THIAGARAJAR COLLEGE OF ENGINEERING

(A Government Aided Autonomous Institution affiliated to Anna University)

MADURAI – 625 015

CURRICULUM AND DETAILED SYLLABI

For

B.Des (Interior Design) DEGREE PROGRAMME

For the students admitted from the academic year 2024-2025 onwards

THIAGARAJAR COLLEGE OF ENGINEERING, MADURAI- 625150
(A Govt. Aided, Autonomous Institution affiliated to Anna University)
THIAGARAJAR SCHOOL OF ENVIRONMENTAL DESIGN AND ARCHITECTURE

VISION

Impart excellence in architectural, planning and design education and nurture socially and environmentally responsible professionals.

MISSION

M1. Evolve and inculcate experiential and effective teaching learning processes.

M2.Strive to instill professional ethics and excellence through effective industry-institute collaboration.

M3. Lead and coordinate the profession's involvement in creating a socially and environmentally sustainable future.

M4. Engage in environmentally conscious and socially equitable research in Interdisciplinary fields.

M5. Promote the school into a centre of excellence through inter disciplinary associations and team work.

Programme Educational Objectives (PEO's)

PEO1: Graduates will develop a robust foundation in design principles and technical expertise essential for undertaking small-scale projects, while also laying the groundwork for advanced studies and research pursuits.

PEO2: Graduates will cultivate a professional ethos characterized by ethical conduct, proficient communication skills, a multidisciplinary approach, and an ability to contextualize design challenges within broader societal frameworks.

PEO3: Graduates will foster effective collaboration with professionals from diverse disciplines, including architects, engineers, and contractors, to successfully execute intricate interior design projects in real-world settings.

PEO4: Graduates will emerge as innovative trendsetters in the field, armed with confidence, creativity, and flair, poised to shape the future of interior design by pushing the boundaries of conventional practices and contributing to its continual evolution.

PEO- Mission Mapping

PEO	M1	M2	M3	M4	M5
PEO1	M	M	M	S	M
PEO2	L	S	M	S	S
PEO3	L	S	L	M	M
PEO4	S	L	S	M	L

L – Low; M – Medium; S – Strong

Programme Outcomes (PO's)

After the successful completion of the B.Des (Interior design) degree programme, the

PO1. Graduates will develop a strong proficiency in fundamental design principles necessary for successful interior design practice.

PO2. Graduates will demonstrate mastery of current software and technical skills essential for spatial planning, rendering, and presentation in interior design.

PO3. Graduates will cultivate creativity and innovation to design interior spaces that are both functional and aesthetically pleasing.

PO4. Graduates will understand the historical, cultural, and social contexts that influence interior design trends and styles.

PO5. Graduates will integrate sustainability principles and environmentally conscious design strategies into their projects.

PO6. Graduates will analyze user needs, behavior, and spatial requirements to create personalized interior solutions.

PO7. Graduates will demonstrate proficiency in material selection, furniture design, and interior detailing to enhance interior spaces.

PO8. Graduates will develop effective communication and presentation skills to convey design concepts to clients and stakeholders.

PO9. Graduates will collaborate with architects, engineers, and contractors to ensure the realization of design visions.

PO10. Graduates will explore emerging technologies and trends shaping the future of interior design practice.

PO11. Graduates will engage in experiential learning opportunities through internships, workshops, and industry projects.

PO12. Graduates will prepare for professional licensure, certifications, and continued education to further their careers in the field of interior design.

PEO-PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
PEO1	S	M	M	L	L	M	M	L	L	S	M	S
PEO2	M	M	L	S	S	S	L	S	M	M	M	L
PEO3	S	M	M	L	L	M	S	M	S	L	S	L
PEO4	S	S	S	M	M	M	S	L	L	S	S	S

L – Low; M – Medium; S – Strong

Credit Distribution

S.No	Category	Credits
A	Professional Core Courses (PCC)	98
B	Compulsory Foundation Courses (CFC)	54
C	Elective Foundation Courses (EFC)	8 - 12
D	Programme Elective (PE)	
E	**Audit Courses (AC) (not to be included in CGPA) - Mandatory**	-
	Minimum Credits to be earned for the award of the Degree	**160** (from A to D) and the successful completion of Mandatory Courses

- General electives are courses offered by different Departments that do not have any prerequisites and could be of interest to students of any branch.

- All students have to undertake co-curricular and extra-curricular activities that include activities related to NCC, NSS, Sports, Professional Societies, participation in identified activities which promote the growth of Departments and the College.

THIAGARAJAR COLLEGE OF ENGINEERING, MADURAI- 625015

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THIAGARAJAR SCHOOL OF ENVIRONMENTAL DESIGN AND ARCHITECTURE

(For the candidates admitted from 20224-2025)

SCHEDULE OF COURSES

SEM	COMPULSORY FOUNDATION COURSES					PROFESSIONAL CORE COURSES	TOTAL HOURS/ CREDITS
	THEORY		THEORY CUMSTUDIO	THEORY CUM STUDIO (Skill based)		STUDIO	
I	25ID110 Evolution of Interior Design (2)		24ID121 Perception of Interior Spaces (3)	24ID131 Visualization and Representation (3)	24ID140 Communication Skills (3)	24ID150 Foundational Design Skills(12)	23
II	24ID210 Design Process (2)	24ID220 Art and Design Evolution (2)	24ID230 Interior Elements and Components (3)	24ID240 2D and 3D Representation (3)		24ID250 Design of Interior Spaces (12)	22

SEM	COMPULSORY FOUNDATION COURSES			ELECTIVE FOUNDATION COURSES / PROGRAM ELECTIVE	PROFESSIONAL CORE COURSES	TOTAL HOURS/ CREDITS
	THEORY		THEORY CUMSTUDIO	THEORY CUM STUDIO (Skill based)	STUDIO	
III	24ID310 Environmental Studies in Interior Design (2)	24ID320 Interior Systems: Plumbing and Fire Services (2)	24ID330 Materials in Interior Design (3)	** Credits are to be earned from Elective foundations / Program Elective that could be chosen are as in Annex 1	24ID340 Residential Interior Design (12)	19
IV	24ID410 Indoor Comfort (2)	24ID420 Interior Finishes (2)	24ID430 Interior Systems: Lighting, Power & Comfort (3)	** Credits are to be earned from Elective foundations / Program Elective that could be chosen are as in Annex 1	24ID440 Workspace Interior Design (12)	19

Program Core Courses + Compulsory Foundation Courses = 98 + 54 =152 credits;

** Elective Foundation Courses (EFC) / Program Elective (PE) = 8 min (12 max) credits;(Audit Courses will be offered from 3rd semester); TOTAL CREDITS = 160 CREDITS MINIMUM

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THIAGARAJAR SCHOOL OF ENVIRONMENTAL DESIGN AND ARCHITECTURE

(For the candidates admitted from 20224-2025)

COURSES OF STUDY

Degree: B.Des (Interior Design) **Annexure – I**

1. COMPULSORY FOUNDATION COURSES: **Total Credits to be earned: 54**

S.No	Course Code	Name of the Course	Number of Hours/ Week			Credit	Semester/ Prerequisite
			L	T	P		
THEORY							
1.	25ID110	Evolution of Interior Design	2	-	-	2	I SEM & ABOVE
2.	24ID210	Design Process	2	-	-	2	II SEM & ABOVE
3.	24ID220	Art and Design Evolution	2	-	-	2	II SEM & ABOVE
4.	24ID310	Environmental Studies in Interior Design	2	-	-	2	III SEM & ABOVE
5.	24ID320	Interior Systems: Plumbing and Fire Services	2	-	-	2	III SEM & ABOVE
6.	24ID410	Indoor Comfort	2	-	-	2	IV SEM & ABOVE
7.	24ID420	Interior Finishes	2	-	-	2	IV SEM & ABOVE
THEORY CUM STUDIO							
8.	24ID121	Perception of Interior Spaces	1	-	2	3	I SEM & ABOVE
9.	24ID230	Interior Elements and Components	1	-	2	3	II SEM & ABOVE
10.	24ID330	Materials in Interior Design	1	-	2	3	III SEM & ABOVE
11.	24ID430	Interior Systems: Lighting, Power & Comfort	1	-	2	3	IV SEM & ABOVE
THEORY CUM STUDIO (SKILL BASED)							
12.	24ID131	Visualization and Representation	1	-	2	3	I SEM & ABOVE
13.	24ID140	Communication Skills	1	-	2	3	I SEM & ABOVE
14.	24ID240	2D and 3D Representation	1	-	2	3	II SEM & ABOVE

2. PROGRAMME CORE COURSES: **Total Credits to be earned: 98**

S.No	Course Code	Name of the Course	Number of Hours/ Week			Credit	Semester Prerequisite
			L	T	P		
STUDIO							
15.	24ID150	Foundational Design Skills	-	4	12	12	I SEM
16.	24ID250	Design of Interior Spaces	-	4	12	12	II SEM
17.	24ID340	Residential Interior Design	-	4	12	12	III SEM
18.	24ID440	Workspace Interior Design	-	4	12	12	IV SEM

3. ELECTIVE FOUNDATION COURSES: **Total Credits to be earned: 08**

S.No	Course Code	Name of the Course	Number of Hours/ Week			Credit	Semester/ Prerequisite
			L	T	P		
THEORY							
19.	24IDFA0	Graphic Design And Infographics	1	-	2	3	III SEM & ABOVE
20.	24IDFB0	Vernacular Indian Crafts	1	-	2	3	III SEM & ABOVE

THIAGARAJAR SCHOOL OF ENVIRONMENTAL DESIGN AND ARCHITECTURE

(For the candidates admitted from 20224-2025)

SCHEME OF EXAMINATIONS

(For the candidates admitted from 2024-2025 onwards)

FIRST SEMESTER

S.No	Course Code	Name of the Course	Duration of Terminal Exam in Hrs.	Marks			Minimum Marks for Pass	
				Continuous Assessment *	Terminal Exam**	Max. Marks	TerminalExam	Total
1	25ID110	Evolution of Interior Design	3	40	60	100	45	50
2	24ID121	Perception of Interior Spaces	3	50	50	100	45	50
3	24ID131	Visualization and Representation**	-	50	50	100	45	50
4	24ID140	Communication Skills**	-	50	50	100	45	50
5	24ID150	Foundational Design Skills#	-	60	40	100	45	50

SECOND SEMESTER

S.No	Course Code	Name of the Course	Duration of Terminal Exam in Hrs.	Marks			Minimum Marks for Pass	
				Continuous Assessment *	Terminal Exam**	Max. Marks	Terminal Exam	Total
1	24ID210	Design Process	3	40	60	100	45	50
2	24ID220	Art and Design Evolution	3	40	60	100	45	50
3	24ID230	Interior Components	3	50	50	100	45	50
4	24ID240	2D and 3D Representation**	-	50	50	100	45	50
5	24ID250	Design of Interior Spaces#	-	60	40	100	45	50

THIRD SEMESTER

S.No	Course Code	Name of the Course	Duration of Terminal Exam in Hrs.	Marks			Minimum Marks for Pass	
				Continuous Assessment *	Terminal Exam**	Max. Marks	Terminal Exam	Total
1	24ID310	Environmental Studies in Interior Design	3	40	60	100	45	50
2	24ID320	Interior Systems: Plumbing and Fire Services	3	40	60	100	45	50
3	24ID330	Materials in Interior Design	3	50	50	100	45	50
4	24ID340	Residential Interior Design#	-	60	40	100	45	50

FOURTH SEMESTER

S.No	Course Code	Name of the Course	Duration of Terminal Exam in Hrs.	Marks			Minimum Marks for Pass	
				Continuous Assessment *	Terminal Exam**	Max. Marks	Terminal Exam	Total
1	24ID410	Indoor Comfort	3	40	60	100	45	50
2	24ID420	Interior Finishes	3	40	60	100	45	50
3	24ID430	Interior Systems: Lighting, Power & Comfort	3	50	50	100	45	50
4	24ID440	Workspace Interior Design#	-	60	40	100	45	50

* Continuous Assessment evaluation pattern will differ from course to course

- For Theory courses Terminal Examination will be conducted for maximum marks of 100 andsubsequently be reduced to 60 marks for the award of terminal examination marks.
- For Theory cum Studio Courses Terminal Examination will be conducted for maximum marks of 100 and subsequently be reduced to 50 marks for the award of terminal examination marks.
- **For Theory cum Studio Courses (Skill based) Terminal Examination in the form of Viva-vocewill be conducted during the end semester for a maximum of 100 marks and subsequently be reduced to 50 marks for the award of terminal examination marks.
- #For Studio Courses Terminal Examination in the form of Viva-voce will be conducted duringthe end semester for a maximum of 100 marks and subsequently be reduced to 40 marks forthe award of terminal examination marks.

** Terminal Examination will be conducted for maximum marks of 100 and subsequently bereduced as mentioned above for the award of terminal examination mark

ELECTIVE FOUNDATION COURSES

S.No	Course Code	Name of the Course	Duration of Terminal Exam in Hrs.	Marks			Minimum Marks for Pass	
				Continuous Assessment *	Terminal Exam**	Max. Marks	Terminal Exam	Total
1	24IDFA0	Graphic Design And Infographics**	-	50	50	100	45	50
2	24IDFB0	Vernacular Indian Crafts**	-	50	50	100	45	50

Continuous Assessment evaluation pattern will differ from course to course

- **For Theory cum Studio Courses (Skill based) Terminal Examination in the form of Viva-vocewill be conducted during the end semester for a maximum of 100 marks and subsequently be reduced to 50 marks for the award of terminal examination marks.

25ID110	EVOLUTION OF INTERIOR DESIGN

Category	L	T	P	Credit
CFC	2	-	-	2

Preamble

Students will explore the evolution of interior space across diverse cultures and epochs. They will understand how environmental factors influence material choices. Students will able analyse interior styles, which have reshaped interior design concepts.

Prerequisite

NIL

Course Outcomes

On the successful completion of the course students will be able to

CO	Course Outcome Statement	TCE Proficiency Scale	Expected Proficiency in %	Expected Attainment Level %
CO1	Identify the historical evolution of interior spaces, from primitive dwellings to modern architecture.	TPS2 20%	70	70
CO2	Observe the significance of the transition of interior spaces with respect to innovation and technology.	TPS2 20%	70	70
CO3	Retell past precedents considering cultural, social, and aesthetic values.	TPS2 15%	70	70
CO4	Discover cultural values through interior aesthetics and spatial design.	TPS4 15%	70	70
CO5	Examine stylistic features and spatial planning in early Christian, Byzantine, and Romanesque interiors, including their structural innovations and material expressions.	TPS4 15%	70	70
CO6	Investigate how environmental factors influence material choices in architectural design, considering climate, availability, and cultural significance.	TPS4 15%	70	70

Mapping with Programme Outcomes and Programme Specific Outcomes

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	S	-	M	S	L	L	M	-	-	L	-	-
CO2	L	M	S	M	L	L	L	-	-	S	-	-
CO3	L	-	M	S	M	L	L	L	-	L	-	L
CO4	M	-	L	S	L	L	L	-	-	L	-	L
CO5	S	M	M	S	L	M	L	L	L	L	-	L
CO6	M	L	L	-	S	L	S	-	L	L	-	M

S- Strong; M-Medium; L-Low

Assessment Pattern: Cognitive Domain

Cognitive Levels	CAT 1		Assignment 1		CAT 2		Assignment 2		Terminal	
TPS Scale	**2**	**4**	**2**	**4**	**2**	**4**	**2**	**4**	**2**	**4**
CO1	25		25						20	
CO2	25		25		25		25		20	
CO3					25		25		15	
CO4						25		25		15
CO5						25		25		15
CO6		50		50						15

Syllabus

Evolution of interior space & its function - Introduction to the evolution of interior space and its function that has been influenced by various factors including cultural shifts, and changing lifestyles. Functional organisation of spaces in primitive dwellings.-Catal Huyuk , Gobekli Tepe, Teepee of native American - and Inuit igloo,Banpo village settlement – china. **Influence of Environment on Materials choice** - The influence of the environment factors such as climate, culture, sustainability goals, and availability of resources directly influences the choice of interior materials. - Hot climate - Interior- - Mud blocks, stone, and timber - Djenne Mosque, Africa , Hawa Mahal, India. - Warm and humid climatic - interior - stone or mud , timber, thatch or coconut leaves, bamboo, and tiles -Kerala architecture (planning, material usage, fenestration details) Padmanabhapuram palace , India, Toba-Batak House , Indonesia ..- Cold Climate – interior – mud . lime timber , thatch - Vernacular interiors of Ladakhi style - Iranian dwelling. **Expression of Cultural Values: Aesthetics and Decoration**-Expression of power – Spiritual / Religious structures - grand architecture and intricate craftsmanship - Geometric forms - interiors Indian temple and its interiors – Brihadeeswaratemple ,Thanjavur. - Egyptian interiors - Temple of Karnak, etc. - Expression of power - civic buildings - Greek and roman interiors - balance and proportion - The Pantheon &Parthenon.- Medieval and Renaissance - Artistry and Opulence -St Peter's Basilica, Rome , Abbey church of saint denis. Cross Cultural Influences – Monument interiors - domes, : Indo-Islamic style - Fathepursikri , Indo – Saracenic – City palace , Udaipur , Thirumalai nayak palace **Early Christian, Byzantine and Romanesque -** Early Christian Bascilica churches –Byzantine design – Ravenna : mosaic art – Constantinople : ground cisterns – Hagia Sophia – secular buildings : baths and palaces Romanesque style – Carolingian – Churches : Moanstery of s.Gall, Switzerland, Abbey church of La Madeline, France Romanesque style – Fortresses and Castles –Monastries and Abbeys – Abbey at Cluny –Romanesque style houses – furniture and other furnishings

