepts for their application in contemporary interior design practice.

Assessment Details (both CIE and SEE)

Continuous Internal Evaluation: The CIE will be based on Internal Tests and Assignments.

Internal tests:

1. One test of 50 marks will be conducted for Every CIA cycle. Total 3 tests per semester.
2. One Assignment for 20 marks or two assignments for 10 marks each will be considered for each CIA cycle.
3. Assignments will consist of Sketches for 10 marks and written answers for 10 marks. It can also be 10 marks for Quiz and 10 marks for seminar presentation.
4. Any combination of the above will be considered for the 20 marks component.
5. The total of 50+20 =70 will be reduced to 50.

Semester End Examination: Will be a written exam for 100 marks reduced to 50.

Question paper pattern:

The SEE question paper will be set for 100 marks and the marks scored will be proportionately reduced to 50.

1. The question paper will have ten full questions carrying equal marks.
2. Each full question is for 20 marks.
3. There will be two full questions (with a maximum of four sub questions) from each module.

The students will have to answer five full questions, selecting one full question from each module.

Reference Books

Sl. No.	Title of the Book	Author(s)	Publisher	Edition & Year
1	The Fundamentals of Interior Architecture	John Coles & Naomi House	Bloomsbury Academic	2007
2	A History of Interior Design	John Pile & Judith Gura	John Wiley & Sons	4th Edition, 2013
3	Interior Color by Design: A Design Tool for Architects, Interior Designers and Homeowners	Jonathan Poore & Sandra L. Ragan	Rockport Publishers	1994
4	Colour Harmony	Bride M. Whelan	Rockport Publishers	1994
5	The Story of Art	E. H. Gombrich	Phaidon Press	16th Edition, 1995
6	The Eyes of the Skin: Architecture and the	Juhani Pallasmaa	John Wiley &	3rd Edition,

Sl. No.	Title of the Book	Author(s)	Publisher	Edition & Year
	Senses		Sons	2012
7	Towards a New Architecture	Le Corbusier	Dover Publications	1986 (Reprint)
8	White Walls, Designer Dresses: The Fashioning of Modern Architecture	Mark Wigley	MIT Press	2001
9	Sexuality and Space	Beatriz Colomina (Ed.)	Princeton Architectural Press	1992
10	The Decoration of Houses	Edith Wharton & Ogden Codman Jr.	Dover Publications	2007 (Reprint of 1897 Edition)
11	Essay:White Walls, Designer Dresses: The Fashioning of Modern Architecture	Mark Wigley	MIT Press	2001
12	Essay: Spoken into void: The principles of cladding	Adolf Loos	Collected Essays	1897 -1900
	Essay: A Wall of Books: The Gender of Natural Colours in Modern Architecture	William W. Braham		2003

BUILDING SERVICES FOR INTERIORS - I

Course Code	**MAID104**	CIE Marks	50
Teaching Hours/Semester (L: P: SDA)	28:14:48	SEE [THEORY] Marks	50
Credits	03	Exam Hours	03

Course Objectives

1. To develop an understanding of essential building services such as water supply, lighting, and fire safety systems, and their application in interior design.
2. To equip students with technical knowledge and practical skills for designing functional and efficient plumbing, lighting, and fire safety layouts for various building types.
3. To foster analytical thinking by integrating concepts of energy efficiency, sustainability, and user comfort into building services for interiors.
4. To enable students to evaluate and incorporate National Building Code (NBC) standards into design projects.
5. To encourage innovation and creativity in solving challenges related to building services in interior spaces.

Pedagogy (Method and Practice of Teaching, Self-Study)

1. The pedagogy will integrate theoretical and practical aspects of building services through lectures, interactive sessions, and collaborative projects.
2. Use of industry-standard software for lighting design (e.g., Dialux, Relux) and plumbing layouts (e.g., AutoCAD, Revit MEP).
3. Site visits and case studies to give students real-world exposure to building services in residential, commercial, and institutional projects.
4. Multimedia tools, such as visuals, videos, and audio, to enhance understanding of technical concepts.
5. Seminars and guest lectures by industry experts to provide insights into current trends and technologies**.**

Module-I

Water Supply & Sanitation

This module covers water distribution, waste plumbing, and their impact on interior layouts. Students will study plumbing fixture selection for residential and commercial spaces, designing functional kitchen, bathroom, and pantry layouts. Through market surveys of materials and case studies on water-efficient systems, students learn to integrate sustainable, practical sanitation solutions into interior design.

