INTERIOR DESIGN STUDIO II [Sustainable interiors and CAD]

Course Code	**MAID201**	CIE Marks	50
Teaching Hours/Semester (L: P: SDA)	28:84:118	SEE [VIVA] Marks	50
Credits	08	TOTAL	100

Course Objectives

1. Apply systematic design methodologies for the analysis and development of interior design projects.
2. Develop design solutions for retail, commercial, and inclusive interior environments.
3. Integrate sustainable materials, technologies, and low-carbon design strategies into interior projects.
4. Understand user behavior, space planning, accessibility, and ergonomic requirements for diverse user groups.
5. Utilize advanced digital tools for design visualization, presentation, material specification, estimation, and BOQ preparation.

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

1. The studio shall integrate theory, design exercises, seminars, discussions, and critiques to support the design process.
2. Sustainable interior design principles, material selection, environmental performance, and inclusive design strategies shall be explored through lectures and case studies.
3. Students shall undertake site visits, precedent studies, market surveys, and user analysis to understand real-world design challenges.
4. Studio projects shall incorporate space planning, material specification, sustainability evaluation, quantity estimation, and BOQ preparation.
5. Advanced digital tools shall be used for visualization, documentation, portfolio development, and professional presentations.

Module I

Introduction to Retail and Commercial Interior Design: Introduction to retail and commercial interior spaces, types of retail and commercial environments, principles of retail planning and space organization, user experience and customer journey mapping, and the use of sustainable materials and design strategies in retail and commercial interiors.

Module II

Understanding Retail and Commercial Space Planning: Analysis of usage patterns of multiple user groups within a single space, principles of space planning and functional zoning, design considerations for public, retail, and commercial interiors, circulation and wayfinding strategies, accessibility requirements, and planning approaches that enhance user comfort, engagement, and operational efficiency.

Module III

Advanced Graphic Representation

Advanced Graphic Representation via Portfolio and Brand Identity Building for Clients

Module IV

Design Exercise - Minor Project

A Minor project like a day care center or children's clinic or a small café that is inclusive in design.
Students are expected to follow the design process, programming, space planning, and 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 - Major Project

Design of commercial multi-functional spaces like High end Showrooms, Restaurants, and Corporate Offices 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. 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 design methodologies for retail, commercial, and public interior spaces.
2. Design inclusive and user-centered environments considering accessibility and anthropometric requirements.
3. Develop effective space planning, material selection, and sustainability strategies for interior projects.
4. Integrate sustainable materials and environmentally responsible design practices into interior design solutions.
5. Utilize advanced digital tools for visualization, documentation, estimation, and BOQ preparation.

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

Textbooks

Sl. No.	Title of the Book	Author(s)	Publisher	Edition / Year
1	The Fundamentals of Interior Architecture	John Coles & Naomi House	Bloomsbury Publishing	2007
2	Interior Design	John Pile & Judith Gura	Pearson	Latest Edition

Reference Books

Sl. No.	Title of the Book	Author(s)	Publisher	Edition / Year
1	Interior Design Illustrated	Francis D.K. Ching & Corky Binggeli	Wiley	2018
2	Time-Saver Standards for Interior Design and Space Planning	Joseph De Chiara, Julius Panero & Martin Zelnik	McGraw-Hill	2003
3	Sustainable Interior Design	Sian Moxon	Laurence King Publishing	2012
4	Retail Design	Clare Cumberlidge & Marina Zavadskas	Rotovision	Latest Edition
5	Human Dimension and Interior Space	Julius Panero & Martin Zelnik	Watson-Guptill	Latest Edition
6	Universal Design Handbook	Wolfgang F.E. Preiser & Korydon H. Smith	McGraw-Hill	Latest Edition

INTERIOR DESIGN MATERIALS & CONSTRUCTION - -I I

Course Code	**MAID202**	CIE Marks	50
Teaching Hours/Semester (L:P:SDA)	28:28:64	SEE [VIVA] Marks	50
Credits	04	TOTAL	100

Course Objectives

1. To facilitate the understanding of the properties of materials used in interiors
2. To enable a better understanding of the applications of glass,
3. To enable a better understanding of suitability of metal and its finishes for different interior applications
4. To enable a better understanding of the applications of plastics in interiors
5. To enable a better understanding of the applications of textiles in interiors

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

1. The studio will be divided into the practical and the theory part. The theory will consist of the faculty introducing the topic and its application as well as the various techniques employed in the construction process.
2. Practical aspect will involve the site visits and other case study visits by the students for better understanding of the material and its practical application
3. The students will also be given reference book lists and other online repository portals that they can learn and refer to for the studio.