Course Contents and Lecture Schedule

Module No.	Topic	No. of Hours	Course Outcome
1.	**EVOLUTION OF INTERIOR SPACE & ITS FUNCTION**	**4**	
1.1	Introduction to the evolution of interior space and its function has been influenced by various factors including cultural shifts, and changing lifestyles.	1	CO1, CO2
1.2	Functional organisation of spaces in primitive dwellings.- Catal Huyuk , Gobekli Tepe.	1	CO1, CO2
1.3	Teepee of native American - and Inuit igloo.	1	CO2, CO6
1.4	Banpo village settlement – china	1	CO2, CO6
2.	**INFLUENCE OF ENVIRONMENT ON MATERIALS CHOICE**	**7**	

2.1	The influence of the environment factors such as climate, culture, sustainability goals, and availability of resources directly influences the choice of interior materials.	1	CO1, CO2
2.2	Hot climate - Interior- - Mud blocks, stone, and timber - Djenne Mosque, Africa ,Hawa Mahal, India	2	CO2, CO6
2.3	Warm and humid climatic -interior - stone or mud , timber, thatch or coconut leaves, bamboo, and tiles - Kerala architecture (planning, material usage, fenestration details)Padmanabhapuram palace , India, Toba-Batak House , Indonesia .	2	CO2, CO6
2.4	Cold Climate – interior – mud . lime timber , thatch - Vernacular interiors of Ladakhi style - Iranian dwelling.	2	CO2, CO6
3.	**EXPRESSION OF CULTURAL VALUES: AESTHETICS AND DECORATION**	**8**	
3.1	Expression of power – Spiritual / Religious structures - grand architecture and intricate craftsmanship – Geometric forms - interiors Indian temple and its interiors – Brihadeeswara temple, Thanjavur. - Egyptian interiors - Temple of Karnak, etc	2	CO2, CO3, CO4
3.2	Expression of power - civic buildings - Greek and roman interiors - balance and proportion- The Pantheon & Parthenon. Medieval and Renaissance - Artistry and Opulence - St Peter's Basilica, Rome , Abbey church of saint Denis.	2	CO2, CO3, CO4
3.3	Cross Cultural Influences – Indian - Monument interiors - domes, arches, minarets: Indo-Islamic style – Fatehpur Sikri , Indo - Saracenic – City palace , Udaipur , Victoria Memorial – Kolkata	2	CO2, CO3, CO4
3.4	Cross Cultural Influences – International – Interiors - Labranche House , New Orleans, Thien Hau Temple , Los Angeles	2	CO2, CO3, CO4
4.	**EARLY CHRISTIAN, BYZANTINE AND ROMANESQUE**	**11**	
4.1	Early Christian Bascilica churches – naves, columns, geometric floor patterns, bilateral and radial symmetry	2	CO1
4.2	Byzantine design – Ravenna : mosaic art – Constantinople : ground cisterns – Hagia Sophia : pendentive, buttresses, Greek cross plan – secular buildings : baths and palaces	3	CO2, CO4, CO5
4.3	Romanesque style – Carolingian – Churches : Moanstery of s.Gall, Switzerland, Abbey church of La Madeline, France	2	CO2, CO4, CO5
4.4	Romanesque style – Fortresses and Castles – materials, hearth, tower houses Monastries and Abbeys – Abbey at Cluny – cloister, transcepts, vaults	2	CO2, CO4, CO5
4.5	Romanesque style houses – furniture and other furnishings	2	CO2, CO4, CO5
	Total Number of Hours	**30**	

Learning Resources

1. John Pile and Judith Gura, A History of Interior Design, Fourth Edition, 2014, John Wiley and Sons Inc.
2. Jeannie Ireland, History of Interior Design, Second edition, 2018, Bloomsbury Publishing

Course Designers:

1. Prof. Dr. Jinu Louishidha Kitchley hodarch@tce.edu
2. Asst. Prof. Roshma R rraarch@tce.edu

24ID121	PERCEPTION OF INTERIOR SPACES	Category	L	T	P	Credit
		CFC	1	-	2	3

Preamble

Perception of interior spaces is a multilayered phenomenon influenced by various factors including cognition of mass and space, relationship of various elements in an interior space, Material application and finishes in a space. By being mindful on perception, and with integration of these elements designers can create spaces that not only fulfill their functional requirements but enhance the overall quality of an interior space.

Prerequisite

NIL

Course Outcomes

On the successful completion of the course students will be able to

CO	Course Outcome	TCE Proficiency Scale	Expected Proficiency in %	Expected Attainment Level %
CO1	Identify the objectives, scope of design and the difference between an artist and a designer.	TPS2	75	70
CO2	Summarize the primary elements of design– Point, Line, Plane, Shape and Form, form defining space and space defining elements.	TPS2	75	70
CO3	Describe the cognition of different masses and volume, Relationship of mass and space, Built form and open space, Spatial organization, Movement through space.	TPS2	75	70
CO4	Explain the theories of visual composition - Gestalt's theory of visual composition; Ordering Principles – Axis, Symmetry, Hierarchy, Datum, Rhythm, Repetition	TPS2	75	70
CO5	Observe the Elements in interior design – Wall plane, Floor plane, Roof plane- Types, Articulation, Attributes, Spatial roles, Design considerations and Applications	TPS2	75	70
CO6	Demonstrate the application of elements of design, perception of space in built environment, manipulation of wall, Floor and roof planes to create various interior spaces through case examples.	TPS3	75	70

Mapping with Programme Outcomes and Programme Specific Outcomes

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	S	-	S	L	-	M	-	L	L	L	-	L
CO2	S	-	S	M	-	L	L	L	L	-	L	L
CO3	S	-	S	M	-	L	L	L	L	-	L	L
CO4	S	-	S	M	-	L	L	L	L	-	L	L
CO5	S	-	S	M	-	L	L	L	L	-	L	L

CO6	S	-	S	M	-	S	M	M	L	M	L	L

S- Strong; M-Medium; L-Low

Assessment Pattern: Cognitive Domain

CO	CAT 1			Assignment - I			CAT 2			Assignment - II			Terminal		
TPS Scale	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
CO1		10			10			10				10		10	
CO2		10			10			10				10		10	
CO3		10			10			10				10		10	
CO4		10			10			10				10		10	
CO5		20				20		20			20			20	
CO6			40			40			40		40				40

Syllabus

Introduction to Fundamentals of Design – Nature of Design – Definition, Difference between artist and a designer, objectives and Scope of study. Primary elements of design - Point, Line, Plane, Volume, shape and Form – Form defining space, Horizontal & vertical elements defining space, Space defining elements.

Perceiving Space in a Built Environment – *Cognitive experience of form and Space*- cognition of different masses and volume- Transformation of form, Additive, subtractive, Linear, radial, centralized, clustered etc. *Relationship of mass and space*- enclosure, internal and external spaces, continuous spaces, hierarchy of spaces, Built form and open space. Spatial organization - centralized, linear, radial, clustered, grid. *Movement through space* – Elements of circulation, Configuration, Relationship of path-space to form and space. *Theories of composition* - Gestalt's theory of visual composition, Ordering Principles – Axis, Symmetry, Hierarchy, Datum, Rhythm, Repetition

Elements in interior design - WALL PLANE - definition, evolution, attributes, spatial roles, applications, design considerations. Articulation of openings – doors and windows (attributes, design considerations and spatial roles) FLOOR PLANE – definition, evolution, attributes, spatial roles, applications, design considerations. Stairs - definition, evolution, attributes, spatial roles, applications, design considerations. ROOF PLANE - definition, evolution, attributes, spatial roles, applications, design considerations.

Case studies- Comprehend the application of elements of design, perception of space in built environment, manipulation of wall, Floor and roof planes to create various interior spaces through case examples.

Learning Resources

1. Pramar.V.S., 'Design fundamentals in architecture', 1973, Sowmiya publications pvt.ltd, New Delhi.
2. Francis DK Ching, 'Architecture form, space and order' 1996, John Wiley and Sons
3. Pandya Yatin, 'Elements of Space-Making, Mapin Publishing Pvt.'.
4. Chiara, Joseph De, 'Time Saver Standards for Building Types', McGraw–Hill Professional Publishing,2001
5. Pierre von Meiss, 'Elements of Architecture – From form to place + tectonics, EPFL Press, 2013.
6. Ernest Burden-Elements of Architectural Design- A visual resource, Van Nostrand Reinhold,1994.

Course Contents and Lecture Schedule

Module No.	Topic	No. of Hours	Course Outcome
1.	**INTRIDUCTION TO FUNDAMENTALS OF DESIGN**	**3**	
1.1	Nature of Design – Definition, Difference between artist and a designer, objectives and Scope of study.	1	CO1
1.2	Primary elements of design - Point, Line, Plane, Volume, shape and Form – Form defining space, Horizontal & vertical elements defining space, Space defining elements.	2	CO2
2.	**PERCEIVING SPACE IN A BUILT ENVIRONMENT**	**12**	
2.1	*Cognitive experience of form and Space*- cognition of different mass and volume- Transformation of form, Additive, subtractive, Linear, radial, centralized, clustered, etc.	3	CO3
2.2	*Relationship of mass and space*- enclosure, internal and external spaces, continuous spaces, hierarchy of spaces, Built form and open space. Spatial organization - centralized, linear, radial, clustered, grid.	3	CO3
2.3	*Movement through space* – Elements of circulation, Configuration, Relationship of path-space to form and space.	3	CO3
2.4	*Theories of composition*- Gestalt's theory of visual Composition, Ordering Principles – Axis, Symmetry, Hierarchy, Datum, Rhythm, Repetition	3	CO4
3.	**ELEMENTS IN INTERIOR DESIGN**	**15**	
3.1	WALL PLANE - definition, evolution, attributes, spatial roles, applications, design considerations. Articulation of openings – doors and windows (attributes, design considerations and spatial roles)	6	CO5
3.2	FLOOR PLANE – definition, evolution, attributes, spatial roles, applications, design considerations. Stairs - definition, evolution, attributes, spatial roles, applications, design considerations.	6	CO5
3.3	ROOF PLANE - definition, evolution, attributes, spatial roles, applications, design considerations.	3	CO5
4	**CASE STUDIES**	**15**	
4.1	Comprehend the application of elements of design, principles of organization & composition, perception of spatial experience in an interior space through case examples.	15	CO6
	Total Number of Hours	**45**	

Course Designers:

1. Prof. Ayswarya A aaarch@tce.edu
2. Prof. D Gokul dglarch@tce.edu
3. Asst. Prof. Roshma R rraarch@tce.edu

24ID131	VISUALISATION AND REPRESENTATION	Category	L	T	P	Credit
		CFC	1		2	**3**

Preamble

This visualization and representation serve as a comprehensive visual representation of the technical aspects and spatial configurations essential for the realization of interior design projects. It embodies the fusion of artistic vision with precise engineering principles, acting as a blueprint for the execution of creative concepts. Through meticulous detailing and adherence to industry standards, this drawing aims to facilitate effective communication between designers, architects, and craftsmen, ensuring the seamless translation of design intent into tangible spaces.

Prerequisite

NIL

Course Outcomes

On the successful completion of the course students will be able to

CO	Course Outcome Statement	TCE Proficiency Scale	Expected Proficiency in %	Expected Attainment Level %
CO1	Infer the basic principles, tools and techniques required for basic	TPS2 10%	70	70
CO2	Acquire knowledge on lettering, dimensioning styles and sheet format.	TPS2 10%	70	70
CO3	Illustrate the drawings through variations in line thickness and intensity in 2D drawings	TPS3 20%	70	70
CO4	Interpret simple and complex solid geometrical forms through visual	TPS3 20%	70	70
CO5	Develop the 2-dimensional drawings into 3 dimensional drawings using metric projection methods and also explore using digital tools	TPS3 20%	70	70
CO6	Apply the principles of perspective drawing techniques and complexity of objects in interior drawings and also explore using digital tools	TPS3 20%	70	70

Mapping with Programme Outcomes and Programme Specific

Cos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	M	L	L	M	L	L	M	L	L	L	L	L
CO2	M	L	L	L	L	L	M	L	L	L	L	L
CO3	M	L	L	M	L	L	M	L	L	L	L	L
CO4	M	L	L	M	L	L	L	L	L	L	L	L
CO5	M	L	L	M	L	L	M	L	L	L	L	L
CO6	M	M	L	S	L	L	L	L	L	L	L	L

S- Strong; M-Medium; L-Low

Assessment Pattern: Cognitive Domain

Cognitive Levels	Assignment 1		Assignment 2		Terminal	
TPS Scale	**2**	**3**	**2**	**3**	**2**	**3**
CO1	10		10		10	
CO2	10		10		10	
CO3		20		20		20
CO4		20		20		20
CO5		20		20		20
CO6		20		20		20

Syllabus

Basics in architecture: Essentials and Principles of Graphics: Drafting fundamentals lettering, dimensioning, representation, format for presentation, etc.; Introduction to different types of Scales and its use in Design Drawings. ***Drawings:*** *Studio exercise on drafting Lines , Lettering (Upper& Lower-case Letters. Type facing.* **Drawings:** *Studio exercise on dimensioning, representation, format for sheet presentation*. **Orthographic Projections:** Introduction to Projections, Orthographic Projection, Concept, Principle and Methods of Projections. Orthographic Projections of solids • Projections of Solids in different positions. Introduction to axonometric projection, Difference between axonometric and orthographic projections **Drawings**: *Studio exercise on Orthographic projection of solid geometries in various positions* **Drawings:** *Studio exercise on axonometric projections of objects and simple building components*. Extrusion and manipulation of solids in digital media. **Perspective drawings of simple objects:** Introduction to perspectives, difference between views & Perspectives, concept of vanishing points – Anatomy of Perspectives – objects, study of picture plane, station point, vanishing point, eye level, Ground round level etc, its variation & effects. – **Drawings:** *Studio exercise on One point perspective of interiors and sectional perspectives Different types and concept of one point perspective and manual perspective drawings.* **Digital Visualisation,** Scaled 3-Dimensional visualization using digital media.

List of Experiments/Activities with CO Mapping

Modul No.	Topic	No. of Hrs	Course Outcome
1	**FUNDAMENTALS OF ARCHITECTURAL GRAPHICS & GEOMETRICAL DRAWINGS**	**10**	
1.1	Essentials and Principles of Architectural Construction of lines, line value, line types, lettering, dimensioning, representation, format for presentation, etc.;	1	**CO1**
1.2	Introduction to different types of Scales and its use in Architectural Drawings.	1	**CO1**

1.3	Drawings: Studio exercise on Fundamentals of drafting,, Lettering (Upper-case & Lower-case Letters) Type facing.	4	**CO2**
1.4	Drawings: Studio exercise on dimensioning, representation, format for sheet presentation.	4	**CO3**
2	**ORTHOGRAPHIC PROJECTIONS**	**15**	
2.1	Introduction to Projections, Orthographic Projection & Concept, Principle and Methods of Projections, Orthographic Projections of Solids.	1	**CO2**
2.2	Projections of Solids in different positions	1	**CO4**
2.3	Drawings: Studio exercise on Orthographic projection of solid geometries in various positions with respect to its surfaces, axis and its relation to Vertical and horizontal plane.	6	**CO5**
2.4	Introduction to Axonometric Projections. Difference between axonometric and orthographic projections.	1	**CO4/ C O5**
2.5	Drawings: Studio exercise on axonometric projections of objects and building components.	6	**CO5**
3	**ONE POINT PERSPECTIVE**	**8**	
3.1	Introduction to perspectives, difference between views & Perspectives, concept of vanishing points	2	**CO2**
3.2	Anatomy of Perspectives – objects, study of picture plane, station point, vanishing point, eye level, Ground round level etc, its variation & effects.	2	**CO6**
3.3	Drawings: Studio exercise on One point perspective of interiors and sectional perspectives. Different types and concept of one point perspective and manual perspective drawings.	4	**CO6**
4	**Digital Visualisation**	**12**	
4.1	Scaled 3-Dimensional visualization using digital media	12	**CO6**
	Total No of Hours	**45**	

Learning Resources

1. Francis D. K. Ching (1996) Architectural Graphics, Van Nostrand Rheinhold.
2. Atkins, B. (1986). Architectural Rendering. California : Walter Foster Art Books.
3. Batley, C. (1973). Indian Architecture. Bombay : D. B. Taraporevale Sons.
4. Bhatt, N. D. (2003). Engineering Drawing. Anand :Charotar Publishing House.
4. Ching, F. D. K. (2009). Architectural Graphics. 5th Ed. Hoboken : John Wiley & Sons.
6. Ching, F. D. K. (2011). A Visual Dictionary of Architecture. 2nd Ed. Hoboken:John Wiley & Sons.
7. Dinsmore, G. A. (1968). Analytical Graphics. Canada :D.VanNostrand, Company Inc.