Module-II

Daylighting

Fundamentals and importance of daylighting in interior design. Principles of daylighting: side lighting, top lighting, and daylight control strategies. Impact of glazing materials on daylighting, thermal comfort, and energy efficiency. Designing for daylight in different building types (residential, commercial, and institutional). Understanding the relationship between daylighting and heat in interiors. Role of daylighting in enhancing user comfort and sustainability.

Module- III

Artificial Lighting and Illumination

Principles of lighting design and the lighting design process. Lighting sources: fluorescent, LED, halogen, CFL, and their characteristics. Types of lighting: general, task, accent, and their application in interior spaces. Advanced lighting controls: occupancy sensors, dimmers, and automated systems. Emergency lighting design and maintenance. Lighting system tuning and maintenance for energy efficiency. Designing lighting for specific spaces: residences, offices, retail, hospitality, educational, and public toilets

Module-IV

Fire Fighting Systems

Understanding fire classifications, causes, and hazards. Structural grading for fire resistance as per NBC. Characteristics of combustible and non-combustible materials. Passive fire protection concepts: escape

routes, fire driveways, refuge areas, pressurization, travel distances, compartmentation, and fire signage. Fire safety integration into interior design.

Module-V

Regulations of Safety & Services

Overview of NBC regulations for water supply, lighting, and fire safety systems. Application of NBC guidelines in interior design to ensure safety and compliance. Integration of services into interior designs.

Course Outcomes

At the end of the course the student will be able to:

1. Demonstrate the ability to design water supply and sanitation systems for residential and commercial interiors.
2. Analyze and design daylighting and artificial lighting systems for specific functional and aesthetic requirements.
3. Develop fire safety strategies, layouts, and passive protection measures as per NBC standards.
4. Integrate building services into holistic and functional and aesthetic interior designs.
5. Apply sustainability and energy efficiency principles in building service systems for interiors.

Assessment Details (both CIE and SEE)

Continuous Internal Evaluation: The CIE will be based on Internal Tests and Assignments.
Internal tests:

1. One test of 50 marks will be conducted for Every CIA cycle. Total 3 tests per semester.
2. One Assignment for 20 marks or two assignments for 10 marks each will be considered for each CIA cycle.
3. Assignments can consist of Sketches for 10 marks and written answers for 10 marks. It can also be 10 marks for Quiz and 10 marks for seminar presentation.
4. Any combination of the above will be considered for the 20 marks component.
5. The total of 50+20 =70 will be reduced to 50

Semester End Examination: Will be a written exam for 100 marks reduced to 50.

Question paper pattern:

The SEE question paper will be set for 100 marks and the marks scored will be proportionately reduced to 50.

1. The question paper will have ten full questions carrying equal marks.
2. Each full question is for 20 marks.
3. There will be two full questions (with a maximum of four sub questions) from each module.
4. The students will have to answer five full questions, selecting one full question from each module**.**

Reference Books

Sl. No.	Title of the Book	Author(s)	Publisher	Edition / Year
1	Plumbing Design and Practice	S. G. Deolalikar	Tata McGraw-Hill	Latest Edition
2	Water Supply and Sanitary Installations (Within Building): Design, Construction and Maintenance	A. C. Panchdhari	Wiley Eastern Ltd., New Delhi	1993
3	Building Systems for Interior Designers	Corky Binggeli	John Wiley & Sons	2nd Edition, 2011
4	Introduction to Interior Lighting Design	J. Paul Guyer	Continuing Education and Development, Inc., Woodcliff Lake, NJ	2010
5	Interior Lighting for Designers	Gary Gordon	John Wiley & Sons	5th Edition, 2011

Sl. No.	Title of the Book	Author(s)	Publisher	Edition / Year
6	National Building Code of India (Volumes 1 & 2)	Bureau of Indian Standards (BIS)	Bureau of Indian Standards, New Delhi	2016
7	IS 1172: Code of Basic Requirements for Water Supply, Drainage and Sanitation	Bureau of Indian Standards (BIS)	Bureau of Indian Standards, New Delhi	IS 1172:1993

ERGONOMICS AND FURNITURE DESIGN & DETAILING

Course Code	**MAID105**	CIE Marks	50
Teaching Hours/Semester (L: P: SDA)	14:28:48	SEE [VIVA] Marks	50
Credits	03	TOTAL	100

Course Objectives

The course aims to enable students to:

1. Understand ergonomics, anthropometry, and human factors in furniture design.
2. Understand furniture design principles, design parameters, aesthetics, and semiotics.
3. Evaluate different furniture materials, their properties, applications, and manufacturing techniques.
4. Develop furniture detailing and fabrication skills using appropriate manufacturing methods.
5. Apply digital modelling and fabrication techniques for furniture design and prototyping.