Module-I

Glass

Types of Glass, ingredients, properties & application. Stained glass. Glass in Green Buildings.

Module-II

Metal: Ferrous & non-ferrous metals – steel, copper, brass.
Steel – material properties, types of steel, treatments, history of steel making.
Copper – physical characteristics, history, applications, degradation. Brass – physical properties, corrosion resistance, history, applications

Module-III

Plastics

History, types of plastics. Polystyrene, Nylon, Rubber and its properties. Environmental effects of plastics. Recycling of plastic. Common plastics and its uses.
Types of moulding plastics – blow moulding, extrusion moulding, injection moulding.

Module-IV

Textiles

Role of textiles in interior design. Properties and applications.
Materials for finishes

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 and analyze the suitability of glass and its finishes finishes for different interior applications
2. Understand and analyze the suitability of metal and its finishes for different interior applications

3. Understand and analyze the suitability plastics for different interior applications
4. Understand and analyze the suitability of various textiles and their applications for different interiors
5. Prepare the estimation and preparation and BOQ for the given materials and furniture and furnishings

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 marks**

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

Textbooks

Sl. No.	Title	Author	Publisher
1	Construction Materials for Interior Design: Principles of Structure and Properties of Materials	William Rupp, Arnold Friedmann & Philip F. Farrell	Whitney Library of Design
2	Materials for Interior Environments	Corky Binggeli	John Wiley & Sons

Reference Books

Sl. No.	Title	Author	Publisher
1	Interior Design Materials and Specifications	Lisa Godsey	Fairchild Books
2	Interior Construction and Detailing for Designers and Architects	David Kent Ballast	Professional Publications Inc.
3	Building Construction Illustrated	Francis D. K. Ching	Wiley
4	Architectural Detailing: Function, Constructibility, Aesthetics	Edward Allen & Patrick Rand	Wiley
5	Materials for Design	Chris Lefteri	Laurence King Publishing
6	The Ecology of Building Materials	Bjørn Berge	Routledge
7	Inside: Interiors of Colour, Fabric, Glass, Light	Iris van Hülst and Sibylle Kramer	Thames & Hudson

BUILDING SERVICE FOR INTERIORS - II

Course Code	**MAID203**	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 advanced building services including thermal comfort principles, HVAC configuration, indoor air quality (IAQ), and architectural acoustics, along with their practical execution in interior design.
2. To equip students with technical competency to calculate basic load requirements and design functional, high-performance HVAC and acoustic layouts for residential, commercial, and hospitality sectors.
3. To foster analytical skills required to evaluate environmental data, sustainable cooling methodologies, energy-efficient equipment, and adaptive comfort standards to optimize interior environments.
4. To enable students to interpret, integrate, and verify compliance with national and international codes such as the National Building Code (NBC 2016), ASHRAE standards, and ECBC (Energy Conservation Building Code).
5. To encourage collaborative innovation by combining engineering-level building systems seamlessly with aesthetic, structurally viable, and user-centric interior spatial planning.

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

1. Lectures integrated with studio-based exercises and technical demonstrations.
2. Hands-on learning using industry-standard software for HVAC planning, thermal analysis, and acoustic evaluation.
3. Site visits and case studies of commercial buildings to understand building services and system integration.
4. Multimedia presentations, simulation tools, and material demonstrations for enhanced technical understanding.
5. Guest lectures, seminars, and self-directed learning through technical manuals, standards, and online resources.

Module-I

Fundamentals of Thermal Comfort and Indoor Air Quality

Principles of thermal comfort and factors affecting indoor environmental quality. Environmental and personal parameters including air temperature, mean radiant temperature, relative humidity, air movement, metabolic rate, and clothing insulation. Thermal comfort models (PMV, PPD, and Adaptive Comfort). Human thermoregulation and local thermal discomfort. Indoor Air Quality (IAQ), Sick Building Syndrome (SBS), Building-Related Illnesses (BRI), indoor pollutants, volatile organic compounds (VOCs), ventilation requirements, and strategies for improving indoor environmental quality.

Module-II

Ventilation and Passive Cooling Strategies

Principles of natural ventilation including cross ventilation and stack effect. Passive cooling strategies such as shading devices, solar chimneys, evaporative cooling, thermal mass, and earth air tunnels. Building envelope, insulation materials, glazing systems, and window-to-wall ratio (WWR). Integration of daylighting, ventilation, and passive design strategies for achieving thermal comfort and energy-efficient interior environments.