8. Halse, A. O. (1972). Architectural rendering; the techniques of contemporary presentation. 2nd Ed. New York : McGraw-Hill.
9. Holmes, J. M. (1954). Applied Perspective. London : Sir Isaac, Piotman and Sons Ltd.
10. Online Resources
a. http://www.cs.brown.edu
b. http://www.dtcc.edu/ - document, project info – Arch.dwg.
c. Perspective made easy by Ernest R Norling : https://ia801309.us.archive.org/12/items/PerspectiveMadeEasy/Norling%20-%20Perspective%20Made%20Easy.pdf
d.https://onlineartlessons.com/tutorial/perspective-drawing-tutorial/#perspectiveprojection#engineeringdrawing#perspectiveprojectionmanasatnaik

Course Designers:

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2. Asst. Prof.Roshma R rraarch@tce.edu

24ID140	COMMUNUCATION SKILLS	Category	L	T	P	Credit
		CFC	1		2	**3**

Preamble

This course aims at enhancing the dynamic and interactive communication with clarity, confidence, and persuasiveness across various platforms and audiences. Through a blend of theory and practical exercises, students will develop proficiency in crafting written and oral communication, mastering the art of formal writing and presentation skills, and honing their analytical skills to deliver well-substantiated presentations. Students will emerge as adept communicators equipped with strategies to navigate diverse communication challenges with finesse and effectiveness.

Prerequisite

Basic Knowledge of verbal and written English

Course Outcomes

On the successful completion of the course students will be able to

CO Number	Course Outcome Statement	Weightage*** in %
CO1	Enhance basic language skills to understand various aspects of communication.	Understand 20%
CO2	Express thoughts with correct usage of language in formal writing.	Apply 15%
CO3	Cultivate skills both in written form and through multimedia presentations.	Apply 20%
CO4	Prepare effective technical documents and interpret pictorial presentations.	Apply 15%
CO5	Elevate critical thinking and analytical skills by evaluating and synthesizing diverse sources of information to support arguments or findings in the research paper.	Apply 10%
CO6	Engage in collaborative projects and discussions related to designing.	Apply 20%

COMappingwithCDIOCurriculumFramework

CO#	TCE Proficiency Scale	LearningDomainLevel			CDIO CurricularComponents (X.Y.Z)
		Cognitive	Affective	Psychomotor	
CO1	TPS2	Apply	Value	Perception	2.4,2.5,3.1
CO2	TPS2	Apply	Respond	Perception	2.4,2.5,3.2.6
CO3	TPS3	Apply	Respond	Perception	3.1,3.1.6
CO4	TPS2	Apply	Respond	Perception	3.1.6,3.2
CO5	TPS3	Apply	Respond	Guided Response	3.2.1,3.2.3,3.3.1
CO6	TPS6	Apply	Respond	Create (Project)	3.1.6,3.2

Mapping with Programme Outcomes

Cos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	L	L	L	L	L	L	L	L	S	S	L	M
CO2	L	L	L	L	L	L	L	L	M	S	L	M
CO3	L	L	L	L	L	L	L	L	M	S	L	S
CO4	L	L	L	L	L	L	L	L	L	S	L	S
CO5	L	L	L	M	L	L	L	L	M	S	L	S
CO6	L	L	L	L	L	L	L	L	S	S	L	S

S-Strong; M-Medium; L-Low

Assessment Pattern: Cognitive Domain

No CAT will be conducted.
Summative - No Paper based Examination.
Activity Based Evaluation will be done by the Internal and External Examiners

INTERNALS

Listening and Reading Comprehension (Understand)	CO1	20
Email, Technical Report (Apply)	CO2	15
Article presentation, Process description (Apply)	CO3	20
Interpretation of Graphics, Instruction writing (Apply)	CO4	15
Proposal Writing (Apply)	CO5	10
Project Submission (Apply)	CO6	20
Total		100

Evaluation is done in classroom activities as given below

Assessment Pattern:Psychomotor

Psychomotor Skill	Mini project/Assignment/Practical Component
Perception	
Set	
Guided Response	Project
Mechanism	
Complex Overt Responses	
Adaptation	
Origination	

Sample Questions for Course Outcome Assessment**

Course Outcome1 (CO1):(20marks)

1. Listen to audio visual content and answer the questions (10 Marks)
2. Read the Technical passage and answer the questions (10 Marks)

Course Outcome 2 (CO2) :(15marks)

1. Formal Email writing (5 marks)

2. Technical Report Writing (10 Marks)

Course Outcome 3(CO3) :(20 Marks)

1. Article Presentation (10 Marks)
2. Process description. (10 Marks)

Course Outcome 4(CO4) :(15marks)

1. Interpretation of Graphics (10 Marks)
2. Instruction Writing (5 Marks)

Course Outcome 5(CO5) :(10 Marks)

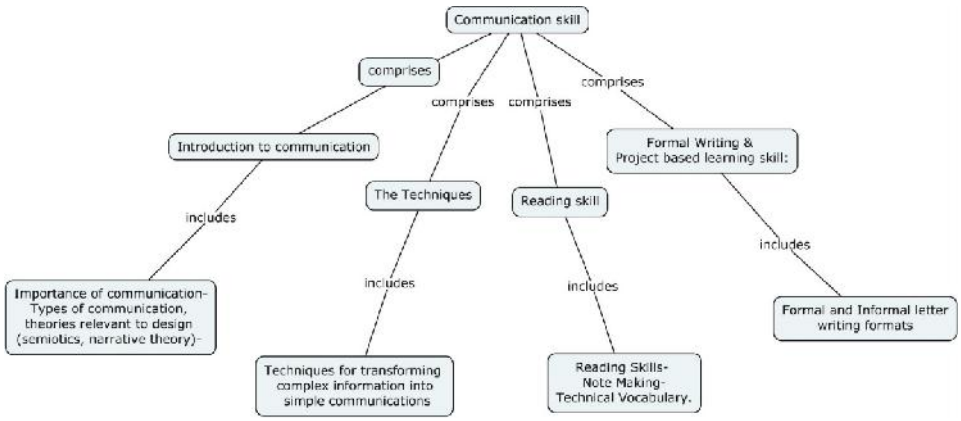
1. Booklet
2. Proposal Writing

Course Outcome 6 (CO6): (20) Article Presentation

Presentations will be reviewed based on -

1. **Article selection**
2. **Preparation (Review)**
3. **Submission**
4. **Presentation**

Concept Map



Syllabus

Introduction to communication: Importance of communication-Types of communication, theories relevant to design (semiotics, narrative theory)- **Activity:**Analyzing different images and captions and their impact on viewer perception. Group discussions on the role of captions.**Activity:** Describing an object/ image based on visual perception. **Techniques for developing narratives** -Techniques for transforming complex information into simple communications. **Activity:** Breaking down a case example narration into simpler components.**Activity:** Developing narratives. Reading Skills: Reading Skills- Note Making-Technical Vocabulary.**Activity:** Making notes of the structure of a case example article and paraphrasing. Activity: writing a comprehension of the above. **Activity:** Preparing a storyboard for a design exhibition – Compositions involving images, Captions, narratives on design objectives (50 words) and comprehension on design methodology (150 words) **Communication with Visuals and Images:** Basics of Photoshop for design sheet composition. **Activity:** Preparing a poster for a design exhibition.

Course Contents and Lecture Schedule

Module No.	Topic	No. of Hours	Course Outcome
1.	**Introduction to communication**	**10**	
1.1	Importance of communication-Types of communication, theories relevant to design (semiotics, narrative theory).	2	CO1
1.2	Activity: Analyzing different images and captions and their impact on viewer perception. Group discussions on the role of captions	4	CO4
1.3	Activity: Describing an object/ image based on visual perception	4	CO2
2.	**The Techniques**	**10**	
2.1	Techniques for transforming complex information into simple communications.	2	CO1
2.2	Activity: Breaking down a case example narration into simpler components.	4	CO2
2.2	Activity: Developing narratives	4	CO2
3.	**Reading Skills**	**10**	
3.1	Reading Skills- Note Making-Technical Vocabulary	2	CO2
3.2	Activity: Making notes of the structure of a case example article and paraphrasing.	2	CO2
3.3	Activity: writing a comprehension of the above.	2	CO4
3.4	Activity: Preparing a story board for a design exhibition – Compositions involving images, Captions, narratives on design objective (50 words) and comprehension on design methodology (150 words)	4	CO5
4.	**Communication with Visuals and Images**	**15**	
4.1	Basics of Photoshop for design sheet composition.	5	CO5
4.2	Activity**:** Preparing a poster for a design exhibition	10	CO6
	TOTAL	**45**	

Learning Resources

Text Books:

There are no prescribed texts for Semester1–there will be handouts and reference links shared.

Reference Books:

1 Martin Hewings. Advanced Grammar in Use. Cambridge University Press.

2 The Presentation Secrets of Steve Jobs: How to Be Insanely Great in Front of Any Audience" by Carmine Gallo.
3 Architectural Research Methods by Linda N. Groat and David Wang.
4 Uncover the invaluable Art of Selling Yourself by Steven Lewis and Rebecca Weintraub.

Web References:

1 https://learnenglish.britishcouncil.org/grammar/english-grammar-reference
2 https://libraryguides.vu.edu.au/oxford-referencing/internet-websites

Online Resources:

1. https://www.youtube.com/watch?v=C4cKbl-NsLg
2.https://www.youtube.com/watch?v=uLN6IdRtDhg
3.https://www.youtube.com/watch?v=yoD8RMq2OkU
4.https://www.youtube.com/watch?v=TEqYnV6KWfY&list=PLvcb33xNTVUmfIpA5majoCXgLS5mFOcck
5.https://www.youtube.com/watch?v=WKoeyEIxhlg

Course Designers:

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24ID150	FOUNDATIONAL DESIGN SKILLS	Category	L	T	P	Credits
		PCC		4	**12**	**12**

Preamble

This course provides an extensive introduction to the core concepts of interior design. It is designed to equip participants with essential skills such as freehand and technical drawing, documenting objects, observing, and understanding the process and elements of design and its dynamics. The course will combine lectures with practical exercises, focusing on fostering creativity, enhancing critical observation skills, and applying theoretical concepts to real-world design situations.

Prerequisite

Nil

Course Outcomes

On the successful completion of the course, students will be able to

CO Number	Course Outcome Statement	Weightage*** in %
CO1	Apply skills in freehand drawing techniques to accurately capture dynamic movements and develop compelling visual narratives through various artistic methods.	Apply 20%
CO2	Apply skills in technical drawing to create precise architectural and object illustrations with detailed material representation and accurate documentation using digital tools.	Apply 15%
CO3	Create advanced 3D models to bring innovative designs to life through sophisticated texture mapping and assembly techniques; and also to understand scale and proportion.	Create 25%
CO4	Apply skills in spatial organization principles to strategically arrange objects and design elements, enhancing functionality, accessibility, and aesthetic value.	Apply 13%
CO5	Apply skills in color theory to enhance design visual impact and functionality, utilizing psychological effects, color gradients, and contrasts.	Apply 12%
CO6	Analyze object functionality and proportions to effectively assess structural functions and relationships within design contexts.	Analyze 15%

** Weightage depends on Bloom's Level, number of contact hours,

CO Mapping with CDIO Curriculum Framework

CO #	TCE Proficiency Scale	Learning Domain Level			CDIO Curricular Components (X.Y.Z)
		Cognitive	Affective	Psychomotor	
CO1	TPS3	Apply	Value	Mechanism	1.1,1.2,2.1.1,2.2.1,2.3.1,2.3.3,2.4.1,2.5.1,2.5.4,4.1.1,4.1.2,4.1.5,4.3.1.
CO2	TPS4	Apply	Value	Mechanism	2.1.3, 2.1.4, 2.1.5, 2.2.3, 2.3.4, 2.4.1, 2.4.5, 2.5.1, 2.5.2, 4.1.1, 4.1.2, 4.1.5, 4.1.6, 4.1.7, 4.3.3, 4.4.5, 4.4.6.
CO3	TPS4	Create	Characterize	Origination	2.1.3, 2.1.4, 2.1.5, 2.2.3, 2.3.4, 2.4.1, 2.4.5, 2.5.1, 2.5.2, 4.1.1, 4.1.2, 4.1.5, 4.1.6, 4.1.7, 4.3.3, 4.4.5, 4.4.6.
CO4	TPS6	Apply	Value	Mechanism	3.1.1, 3.1.2, 3.2.1, 3.2.2, 4.4.1, 4.4.2, 4.4.3, 4.4.4, 4.4.5, 4.4.6
CO5	TPS4	Apply	Value	Mechanism	2.1.3, 2.1.4, 2.1.5, 2.2.3, 2.3.4, 2.4.1, 2.4.5, 2.5.1, 2.5.2, 4.1.1, 4.1.2, 4.1.5, 4.1.6, 4.1.7, 4.3.3, 4.4.5, 4.4.6.
CO6	TPS3	Analyse	Organise	Complex Overt Responses	1.1,1.2,2.1.1,2.2.1,2.3.1,2.3.3,2.4.1,2.5.1,2.5.4,4.1.1,4.1.2,4.1.5,4.3.1.

Mapping with Programme Outcomes and Programme Specific Outcomes

Cos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	S	S	M	M	L	L	S	S	L	L	L	L
CO2	S	S	S	S	L	S	S	S	L	L	L	L
CO3	S	S	M	M	L	S	M	S	L	L	L	S
CO4	S	S	S	S	L	S	S	S	L	L	L	L
CO5	S	S	M	M	L	L	S	S	L	L	L	L
CO6	S	S	S	S	S	S	S	S	S	S	S	S

S- Strong; M-Medium; L-Low

Syllabus

Unit I **3 Weeks**

Drawing Freehand - Pencil Handling – Pressure and line depth– Straight Lines - Shading Techniques - Understanding Body Dynamics - Capturing Movement - Speed Sketching: Rapid Visualization - Techniques for Quick Rendering.

Unit II **3 Weeks**

Digital Drafting - Detailed Observation Drawing of Objects and Built Spaces - Plans - Elevations - Views - Material Representation – Introducing Digital Representation - Line Weight and Style Techniques - Annotation and Dimensioning - Extrusions – Using CAD.

Unit III **1 Week**

Modeling - Understanding textures - 2D and 3D Exercises, Modeling-Inspired Design and Folding Mechanics - Assembly Methods: Interlocking - Clipping and Fastening Techniques - Origami.

Unit IV **2 Weeks**

Perceiving and Understanding Scale and Proportions: Relative Dimensions - Visual Hierarchy Techniques - Spatial Relationships.

Unit V **2 Weeks**

Ordering Principles - Object Arrangement Strategies: Optimal Time, location, and method of placement (When, Where, and How) - Functional Grouping - Spatial Hierarchy in Built Environment - Alignment and Distribution – Accessibility, Axis, Balance, Symmetry, Hierarchy, Rhythm, Repetition, Datum, Balance, Contrast, Unity.

Unit VI **2 Weeks**

Colour - Color Theory - Psychological Effects on Color Perception - Color Gradients and Volume Perception - Visual Impact of Color in Spatial Design - Contrast and Harmony in Color Usage.

Unit VII **2 Weeks**

Functioning of Objects: Understanding co-functioning of objects - Interactive Dimension Exploration - Mechanical Movements - Structural Functions - Interactivity and Usability - Connection and Assembly Technique.

List of Experiments/Activities with CO Mapping

Assignment No.	Assignment Details	COs
A1	**Pencil Handling with Lines:** Draw straight and curved lines in different directions, adjusting your grip and pressure to explore line quality.	CO1
A2	**Pressure and Line Depth:** Create a gradient effect by varying pressure on the pencil during hatching and cross-hatching exercises.	CO1
A3	**3D Geometric Object Drawing:** Practice assembling 3D geometric shapes into complex patterns and forms, imagining how these objects interact and interlock in a three-dimensional space, applying different shading techniques to indicate a consistent light source.	CO1
A4	**Speed Sketching in Real-Time Public Spaces:** Engage in 30-60 minute sketching sessions in public spaces, capturing dynamic scenes and interactions, focusing on conveying the atmosphere and movement of the environment.	CO1
B1	**Basic Object Drawings Using Digital Representation:** Utilize digital tools to create precise and detailed drawings of basic objects, exploring layering, opacity, and digital brush settings to mimic traditional drawing techniques.	CO2

B2	**Documentation of Spaces:** Employ digital software to document and visually represent interior and exterior spaces, focusing on accuracy, scale, and the use of annotations to highlight important features.	CO2
C1	**Using Different Assembling Textures:** Combine various textural elements in model assembly, such as smooth plastics with rough, natural wood, or reflective metals, to explore tactile contrasts and aesthetic interactions.	CO3
D1	**Modeling Real-Time Objects in Scale and Changing Proportions:** Create accurate scale models of real-world objects, focusing on meticulous measurement and replication to ensure that every detail corresponds proportionally to the original. Select at least one parameter of the modeled object to alter (e.g., length, width, height, thickness) and construct the model with this changed proportion to study how this alteration impacts the object's functionality and aesthetics.	CO3
E1	**Ordering Principles:** Analyze and illustrate the ordering principles determining the spatial configuration of a chosen space by exploring its arrangement strategies, style, and underlying philosophical approaches, culminating in a detailed report or visual presentation.	CO4
F1	**Colours:** Explore how color gradients influence the visual perception of spaces and analyze the visual impact of colors on emphasis, contrast, and harmony within a selected space or design, presented through a series of visual compositions	CO5
G1	**Functioning of Objects:** Create an exploded axonometric or isometric view of a complex object with at least 10 parts, documenting each stage with photographs, and compose an A3 sheet that reflects an understanding of the object's functionality and materials, using varied pen weights and lettering techniques learned previously.	CO6

Phases	**Deliverables**	**Marks**	**Course Outcomes**
Continuous Assessment			
Review 1	Deliverables as per the studio requirement	100*	
Review 2		100*	
Review 3		100*	
*During the semester, three reviews will be conducted. Each review will be evaluated for 100 marks and subsequently be reduced to 60 marks for the award of Continuous Assessment marks based on Rubrics.			
Terminal Examination			
Viva Voce	Sheets and Models	100*	
*Terminal Examination in the form of Viva-voce will be conducted during the end semester for a maximum of 100 marks and subsequently be reduced to 40 marks for the award of terminal examination marks.			

