

DESSERTATION

Course Code	MAID301	CIE Marks	50
Teaching Hours/Semester (L:P:SDA)	14:126:160	SEE [VIVA] Marks	50
Credits	10	TOTAL	100

Course Objectives

The course aims to enable students to:

1. To Apply research findings and design inquiry to formulate innovative and context-responsive interior design solutions.
2. To Develop comprehensive design proposals that address complex functional, spatial, environmental, technical, and user requirements.
3. To Integrate principles of sustainability, building services, material selection, and construction technologies into the design process.
4. To Develop professional competency in design development, technical documentation, visualization, model making, and presentation techniques.
5. To Demonstrate critical thinking, creativity, and effective communication through the preparation, presentation and defence of a comprehensive interior design thesis.

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

1. Individual guidance through an assigned faculty mentor.
2. Regular studio discussions, design critiques, and progress reviews.
3. Site visits, field investigations, user studies, and case study documentation.
4. Expert lectures, interdisciplinary consultations, and external review panels.
5. Independent design exploration supported by digital visualization, model making, and professional documentation.

Course Description

The Design Thesis is an independent, research-informed design project that enables students to investigate and resolve complex interior design issues through a comprehensive design process. Building upon the approved Dissertation Phase I research, students develop innovative design solutions supported by critical analysis, case studies, user requirements, technical integration, sustainability, and professional documentation. The course culminates in the presentation and defense of a complete design thesis demonstrating analytical, creative, and technical competence.

Course Outcomes:

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

1. Develop a comprehensive interior design thesis based on systematic research and design inquiry.
2. Apply design thinking and critical analysis to resolve complex interior design challenges.
3. Integrate sustainability, user needs, technology, building services, materials, and construction into interior design solutions.
4. Prepare professional design documentation including drawings, specifications, visualizations, and presentation material.
5. Effectively present and defend the design thesis before an academic and professional jury.

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 final Semester Thesis Viva will be conducted by two external examiners (from academics/profession) and one internal examiner.
- The VIVA VOCE duration will be 40 minutes per student for Final Semester Thesis Viva.

Textbook/ Textbooks

S.No	Title of the Book	Author(s)	Publisher	Edition & Year
1	Interior Design Illustrated	Francis D. K. Ching & Corky Binggeli	John Wiley & Sons	4th Edition, 2020
2	Human Dimension and Interior Space	Julius Panero & Martin Zelnik	Watson-Guptill	2nd Edition, 2014
3	Interior Graphic Standards	Corky Binggeli	John Wiley & Sons	3rd Edition, 2018
4	Indian Design (DAAB Design)	Ralf Daab	DAAB Press	2004
5	Detail + Interior + Architecture	Archiworld	Archiworld	2017
6	Interior Spaces	Archiworld	Archiworld	2008

LOW CARBON BUILDING MATERIALS AND TECHNOLOGIES

Course Code	MAID302A	CIE Marks	100
Teaching Hours/Semester(L:P:SDA)	14:28:48	SEE Marks	---
Credits	03	TOTAL	100

Course Objectives

1. Understand the principles of sustainability, embodied carbon, and life cycle thinking in the selection and application of interior materials.
2. Evaluate low-carbon, bio-based, recycled, and circular materials based on their environmental performance, durability, health impacts, and suitability for interior applications.
3. Explore sustainable technologies and construction systems that promote resource efficiency, adaptability, and circularity in interior design.
4. Apply national and international standards, certifications, and environmental assessment frameworks to material specification and sustainable interior design.
5. Develop integrated low-carbon material specifications that support healthy, resilient, and environmentally responsible interior environments.

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

1. Lectures supported by case studies to introduce sustainable materials, low-carbon technologies, and circular economy principles in interior design.
2. Material demonstrations, sample studies, and comparative analysis of conventional and low-carbon materials.
3. Site visits to sustainable buildings, material libraries, manufacturing units, and green building projects wherever feasible.
4. Use of digital resources, environmental databases, and Life Cycle Assessment (LCA) tools for material evaluation.
5. Workshops, seminars, and expert lectures on sustainable materials, certifications, and emerging low-carbon technologies.