Module-III

HVAC Systems, Equipment & Spatial Distribution

Introduction to Heating, Ventilation, and Air Conditioning (HVAC). Classification of HVAC systems—Window, Split, VRF/VRV, and Central Air Conditioning systems. Components and spatial requirements of HVAC equipment including Air Handling Units (AHUs), Fan Coil Units (FCUs), condensers, ducts, shafts, and service spaces. Air distribution systems, duct layout, grilles, diffusers, dampers, and their integration with interior spaces. Basic principles of cooling load estimation and selection of energy-efficient HVAC systems for interior applications.

Module-IV

Architectural Acoustics and Sound Control

Fundamentals of sound, sound propagation, frequency, amplitude, wavelength, and decibel scale. Human perception of sound and speech intelligibility. Sound absorption, sound insulation, Noise Reduction Coefficient (NRC), and Sound Transmission Class (STC). Acoustical materials, reverberation time, and interior acoustic treatment. Design considerations for conference rooms, auditoriums, theatres, studios, and open-plan offices. Noise control measures for mechanical equipment, ducts, vibrations, and impact noise in interior environments.

Module-V

Building Services And Design Solutions

Integration of thermal comfort, HVAC, ventilation, and acoustical systems in interior design. Overview of relevant provisions of the National Building Code (NBC) related to building services, ventilation, air conditioning, and acoustics. Coordination of HVAC, lighting, fire safety, and acoustic systems in reflected ceiling plans (RCPs) and interior service layouts. Preparation of integrated building services drawings and design solutions for Interior Design Studio projects.

Course Outcomes

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

1. Analyze the principles of thermal comfort, indoor air quality, and their influence on interior environments.
2. Apply natural ventilation and passive cooling strategies to enhance thermal comfort and energy efficiency in interior spaces.
3. Analyze HVAC systems, air distribution, and their integration with interior design requirements.
4. Evaluate acoustical principles, materials, and noise control measures for different interior environments.
5. Develop integrated interior service layouts incorporating thermal comfort, HVAC, ventilation, acoustics, and relevant building service guidelines for design projects.

Assessment Details (both CIE and SEE)

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

- One test of 50 marks will be conducted for Every CIA cycle. Total 3 tests per semester.
- One Assignment for 20 marks or two assignments for 10 marks each will be considered for each CIA cycle.
- 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.
- Any combination of the above will be considered for the 20 marks component.
- 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.

- The question paper will have ten full questions carrying equal marks.
- Each full question is for 20 marks.
- 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

Textbooks

Sl. No.	Title of the Book	Author(s)	Publisher	Edition / Year
1	Building Systems for Interior Designers	Corky Binggeli	John Wiley & Sons	3rd Edition, 2016
2	Building Services Handbook	Fred Hall & Roger Greeno	Routledge	9th Edition, 2017
3	Managing Water Supply and Sanitation in Emergencies (Oxfam Skills and Practice Series)	John Adams	Oxfam	1999

Reference Books

Sl. No.	Title of the Book	Author(s)	Publisher	Edition / Year
1	HVAC Design Sourcebook	W. Larsen Angel	McGraw-Hill Education	2011
2	Handbook of Acoustics	Malcolm J. Crocker	John Wiley & Sons	1998
3	Architectural Acoustics: Principles and Practice	William J. Cavanaugh, Joseph A. Wilkes & Gregory C. Tocci	John Wiley & Sons	2nd Edition, 2010
4	Architectural Acoustics: Principles and Design	Madan Mehta, James Johnson & Jorge Rocafort	Pearson	2014
5	The Theory of Sound	J. W. S. Rayleigh	Dover Publications	2013 (Vol. 1, Unabridged 2nd Revised Edition)
6	Theoretical Acoustics	Philip M. Morse	Princeton University Press	1968
7	National Building Code of India (NBC 2016), Volumes 1 & 2	Bureau of Indian Standards (BIS)	BIS, New Delhi	2016
8	ASHRAE Handbook – Fundamentals / ASHRAE Standard 55: Thermal Environmental Conditions for Human Occupancy	ASHRAE	American Society of Heating, Refrigerating and Air-Conditioning Engineers	Latest Edition
9	Indian Weather Data for HVAC Applications	Indian Society of Heating, Refrigerating and Air Conditioning Engineers (ISHRAE)	ISHRAE	2019