Learning Resources

Text Books:

1. Drawing on the Right Side of the Brain, ISBN:9780285641785, 0285641786 Published: February 2013 Publisher: Souvenir Press Language: English Author: Betty Edwards
2. Keys to Drawing, ISBN:9781440308673, 1440308675 Published:15 August 1990 Publisher: F+W Media, Language: English Author: Bert Dodson
3. Architectural Graphics, ISBN:9781119073505, 1119073502 Published: 30 March 2015 Publisher: Wiley Language: English Author: Francis D. K. Ching
4. Machine Drawing, ISBN:9788122419177, 8122419178 Published:30 June 2009 Publisher: New Age International (P) Limited Language: English Author: K. L. Narayana
5. Materials and Design: The Art and Science of Material Selection in Product Design, ISBN:9780080982823, 0080982824 Published:19 December 2013 Publisher: Elsevier Science, Language: English Author: Michael F. Ashby, Kara Johnson
6. Architectural Model making, ISBN:9781780671727, 1780671725 Published: 2014 Publisher: Laurence King Publishing Language: English Author: Nick Dunn
7. Paper Engineering & Pop-ups For Dummies, ISBN:9780470409558, 047040955X Published: 3 March 2009 Publisher: Wiley Language: English, Author: Rob Ives
8. Interaction of Color, ISBN:9780300179354, 0300179359 Published: 28 June 2013 Publisher: Yale University Press Language: English Author: Josef Albers
9. The Designer's Dictionary of Color - ISBN:9781683350026, 1683350022 Published:11 April 2017 Publisher: ABRAMS, Incorporated Language: English Author: Sean Adams
10. Color Inspirations: More Than 3,000 Innovative Palettes from the Colour lovers Community, ISBN:9781600619458, 1600619452 Published:12 July 2011 Publisher: Adams Media Language: English, Author: Darius A Monsef
11. The Elements of Typographic Style, ISBN:9780881792058, 0881792055 Published:2004, Publisher: Hartley & Marks, Publishers Original from the University of Virginia Digitized: 10 September 2008 Language: English Author: Robert Bringhurst
12. The Anatomy of Type - A Graphic Guide to 100 Typefaces, ISBN:9780062203113, 0062203118, Published:18 December 2012 Publisher: HarperCollins Language: English, Author: Stephen Coles
13. Type Rules the Designer's Guide to Professional Typography, ISBN:9781118758663, 1118758668 Published:4 February 2014 Publisher: Wiley Language: English, Author: Ilene Strizver
14. Universal Principles of Design Revised and Updated,ISBN:9781610580656, 1610580656 Published:2010, Publisher: Rockport Publishers Language: English, Author: William Lidwell, Kritina Holden, Jill Butler
15. The Design of Everyday Things Revised and Expanded Edition, ISBN:9780465072996, 0465072992 Published:5 November 2013 Publisher: Basic Books Language: English Author: Don Norman
16. Interior Design Illustrated, ISBN:9781118090718, 1118090713 Published:20 February 2012 Publisher: Wiley Language: English Author: Francis D. K. Ching, Corky Binggeli
17. Sketching for Architecture + Interior Design, ISBN:9781780678054, 1780678053, Published:20 July 2015 Publisher: Quercus Publishing Language: English Author: Stephanie Travis

Course Designers:

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3. Mr. Vinoth Kumar Ramanathan rvkarch@tce.edu
4. Ar. S. Elangovan senarch@tce.edu

24ID210	DESIGN PROCESS	Category	L	T	P	Credit
		CFC	2	-	-	2

Preamble

Design Process is a human-centered approach to problem-solving and innovation that focuses on understanding the needs of the end user. It promotes a mindset of creativity and ideation. The overall purpose of the course is to support each student to establish a personal, reflective, and examined intellectual position in relation to design as a process of inquiry, thought, and action.

Prerequisite

NIL

Course Outcomes

On the successful completion of the course students will be able to

CO	Course Outcome	TCE Proficiency Scale	Expected Proficiency in %	Expected Attainment Level %
CO1	Visualize the concept of design, and the processes in design	TPS2	75	70
CO2	Identify qualities, skills and types of thinking and approaches for design problem solving	TPS2	75	70
CO3	Research diagrammatic tools, skills from design case examples	TPS2	75	70
CO4	Assign context based strategies for creative innovation –conceptual, formal, material, contextual, functional, computational, collaborative	TPS3	75	70
CO5	Personalize the design process in action and define the project	TPS3	75	70
CO6	Illustrate architect's design philosophies from case examples for efficiency and appropriateness	TPS3	75	70

Mapping with Programme Outcomes and Programme Specific Outcomes

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	S	L	S	M	M	M	M	L	L	L	L	M
CO2	S	S	S	M	M	S	M	M	L	L	L	M
CO3	S	S	S	M	M	S	M	S	L	L	L	M
CO4	S	L	S	M	M	M	S	S	L	M	L	M
CO5	S	L	S	M	M	S	S	S	L	M	L	M
CO6	S	L	S	M	M	M	S	S	L	M	L	M

S- Strong; M-Medium; L-Low

Assessment Pattern: Cognitive Domain

CO	CAT 1			Assignment - I			CAT 2			Assignment - II			Terminal		
TPS Scale	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
CO1	-	10	-	-			-	10	-	-			-	10	-
CO2	-	20	-	20			-	20	-	20			-	20	-

CO3	-	10	-	20			-	10	-	20			-	10	-
CO4	-	-	20		20		-	-	20		20		-	-	20
CO5	-	20	-		20		-	-	20		20		-	-	20
CO6	-	20	-		20		-	-	20		20		-	-	20

Syllabus

What is Design? – Introduction to design **–** Why design? **–** Who designs? **–** Design is collaborative, is a service, is iterative, is personal - **Stages of the Design Process –** Research **–** Proposition **–** Analysis **–** Revision; Design problems and traps for an amateur designer – nature and qualities of design problem

Modelling the Design Process and lateral thinking techniques – Double Diamond : Discover,Define,Develop,Deliver **–** Alice Agogino : Design Build Test **–** Nigel Cross : Four stage design : Exploration, Generation, Evaluation, Communication

Lateral Thinking Techniques – Creativity **–** The generation of alternatives **–** Challenging Assumptions **–** Six thinking hats **–** Brainstorming **–** Fractionation (with case examples and exercises from the studio)

Tools of the Design Process – Drawing and Sketching **–** Orthographic Projections **–** Models and Prototypes **–** Digital models and Visualizations **–** Construction drawings **–** BIM

Approaches to Design Process – Conceptual **–** Formal **–** Material **–** Contextual **–** Functional **–** Computational **–** Collaborative

Defining the Project – Discovering and analyzing the brief/program **–** User Analysis **–** Typology of project : Residential, Commercial, Public/Institutional **–** Contextual nature : Physical and Non-physical, Recording context, Analysis **–** Spatial needs : Site Spatial relationship, Spatial programmatic relationship **–** Final brief/program

The Design Process in Action – Concept Design : Initial drawings **–** Models : Sketch models, Concept models, Making models **–** Concept Development : from sketch to drawing **–** Design Development **–** Detail Design : Prototypes and mockups **–** Production design and Construction information (with case example of design process)

CASE EXAMPLES OF THE DESIGN PROCESS - International context-Enquiry into Le Corbusier's Buildings – Promenade and Montage-Strategies and priorities in Design - Indian Context-Enquiry into Charles Correa's housing language - Incrementality, Identity, Pluralism, Equity, Cost as priorities - Case studies based on: Strategies and priorities in Design - Design Inquiry, Design thinking and Design action – Attempt to retrace the design process of the designer by conventional diagrammatic tools like zoning, bubble diagrams etc. – Understanding the restriction of each tool

Learning Resources

1. Geoffrey Makstutis, Design Process in Architecture : From Concept to Completion, 2018, Laurence King Publishing Ltd.
2. Edward De Bono, Lateral Thinking : A Textbook of Creativity, Penguin Books
3. Bryan Lawson, How Designers Think : The design process demystified, Fourth edition, 2005, Architectural Press Oxford
4. Bryan Lawson, What Designers Know, First edition, 2004, Architectural Press Oxford

Course Contents and Lecture Schedule

Module No.	Topic	No. of Hours	Course Outcome
1.	**WHAT IS DESIGN**	**3**	
1.1	Introduction to Design-definition – Why design? – Who Designs - Design is collaborative, is a service, is iterative, is personal	1	CO1

1.2	Stages of the Design process : Research **–** Proposition **–** Analysis **–** Revision ; Design problems and traps for an amateur designer – nature and qualities of design problem	2	CO1
2.	**MODELLING THE DESIGN PROCESS AND LATERAL THINKING TECHNIQUES**	**6**	
2.1	Double Diamond : Discover,Define,Develop,Deliver **–** Alice Agogino : Design Build Test **–** Nigel Cross : Four stage design : Exploration, Generation, Evaluation, Communication	2	CO2
2.2	What is Creativity – The generation of alternatives **–** Challenging Assumptions **–** Six thinking hats **–** Brainstorming **–** Fractionation	4	CO2
3.	**TOOLS OF THE DESIGN PROCESS**	**3**	
3.1	Drawing and Sketching **–** Orthographic Projections **–** Models and Prototypes **–** Digital models and Visualizations **–** Construction drawings **–** BIM	3	CO3
4.	**APPROACHES TO THE DESIGN PROCESS**	**6**	
4.1	Conceptual – Daniel Libeskind; Formal – Mies Van der Rohe; Material – any example	3	CO4
4.2	Contextual; Functional; Computational; Collaborative	3	CO4
5	**DEFINING THE PROJECT**	**3**	
5.1	Discovering and analyzing the brief/program – User analysis	1	CO5
5.2	Typology of project : Residential, Commercial, Public/Institutional **–** Contextual nature : Physical and Non-physical, Recording context, Analysis	1	CO5
5.3	Spatial needs : Site Spatial relationship, Spatial programmatic relationship **–** Final brief/program	1	CO5
6	**THE DESIGN PROCESS IN ACTION**	**3**	
6.1	Concept Design : Initial drawings **–** Models : Sketch models, Concept models, Making models **–** Concept Development : from sketch to drawing **–** Design Development **–** Detail Design : Prototypes and mockups **–** Production design and Construction information	3	CO5
7	**CASE EXAMPLES OF THE DESIGN PROCESS**	**6**	
7.1	International context-Enquiry into Le Corbusier's Buildings – Promenade and Montage-Strategies and priorities in Design	2	CO6
7.2	Indian Context-Enquiry into Charles Correa's housing language - Incrementality, Identity, Pluralism, Equity, Cost as priorities	2	CO6
7.3	Case studies based on: Strategies and priorities in Design - Design Inquiry, Design thinking and Design action – Attempt to retrace the design process of the designer by conventional diagrammatic tools like zoning, bubble diagrams etc. – Understanding the restriction of each tool.	2	CO6
	Total Number of Hours	**30**	

Course Designers:

1. Prof. Dr. Jinu Louishidha Kitchley hodarch@tce.edu
2. Asst. Prof. Roshma R rraarch@tce.edu

24ID220	ART AND DESIGN EVOLUTION	Category	L	T	P	Credit
		CFC	2	-	-	2

Preamble

Students will explore the impact of various art movements in the world of interior design. They will understand how different Interior styles evolved based on the various art movements and evolution of furniture, products and materials in those.

Prerequisite

NIL

Course Outcomes

On the successful completion of the course students will be able to

CO	Course Outcome	TCE Proficiency Scale	Expected Proficiency in %	Expected Attainment Level %
CO1	Comprehend the historical evolution of interior spaces, through different styles and movements	TPS2	75	70
CO2	Debate past precedents and consider cultural, social and aesthetic values	TPS2	75	70
CO3	Recognize the significance of the transition of interior spaces with respect to innovation and technology	TPS2	75	70
CO4	Outline how power and prestige lead to varying interior styles and details	TPS2	75	70
CO5	Compute the spatial design ideologies, interior details and elements in the Modern world through case examples	TPS3	75	70
CO6	Demonstrate the various expressions through interior forms and interior elements	TPS3	75	70

Mapping with Programme Outcomes and Programme Specific Outcomes

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	S	L	M	S	L	M	S	L	L	L	L	L
CO2	S	L	S	S	L	M	S	L	L	L	L	L
CO3	S	L	S	S	M	M	S	L	L	S	L	L
CO4	S	L	M	S	L	M	S	L	L	L	L	L
CO5	S	L	S	S	L	M	S	L	L	S	L	L
CO6	S	L	S	S	L	M	S	L	L	S	L	L

S- Strong; M-Medium; L-Low

Assessment Pattern: Cognitive Domain

CO	CAT 1			Assignment - I			CAT 2			Assignment - II			Terminal		
TPS Scale	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
CO1	-	10	-		10			10			10			10	
CO2	-	10	-		10			10			10			10	
CO3	-	20	-		20			20			20			20	

CO4	-	10	-		10				10		10			10	
CO5	-	10	20			30			30			30			30
CO6	-	20	-			20			20			20			20

Syllabus

Islamic and Asian Traditions – Islamic influence in Mosques and Palaces – Mihrab, Mimbar, Minaret – Islamic influence in Spain – Islamic furnishings: rugs and geometry – Islamic influence in India and Indian furnishings **–** China: Chinese details, materials and decor, furnishings - the Forbidden City **–** Japan: details, Interior philosophy, materials and decor, traditional Japanese houses and proportioning and Japanese furnishings

Enlightenment – Renaissance in Italy: elements (palazzo, piano nobile, mural, inlyas, intarsia), Brunelleschi, Alberti, Bramante, Michaelangelo, Palladio Furniture: Credenza, Sedia, Savonarola chair, Sgabello, Dante Chair –Tudor and Jacobean, Wren, Carolean and William and Mary, Queen Anne, Georgian

Power and Prestige – Baroque and Rococo: Concept of quadrature, Quadro riportato, Ceiling paintings and details Interiors of Palace of Versailles, Louvre, Gian Lorenzo Bernini - St. Peters

The Modern World – Industrial Revolution: Iron and Glass ; England – Interiors of Paxton ; France – Interiors of Labrouste, Baltard, Eiffel **–** Victorian Style : grand staircases, carved wood paneling, decorative fireplaces, elaborate kitchens, complicated floor plans with multiple rooms, and stained glass windows **–** Aesthetic Movements : Arts and Crafts movement – Morris, Webb, Mackintosh ; **–** Craftsman Movement – Stickley and Roycrofters, Bradley, Richardson, **–** Art Nouveau : Gaudi, Behrens, Hoffmann, Loos, Tiffany and Sullivan **–** Eclecticism : Hunt, McKim Mead & White, **–** Early Skyscrapers, Wood, McMillen, Saarinen and Cranbrook Academy, Lutyens, **–** Ocean Liners

Art Movements – Frank Lloyd Wright – De Stijl: Mondrian, van Doesburg, Rietveld **–** International style: Gropius, Bauhaus, Mies van der Rohe, Le Corbusier, Aalto **–** Art Deco and Expressionism **–** Knoll and Herman Miller Furniture Company

Learning Resources

1. John Pile and Judith Gura, A History of Interior Design, Fourth Edition, 2014, John Wiley and Sons Inc.
2. Stephen Calloway and Elizabeth Cromley, The Elements of Style – A Practical Encyclopedia of Interior Architectural Details from 1485 to the Present, Revised Edition, 1996, Simon and Schuster
3. Robbie G. Blakemore, History of Interior Design and Furniture – From Ancient Egypt to Nineteenth Century Europe, 1997, John Wiley and Sons Inc.
4. Jeannie Ireland, History of Interior Design, Second edition, 2018, Bloomsbury Publishing
5. Mark Hinchman, History of Interior Architecture – Furniture, Design and Global Culture, Second Edition, 2024, Bloomsbury Publishing

Course Contents and Lecture Schedule

Module No.	Topic	No. of Hours	Course Outcome
1.	**ISLAMIC AND ASIAN TRADITIONS**	**6**	

1.1	Islamic influence in Mosques and Palaces – Mihrab, Mimbar, Minaret – Islamic influence in Spain – Islamic furnishings : rugs and geometry – Islamic influence in India and Indian furnishings	2	CO1,CO 2
1.2	China : Chinese details, materials and decor, furnishings - the Forbidden City	2	CO1,CO 2
1.3	Japan : details, Interior philosophy, materials and decor, traditional Japanese houses and proportioning and Japanese furnishings	2	CO1,CO 2
2.	**ENLIGHTENMENT**	**5**	
2.1	Renaissance in Italy: elements (palazzo, piano nobile, mural, inlyas, intarsia), Brunelleschi, Alberti, Bramante, Michaelangelo, Palladio Furniture : Credenza, Sedia, Savonarola chair, Sgabello, Dante Chair	2	CO1,CO 3
2.2	Tudor and Jacobean, Wren, Carolean and William and Mary, Queen Anne, Georgian	3	CO1,CO 3
3	**POWER AND PRESTIGE**	**3**	
3.1	Baroque and Rococo : Concept of quadrature, Quadro riportato, Ceiling paintings and details Interiors of Palace of Versailles, Louvre**,** Gian Lorenzo Bernini - St. Peters	3	CO4
4	**THE MODERN WORLD**	**10**	
4.1	Industrial Revolution : Iron and Glass ; England – Interiors of Paxton ; France – Interiors of Labrouste, Baltard, Eiffel	2	CO5
4.2	Victorian : grand staircases, carved wood paneling, decorative fireplaces, elaborate kitchens, complicated floor plans with multiple rooms, and stained glass windows	2	CO5
4.3	Aesthetic Movements : Arts and Crafts movement – Morris, Webb, Mackintosh ; Craftsman Movement – Stickley and Roycrofters, Bradley, Richardson	2	CO5
4.4	Art Nouveau : Gaudi, Behrens, Hoffmann, Loos, Tiffany and Sullivan	2	CO5
4.5	Eclecticism : Hunt, McKim Mead & White, Early Skyscrapers, Wood, McMillen, Saarinen and Cranbrook Academy, Lutyens, Ocean Liners	2	CO5
5	**ART MOVEMENTS**	**6**	
5.1	Frank Lloyd Wright – De Stijl : Mondrian, van Doesburg, Rietveld	2	CO6
5.2	International style : Gropius, Bauhaus, Mies van der Rohe, Le Corbusier, Aalto	2	CO6
5.3	Art Deco and Expressionism **–** Knoll and Herman Miller Furniture Company	2	CO6
	Total Number of Hours	**30**	

Course Designers:

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24ID230	INTERIOR DESIGN ELEMENTS AND COMPONENTS	Category	L	T	P	Credit
		CFC	1	-	2	3

Preamble

This course is designed to give students a foundational understanding of the materials, structural systems, and building components essential to interior design. Through a combined studio and theory approach, students will explore both the technical aspects and practical applications of building systems, with an emphasis on how these elements interact within an interior space. The course prepares students to make informed choices about materials and structural systems, enhancing both the aesthetic and functional qualities of their designs.