Pedagogy (Method and Practice of Teaching, Self-Study**)**

1. Lectures integrating theoretical concepts with practical furniture design exercises.
2. Ergonomic analysis through anthropometric studies and furniture evaluation.
3. Material exploration, detail drawing, model making, and prototype development.
4. Factory visits to understand furniture manufacturing and fabrication processes.
5. Visits to furniture showrooms, exhibitions, and design studios to study market trends and furniture systems.
6. Seminars, guest lectures, and case studies by industry experts.
7. Digital modelling and fabrication workshops using appropriate software and fabrication equipment.

Module-I

Ergonomics

Introduction to ergonomics & human factor design. Domains of specialization in the discipline of ergonomics. Methods of analysis.

Module-II

Theory of Furniture Design & Design Parameters

Descriptive and normative approaches to furniture design. Design parameters, usability, manufacturing considerations, aesthetics and semiotics in furniture design.

Module-III

Materials In Furniture Design

Wood and engineered wood products including plywood, MDF, HDF, particle board, bentwood, bamboo, tubular steel, aluminium, plastics, paper, composites, upholstery materials, and sustainable materials. Properties, applications, manufacturing techniques, and contemporary furniture systems.

Concepts of Furniture Design Study of various styles, systems & products available in the market.

Module-IV

Trends In Furniture Design

Marcel Bruer, Harry Bertoia, Mario Bellini, Achille Castiglioni, Antonio Citterio, John Cobb, JoeColombo, Ray & Charles Eames, Tom Dixon, Gio Ponti, Arne Jacobsen
Florence Knoll, Ross Lovegrove, Mackintosh, Enzo Mari, Verner Panton, Jean Provue, Patricia Urquiola, Philippe Starck, Karim Rashid.

Module-IV

Fabrication

Manufacturing & fabrication. Prefabrication & its advantages. Composite fabrication, metal fabrication, micro fabrication & optics fabrication. Rapid proto typing, solid free form fabrication
Digital Modelling& Fabrication
Machines for fabrication- CNC router, laser cutter, 3D printers. Software for modelling- Blender, SketchUp, Rhino, or equivalent software for furniture modelling and fabrication.

Course outcomes:

At the end of the course the student will be able to:

1. Understand ergonomics, anthropometry and human factors in furniture design.
2. Analyze furniture design principles, design parameters, aesthetics, and semiotics.
3. Evaluate furniture materials, manufacturing techniques, and their applications in furniture design.
4. Develop furniture detailing and fabrication solutions using appropriate manufacturing methods.
5. Apply digital modelling and fabrication techniques for furniture design and prototyping.

Assessment Details (both CIE and SEE)

Continuous Internal Evaluation

The CIE will be progressive marking:
Each week discussion will be marked and considered for 50 + Internal Reviews for 50 + External Reviews for 50 + final Portfolio for 50.
Total 200 will be then reduced to 50

Semester End Examination

Will be a VIVA for 50 marks.
The VIVA VOCE examination will be conducted by one external examiner (from academics/profession) and one internal examiner
The VIVA VOCE duration will be 20 minutes each per student

Textbooks

Sl. No.	Title of the Book	Name of the Author(s)	Publisher	Edition / Year
1	Furnish: Furniture and Interior Design for the 21st Century	Birga Meyer, Robert Klanten & Sophie Lovell	Prestel Publications	2007, Digitized 2011
2	Furniture Design	Stuart Lawson	Laurence King Publishing	Latest Edition

Reference Books

Sl. No.	Title of the Book	Author(s)	Publisher	Edition / Year
1	Human Dimension and Interior Space	Julius Panero & Martin Zelnik	Watson-Guptill	Latest Edition
2	Materials for Interior Environments	Corky Binggeli	John Wiley & Sons	Latest Edition
3	Interior Graphic Standards	Corky Binggeli	John Wiley & Sons	Latest Edition
4	Architectural Detailing: Function, Constructibility, Aesthetics	Edward Allen & Patrick Rand	John Wiley & Sons	Latest Edition
5	Furniture Design	Stuart Lawson	Laurence King Publishing	Latest Edition
6	Industrial Design: Materials and Manufacturing Guide	Jim Lesko	John Wiley & Sons	Latest Edition

ADVANCED SOFTWARE FOR INTERIORS I [ELECTIVE]

Course Code	**MAID106A**	CIE Marks	100
Teaching Hours/Semester (L: P: SDA)	14:28:48	SEE Marks	---
Credits	03	TOTAL	100

Course Objectives

1. Understand Building Information Modelling (BIM) workflows and advanced digital modelling techniques for interior design applications.
2. Develop advanced 3D models, digital assets, and visualization strategies using industry-standard software.
3. Create photorealistic renderings, immersive virtual environments, and interactive design presentations.
4. Apply digital graphics, AI-assisted visualization, and presentation techniques for effective design communication.
5. Utilize computational design, performance simulation, and digital fabrication technologies to develop sustainable and innovative interior design solutions.