LANDSCAPE IN INTERIOR DESIGN

Course Code	**MAID204**	CIE Marks	50
Teaching Hours/Semester (L:P:SDA)	14:28:48	SEE [VIVA] Marks	50
Credits	03	TOTAL	100

Course Objectives

1. To understand the relationship between landscape and interior environments in enhancing spatial quality and user well-being.
2. To apply principles of landscape design, planting, and spatial composition within interior and transitional spaces.
3. To evaluate appropriate plant species, materials, and landscape systems for functional, aesthetic, and sustainable interior environments.
4. To explore contemporary landscape technologies, biophilic design, and sustainable landscape interventions.
5. To develop integrated landscape design proposals for residential, commercial, and mixed-use interior environments.

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

1. Lectures supported by case studies, multimedia presentations, and discussions on contemporary landscape practices.
2. Studio-based exercises focusing on planting design, landscape planning, and spatial integration.
3. Site visits to landscape projects, nurseries, botanical gardens, and commercial developments.
4. Material and plant identification workshops, market surveys, and product studies.
5. Guest lectures by landscape architects, horticulturists, and industry professionals.
6. Self-directed learning through literature review, plant documentation, design research, and portfolio development.

Module-I

Foundations of Landscape in Interior Design

Introduction to Landscape and Interior Design Interface. Environmental, Psychological and Aesthetic benefits of Plants. Plant Identification and Classification: Plant Forms, Texture, Colour and Seasonal Characteristics

Module-II

Design Principles and Spatial Composition

Principles of Landscape Design, Landscape Composition Techniques, Spatial Organization and Visual Perception. Planting Design Fundamentals. Indoor Landscape Typologies: Case Studies of Interior Landscape Projects

Module-III

Landscape Materials, Systems and Technologies

Hardscape Materials, Composite Materials, Paving and Surface Treatments. Landscape Lighting, Water Features, Irrigation Systems. Sustainable Landscape Technologies, Product and Market Studies

Module-IV

Contemporary Interior Landscape Systems

Roof-top gardens and green roof systems. Vertical Gardens, Living Walls and Green Facades. Hydroponic and Modular Planting Systems

Module-V

Landscape Design Studio

Landscape Concept Development and Design Process. Planting Design and Plant Palette Development Integration of Interior and Exterior Spaces. Residential and Commercial Interior Landscape Design Applications

Course outcomes:

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

1. Analyze the relationship between landscape and interior environments in enhancing environmental quality and user experience.
2. Apply principles of landscape design, planting, and spatial composition in interior and transitional spaces.
3. Evaluate plant species, landscape materials, systems, and technologies suitable for interior applications.
4. Integrate sustainable landscape strategies, biophilic design, and contemporary landscape systems into interior environments.
5. Develop comprehensive landscape design proposals integrating interior and exterior spaces through appropriate documentation and presentation.

Assessment Details (both CIE and SEE)

Continuous Internal Evaluation: The CIE will be progressive marking:

- Each Submission will be marked for 10 + Viva (for every CIA) 50 + Case Study Presentation 20 + final Portfolio for 50.
- Total will be then reduced to **50 marks**

Semester End Examination:

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

Textbooks

Sl. No.	Title of the Book	Author(s)	Publisher	Edition / Year
1	Interior Landscaping	Tokuji Furuta, Debra Sievers & Vernon Artman	Reston Publishing Co.	1983
2	Interior Landscape Design	Nelson Hammer	McGraw-Hill	1991

Reference Books

Sl. No.	Title of the Book	Author(s)	Publisher	Edition / Year
1	Planting Design Handbook	Nick Robinson	Routledge	Latest Edition
2	Time-Saver Standards for Landscape Architecture	Charles W. Harris & Nicholas T. Dines	McGraw-Hill	Latest Edition
3	Biophilic Design: The Theory, Science and Practice of Bringing Buildings to Life	Stephen R. Kellert, Judith Heerwagen & Martin Mador	Wiley	2008
4	Landscape Architecture: A Manual of Environmental Planning and Design	John Ormsbee Simonds & Barry W. Starke	McGraw-Hill	Latest Edition
5	The Living Landscape: Designing for Beauty and Biodiversity in the Home Garden	Rick Darke & Douglas W. Tallamy	Timber Press	Latest Edition
6	Manual of Tropical Landscape Plants	Warren D. Hawthorne & James S. Miller	Wiley (or equivalent reference)	Latest Edition

INTERIOR PROJECT MANAGEMENT & PRACTICE

Course Code	**MAID205**	CIE Marks	50
Teaching Hours/Semester (L:P:SDA)	28:14:48	SEE [THEORY] Marks	50
Credits	03	Exam Hours	03

Course Objectives

1. Understand the principles, processes, and management techniques involved in interior design projects.
2. Apply project planning, scheduling, estimation, costing, and budgeting techniques for interior works.
3. Develop knowledge of professional practice, project coordination, contractual responsibilities, and industry standards.
4. Evaluate market trends, business practices, and professional ethics in interior design.
5. Prepare project estimates, rate analysis, and project documentation using manual and digital tools.