Prerequisite

NIL

Course Outcomes

On the successful completion of the course students will be able to

CO	Course Outcome	TCE Proficiency Scale	Expected Proficiency in %	Expected Attainment Level %
CO1	Comprehend foundational concepts in building forms, structural systems, and the historical evolution of building materials.	TPS2	75	70
CO2	Recognise the principles of building loads, including compression, deflection, and tension, and their impact on structural elements.	TPS2	75	70
CO3	Discuss different types of structural materials (masonry, concrete, metal) and the role of foundations and service core.	TPS2	75	70
CO4	Adapt knowledge of floor and ceiling assemblies in addressing horizontal structural units and related interior design concerns.	TPS3	75	70
CO5	Demonstrate knowledge of wall and stair systems, including load-bearing walls, frames, and design solutions for stairs and ramps.	TPS3	75	70
CO6	Practice principles of window and door selection, focusing on aspects like thermal performance, shading, and solar control for optimized interior spaces.	TPS3	75	70

Mapping with Programme Outcomes and Programme Specific Outcomes

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	S	M	S	M	M	S	S	M	M	M	L	-
CO2	S	M	S	M	M	S	S	M	M	M	L	-
CO3	S	M	S	M	M	S	S	S	M	M	L	-
CO4	S	M	S	M	L	S	S	S	M	M	L	-
CO5	S	M	S	M	L	S	S	S	S	M	L	-
CO6	S	M	S	M	L	S	S	S	S	M	L	-

S- Strong; M-Medium; L-Low

Assessment Pattern: Cognitive Domain

Cognitive Levels	CAT 1			Assignment - I			CAT 2			Assignment - II			Terminal		
TPS Scale	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
CO1		10			10			10			10			10	
CO2		10			10			10			10			10	
CO3		20			20			20			20			20	
CO4			20			20			20			20			20
CO5			20			20			20			20			20
CO6			20			20			20			20			20

Syllabus

Unit 01 - Building Forms - Introduction to Building elements Building Elements in a typical section - **Sub Substructure: Foundation** -Footings - Foundation walls- Waterproofing layer - Earth beam - Plinth beam. **Superstructure**: Ground floor slab- Walls -Load-bearing walls -Non-load-bearing walls - sill beam - litel beam -Roof lab - parapet wall - coping -

Unit 02 - Floor/Ceiling Assemblies - Introduction - Horizontal Structural Units - Floor/Ceiling Assemblies - Interior Design Concerns

Unit 03 - Walls, and Stairs - Wall Systems - Load-Bearing Walls and Framed structure - Interior Walls and Partitions - Stairs and Ramps - Stairs Introduction to Staircase, Components of Staircase, Classification of Staircase with respect to the Material Specification such as Timber, Steel, R.C.C.- Ramps – Components of Ramp and structural detail.

Unit 04 - Windows - Window Selection - Window Types - Glazing - Window Frames - Storm Windows and Screens - Thermal Transmission - Shading and Solar Control - Top lighting and Skylights - Top lighting - Components of Window Frames, Parts of Window Shutter, Classification of Windows with respect to the Material Specification such as Timber, Steel, Aluminum, Plastic, composite materials

Unit 05 - Doors - Thermal Performance - Exterior Doors - Interior Doors - Door Types - Fire Doors - Door Hardware - Introduction to Doors, Components of Door, Parts of Door Frames, Parts of Door Shutters, Classification of Door with respect to the Material Specification such as Timber, Steel, Aluminum, Plastic, composite materials

Learning Resources

1. Building Systems for Interior Designers Third Edition Corky Binggeli, ASID
2. Building Construction By S. C. Rangwala · 2009
3. Interior Design Illustrated - Third Edition By Francis D.K. Ching • Corky Binggeli

Course Contents and Lecture Schedule

Module	Topics Covered	No. of Hours	Course Outcome
1	**Building Forms - Introduction to Building Elements**	**5**	
1.1	Substructure: Foundations, Footings, Foundation Walls, Waterproofing Layer, Earth Beam, Plinth Beam	1	CO1, CO3

1.2	Superstructure : Ground Floor Slab, Load-Bearing Walls, Non-Load-Bearing Walls, Sill Beam, Lintel Beam, Roof Slab, Parapet Wall, Coping	1	CO2
1.3	Exercise - Typical Wall section - To scale drafting	3	CO3
2	**Floor/Ceiling Assemblies**	**6**	
2.1	Openings & Circulation: Horizontal Structural Units	1	CO4
2.2	Floor/Ceiling Assemblies: Types of Floors (Wooden, RCC, Steel), Ceiling Types, Finishes, and Functional Considerations	1	CO4
2.3	Interior Design Concerns: Thermal Performance, Sound Insulation, Fire Resistance	1	CO4
	Exercise - Types of floorings - To scale drafting	3	CO4
3	**Walls and Stairs**	**16**	
3.1	Wall Systems: Load-Bearing Walls, Framed Structure, Interior Walls, Partitions	1	CO5
3.2	Stairs Introduction: Stairs Introduction: Components of Stairs (Tread, Riser, Stringer), Staircase Classification by Material (Timber, Steel, RCC)	1	CO5
3.3	Ramps and Structural Details: Ramp Components, Gradient and Surface Specifications, Structural Detailing	1	CO5
3.4	Partitions : Functional and Aesthetic Design of Partitions	1	CO5
	Exercise - Types of wall - To scale drafting	3	CO5
	Exercise - Staircase - To scale drafting	6	CO5
	Exercise - Partiion- To scale drafting	3	CO5
4	**Windows**	**9**	
4.1	Window Selection: Types of Windows, Frames (Timber, Steel, Aluminum, Plastic, Composite Materials), Glazing	1	CO6
4.2	Top Lighting and Skylights: Components of Skylights, Material Specifications, Integration in Building Design	1	CO6
4.3	Thermal and Shading Considerations :Solar Control, Energy Efficiency, Thermal Transmission	1	CO6
4.4	Types of windows and details	6	CO6
5	**Doors**	**9**	
5.1	Door Types and Performance: Exterior, Interior, and Fire Doors; Door Frames and Shutters	1	CO6
5.2	Door Hardware and Components: Hinges, Locks, Handles, Closers	1	CO6
5.3	Material Classification: Timber, Steel, Aluminum, Plastic, Composite Materials	1	CO6
5.4	Types of doors and details	6	CO6
	Total Hours	**45**	

Course Designers:

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24ID240	2D AND 3D REPRESENTATION	Category	L	T	P	Credit
		CFC	1	-	2	3

Preamble

The course introduces the students to learn the drafting and modelling techniques in 2D and 3D respectively. The course focuses on the discipline of Computer Technology, its types and appropriate software usage in Interior Design. This course helps the students to effectively and accurately communicate design details and visualize the analytical and theoretical portions of design in digitized graphical modes for client approval and site execution.

Prerequisite

NIL

Course Outcomes

On the successful completion of the course students will be able to

CO	Course Outcome	TCE Proficiency Scale	Expected Proficiency in %	Expected Attainment Level %
CO1	Recognize the software, hardware and server storage service components of computer technologies in architecture. (Computer Knowledge)	TPS2	75	70
CO2	Identify the Two-Dimensional and Three-Dimensional geometric and solid modelling techniques respectively using appropriate 2D software and 3D modelling and rendering techniques.	TPS2	75	70
CO3	Practice the proficiency of CAD tools to design and develop 2D drawings	TPS3	75	70
CO4	Demonstrate the Technical Drafting skills, communicate the drawings of precision in drafting to achieve realistic outputs in 2D Architectural drawings	TPS3	75	70
CO5	Demonstrate the analytical process, proficient detailing and assembly modelling of craftsmanship on the specified material.	TPS3	75	70
CO6	Demonstrate proficiency of rendering properties, Plug-in techniques to achieve realistic outputs in 3D Modelling.	TPS3	75	70

Mapping with Programme Outcomes and Programme Specific Outcomes

Cos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	L	S	-	-	-	-	M	S	-	S	M	M
CO2	L	S	-	-	-	-	M	S	-	S	M	M
CO3	-	S	L	M	L	L	S	S	S	S	S	S
CO4	-	S	M	M	M	L	S	S	S	S	S	S
CO5	M	S	M	M	S	S	S	S	S	S	S	S

CO6	-	S	M	M	L	S	S	S	M	S	S	S

S- Strong; M-Medium; L-Low

Assessment Pattern: Cognitive Domain

CO	Assignment - I			Assignment - II			Terminal (Viva-Voce)		
TPS Scale	1	**2**	**3**	1	**2**	**3**	1	**2**	**3**
CO1		10			10			10	
CO2		10			10			10	
CO3			20			20			20
CO4			20			20			20
CO5			20			20			20
CO6			20			20			20

Syllabus

Unit I – INTRODUCTION TO COMPUTER TERMINOLOGIES AND CONCEPTS OF MODEL MAKING IN INTERIOR DESIGN – Introduction to computer terminologies and operating principles of a computer system; Introduction to free and licensed software – their types and application in architecture and design; File management – opening, saving, storing, manipulation etc.; File formats and interdisciplinary software functionality; familiarizing the use of scanners, printers, plotters etc. Contemporary advancements in computer technologies; Understanding a system configuration and installation of architecture/design software; Introduction to cloud computing and web services. Introduction to concepts of model making and various materials used for model making to understand material parameters in design, in terms of finishes, colour, surface, quality, etc.

Unit II – 2D DRAFTING & REPRESENTATION – Introduction to layers, styles, dimensions, texts, templates, blocks, layouts, UCS, hatching utilities, assigned colour, symbol library, manipulation for accurate drawings. Introduction to creating tool palettes, External reference drawing files, creating and using Dynamic Blocks, architectural components such as doors, windows, stairs and furniture such as chairs and tables. Interior layout Plans, Elevations, Sections, Reflected Ceiling Plans, Dimensions, Lettering to produce detailed and precise technical drawings. Rendering and Presentation. Introduction to paper space or layout; Adding sheet views, Adding callout blocks. Proficiency in Viewports; Scaling; Plotting and Printing. (Assignment to be coordinated with Program Core course)

Unit III – 3D MODELLING AND REPRESENTATION – Introduction to model-making methods including cutting, assembling, and finishing techniques. Usage of hand tools and hand-held power tools, safety practices. Importance of Scale and Proportion understanding in model making. Knowledge on Material, Structural, Human scale and Ergonomics. Model making techniques like hand cutting, laser cutting 3D printing, CNC Machining, etc. Introducing the techniques to create miniature versions of furniture, fixtures, joineries and decor elements. Techniques for designing miniature upholstery and soft elements. Documentation and representation of final product, innovative representational mimicry. Understanding of model durability and portability to ensure it remains intact and presentable. (Assignment to be coordinated with Program Core course)

Unit IV – 3D VISUALISATION – Introduction to Vector Graphics and Raster Graphics. Proficiency in 3D modelling programs - Introduction to Rendering Plugins: to create realistic images of designs including textures, lighting, and material applications. Virtual Reality (VR) Skills in VR

applications to provide immersive experiences.

Learning Resources

1. AutoCAD, “Computer Aided Design guide for Architecture, Engineering and construction”,process, 2012.
2. AutoCAD 2021 for the Interior Designer, Dean Muccio, SDC Publications, 2020.
3. Watt, “Fundamentals of Three-Dimensional Computer Graphics”, Addison Wesley, Massachusetts, 1989.
4. Jannsen, Constructional Drawings & Architectural models, Karl Kramer Verlag Stuttgart, 1973.
5. Interior Design Visual Presentation: A Guide to Graphics, Models and Presentation Techniques, Maureen Mitton, John Wiley & Sons, 2012.
6. SketchUp 2014 for Architectural Visualization, Thomas Bleicher, Robin de Jongh, 2010.
7. SketchUp for Interior Design: 3D Visualising, Designing, and Space Planning, Lydia Cline, John Wiley and Sons, 2014.
8. Harry W.Smith, The art of making furniture in miniature, E.P.Duttor Inc., New York, 1982.
9. BENN, The book of the House, Ernest Benn Limited, London.
10. Construction and Detailing for Interior Design (Portfolio Skills), Drew Plunkett, Laurence King Publishing, 2010.
11. Materials and Interior Design (Portfolio Skills), Lorraine Farrelly, Rachael Brown, Laurence King Publishing, 2012.

Course Contents and Lecture Schedule

Module No.	Topic	No. of Hours	Course Outcome
1.	**INTRODUCTION TO COMPUTER TERMINOLOGIES AND CONCEPTS OF MODEL MAKING IN INTERIOR DESIGN**	**3**	
1.1	Introduction to computer terminologies and operating principles of a computer system; Introduction to free and licensed software – their types and application in architecture and design	1	CO1
1.2	File management – opening, saving, storing, manipulation etc.; File formats and interdisciplinary software functionality; familiarizing the use of scanners, printers, plotters etc. Contemporary advancements in computer technologies; Understanding a system configuration and installation of architecture/design software	1	CO1
1.3	Introduction to cloud computing and web services. Introduction to concepts of model making and various materials used for model making to understand material parameters in design, in terms of finishes, colour, surface, quality, etc.	1	CO2
2.	**2D DRAFTING & REPRESENTATION**	**12**	
2.1	Introduction to layers, styles, dimensions, texts, templates, blocks, layouts, UCS, hatching utilities, assigned colour, symbol library, manipulation for accurate drawings.	3	CO3
2.2	Introduction to creating tool palettes, External reference drawing files, creating and using Dynamic Blocks	3	CO3
2.3	Architectural components such as doors, windows, stairs and furniture such as chairs and tables.	1	CO4

2.4	Interior layout Plans, Elevations, Sections, Reflected Ceiling Plans, Dimensions, Lettering to produce detailed and precise technical drawings. Rendering and Presentation.	3	CO4
2.5	Introduction to paper space or layout; Adding sheet views, Adding callout blocks. Proficiency in Viewports; Scaling; Plotting and Printing.	2	CO4
Assignment 1 (Assignment to be coordinated with Program Core course)		4	CO1, CO2, CO3 & CO4
3	**3D MODELLING AND REPRESENTATION**	**20**	
3.1	Introduction to model-making methods including cutting, assembling, and finishing techniques. Usage of hand tools and hand-held power tools, safety practices.	4	CO2
3.2	Importance of Scale and Proportion understanding in model making. Knowledge on Material, Structural, Human scale and Ergonomics.	2	CO5
3.3	Model making techniques like hand cutting, laser cutting 3D printing, CNC Machining, etc.	4	CO5
3.4	Introducing the techniques to create miniature versions of furniture, fixtures, joineries and decor elements. Techniques for designing miniature upholstery and soft elements	6	CO5
3.5	Documentation and representation of final product, innovative representational mimicry. Understanding of model durability and portability to ensure it remains intact and presentable.	4	CO5
Assignment 2 (Assignment to be coordinated with Program Core course)		4	CO1, CO2, CO5
4	**3D VISUALISATION**	**10**	
4.1	Introduction to Vector Graphics and Raster Graphics. Proficiency in 3D modelling programs	3	CO2 & CO6
4.2	Introduction to Rendering Plugins: to create realistic images of designs including textures, lighting, and material applications.	3	CO6
4.3	Virtual Reality (VR) Skills in VR applications to provide immersive experiences.	4	CO6
	Total No. of Hours	**45**	

List of Experiments/Activities with CO Mapping

	EXERCISE TOPIC	Subject integration
1	Assignment 1 – Coordinating with Program Core course	CO1, CO2, CO3 & CO4
2	Assignment 2 – Coordinating with Program Core course	CO1, CO2, CO5 & CO6

Course Designers

1. Prof. Dr. Jinu Louishidha Kitchley hodarch@tce.edu
2. Asst. Prof. M Vishal mvlarch@tce.edu

24ID250	DESIGN OF INTERIOR SPACES	Category	L	T	P	Credit
		PCC	-	4	12	12

Preamble

This course focuses on Design as a process. It is designed to equip students with essential techniques and thought processes of a Designer – at a beginner level.
They will be able to develop their designs from concept to production, and enhance details, assembly of parts and working mechanism of product/furniture/singe space, while effectively using materials and industry standard finishes with the knowledge of costing.