Pedagogy (Method and Practice of Teaching, Self-Study**)**

1. Lectures integrated with software demonstrations and practical studio exercises.
2. Hands-on training in BIM, 3D modelling, rendering, digital visualization, and computational design.
3. Case studies, workshops, seminars, and industry interactions.
4. Project-based learning through digital modelling, visualization, and presentation development.
5. Self-directed learning using online tutorials, software documentation, and digital resources.

Module-I

BIM and Digital Modelling for Interiors: Introduction to Building Information Modelling (BIM), interior modelling using Revit, creation of parametric families and custom interior components, coordination of interior elements, furniture and services, and preparation of documentation, schedules, and drawings using BIM workflows.

Module-II

Rendering

Advanced 3D Modelling and Visualization: Advanced 3D modelling using AutoCAD, SketchUp, Rhino, and Revit, including surface, solid, and parametric modelling techniques, interior detailing and furniture modelling, material mapping and scene composition, and the development and management of digital asset libraries for design visualization.

Module-III

Photorealistic Rendering and Immersive Environments

Creation of photorealistic visualizations using 3ds Max, V-Ray, Corona, Lumion, and Enscape, including lighting simulation, material visualization, interior atmosphere and mood creation, virtual and augmented reality applications, and the development of interactive walkthroughs and virtual tours for interior design presentations.

Module-IV

Digital Graphics, Presentation, and AI-Assisted Design: Application of Adobe Photoshop, Illustrator, and InDesign for portfolio and presentation design, development of digital mood boards and material boards, AI-assisted visualization and image generation, and graphic enhancement, post-production, and visual storytelling techniques for effective design communication.

Module-V

Computational Design and Performance Simulation

Introduction to computational and parametric design, Grasshopper and generative design workflows, daylighting and lighting analysis, thermal comfort and energy performance simulation, digital fabrication techniques such as CNC machining, laser cutting, and 3D printing, and the evaluation of sustainable design strategies and material performance in interior design projects.

Course outcomes:
At the end of the course the student will be able to:

1. Apply Building Information Modelling (BIM) workflows to develop coordinated interior models, documentation, and schedules.
2. Develop advanced 3D models, furniture components, and digital assets using contemporary modelling software.
3. Create photorealistic renderings, immersive visualizations, and virtual walkthroughs for interior design projects.
4. Produce professional digital presentations using graphic design software and AI-assisted visualization techniques.
5. Apply computational design, environmental performance analysis, and digital fabrication techniques to develop sustainable interior design solutions.

Assessment Details (CIE only)
Continuous Internal Evaluation:
The CIE will be based on continuous assessment through assignments, practical exercises, case studies, presentations, and portfolio submissions conducted during each CIA cycle.

- One test/submission of 50 marks will be conducted for Every CIA cycle. Total 3 per semester.
- The final portfolio/assignment submission will be considered for the 50 marks component.
- The total of 50+50+50+50 =200 will be converted to final CIE marks of 100.

Textbooks

Sl. No.	Title of the Book	Author(s)	Publisher	Edition / Year
1	Mastering Autodesk Revit Architecture	Phil Read & James Vandezande	Sybex (Wiley)	Latest Edition
2	Interior Design Using Autodesk Revit	Daniel John Stine	SDC Publications	Latest Edition

Reference Books

Sl. No.	Title of the Book	Author(s)	Publisher	Edition / Year
1	Rendering with V-Ray	Ciro Sannino	Createspace	Latest Edition
2	Architectural Rendering with 3ds Max and V-Ray	Markus Kuhlo & Enrico Eggert	Galileo Press	Latest Edition
3	Rhino for Architects	Giuseppe Pellitteri	Routledge	Latest Edition
4	AAD Algorithms-Aided Design: Parametric Strategies Using Grasshopper	Arturo Tedeschi	Le Penseur	Latest Edition
5	Digital Fabrications: Architectural and Material Techniques	Lisa Iwamoto	Princeton Architectural Press	Latest Edition
6	The BIM Handbook: A Guide to Building Information Modeling	Chuck Eastman, Paul Teicholz, Rafael Sacks & Kathleen Liston	Wiley	Latest Edition
7	Architectural Graphics	Francis D. K. Ching	Wiley	Latest Edition
8	Design Drawing	Francis D. K. Ching & Steven P. Juroszek	Wiley	Latest Edition