Module-I

Introduction to Sustainability and Carbon in Interiors

Embodied vs. operational carbon in interior fit-outs. Life Cycle Assessment (LCA) of interior materials. Health and toxicity impacts: Volatile Organic Compounds (VOCs), off-gassing, and indoor air quality (IAQ) standards. Compliance with IGBC Green Interiors and National Building Code (NBC) air exchange guidelines

Module-II

Low-Carbon and Bio-Based Finishes

Natural wall finishes: Lime plaster, clay plasters, and earth-based paints. Rapidly renewable surfaces: Sourcing regional bamboo, cane, coir, and agricultural waste panels (bagasse, rice strawboard). Certified sustainable wood and engineered mass timber for interior partitions and flooring

Module-III

Circular Economy and Recycled Interior Elements

Upcycled and recycled products: Recycled metal fixtures, reclaimed timber, and recycled glass tiles. Design for Disassembly (DfD): Modular furniture, dry-joint wall systems, and non-toxic adhesives. Second-life material sourcing and reducing construction waste in interior renovations.

Module-IV

Low-Impact Flooring and Textiles

Eco-friendly flooring: Linoleum, natural rubber, organic carpets, and salvaged stone. Textiles and soft furnishings: Organic cotton, hemp, flax, and post-consumer recycled fabrics. Certifications and eco-labels: Cradle to Cradle (C2C), GREENGUARD, and LEED/GRIHA interior requirements.

Module-V

Case Studies and Practical Application

Material lifecycle comparison matrices

Studio project: Specifying a low-carbon interior palette for a commercial or residential space

Course outcomes

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

1. Apply the principles of sustainable material selection, embodied carbon, life cycle assessment, and circular economy in interior design.
2. Evaluate the environmental, technical, and health performance of conventional and low-carbon interior materials using appropriate assessment criteria.
3. Select and specify sustainable materials, finishes, flooring, furniture, and furnishings that enhance indoor environmental quality while reducing carbon emissions.
4. Apply green building standards, material certifications, and regulatory frameworks in the development of sustainable interior design solutions.
5. Develop comprehensive low-carbon material palettes and specifications integrated with professional interior design projects.

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.

Reference Books

SI No	Title of the Book	Name of the Author/s	Name of the Publisher	Edition and Year
1	Sustainable Construction: Green Building Design and Delivery	Charles J. Kibert	John Wiley & Sons	5th Edition, 2022
2	The Ecology of Building Materials	Bjørn Berge	Routledge	3rd Edition, 2019
3	Materials and Sustainable Development	Michael F. Ashby	Butterworth-Heinemann (Elsevier)	2nd Edition, 2016
4	Sustainable Construction	Sandy Halliday	Routledge	3rd Edition, 2018
5	Cradle to Cradle: Remaking the Way We Make Things	William McDonough & Michael Braungart	North Point Press	1st Edition, 2002
6	Life Cycle Assessment (LCA) of Construction Materials	Luisa F. Cabeza (Ed.)	Woodhead Publishing (Elsevier)	1st Edition, 2014
7	Eco-Efficient Construction and Building Materials	Fernando Pacheco-Torgal, Luisa F. Cabeza, João Labrincha & Aníbal G. de Magalhães (Eds.)	Woodhead Publishing (Elsevier)	2nd Edition, 2020
8	Sustainability in Interior Design	Sian Moxon	Laurence King Publishing	1st Edition, 2012
9	The Green Studio Handbook: Environmental Strategies for Schematic Design	Alison G. Kwok & Walter T. Grondzik	Routledge	3rd Edition, 2018
10	Green Building Through Integrated Design	Jerry Yudelson	McGraw-Hill	1st Edition, 2008

Technical Documents

Bureau of Energy Efficiency (BEE). *Energy Conservation Building Code (ECBC)*. Latest Edition.

Indian Green Building Council (IGBC). *IGBC Green Interiors Rating System*. Latest Version.

GRIHA Council. *GRIHA for Interior Projects Manual*. Latest Version.

National Building Code of India (NBC 2016), Part 8 – Building Services.

ASHRAE. *Indoor Environmental Quality and Ventilation Guidelines*. Latest Edition.

World Green Building Council. *Bringing Embodied Carbon Upfront*.