Prerequisite

NIL

Course Outcomes

On the successful completion of the course students will be able to

CO #	Course Outcome Statement	TCE Proficiency Scale	Expected Proficiency in %	Expected Attainment Level %
CO1	Demonstrate the kit of parts and the assembly mechanism to construct an object/space as a whole	TPS3	75	70
CO2	Ascertain materials and finishes and the production techniques to build the object/space as a whole	TPS3	75	70
CO3	Characterise the program requirement of the product or space based on user study	TPS4	75	70
CO4	Design a product/space based on a brief/program requirement	TPS6	75	70
CO5	Develop construction techniques by exploring the production process and mechanisms	TPS6	75	70
CO6	Investigate and communicate thoughts and ideas by means of presentations, both visually and through narration	TPS4	75	70

Mapping with Programme Outcomes and Programme Specific Outcomes

Cos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	S	S	S	M	M	M	S	S	S	S	L	L
CO2	S	S	S	M	S	M	S	M	S	S	L	L
CO3	S	L	M	S	M	S	L	M	L	L	L	L
CO4	S	S	S	M	M	S	S	S	S	S	L	L
CO5	S	S	S	M	M	S	S	S	S	S	L	L
CO6	S	S	S	M	M	S	S	S	S	S	L	L

S- Strong; M-Medium; L-Low

Assessment Pattern: Cognitive Domain

CO	Continuous Assessment (Reviews)						Terminal (Viva-Voce)					
TPS Scale	1	2	3	4	5	6	1	2	3	4	5	6

CO1			10						10			
CO2			10						10			
CO3				20						20		
CO4						20						20
CO5						30						30
CO6				10						10		

Syllabus

Spatial Design Understanding

The studio will focus on designing various single spaces and understanding spatial organisation, in terms of allocation of activities, location of relevant furniture and the design of said space for the specific activity/ies. Students will enact activities in a 1:1 scale space and determine the requirements.

Detail Design of a Furniture

The studio will focus on a single furniture unit design, a wardrobe or cabinet design, based on user analysis, functional requirement and real world materiality and details.

The studio will explore the details of fixtures, hardware necessary, working mechanisms, material finishes and costing; it will also focus on detail drawings of the product/furniture, along with exploded isometric views of the assembly of parts and mechanism. Emphasis on the production techniques on a mass production level.

Kitchen Design

The studio will focus on the design of kitchen interiors, based on user analysis, work triangle, real world materiality and details. Various kitchen organisations like L-shaped, U-shaped, island kitchens, will be explored.

The studio will explore cabinetry details along with hardware and its adjoining mechanisms, with ample lighting and electrical details, and plumbing details, various storage and display units; it will focus on detail drawings of all the cabinets and accessories, along with exploded isometric views of the assembly of parts and mechanism.

Learning Resources

1. Joseph de Chiara, Julius Panero, Martin Zelnik, Time-Saver Standards for Interior Design and Space Planning, 2001, Om Books
2. Ernst Neufert, Neufert Architect's Data, Fifth Edition, 2019, John Wiley and Sons
3. Gopal Dwivedi, Modular Kitchen Planning & Designing Guide: A-Z Modular Kitchen Guide for Indian Homes, 2020, Notion Press
4. Gopal Dwivedi, Modular Wardrobe Planning & Designing Guide: A-Z Modular Wardrobe Guide for Indian Homes, 2022, Notion Press
5. Chris Grimley, Mimi Love, The Interior Design Reference & Specification Book, updated and revised, 2018, Rockport Publishers
6. Frida Ramstedt, The Interior Design Hand book: Furnish, Decorate, and Style your Space, 2020, Clarkson Potter
7. Natalie Badenduck, Interior Design Concept: Critical practices, Processes and Explorations in Interior Architecture and Design, 2022, Routledge

List of Experiments/Activities with CO Mapping

Module No.	Details	No. of Weeks	Course Outcome
1.	**SPATIAL DESIGN UNDERSTANDING**	**2 Weeks**	CO1,CO2,CO3 CO4,CO5.CO6
	Creatively designing spaces according to user		

	requirements – functional requirements met – 3D block models – Real scale modelling of space using tape, chalk – Enacting of activities to determine the spatial requirement		
2.	**DETAIL DESIGN OF A FURNITURE**	**4 Weeks**	CO1,CO2,CO3 CO4,CO5.CO6
	User analysis – functional requirement – detailed design – exploded isometric view – material finishes – production techniques – working mechanism – costing		
3.	**KITCHEN DESIGN**	**9 Weeks**	CO1,CO2,CO3 ,CO4,CO5.CO 6
	User analysis – functional requirement – work triangle – detailed drawings – sectional elevations – materials and finishes – lighting and electrical details – plumbing details – individual cabinetry details – fixture details – exploded isometric views – joinery modelling with actual materials – model with stationery materials		
*All prototypes and 3D modelling will be integrated with the CFC 24ID240 : 2D and 3D Representation, during the course.			
	Total Number of Weeks	**15 Weeks**	

Phases	**Deliverables**	**Marks**	**Course Outcomes**
Continuous Assessment			
Review 1	Deliverables as per the studio requirement	100*	
Review 2		100*	
Review 3		100*	
*During the course of the semester, four reviews will be conducted. Each review will be evaluated for 100 marks and subsequently be reduced to 60 marks for the award of Continuous Assessment marks based on Rubrics.			
Terminal Examination			
Viva-Voce	Sheets & models	100*	
*Terminal Examination in the form of Viva voce will be conducted during the end semester for a maximum of 100 marks and subsequently be reduced to 40 marks for the award of terminal examination marks.			

Course Designers:

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24ID310	ENVIRONMENTAL STUDIES IN INTERIOR DESIGN

Category	L	T	P	Credit
CFC	2	-	-	2

Preamble

This course introduces students to environmental principles relevant to interior design, focusing on ecosystems, resource management, and sustainability. It equips students with the knowledge to understand environmental challenges and apply sustainable strategies in interior projects. Emphasis is placed on responsible material selection, energy and water efficiency, and Environmental Impact Assessment (EIA) in the context of interior spaces.

Prerequisite

Nil

Course Outcome

On successful completion of the course, students will be able to

CO	Course Outcome	TCE Proficiency Scale	Expected Proficiency in %	Expected Attainment Level %
CO1	Describe the multidisciplinary nature of environmental studies and explain the structure and function of ecosystems and biodiversity relevant to interior.	TPS2 10%	70	70
CO2	Identify sources, cycles, and conservation methods of water and explain their relevance in the planning and management of interior spaces.	TPS2 10%	70	70
CO3	Discuss and explain environmental issues associated with interior design, including pollution, energy use, and material impact.	TPS2 20%	70	70
CO4	Apply the principles of sustainable design such as ecological planning, circular economy, and environmental conservation in interior spaces.	TPS3 20%	75	70
CO5	Demonstrate sustainable and energy-efficient strategies in interior design to reduce environmental impact, focusing on materials, systems, and waste management.	TPS3 20%	75	70
CO6	Investigate environmental assessment techniques like Environmental Impact Assessment (EIA) and prepare documentation, report, and design proposals for eco-friendly interior projects.	TPS4 20%	75	70

Mapping with Programme Outcomes and Programme Specific Outcomes

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	S	L	L	M	S	M	M	L	M	L	L	L
CO2	M	L	M	L	S	S	M	L	L	L	L	L
CO3	L	L	M	M	S	S	M	L	L	M	L	L
CO4	M	L	L	L	S	S	L	M	L	L	L	M
CO5	M	M	L	L	S	M	S	L	L	M	L	L
CO6	M	M	M	L	S	S	L	L	L	M	L	L

S- Strong; M-Medium; L-Low

Assessment Pattern: Cognitive Domain

Cognitive Levels	CAT 1			Assignment 1			CAT 2			Assignment 2			Terminal		
TPS Scale	**2**	**3**	**4**	**2**	**3**	**4**	**2**	**3**	**4**	**2**	**3**	**4**	**2**	**3**	**4**
CO1	25			25									10		
CO2	25			25									10		
CO3	25			25			25			25			20		
CO4		25			25			25			25			20	
CO5								25			25			20	
CO6									25			25			20

Syllabus

Unit 01 - Ecosystem & Biodiversity – Multidisciplinary nature of environment – need for public awareness – Concept of ecosystems – structure, function, components, energy flow, ecological succession – Biodiversity – types, values, bio-geographical classification, hot spots, threats – Concepts of ecological planning, conservation approaches, and disaster management.

Unit 02 - Water Supply Systems – Water Sources and Use: Water Sources and Use, Hydrologic Cycle & Water Management, Water Conservation & Protection – Water Distribution: Municipal Water Supply & Distribution Systems, Water Quality & Treatment, Hot and Chilled Water Systems, Gas Supply and Distribution Planning and Environmental context.

Unit 03 - Environmental Issues in Interior Design – Introduction to environmental issues in the built environment: pollution, resource depletion, and waste generation — with emphasis on the role of interior design decisions – Material-related impacts: indoor air pollution, VOC emissions, overuse of synthetic and non-renewable finishes — causes and design-based solutions – Energy and water usage in interiors: lighting, HVAC, fixtures — challenges and energy-efficient alternatives in interior design – Waste generation and lifecycle thinking: design choices that influence construction waste, furniture disposal, material reuse.

Unit 04 - Sustainable Approaches in Interior Design – Circular economy in interior design: principles, reuse strategies, sustainable material sourcing, and case examples – Ecological and environmental planning for interior projects: integrating environmental principles into residential, commercial, and institutional interior spaces – Environmental Impact Assessment (EIA) in interior design: components, methods, and how EIA applies to interior projects – Sustainable interior project case study: analysis of zero energy buildings and green-certified interiors – Environmental documentation and professional roles: preparing reports, drawings for environmental clearance, role of interior designers in multidisciplinary green projects.

Course Contents and Lecture Schedule

Module No	Topic	No. of Lecture Hours	Course Outcome
1	**Ecosystem & Biodiversity**	**4**	
1.1	Multidisciplinary nature of environment – need for public awareness	1	CO1
1.2	Concept of ecosystems – structure, function, components, energy flow, ecological succession	1	CO1
1.3	Biodiversity – types, values, bio-geographical classification, hot spots, threats	1	CO1
1.4	Concepts of ecological planning, conservation approaches, and disaster management	1	CO1, CO4

2	**Water supply Systems**	**6**	
2.1	Water Sources and Use: Water Sources and Use, Hydrologic Cycle & Water Management, Water Conservation & Protection	3	CO2
2.2	Water Distribution: Municipal Water Supply & Distribution Systems, Water Quality & Treatment, Hot and Chilled Water Systems, Gas Supply and Distribution Planning and Environmental context	3	CO2, CO3
3	**Environmental Issues in Interior Design**	**10**	
3.1	Introduction to environmental issues in the built environment: pollution, resource depletion, and waste generation — with emphasis on the role of interior design decisions	3	CO3
3.2	Material-related impacts: indoor air pollution, VOC emissions, overuse of synthetic and non-renewable finishes — causes and design-based solutions	3	CO3, CO4
3.3	Energy and water usage in interiors: lighting, HVAC, fixtures — challenges and energy-efficient alternatives in interior design	2	CO3, CO5
3.4	Waste generation and lifecycle thinking: design choices that influence construction waste, furniture disposal, material reuse	2	CO4, CO5
4	**Sustainable Approaches in Interior Design**	**10**	
4.1	Circular economy in interior design: principles, reuse strategies, sustainable material sourcing, and case examples	2	CO4, CO5
4.2	Ecological and environmental planning for interior projects: integrating environmental principles into residential, commercial, and institutional interior spaces	2	CO4, CO5
4.3	Environmental Impact Assessment (EIA) in interior design: components, methods, and how EIA applies to interior projects	2	CO5, CO6
4.4	Sustainable interior project case study: analysis of zero energy buildings and green-certified interiors	2	CO5, CO6
4.5	Environmental documentation and professional roles: preparing reports, drawings for environmental clearance, role of interior designers in multidisciplinary green projects	2	CO5, CO6
	Total Hours	**30**	

Learning Resources

1. Perspective in Environmental studies A.Kaushi and CP Kaushi, New age International (P) Limited Publishers.2014.
2. Building Systems for Interior Designers by Corky Binggeli. Third Edition.
3. B.K.Sharma&H.Kaur, An Introduction to Environmental pollution, GOEL Publishing House, Meerut First Edition, 1997 (Unit II & IV).
4. Wright & Nebel, Environmental science towards a sustainable future, Prentice Hall of India Ltd, 2000.
5. Principles of Geographical Information Systems for Land Resource Assessment — P. A. Burrough.

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24ID320	INTERIOR SYSTEMS : PLUMBING AND FIRE SERVICES

Category	L	T	P	Credit
CFC	2	-	-	2

Preamble

Buildings are complex structures that require well-designed and integrated interior systems to ensure functionality, safety, and comfort. This course provides a comprehensive introduction to key interior systems, including plumbing as well as fire protection and communication systems. Students will explore the principles, design considerations, installation practices, and maintenance of these critical building systems. The course will emphasize sustainability, energy efficiency, and compliance with relevant codes and standards.

Prerequisite

NIL

Course Outcomes

On the successful completion of the course students will be able to

CO	Course Outcome Statement	TCE Proficiency Scale	Expected Proficiency in %	Expected Attainment Level %
CO1	Recognize the principles, components, and functions of plumbing and fire protection systems in buildings.	TPS2 10%	70	70
CO2	Identify and explain key regulations and safety standards governing interior systems.	TPS2 15%	70	70
CO3	Explain how plumbing and fire protection systems interact within a building's overall infrastructure.	TPS2 15%	70	70
CO4	Adapt knowledge of system installation, operation, and maintenance procedures to ensure proper functionality and safety.	TPS3 20%	70	70
CO5	Implement sustainable practices to optimize the efficiency and environmental impact of interior systems.	TPS3 20%	70	70
CO6	Produce conceptual layouts for plumbing, and fire protection systems based on building requirements.	TPS3 20%	70	70

Mapping with Programme Outcomes and Programme Specific Outcomes

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	M	L	L	L	L	L	L	L	L	M	L	S
CO2	M	L	L	L	M	S	L	L	L	M	L	S
CO3	M	M	M	L	M	S	L	L	L	S	L	S
CO4	M	M	M	L	M	S	S	L	L	S	L	S
CO5	M	L	L	L	S	M	S	L	L	S	L	S
CO6	M	M	M	L	S	S	L	S	S	S	L	S

S- Strong; M-Medium; L-Low

Assessment Pattern: Cognitive Domain

Cognitive Levels	CAT 1		Assignment 1		CAT 2		Assignment 2		Terminal	
TPS Scale	**2**	**3**	**2**	**3**	**2**	**3**	**2**	**3**	**2**	**3**
CO1	10		10		10		10		10	
CO2	20		10		20		10		15	
CO3	20		10		20		10		15	
CO4		20		10		20		10		20
CO5		20		10		20		10		20
CO6		10		50		10		50		20

Syllabus

Plumbing basics – Water distribution system – Service pipes and connections – Water metre and valves – Storage tanks **Sanitary waste systems** – pipes and accessories – traps – vents – fresh air inlets – floor drains **Plumbing systems** – single stack – one pipe – single stack partially ventilated – two pipe **Treating and recycling wastewater** – greywater recycling – septic systems – aerobic treatment units – solid waste systems

Plumbing fixtures and appliances – Fixtures - Water closets – operation – codes – water conserving toilets – composting toilets – ejector toilets – Urinals – Bidets – Lavatories Sinks – Faucets – Bathtubs – Accessibility and safety – Bathtub controls – Bathtub styles – Showers – codes and safety – Shower enclosures – showerheads and controls Steam rooms and saunas – Residential bathroom design – Public toilet rooms design – drinking fountain **Appliances** – Kitchen sinks and faucets, dishwashers, laundry areas : cloth washers and dryers

Fire Safety Design - Basic principles : fire risk, combustion, fire triangle – fire safety codes and standards – occupancy hazard classification **Means of egress** – low rise and high rise buildings – egress components – exit access – exits – passageways – exit discharges – exit signs – travel distance and dead end corridors – exit stairs – areas of refuge – elevators and escalators – vertical openings – horizontal exits **Protecting the building** – compartmentation – fire barriers – concealed spaces – fire doors and windows – fire dampers and draft stops – fires tops **Materials and fire protection** – finish classes and test ratings – smoke management and control systems – fire detection systems – fire alarm systems **Fire suppression systems** – sprinkler systems – sprinkler heads and piping – standpipes and hoses – portable fire extinguishers

Communication and Security - Signal systems – data and communications wiring – telecommunication and security systems – intrusion detection – automation and intelligent building controls

Course Contents and Lecture Schedule

Module No.	Topic	No. of Hours	Course Outcome
1.	**PLUMBING BASICS**	**8**	
1.1	Water distribution system – Service pipes and connections – Water metre and valves – Storage tanks	2	CO1, CO2
1.2	Sanitary waste systems – pipes and accessories – traps – vents – fresh air inlets – floor drains	2	CO1, CO2
1.3	Plumbing systems – single stack – one pipe – single stack partially ventilated – two pipe	2	CO1, CO2, CO3
1.4	Treating and recycling wastewater – greywater recycling – septic systems – aerobic treatment units – solid waste systems	2	CO1, CO2, CO3, CO4, CO5
2.	**PLUMBING FIXTURES AND APPLIANCES**	**10**	
2.1	Water closets – operation – codes – water conserving toilets – composting toilets – ejector toilets – Urinals – Bidets - Lavatories	2	CO1, CO2, CO4

2.2	Sinks – Faucets – Bathtubs – Accessibility and safety – Bathtub controls – Bathtub styles – Showers – codes and safety – Shower enclosures – showerheads and controls	2	CO1, CO2, CO4
2.3	Steam rooms and saunas – Residential bathroom design – Public toilet rooms design – drinking fountain	2	CO1, CO2, CO3, CO4
2.4	Appliances – Kitchen sinks and faucets, dishwashers, laundry areas : cloth washers and dryers	2	CO1, CO2, CO3, CO4
2.5	Plumbing Layouts	2	CO6
4.	**FIRE SAFETY DESIGN**	**10**	
4.1	Basic principles : fire risk, combustion, fire triangle – fire safety codes and standards – occupancy hazard classification	2	CO1, CO2
4.2	Means of egress – low rise and high rise buildings – egress components – exit access – exits – passageways – exit discharges – exit signs – travel distance and dead end corridors – exit stairs – areas of refuge – elevators and escalators – vertical openings – horizontal exits	2	CO1, CO2, CO3, CO4
4.3	Protecting the building – compartmentation – fire barriers – concealed spaces – fire doors and windows – fire dampers and draft stops - firestops	2	CO1, CO2, CO3, CO4
4.4	Materials and fire protection – finish classes and test ratings – smoke management and control systems – fire detection systems – fire alarm systems	2	CO1, CO2, CO3, CO4, CO5
4.5	Fire suppression systems – sprinkler systems – sprinkler heads and piping – standpipes and hoses – portable fire extinguishers Fire layouts	2	CO1, CO2, CO3, CO4, CO5, CO6
5	**COMMUNICATION AND SECURITY**	**2**	
5.1	Signal systems – data and communications wiring – telecommunication and security systems – intrusion detection – automation and intelligent building controls	2	CO1, CO2, CO3, CO4
	Total Number of Hours	**30**	

Learning Resources

1. Corky Binggeli, ASID, Building Systems for Interior Designers, Third Edition, 2016, John Wiley & Sons
2. B C Punmia, Building Construction, Tenth Edition, 2012, Laxmi Publications Ltd.