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

1. Interactive lectures supported by industry case studies and project documentation.
2. Studio exercises on project planning, estimation, costing, and scheduling.
3. Demonstrations using spreadsheet software and project management tools.
4. Site visits to ongoing interior projects and interaction with industry professionals.
5. Guest lectures by practicing interior designers, project managers, contractors, and consultants.
6. Self-directed learning through market surveys, professional practice studies, and project documentation.

Module-I

Interior Project Management – Introduction

Introduction to interior project management, its objectives, resources & team
Client contact & relationship issues, design development stage and co-ordination with various agencies.

Module-II

Management Techniques

Execution of work – planning, scheduling and control.
Project monitoring, programming of works. Tools & techniques for project management; bar charts, network techniques.

Module-III

Estimation & Costing

Project cost analysis – methods of estimating, total budgeting and schedule of payment of various agencies

Module-IV

Professional Practice, Market Trends & Survey
Interior design profession: survey of various interior designers, working procedures. Fee systems. Professional interior design societies, licensing & registering.

Module-V

Rate analysis of various items of interior work: preparation of various items of work in the interiors
Estimating interior items manually and through spreadsheet programs to track the progress of the project.

Course outcomes:

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

1. Analyze the stages of interior project management, project coordination, and stakeholder responsibilities.
2. Apply project planning, scheduling, monitoring, and management techniques for interior projects.
3. Prepare estimates, budgets, and cost analyses for interior design projects.
4. Evaluate professional practice, market trends, ethical responsibilities, and business procedures in interior design.
5. Develop rate analysis, project documentation, and project tracking using manual and digital tools.

Assessment Details (both CIE and SEE)
Continuous Internal Evaluation: The CIE will be based on Internal Tests and Assignments.
Internal tests:

- One test of 50 marks will be conducted for Every CIA cycle. Total 3 tests per semester.
- One Assignment for 20 marks or two assignments for 10 marks each will be considered for each CIA cycle.
- Assignments will consist of Sketches for 10 marks and design exercises for 10 marks. It can also be 10 marks for Quiz and 10 marks for seminar presentation.
- Any combination of the above will be considered for the 20 marks component.
- 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.
- The question paper will have ten full questions carrying equal marks.
- Each full question is for 20 marks.
- 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.

Textbooks

Sl. No.	Title of the Book	Author(s)	Publisher	Edition / Year
1	The Interior Design Business Handbook: A Complete Guide to Profitability	Mary V. Knackstedt & Laura Haney	Wiley Publishing	2001
2	Becoming an Interior Designer	Christine M. Piotrowski	John Wiley & Sons	3rd Edition, 2011
3	Architect's Essentials of Negotiation	Ava J. Abramowitz	John Wiley & Sons	2009

Reference Books

Sl. No.	Title of the Book	Author(s)	Publisher	Edition / Year
1	Professional Practice for Interior Designers	Christine M. Piotrowski	John Wiley & Sons	Latest Edition
2	Project Management for Design Professionals	William Ramroth	Kaplan Publishing	Latest Edition
3	Construction Project Management	Frederick Gould & Nancy Joyce	Pearson	Latest Edition
4	Fundamentals of Project Management	Joseph Heagney	AMACOM	Latest Edition
5	Interior Design Illustrated	Francis D. K. Ching & Corky Binggeli	John Wiley & Sons	Latest Edition

DISSERTATION PHASE I [SYNOPSIS SUBMISSION]

Course Code	**MPRJ287/ MAID206**	CIE Marks	50
Teaching Hours/Semester (L:P:SDA)	28:14:48	SEE [TW]Marks	50
Credits	03	TOTAL	100

Course Objectives

The course aims to enable students to:

1. Identify and define a research problem aligned with the proposed Design Thesis.
2. Develop a structured research proposal through critical literature review and problem analysis.
3. Formulate research objectives, scope, methodology, and expected outcomes.
4. Prepare and present a comprehensive research synopsis following academic standards.
5. Develop independent research and presentation skills through continuous faculty guidance.