United Nations Environment Programme (UNEP). *Global Status Report for Buildings and Construction* (Latest Edition).

ISO 14040 & ISO 14044 – *Environmental Management: Life Cycle Assessment*.

ISO 16000 Series – *Indoor Air Quality*.

ASTM and EN standards relating to VOC emissions, recycled materials, and sustainable building products (as applicable).

LIGHTING DESIGN AND SPATIAL EXPERIENCE

Course Code	MAID302B	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 of light, visual perception, and their influence on spatial experience.
2. To apply lighting design principles to create functional, aesthetic, and user-centric interior environments.
3. To integrate appropriate lighting systems and energy-efficient technologies into interior design.
4. To apply smart lighting systems, simulation tools, and sustainable lighting strategies in design.
5. To develop creative and technically sound lighting solutions through studio-based design projects.

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

1. The pedagogy will focus on introducing the students to the importance of lighting in design by various
2. examples and software available.
3. Use of software to teach about photometry and luminance
4. Use of visuals, video and audio will be used to augment the teaching process
5. Workshops and talks from the leading experts in the field will be planned for relevant topics

Module-I

Science of Light and Perception

Physics of light and Metrics: Daylighting, Daylight factor, reflection, refraction, Light tube, light shelves, light reflectors, Photometry – Illuminance, Luminance, Lux. Colour properties – colour temperature, colour rendering index, Lumen, luminous flux, light pressure.

Visual Perception and Spatial Psychology - How light defines boundaries, alters perceived proportions of a room, and creates focal points. Cultural colour temperature preferences: Balancing the historical affinity for warm light with modern workspace requirements.

Circadian rhythm and Light- the effects of light on human health

Module-II

Lighting Design and Spatial Experience

Principles of lighting design, specification of illumination requirements for different functional spaces, and analysis of lighting quality. Ambient, task, and accent lighting; layering of light; visual hierarchy and focal points; development of lighting design concepts; lighting criteria and documentation requirements. Design of lighting for residential, workplace, hospitality, retail, healthcare, exhibition, and cultural spaces, emphasizing mood, ambience, spatial character, wayfinding, and user experience.

Module-III

Lighting Systems, Energy Consumption & Automation

Illumination- light fixtures, methods of lighting, forms of lighting- indoor & outdoor. Lamps, fixtures and its Types. Lighting systems and selection criteria. Energy consumption, lighting efficacy, maintenance, life-cycle considerations, light pollution, glare control and strategies for improving energy efficiency.

Module-IV

Smart Lighting and Integrated Design

Lighting controls, sensors and automation. Energy-efficient lighting strategies. Smart lighting- minimizing energy usage, major techniques of smart lighting. Lighting simulation tools (Dialux, Relux or equivalent). Energy Conservation Building Code (EGBC). Compliance criteria for IGBC Green interiors and GRIHA. Sustainable fixtures and local manufacturing.

Module-V

Light as Art: Light art, Light sculptures. Examples of light art works by Chul Hyun Ahn, Dan Flavin, Olafur Eliasson, James Turrell, Watriut Cooper, Bruce Munro, Dan Roosegaarde+

A lighting installation can be designed as an output. Alternatively, the lighting design for the ID studio project can be worked out in this course through lateral integration.

Course outcomes

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

1. Develop an understanding the characteristics of lighting in a building and its relevance in design.
2. Develop an understanding of and modulate illumination requirements for effective designing.
3. Develop a skill for utilising modern lighting systems focusing on energy saving while designing.
4. Develop an understanding on smart lighting systems, simulation tools, and sustainable lighting practices in interior design projects.
5. Develop creative lighting concepts and communicate them through technical documentation and design presentations.

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.