Course Designers:

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24ID330	MATERIALS IN INTERIOR DESIGN

Category	L	T	P	Credit
CFC	1	-	2	3

Preamble

This subject introduces students to key materials used in interior design, focusing on their physical properties, metaphysical meanings, and functional applications. Through case studies and practical exercises, students will understand how material choices influence aesthetics, sustainability, and user experience. The course encourages the thoughtful and innovative application of materials in diverse interior contexts.

Prerequisite

Nil

Course Outcome

On successful completion of the course, students will be able to

CO	Course Outcome	TCE Proficiency Scale	Expected Proficiency in %	Expected Attainment Level %
CO1	Describe the metaphysical and cultural dimensions of materials and their emotional and symbolic roles in interior spaces.	TPS2 10%	75	70
CO2	Explain the sustainable characteristics, environmental impact, and tactile qualities of materials	TPS2 10%	75	70
CO3	Discuss the physical, thermal, acoustic, and mechanical properties of various materials used in interiors.	TPS2 20%	75	70
CO4	Demonstrate material choices that affect design aesthetics, construction feasibility, and functional performance in different spatial contexts.	TPS3 20%	75	70
CO5	Apply knowledge of material properties to select and integrate appropriate materials for surface finishes, spatial divisions, and furniture elements.	TPS3 20%	75	70
CO6	Experiment through practical techniques and innovative methods in handling, fixing, and composing materials to create effective, expressive, and contextually relevant interior environments.	TPS4 20%	75	70

Mapping with Programme Outcomes and Programme Specific Outcomes

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	S	M	S	M	S	L	S	L	L	S	M	L
CO2	S	M	S	L	S	S	S	L	L	M	L	L
CO3	L	S	S	L	M	L	L	S	M	M	L	M
CO4	M	M	S	M	L	L	M	S	M	S	M	L
CO5	M	L	M	S	L	L	S	M	L	M	L	M
CO6	L	M	L	M	M	S	L	M	L	M	M	L

S- Strong; M-Medium; L-Low

Assessment Pattern: Cognitive Domain

Cognitive Levels	CAT 1			Assignment 1			CAT 2			Assignment 2			Terminal		
TPS Scale	**2**	**3**	**4**	**2**	**3**	**4**	**2**	**3**	**4**	**2**	**3**	**4**	**2**	**3**	**4**
CO1	10			10			10			10			10		
CO2	10			10			10			10			10		
CO3	20			10			20			10			20		
CO4		20			10			20			10			20	
CO5		20			10			20			10			20	
CO6			20			50			20			50			20

Syllabus

Unit 01 - Wood – Metaphysical aspects of wood in interiors –Warmth, texture, emotional connect – Properties of wood – Physical (grain, moisture), thermal, acoustic – Applications of wood – Furniture, flooring, ceiling, panelling – Case Studies – Vernacular and contemporary interior spaces.

Unit 02 - Concrete – Metaphysical Aspects of concrete – Brutalist aesthetic, honesty of material – Properties of concrete – Compressive strength, thermal mass, texture, finishes (exposed, polished) – Applications of concrete – Flooring, walls, counters, washbasins, precast elements – Case Studies – Tadao Ando, Indian concrete interiors.

Unit 03 - Bamboo – Metaphysical Aspects of bamboo – Sustainability, flexibility, lightness – Properties of bamboo – Tensile strength, thermal behaviour, renewability – Applications of bamboo – Partition walls, ceilings, furniture, cladding – Case Studies – Bamboo-based eco-interiors, Venu Shilpa.

Unit 04 - Stone – Metaphysical Aspects of stone – Permanence, grounding, cultural meaning – Properties of stone – Hardness, porosity, finishes (honed, flamed, polished) – Applications of stone – Wall cladding, flooring, counters, columns – Case Studies –
Use of sandstone, marble, granite in luxury & heritage interiors.

Unit 05 - Glass – Metaphysical Aspects of glass – Transparency, openness, transformation with light – Properties of glass – Fragility, light transmission, insulation, safety – Applications of glass – Windows, partitions, balustrades, decorative glass (etched, stained, tinted) – Case Studies – Usage in modern minimal and retail interiors.

Unit 06 - Brick – Metaphysical Aspects of brick – Earthy feel, rhythm, warmth – Properties of brick – Thermal mass, texture, modularity, compressive strength – Applications of brick – Exposed brick walls, curved walls, arches, accents – Case Studies: Laurie Baker, contemporary exposed brick interiors.

Unit 07 - Metal – Metaphysical Aspects of metal – Industrial chic, strength, elegance – Properties of metal – Conductivity, corrosion resistance, finish types – Applications of metal – Stair railings, partitions, fixtures, furniture frames – Case Studies: Laurie Baker, contemporary exposed brick interiors.

Unit 08 - Gypsum – Metaphysical Aspects of gypsum – Lightness, minimalism, fluidity in form – Properties of gypsum – Fire resistance, sound insulation, smoothness, flexibility in shaping – Applications of gypsum – False ceilings, drywall partitions, moldings, niches – Case Studies: Pop ceilings in residential interiors, office design use.

Course Contents and Lecture Schedule

Module. No	Topic	No. of Lecture Hours	Course Outcome
1	**Wood**	**8**	
1.1	Metaphysical aspects of wood in interiors –Warmth, texture, emotional connect	1	CO1, CO2
1.2	Properties of wood – Physical (grain, moisture), thermal, acoustic	1	CO1, CO2, CO3
1.3	Applications of wood – Furniture, flooring, ceiling, panelling	2	CO1, CO2, CO3, CO4
1.4	Case Studies – Vernacular and contemporary interior spaces	2	CO1, CO2, CO3, CO4, CO5, CO6
1.5	Exercise	2	CO1, CO2, CO3, CO4, CO5, CO6
2	**Concrete**	**7**	
2.1	Metaphysical Aspects of concrete – Brutalist aesthetic, honesty of material	1	CO1, CO2
2.2	Properties of concrete – Compressive strength, thermal mass, texture, finishes (exposed, polished)	1	CO1, CO2, CO3
2.3	Applications of concrete – Flooring, walls, counters, washbasins, precast elements	1	CO1, CO2, CO3, CO4
2.4	Case Studies – Tadao Ando, Indian concrete interiors	2	CO1, CO2, CO3, CO4, CO5, CO6
2.6	Exercise	2	CO1, CO2, CO3, CO4, CO5, CO6
3	**Bamboo**	**5**	
3.1	Metaphysical Aspects of bamboo – Sustainability, flexibility, lightness	1	CO1, CO2
3.2	Properties of bamboo – Tensile strength, thermal behaviour, renewability	1	CO1, CO2, CO3
3.3	Applications of bamboo – Partition walls, ceilings, furniture, cladding	1	CO1, CO2, CO3, CO4
3.4	Case Studies – Bamboo-based eco-interiors, Venu Shilpa Foundation	1	CO1, CO2, CO3, CO4,
3.5	Exercise	1	CO1, CO2, CO3, CO4, CO5, CO6
4	**Stone**	**5**	
4.1	Metaphysical Aspects of stone – Permanence, grounding, cultural meaning	1	CO1, CO2
4.2	Properties of stone – Hardness, porosity, finishes (honed, flamed, polished)	1	CO1, CO2, CO3
4.3	Applications of stone – Wall cladding, flooring, counters, columns	1	CO1, CO2, CO3, CO4

4.4	Case Studies – Use of sandstone, marble, granite in luxury & heritage interiors	1	CO1, CO2, CO3, CO4,
4.5	Exercise	1	CO1, CO2, CO3, CO4, CO5, CO6
5	**Glass**	**5**	
5.1	Metaphysical Aspects of glass – Transparency, openness, transformation with light	1	CO1, CO2
5.2	Properties of glass – Fragility, light transmission, insulation, safety	1	CO1, CO2, CO3
5.3	Applications of glass – Windows, partitions, balustrades, decorative glass (etched, stained, tinted)	1	CO1, CO2, CO3, CO4
5.4	Case Studies – Usage in modern minimal and retail interiors	1	CO1, CO2, CO3, CO4,
5.5	Exercise	1	CO1, CO2, CO3, CO4, CO5, CO6
6	**Brick**	**5**	
6.1	Metaphysical Aspects of brick – Earthy feel, rhythm, warmth	1	CO1, CO2
6.2	Properties of brick – Thermal mass, texture, modularity, compressive strength	1	CO1, CO2, CO3
6.3	Applications of brick – Exposed brick walls, curved walls, arches, accents	1	CO1, CO2, CO3, CO4
6.4	Case Studies: Laurie Baker, contemporary exposed brick interiors	1	CO1, CO2, CO3, CO4,
6.5	Exercise	1	CO1, CO2, CO3, CO4, CO5, CO6
7	**Metal**	**5**	
7.1	Metaphysical Aspects of metal – Industrial chic, strength, elegance	1	CO1, CO2
7.2	Properties of metal – Conductivity, corrosion resistance, finish types (brushed,	1	CO1, CO2, CO3
7.3	Applications of metal – Stair railings, partitions, fixtures, furniture frames	1	CO1, CO2, CO3, CO4
7.4	Case Studies of metal – Mixed-material interiors, high-end modern interiors	1	CO1, CO2, CO3, CO4,
6.5	Exercise	1	CO1, CO2, CO3, CO4, CO5, CO6
8	**Gypsum**	**5**	
8.1	Metaphysical Aspects of gypsum – Lightness, minimalism, fluidity in form	1	CO1, CO2

8.2	Properties of gypsum – Fire resistance, sound insulation, smoothness, flexibility in shaping	1	CO1, CO2, CO3
8.3	Applications of gypsum – False ceilings, drywall partitions, moldings, niches	1	CO1, CO2, CO3, CO4
8.4	Case Studies: Pop ceilings in residential interiors, office design use	1	CO1, CO2, CO3, CO4,
8.5	Exercise	1	CO1, CO2, CO3, CO4, CO5, CO6
	Total Hours	**45**	

Learning Resources:

1. American Institute of Timber Construction (AITC), 'Timber Construction Manual', Wiley Publishers, 2004.
2. Francis D.K Ching, 'Building Construction Illustrated', John Willey and Sons, 2014.
3. Willis H Wagner and Howard Bud Smith, 'Modern Carpentry', Good Heart–Wilcox Publishers, Portland, 2007.
4. Barry, 'Construction of Buildings, Volume 1and2', Blackwell Publishing Ltd., Oxford, 2005.
5. S.P Arora and S.P Bindra, 'A Textbook of Building Construction', Dhanpat Rai Publishing Company Pvt. Ltd, 2010.
6. Roy Chudley, Roger Greeno, 'Building Construction Handbook', Routledge, 2017.
7. Materials for interior Designing by Er.Harish Malpani- 1st edition, 2024.

Course Designers:

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24ID340	RESIDENTIAL INTERIOR DESIGN

Category	L	T	P	Credit
PCC	-	4	12	12

Preamble

This course introduces the principles and practices of designing functional and aesthetically appealing residential interiors. Emphasizing user-centric design, it covers space planning, ergonomics, materials, and building services. Through a hands-on design project, students learn to translate client needs into creative, technically sound solutions while developing strong visual communication and presentation skills essential for professional practice.

Prerequisite

NIL

Course Outcomes

On the successful completion of the course students will be able to

CO	Course Outcome Statement	TCE Proficiency Scale	Expected Proficiency in %	Expected Attainment Level %
CO1	Identify various residential typologies, user needs, and lifestyle influences on home design.	TPS2 10%	70	70
CO2	Demonstrate principles of space planning, zoning, and circulation to develop functional and aesthetic residential layouts.	TPS3 10%	70	70
CO3	Discover anthropometric data and ergonomic standards in the design and placement of residential furniture and fixtures.	TPS4 20%	70	70
CO4	Assess and select appropriate materials, finishes, and sustainable solutions suitable for residential interiors.	TPS5 20%	70	70
CO5	Develop comprehensive design proposals for residential projects, including conceptual, schematic, and detailed drawings.	TPS6 20%	70	70
CO6	Show design ideas effectively through visual presentations, portfolios, and verbal juries, demonstrating professional design thinking.	TPS6 20%	70	70

Mapping with Programme Outcomes and Programme Specific Outcomes

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	S	M	S	L	M	S	S	S	M	M	L	S
CO2	S	S	S	L	M	S	S	S	M	M	L	S
CO3	S	M	S	L	M	S	S	S	M	M	L	S
CO4	S	M	S	L	S	M	S	S	M	M	L	S
CO5	S	M	S	L	M	M	S	S	M	S	L	S
CO6	S	S	S	L	L	M	S	S	M	S	L	S

S- Strong; M-Medium; L-Low

Assessment Pattern: Cognitive Domain

Cognitive Levels	Continuous Assessment (Reviews)					Terminal (Viva Voce)				
TPS Scale	**2**	**3**	**4**	**5**	**6**	**2**	**3**	**4**	**5**	**6**
CO1	10					10				
CO2		10					10			
CO3			20					20		
CO4				20					20	
CO5					20					20
CO6					20					20

Syllabus

Residential Interior Design –

This course offers a comprehensive introduction to the foundational principles and professional practices of residential interior design. At its core, the course emphasizes a **user-centric design** approach, encouraging students to consider the habits, preferences, and lifestyle needs of the occupants in every design decision. Students will explore key aspects of interior planning such as **spatial organization, circulation, zoning, and functional layouts**, as well as gain a deep understanding of **ergonomic standards** to ensure comfort, accessibility, and safety. Additionally, the curriculum covers the selection and specification of appropriate **materials and finishes**, helping students understand durability, maintenance, sustainability, and visual impact. **Building services** such as lighting, HVAC, plumbing, and electrical systems are also integrated into the design process, allowing students to develop holistic and practical design solutions that align with technical and regulatory requirements.

By the end of the course, participants will have built a strong foundation in residential interior design and will be capable of delivering thoughtful, technically sound, and aesthetically refined interior environments that respond to the needs of modern living.

Course Contents and Lecture Schedule

Module No.	Topic	No. of Weeks	Course Outcome
1.	**RESIDENTIAL INTERIOR DESIGN**		
	This course offers a comprehensive introduction to the foundational principles and professional practices of residential interior design. At its core, the course emphasizes a **user-centric design** approach, encouraging students to consider the habits, preferences, and lifestyle needs of the occupants in every design decision. Students will explore key aspects of interior planning such as **spatial organization, circulation, zoning, and functional layouts**, as well as gain a deep understanding of **ergonomic standards** to ensure comfort, accessibility, and safety. Additionally, the curriculum covers the selection and specification of appropriate **materials and finishes**, helping students understand durability, maintenance, sustainability, and visual impact. **Building services** such as lighting, HVAC, plumbing, and electrical systems are also integrated into the design process, allowing students to develop holistic and practical design solutions that align with technical and regulatory requirements. **By the end of the course, participants will have built a strong foundation in residential interior design and will**	15	CO1, CO2, CO3, CO4, CO5, CO6

	be capable of delivering thoughtful, technically sound, and aesthetically refined interior environments that respond to the needs of modern living.		
	Total Number of Weeks	**15**	

Learning Resources

1. Joseph de Chiara, Julius Panero, Martin Zelnik, Time-Saver Standards for Interior Design and Space Planning, 2001, Om Books
2. Ernst Neufert, Neufert Architect's Data, Fifth Edition, 2019, John Wiley and Sons
3. Frida Ramstedt, The Interior Design Handbook : Furnish, Decorate, and Style your Space, 2020, Clarkson Potter
4. Chris Grimley, Mimi Love, The Interior Design Reference & Specification Book, updated and revised, 2018, Rockport Publishers
5. Natalie Badenduck, Interior Design Concept : Critical practices, Processes and Explorations in Interior Architecture and Design, 2022, Routledge

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24ID410	INDOOR COMFORT

Category	L	T	P	Credit
CFC	2	-	-	2

Preamble

This course explores the principles of thermal comfort, air quality, ventilation, and moisture control in interior spaces. Students will understand the impact of environmental factors on occupant well-being and learn to apply design strategies for energy-efficient, healthy indoor environments. By integrating theoretical concepts with practical applications, the course equips students to create sustainable and comfortable spaces in line with industry standards.