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

1. Individual research supervision and mentoring.
2. Periodic research reviews and progress presentations.
3. Guided literature review and independent study.
4. Synopsis seminars and internal jury discussions.
5. Self-directed research supported by faculty consultations.

Course Description

The Dissertation Phase I course guides students in the formulation and development of an independent research proposal aligned with the proposed Design Thesis. The course provides a structured framework for undertaking scholarly research, beginning with the identification and selection of an appropriate research topic and the formulation of a research problem, objectives, scope, and research questions. Students are guided in conducting a critical literature review to identify research gaps, developing a conceptual framework, selecting appropriate research methodologies, planning data collection techniques and organizing the research through a systematic chapter structure, abstract, and index. Emphasis is placed on critical thinking, analytical inquiry, research integrity, academic writing, ethical research practices, and the appropriate use of citation and referencing standards. Through continuous faculty guidance, periodic reviews, seminars, and presentations, students undertake an in-depth investigation of the chosen area, leading to the preparation, submission, and defense of a comprehensive research synopsis in accordance with departmental guidelines.

Course Contents / Scope of Work

Stage 1: Research Topic Identification and Proposal Development

Selection and refinement of the research topic in consultation with the appointed faculty guide.
Definition of the research problem, objectives, scope, and significance of the study.
Formulation of research questions and/or hypotheses.
Development of an appropriate research methodology and work plan.

Stage 2: Literature Review

Identification and critical review of relevant books, journals, conference proceedings, standards, reports, and other scholarly sources.
Critical evaluation of existing literature to identify research gaps.
Development of the theoretical or conceptual framework for the proposed study.

Stage 3: Case Studies and Data Collection

Selection of appropriate case studies relevant to the research topic.
Planning and execution of primary and/or secondary data collection.
Documentation and critical analysis of case studies and collected data with reference to the research questions.

Stage 4: Analysis and Interpretation

Interpretation and evaluation of research findings.
Critical analysis of the collected data in relation to the research objectives.
Validation of findings and formulation of preliminary conclusions.

Stage 5: Research Synopsis Preparation
Preparation of a structured research synopsis incorporating the research framework, literature review, methodology, preliminary findings, expected outcomes, and references.
Formulation of recommendations to establish a strong foundation for the Design Thesis in the subsequent semester.
Presentation and defense of the research synopsis before the departmental review committee/internal jury.

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

1. Identify and formulate a research problem related to the Design Thesis.
2. Critically review literature and establish the significance of the proposed research.
3. Develop a structured research proposal with appropriate objectives, methodology, and scope.
4. Prepare and present a professional research synopsis following academic standards.
5. Demonstrate independent research planning and effective scholarly communication.

Assessment Details (CIE and SEE)
Continuous Internal Evaluation: The CIE will be progressive marking:

- Each week discussion will be marked and considered for 50 + Seminar for 50 + Final Report for 100.
- Total 200 will be then reduced to 100

Semester End Examination
Will be a TERM WORK for **50 marks**.
The TERM WORK examination will be conducted by one external examiner (from academics/profession) and one internal examiner for the final report submitted by each student.

Textbook/ Textbooks

Sl. No.	Title of the Book	Author(s)	Publisher	Edition / Year
1	The Dissertation Journey: A Practical and Comprehensive Guide to Planning, Writing, and Defending Your Dissertation	Carol M. Roberts & Laura Z. Hyatt	Corwin	3rd Edition, 2021
2	Demystifying Dissertation Writing: A Streamlined Process from Choice of Topic to Final Text	Peg Boyle Single & Richard M. Reis	Stylus Publishing	September 2009

ADVANCED SOFTWARES FOR INTERIORS-II (ELECTIVE)

Course Code	**MAID207A**	CIE Marks	100
Teaching Hours/Semester (L:P:SDA)	14:28:48	SEE Marks	---
Credits	03	TOTAL	100

Course Objectives

1. Develop proficiency in Building Information Modelling (BIM), advanced 3D modelling, and digital documentation for interior design.
2. Apply computational and parametric design approaches to generate complex interior forms and customized design solutions.
3. Explore digital fabrication workflows, visualization techniques, and graphic communication for professional practice.
4. Evaluate environmental simulation tools for daylight, lighting, and interior performance analysis.
5. Integrate advanced software applications into the complete interior design workflow from concept development to fabrication documentation.