Reference Books

Sl No	Title of the Book	Name of the Author/s	Name of the Publisher Edition and Year
1	Interior Lighting for Designers	Gary Gordon	Wiley Publishers 4th Edition, 2003
2	The Lighting Handbook	David L. DiLaura, Kevin W. Houser, Richard G. Mistrick & Gary R. Steffy	Illuminating Engineering Society (IES), 11 th edition, 2020
3	Architectural Lighting Design	Gary R. Steffy John	Wiley & Sons 2002
4	The Architecture of Light: A textbook of procedures and practices for the Architect, Interior Designer and Lighting Designer.	Sage Russell	Concept nine Publishers 2008
5	Designing with Light: The Art, Science and Practice of Architectural Lighting Design	Jason Livingston	John Wiley & Sons, 2nd Edition, 2014
6	Light for Visual Artists: Understanding & Using Light in Art & Design	Richard Yot	Laurence King Publishing, 2011

SMART TECHNOLOGIES IN INTERIOR DESIGN[ELECTIVE]

Course Code	MAID302C	CIE Marks	100
Teaching Hours/Semester (L: P: SDA)	14:28:48	SEE Marks	---
Credits	03	TOTAL	100

Course Objectives

1. To introduce the concepts, principles, and applications of smart interior technologies.
2. To understand the role of intelligent systems in enhancing user comfort, functionality, safety, and sustainability in interior spaces.
3. To explore IoT-enabled, automated, and user-centric technologies for residential, commercial, and hospitality interiors.
4. To develop skills in integrating smart technologies into interior design projects through appropriate planning, selection, and documentation.

Pedagogy (Method and Practice of Teaching, Self Study)

1. The pedagogy will be project oriented
2. Live examples will be studied in the class
3. Guest lectures and expert talks will be arranged for the relevant topics

Module-I

Introduction to Smart Interior Design: Concept and Evolution of Smart Interiors. Smart Homes, Smart Workplaces, and Smart Commercial Spaces. Role of Technology in Enhancing User Experience. Smart Interior Design Principles and Applications. Emerging Trends in Smart Interior Technologies

Module-II

Smart Lighting and Environmental Control Systems: Intelligent lighting systems and automated lighting controls, automated shading and daylight management, smart HVAC systems for thermal comfort, indoor air quality monitoring, and energy-efficient strategies for creating sustainable smart interior environments.

Module-III

Smart Security and User-Centric Technologies: Smart access control systems, biometric and contactless technologies, smart surveillance and safety systems, user interaction and occupant-centric design, and the integration of security technologies within interior spaces to enhance safety, accessibility, and user experience.

Module-IV

IoT and Integrated Smart Interior Systems: Application of the Internet of Things (IoT) in interior design, connected furniture and smart appliances, home and building automation systems, smart workspace and retail technologies, and the integration of smart systems in residential, commercial, and hospitality interiors. Integration of Smart Systems for Residential, Commercial, and Hospitality Interiors

Module-V

Smart Interior Design Project and Documentation: Study of smart interior design case studies, selection and specification of smart interior technologies, layout planning and integration of smart systems, preparation of material specifications, estimates and BOQ, and development of a design project demonstrating the application of smart interior technologies.

Course outcomes

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

1. Understand the principles and applications of smart interior design technologies.
2. Identify and evaluate smart lighting, environmental control, and energy-efficient systems for interior spaces.
3. Analyze the integration of smart security, access control, and user-centric technologies in interior environments.
4. Apply IoT-enabled and automated solutions to enhance functionality, comfort, and sustainability in interior projects.
5. Develop a smart interior design proposal incorporating appropriate technologies, specifications, and documentation.

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.

Reference Books

S. No.	Title of the Book	Author(s)	Publisher	Edition / Year
1	Smart Buildings: Advanced Materials and Nanotechnology to Improve Energy Efficiency and Environmental Performance	James Sinopoli	Butterworth-Heinemann	2010
2	Smart Homes and Health Telematics	Bartosz Zupan, et al.	Springer	Latest Edition
3	Internet of Things for Architects: Architecture, Design and Implementation	Perry Lea	Packt Publishing	2018
4	The Interior Design Handbook	Frida Ramstedt	Clarkson Potter	2020
5	Sustainable Interior Design	Sian Moxon	Laurence King Publishing	2012
6	Designing Connected Products: UX for the Consumer Internet of Things	Claire Rowland, Elizabeth Goodman, Martin Charlier, Ann Light	O'Reilly Media	2015
7	Building Automation: Control Devices and Applications	In Partnership with Honeywell	American Technical Publishers	Latest Edition
8	Smart Homes for Dummies	Danny Briere & Pat Hurley	Wiley Publishing	Latest Edition

*** END OF III SEMESTER***