FABRICATION WORKSHOP [ELECTIVE]

Course Code	**MAID106B**	CIE Marks	100
Teaching Hours/Semester (L: P: SDA)	14:28:48	SEE Marks	---
Credits	03	TOTAL	**100**

Course Objectives

The course aims to enable students to:

1. Understand material behaviour, fabrication principles, and design-through-making approaches for interior applications.
2. Develop skills in manual, mechanical, and digital fabrication techniques for interior components and furniture.
3. Apply computational design and CAD/CAM workflows in prototype development.
4. Explore emerging fabrication technologies, smart materials, and sustainable manufacturing strategies.
5. Design, fabricate, test, and present functional prototypes integrating computational thinking and fabrication processes.

Pedagogy (Method and Practice of Teaching, Self-Study)

1. Studio-based learning through hands-on fabrication workshops.
2. Demonstrations of manual, mechanical, and digital fabrication techniques.
3. Material exploration, experimentation, and prototype development.
4. Project-based learning integrating computational design and fabrication.
5. Design reviews, peer learning, seminars, and industry interactions.
6. Self-directed learning through documentation, model making, and fabrication studies.

Module I

Material Exploration and Design Through Making

Introduction to fabrication in contemporary interior design. Material behaviour and properties of wood, engineered wood, metals, composites, polymers, textiles, and sustainable materials. Material experimentation, joinery studies, structural behaviour, surface treatments, fabrication constraints, design through making, and circular material practices.

Module II

Manual and Mechanical Fabrication Techniques

Workshop safety and fabrication practices. Measurement, marking, cutting, shaping, drilling, routing, sanding, bending, lamination, mould making, casting, thermoforming, vacuum forming, joinery systems, modular fabrication, assembly methods, finishing techniques, and quality control.

Module III

Computational Design and Digital Fabrication

Introduction to computational thinking in design. CAD/CAM workflow, parametric modelling, file preparation, fabrication tolerances, CNC routing, laser cutting, digital engraving, 3D printing, hybrid fabrication techniques, and digital-to-physical workflows.

Emerging Fabrication Technologies

Responsive and smart materials, embedded electronics, sensor-integrated prototypes, AI-assisted fabrication workflows, robotic fabrication overview, design for manufacture and assembly (DfMA), design for disassembly, sustainable manufacturing, waste minimization, resource-efficient fabrication, and circular fabrication strategies.

Module V

Integrated Prototype Development

Development of furniture systems, interior components, or spatial installations through iterative prototyping. Fabrication planning, working drawings, prototype development, testing and evaluation, refinement, assembly, detailing, documentation, professional presentation, and portfolio preparation.

Course Outcomes

At the end of the course, students will be able to:

1. Explain material behaviour and fabrication principles for interior design applications.
2. Apply manual and mechanical fabrication techniques to develop interior components and furniture.
3. Develop computational design models and digital fabrication workflows using CAD/CAM technologies.
4. Evaluate emerging fabrication technologies and sustainable manufacturing strategies for innovative interior solutions.
5. Design, fabricate, test, document, and present functional prototypes integrating computational design and fabrication processes.

Assessment Details (CIE only)

Continuous Internal Evaluation:

The CIE will be based on continuous assessment through assignments, practical exercises, case studies, presentations, and portfolio submissions conducted during each CIA cycle.

- One test/submission of 50 marks will be conducted for Every CIA cycle. Total 3 per semester.
- The final portfolio/assignment submission will be considered for the 50 marks component.
- The total of 50+50+50+50 =200 will be converted to final CIE marks of 100.

Textbooks

Sl. No.	Title of the Book	Author(s)	Publisher
1	Digital Fabrications: Architectural and Material Techniques	Lisa Iwamoto	Princeton Architectural Press
2	Making It: Manufacturing Techniques for Product Design	Chris Lefteri	Laurence King Publishing

Reference Books

Sl. No.	Title of the Book	Author(s)	Publisher
1	Materials for Interior Environments	Corky Binggeli	Wiley
2	Manufacturing Processes for Design Professionals	Rob Thompson	Thames & Hudson
3	The Ecology of Building Materials	Bjørn Berge	Routledge
4	AAD Algorithms-Aided Design: Parametric Strategies Using Grasshopper	Arturo Tedeschi	Le Penseur
5	Architectural Detailing: Function, Constructibility, Aesthetics	Edward Allen & Patrick Rand	Wiley
6	Fab: The Coming Revolution on Your Desktop	Neil Gershenfeld	Basic Books