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

1. Software demonstrations and guided laboratory sessions.
2. Hands-on studio exercises in BIM, modelling, rendering, and digital fabrication.
3. Case studies, tutorials, and project-based learning.
4. Workshops on computational design, visualization, and environmental simulation.
5. Portfolio development, peer reviews, and self-directed learning.

Module I

Introduction to BIM Architecture & Core Interfaces (Revit / Archicad)

Introduction to BIM: Principles, history, core features, project templates, default system templates, and architectural file frameworks.

Interface Operations: Exploring the user interface, modifying and establishing custom project units, listening dimensions, temporary dimensions, and level management (adding, modifying, creating new level element types, constraining, and removing level lines).

Core Spatial Modeling: Drawing dimensioned interior floor plans, defining wall properties, creating custom wall element types, managing arc walls, compound structures, vertically compound walls, adding architectural sweeps/reveals, stacked walls, curtain walls, curtain grids, mullions, reshaping curtain wall panels, and embedding specialized doors and windows.

Modification & Detailing: Master usage of transformation modifiers: Move, Copy, Paste Aligned, Create Similar, Rotate, Mirror, Array, Scale, Trim/Extend, Offset, Align, Loading custom component families, constraint parameters, and visibility graphics.

Module II

Contextual Coordination & High-Fidelity Geometry Engines

BIM Interoperability: Introduction to the Rhino.Inside.Revit ecosystem; hosting highly articulated, algorithmically derived designs within a standardized BIM environment for flawless spatial and structural coordination.

High-Fidelity Geometry Engine: Principles of Non-Uniform Rational B-Splines (NURBS) modeling; creating mathematically accurate, high-fidelity surfaces calibrated for Computer Numerical Control (CNC) architectural manufacturing.

Module III

Parametric Logic & Production Optimization

Algorithmic Joinery: Scripting customized, automated "puzzle" connections (such as dogbones and interlocking finger joints) configured dynamically to respond to material thickness variables.

Nesting Utilities & Optimization: Advanced nesting techniques; employing software platforms like Fusion 360's Nesting Utility to systematically arrange furniture components across a standard 4' x 8' sheet of material to eliminate industrial waste.

Parametric Design Thinking: Moving beyond fixed drawing paradigms to build dynamic visual scripts where changing primary parameters (e.g., width or height of an interior fixture) automatically recalibrates

downstream assembly joints.

Module IV

Digital Fabrication, CAM Simulation & Graphic Brand Identity

Fabrication & CAM: Introduction to Computer-Aided Manufacturing parameters; simulating toolpath generations for CNC milling machines or industrial 3D printers directly from the design engine to prevent tool collision prior to shop floor execution.

Graphic Communication: Synthesizing complex data, parametric joinery systems, and technical documentation layouts into high-end, communicative corporate media formats (e.g., Graphics as an IKEA Store style document structure).

Module V

Environmental Simulation Software & Spatial Lighting

Illumination Simulation: Deep dive into advanced digital simulation for internal microclimates; managing daylight and lux distribution calculations using open-source calculation tools and architectural plugins (such as Dialux, AndrewMarsh web engines, and Autodesk Forma).

Render Execution: Executing complex interior/exterior lighting layouts using specialized light entities, custom emitter properties, and precise material behavior controls.

Course Outcomes (CO)

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

1. Apply BIM workflows for interior modelling, documentation, and interdisciplinary coordination.
2. Develop advanced computational and freeform interior models using parametric design approaches.
3. Analyze parametric systems and digital optimization techniques for customized interior design solutions.
4. Integrate digital fabrication workflows and professional graphic communication into interior design documentation.
5. Evaluate environmental simulation and visualization tools to support sustainable and performance-based interior design decisions.

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	Eric Wing	Sybex (Wiley)	Latest Edition
2	BIM Handbook: A Guide to Building Information Modeling	Chuck Eastman, Paul Teicholz, Rafael Sacks & Kathleen Liston	Wiley	3rd Edition, 2018
3	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	Architectural Geometry	Helmut Pottmann et al.	Bentley Institute Press	2007
2	AAD Algorithms-Aided Design	Arturo Tedeschi	Le Penseur	Latest Edition

Sl. No.	Title of the Book	Author(s)	Publisher	Edition / Year
3	Digital Fabrications: Architectural and Material Techniques	Lisa Iwamoto	Princeton Architectural Press	2009
4	Rendering in SketchUp	Daniel Tal	Wiley	Latest Edition
5	Grasshopper for Designers	Arturo Tedeschi	Routledge	Latest Edition

RESEARCH WRITING AND PUBLICATION

Course Code	**MAID207B**	CIE Marks	100
Teaching Hours/Semester (L:P:SDA)	14:28:48	SEE Marks	---
Credits	03	TOTAL	100

Course Objectives

1. To understand the principles and processes of academic research and scholarly writing.
2. To develop the ability to identify research problems, formulate research questions, and design appropriate research methodologies.
3. To apply literature review techniques, data collection methods, and analytical approaches in conducting research.
4. To demonstrate proficiency in academic writing, citation, referencing, and manuscript preparation following accepted scholarly standards.
5. To prepare research outputs suitable for publication in peer-reviewed journals and presentation at academic conferences.

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

1. Interactive lectures on research methodology and scholarly communication.
2. Workshops on literature review, academic writing, citation, and reference management.
3. Hands-on training in manuscript preparation and publication processes.
4. Seminars by academicians, researchers, and industry experts.
5. Critical review of published research papers and case studies.
6. Independent learning through journals, digital databases, and research repositories.
7. Continuous faculty mentoring and presentation-based learning.

Course Description

This course introduces students to the fundamentals of academic research, research methodology, scholarly writing, and publication. It emphasizes literature review, data collection, academic writing, citation and referencing, publication ethics, and scholarly communication, enabling students to prepare research reports, dissertations, conference papers, and journal articles following accepted academic standards.

Module I

Introduction to Research and Scholarly Writing

Fundamentals of academic research; research process; characteristics and types of research; qualitative, quantitative, mixed-method, case study, exploratory, descriptive, experimental and design-based research; identification of research problems; selection of research topics; formulation of research questions, objectives, scope and significance of the study; research ethics, integrity and responsible conduct of research.

Module II

Research Planning and Academic Writing

Research proposal; literature review; research gap identification; research design and methodology; academic writing; abstracts and chapter structure; ICT tools for research; reference management tools.

Module III

Research Methods and Data Collection

Qualitative, quantitative and mixed-method research; data collection methods; observation, interviews, questionnaires, case studies; sampling techniques; data organization and analysis; reference management using software tools.

Module IV

Academic Writing, Citation and Publication

Principles of academic writing; structuring research reports, dissertations, and journal articles; citation and referencing styles (APA, MLA, Chicago, IEEE); bibliography preparation; tables, figures and illustrations; manuscript preparation; journal selection; peer-review process; publication ethics.

Module V

Research Dissemination

Conference papers and presentations; journal publication process; responding to reviewers; research impact and indexing; intellectual property rights; review of published research papers; case studies demonstrating the application of research from project inception to publication.

Course Outcomes

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

1. Identify research problems and formulate research questions using appropriate research approaches.
2. Conduct systematic literature reviews and develop suitable research methodologies.
3. Apply appropriate data collection, documentation, and ethical research practices.
4. Prepare research reports, dissertations, and manuscripts using accepted academic writing and citation standards.
5. Communicate and publish research outcomes effectively through conference presentations and scholarly journals.

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.

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Reference Books

S.No	Title of the Book	Name of the Author(s)	Name of the Publisher	Edition and Year
1	Research Design: Qualitative, Quantitative, and Mixed Methods Approaches	John W. Creswell & J. David Creswell	SAGE Publications	6th Edition, 2023
2	The Dissertation Journey: A Practical and Comprehensive Guide to Planning, Writing, and Defending Your Dissertation	Carol M. Roberts & Laura Z. Hyatt	Corwin Press	4th Edition, 2021
3	Demystifying Dissertation Writing: A Streamlined Process from Choice of Topic to Final Text	Peg Boyle Single & Rita M. Reis	Stylus Publishing	2nd Edition, 2009
4	The Craft of Research	Wayne C. Booth, Gregory G. Colomb, Joseph M. Williams, Joseph Bizup & William T. FitzGerald	The University of Chicago Press	4th Edition, 2016
5	Writing for Academic Journals	Rowena Murray	McGraw-Hill Education / Open University Press	4th Edition, 2020
6	Architectural Research Methods	Linda N. Groat & David Wang	John Wiley & Sons	2nd Edition, 2013
7	Research Methodology: A Step-by-Step Guide for Beginners	Ranjit Kumar	SAGE Publications	5th Edition, 2019
8	Academic Writing: A Handbook for International Students	Stephen Bailey	Routledge	6th Edition, 2024

*** END OF II SEMESTER***