Prerequisite

Nil

Course Outcome

On successful completion of the course, students will be able to

CO	Course Outcome	TCE Proficiency Scale	Expected Proficiency in %	Expected Attainment Level %
CO1	Describe the fundamental principles of thermal comfort, including factors influencing human comfort and heat transfer mechanisms in indoor spaces.	TPS2 10%	70	70
CO2	Discuss how different environmental parameters affect health, productivity, and psychological comfort.	TPS2 10%	70	70
CO3	Explain how variables like building orientation, climate, materials, and spatial planning influence indoor comfort.	TPS2 20%	75	70
CO4	Illustrate how furniture layout, material selection, finishes, and lighting design affect the comfort and usability of a space.	TPS3 20%	75	70
CO5	Implement standards such as ASHRAE, NBC, and WELL Building Standard in relation to comfort in interiors.	TPS3 20%	75	70
CO6	Experiment environmentally responsible solutions for maintaining indoor comfort while reducing energy consumption and environmental impact.	TPS4 20%	75	70

Mapping with Programme Outcomes and Programme Specific Outcomes

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	S	L	M	L	M	M	L	L	S	M	L	L
CO2	M	L	M	L	S	S	M	L	L	M	L	L
CO3	M	L	M	M	S	M	M	L	L	S	M	L
CO4	M	L	L	M	S	S	M	L	M	M	L	L
CO5	L	M	L	L	M	S	S	M	M	L	L	M
CO6	M	L	S	L	S	M	M	L	M	L	M	L

S- Strong; M-Medium; L-Low

Assessment Pattern: Cognitive Domain

Cognitive Levels	CAT 1			Assignment 1			CAT 2			Assignment 2			Terminal		
TPS Scale	**2**	**3**	**4**	**2**	**3**	**4**	**2**	**3**	**4**	**2**	**3**	**4**	**2**	**3**	**4**
CO1	20			10						10			10		
CO2	20			10			10			10			10		
CO3	20			10			20			10			20		
CO4		20			10			20			10			20	
CO5		20			10			20			10			20	
CO6						50			30			50			20

Syllabus

Unit 01 - Principles of Thermal Comfort – Introduction to Thermal Comfort - Introduction, History, Factors Affecting Thermal Comfort - Comfort Range. Principles of Heat Transfer in Indoor Spaces - Principles of Heat Transfer, Thermal Energy Transfer.

Unit 02 - Thermal Properties, Climate Control and Heat flow and Building Envelope – Thermal Energy Transfer and Airflow - Air Temperature and Air Motion, Water Vapor and Heat Transfer. Thermal Properties of Materials - Thermal Capacity, Thermal Mass, Thermal Conductivity, Thermal Resistance, Thermal Feel. Heating and Cooling Load Considerations – Heating Loads and Cooling Loads. Heat Flow and the Building Envelope – Terminology, Thermodynamics, Heat Flow and Building Envelope, Moisture Flow through Building Envelope, Envelope Thermal Performance Insulation Materials – Air Films and Air Spaces, Insulation Types and Forms.

Unit 03 - Indoor Air Quality and Ventilation – Introduction to Indoor Air Quality (IAQ) - Indoor Air Quality, ASHRAE Standards and LEED, Sources of Pollution and Health Effects - Illnesses Related to Buildings, Sources of Pollution. Indoor Air Quality Equipment and Control Systems- Indoor Air Quality Equipment, Plants and Indoor Air Quality, Controls for Indoor Air Quality. Ventilation Strategies - Infiltration, Natural Ventilation, Mechanical Ventilation, Residential Ventilation Systems, Fans.

Unit 04 - Moisture Control and Humidity Management – Understanding Humidity and Moisture in Buildings - Water Movement, Humidity, Condensation. Moisture Control Strategies - Dehumidification, Basic Waterproofing Techniques.

Unit 05 - Design Integration and Practical Applications – Thermal Comfort in Design - Mechanical Engineering Design Process, Phases of Design Process, Thermal Comfort Zones. Ventilation Strategies in Building Systems - Attic and Roof Ventilation, Specialized Ventilation Techniques. Case example- Case Study: Passive Cooling in a Brick House – The Sharanam Centre, India. Explains about live case example using brick material construction and how it impacts thermal comfort, indoor air quality, and moisture control.

Course Contents and Lecture Schedule

Module No	Topic	No. of Lecture Hours	Course Outcome
1	**Principles of Thermal Comfort**	**4**	
1.1	Introduction to Thermal Comfort - Introduction, History, Factors Affecting Thermal Comfort - Comfort Range	2	CO1, CO2
1.2	Principles of Heat Transfer in Indoor Spaces - Principles of Heat Transfer, Thermal Energy Transfer	2	CO1, CO2
2	**Thermal Properties, Climate Control and Heat flow and Building Envelope**	**9**	
2.1	Thermal Energy Transfer and Airflow - Air Temperature and Air Motion, Water Vapor and Heat Transfer	2	CO1, CO2, CO3

2.2	Thermal Properties of Materials - Thermal Capacity, Thermal Mass, Thermal Conductivity, Thermal Resistance,	2	CO1, CO2, CO3
2.3	Heating and Cooling Load Considerations – Heating Loads and Cooling Loads	2	CO1, CO2, CO3
2.4	Heat Flow and the Building Envelope – Terminology, Thermodynamics, Heat Flow and Building Envelope, Moisture Flow through Building Envelope, Envelope Thermal Performance Insulation Materials – Air Films and Air Spaces, Insulation Types and Forms	3	CO1, CO2, CO3, CO4
3	**Indoor Air Quality and Ventilation**	**5**	
3.1	Introduction to Indoor Air Quality (IAQ) - Indoor Air Quality, ASHRAE Standards and LEED Sources of Pollution and Health Effects - Illnesses Related to Buildings, Sources of Pollution	2	CO2, CO3, CO4, CO5
3.2	Indoor Air Quality Equipment and Control Systems- Indoor Air Quality Equipment, Plants and Indoor Air Quality, Controls for Indoor Air Quality	2	CO2, CO3, CO4, CO5
3.3	Ventilation Strategies - Infiltration, Natural Ventilation, Mechanical Ventilation, Residential Ventilation Systems,	1	CO2, CO3, CO4, CO5
4	**Moisture Control and Humidity Management**	**4**	
4.1	Understanding Humidity and Moisture in Buildings - Water Movement, Humidity, Condensation	2	CO2, CO3, CO4, CO5
4.2	Moisture Control Strategies - Dehumidification, Basic Waterproofing Techniques	2	CO2, CO3, CO4, CO5
5	**Design Integration and Practical Applications**	**8**	
5.1	Thermal Comfort in Design -Mechanical Engineering Design Process, Phases of Design Process, Thermal Comfort Zones	3	CO2, CO3, CO4, CO5, CO6
5.2	Ventilation Strategies in Building Systems - Attic and Roof Ventilation, Specialized Ventilation Techniques	3	CO2, CO3, CO4, CO5, CO6
5.3	Case example- Case Study: Passive Cooling in a Brick House – The Sharanam Centre, India Explains about live case example using brick material construction and how it impacts thermal comfort, indoor air quality, and moisture control.	2	CO1,CO2, CO3, CO4, CO5, CO6
	Total Hours	**30**	

Learning Resources

1. Building Systems for Interior Designers Third Edition Corky Binggeli, ASID
2. Building Construction By S. C. Rangwala · 2009
3. Interior Design Illustrated - Third Edition By Francis D.K. Ching • Corky Binggeli
4. Thermal Comfort: Analysis and Applications in Environmental Engineering by P.O. Fanger
5. Thermal Delight in Architecture by Lisa Heschong

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24ID420	INTERIOR FINISHES

Category	L	T	P	Credit
CFC	2	-	-	2

Preamble

This course introduces students to key finishes and techniques used in wall, floor, and ceiling elements. It focuses on understanding the properties, applications, and aesthetics of interior finishes, enabling students to make informed design decisions that enhance functionality and visual appeal in interior spaces.

Prerequisite

Nil

Course Outcome

On successful completion of the course, students will be able to

CO	Course Outcome	TCE Proficiency Scale	Expected Proficiency in %	Expected Attainment Level %
CO1	Describe, recognize and categorize a range of interior finishes, including flooring, wall treatments, ceiling finishes, and surface coatings.	TPS2 10%	70	70
CO2	Explain the functional, aesthetic, and performance characteristics of different finishes and their suitability for specific interior applications.	TPS2 10%	70	70
CO3	Discuss knowledge of safety, fire resistance, acoustic performance, and sustainability requirements applicable to interior finishing materials.	TPS2 20%	70	70
CO4	Demonstrate how texture, color, pattern, and materiality impact spatial perception and user interaction within interior environments.	TPS3 20%	75	70
CO5	Experiment various finish options in terms of their long-term functionality, upkeep, lifecycle cost, and appropriateness for different project types.	TPS3 20%	75	70
CO6	Examine new technologies, eco-friendly materials, and design trends that are shaping the future of interior finishes.	TPS4 20%	75	70

Mapping with Programme Outcomes and Programme Specific Outcomes

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	S	L	L	M	S	M	M	L	M	L	L	L
CO2	M	L	M	L	S	S	M	L	L	M	L	L
CO3	L	M	M	L	S	S	M	L	L	M	L	L
CO4	M	L	L	L	S	S	M	L	L	M	L	M
CO5	M	L	L	L	S	M	S	L	L	M	L	L
CO6	M	M	M	L	S	S	S	L	L	M	L	L

S- Strong; M-Medium; L-Low

Assessment Pattern: Cognitive Domain

Cognitive Levels	CAT 1			Assignment 1			CAT 2			Assignment 2			Terminal		
TPS Scale	**2**	**3**	**4**	**2**	**3**	**4**	**2**	**3**	**4**	**2**	**3**	**4**	**2**	**3**	**4**
CO1	10			10			10			10			10		
CO2	10			10			10			10			10		
CO3	20			10			20			10			20		
CO4		20			20			20			20			20	
CO5		20			25			20			25			20	
CO6			20			25			20			25			20

Syllabus

Unit 01 - Wall Finishes – Modern Wall Finishes- Wall Cladding: Stone Cladding, Wood Cladding, Tile Cladding, Metal Cladding, Laminates, PVC – Wallpapers: Types of Wallpaper, Wallpaper Installation, Aesthetic Use of Wallpaper – Wall Textures: Techniques for Wall Texture, Types of Materials used for Wall Texture, Tools used in Wall Texture – Partition Walls- Types of Partition Walls: Brick Partitions, Clay Block Partition Walls, Concrete Partitions, Glass Partitions, Metal Lath Partitions, Plaster Slab Partitions, Timber Partitions – Plastering and Pointing- Types of Mortars for Plastering, Terminology Used in Plastering Work, Methods of Plastering, Types of Plaster Finishes, Defects in Plastering, Pointing – Painting, Distempering, and White-Washing- Paints and Painting, Characteristics of an Ideal Paint, Types of Paints, Painting on Different Surfaces, Defects in Painting, Distempering, White Washing and Colour Washing.

Unit 02 - Flooring Finishes – Floors-I: Ground Floors- Materials for Construction, Selection of Flooring Material, Different types of flooring: Mud Flooring and Muram Flooring, Brick Flooring, Flag Stone Flooring, Cement Concrete Flooring, Terrazzo Flooring, Mosaic Flooring, Tiled Flooring, Marble Flooring, Timber Flooring, Asphalt Flooring, Rubber Flooring, Linoleum Flooring, Cork Flooring, Glass Flooring, PVC Flooring – Floors-II: Upper Floors- Types of Flooring: Steel Joist and Stone or Precast Concrete Slab Floors, Jack Arch Floors, Reinforced Cement Concrete Floors, Ribbed or Hollow Tiled Flooring, Filler Joists Floors, Precast Concrete Floors, Timber Floors.

Unit 03 - Ceiling Finishes – Plastering and Pointing: Plastering and Pointing in ceiling, Special Materials Used in Plastering – Classification and Types of Paints for ceiling, Varnishing, Distempering, White-Washing and Colour Washing – POP and Gypsum Ceiling Finishes: Plaster of Paris (POP) Ceilings: Techniques, Materials, Finishes – Gypsum Board Ceilings: Installation, Aesthetic Uses, Benefits – Ply and Textured Ceilings: Plywood Ceilings: Types, Installation, Maintenance – Ceiling Texturing: Techniques, Materials, Tools.

Course Contents and Lecture Schedule

Module No	Topic	No. of Lecture Hours	Course Outcome
1	**Wall Finishes**	**10**	
1.1	Modern Wall Finishes - Wall Cladding: Stone Cladding, Wood Cladding, Tile Cladding, Metal Cladding, Laminates, PVC Wallpapers: Types of Wallpaper, Wallpaper Installation, Aesthetic Use of Wallpaper Wall Textures: Techniques for Wall Texture, Types of Materials used for Wall Texture, Tools used in Wall Texture	3	CO1 – CO6

1.2	Partition Walls- Types of Partition Walls: Brick Partitions, Clay Block Partition Walls, Concrete Partitions, Glass Partitions, Metal Lath Partitions, Plaster Slab Partitions, Timber Partitions	3	CO1 – CO6
1.3	Plastering and Pointing- Types of Mortars for Plastering, Terminology Used in Plastering Work, Methods of Plastering, Types of Plaster Finishes, Defects in Plastering, Pointing	2	CO1 – CO6
1.4	Painting, Distempering, and White-Washing- Paints and Painting, Characteristics of an Ideal Paint, Types of Paints, Painting on Different Surfaces, Defects in Painting, Distempering, White Washing and Colour Washing	2	CO1 – CO6
2	**Flooring Finishes**	**10**	
2.1	Floors-I: Ground Floors- Materials for Construction, Selection of Flooring Material, Different types of flooring: Mud Flooring and Muram Flooring, Brick Flooring, Flag Stone Flooring, Cement Concrete Flooring, Terrazzo Flooring, Mosaic Flooring, Tiled Flooring, Marble Flooring, Timber Flooring, Asphalt Flooring, Rubber Flooring, Linoleum Flooring, Cork Flooring, Glass Flooring, PVC Flooring	6	CO1 – CO6
2.2	Floors-II: Upper Floors- Types of Flooring: Steel Joist and Stone or Precast Concrete Slab Floors, Jack Arch Floors, Reinforced Cement Concrete Floors, Ribbed or Hollow Tiled Flooring, Filler Joists Floors, Precast Concrete Floors, Timber Floors	4	CO1 – CO6
3	**Ceiling Finishes**	**10**	
3.1	Plastering and Pointing: Plastering and Pointing in ceiling, Special Materials Used in Plastering	2	CO1 – CO6
3.2	Painting, Distempering, and White-Washing: Classification and Types of Paints for ceiling, Varnishing, Distempering, White-Washing and Colour Washing	2	CO1 – CO6
3.3	POP and Gypsum Ceiling Finishes: Plaster of Paris (POP) Ceilings: Techniques, Materials, Finishes Gypsum Board Ceilings: Installation, Aesthetic Uses, Benefits	3	CO1 – CO6
3.4	Ply and Textured Ceilings: Plywood Ceilings: Types, Installation, Maintenance Ceiling Texturing: Techniques, Materials, Tools	3	CO1 – CO6
	Total Hours	**30**	

Learning Resources

1. Building Construction – B.C. Punmia, Ashok Kumar Jain, Arun Kumar Jain (2016)
2. Building Systems for Interior Designers – Corky Binggeli (2013, 3rd Edition)

3. Building Construction Illustrated – Francis D.K. Ching (2014, 5th Edition)
4. Engineering Materials – S.C. Rangwala (2017)
5. Building Construction: Principles, Materials, and Systems – Madan Mehta, Walter Scarborough, Diane Armpriest (2013, 2nd Edition)

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24ID430	INTERIOR SYSTEMS : LIGHTING, POWER AND COMFORT

Category	L	T	P	Credit
CFC	1	-	2	3

Preamble

Interior spaces must be designed not only for aesthetics but also for functionality, safety, and user comfort. This course provides a comprehensive understanding of essential interior services, focusing on electrical systems, lighting design, and HVAC (Heating, Ventilation and Air Conditioning). Through theoretical knowledge and practical applications, students will develop skills to design and implement electrical, lighting, and HVAC solutions for residential, commercial, and industrial interiors. Students will be equipped to create well-lit, energy-efficient, and comfortable environments that enhance user experience and functionality.

Prerequisite

NIL

Course Outcomes

On the successful completion of the course students will be able to

CO	Course Outcome Statement	TCE Proficiency Scale	Expected Proficiency in %	Expected Attainment Level %
CO1	Recognize the principles, components, and functions of electrical, lighting, and HVAC systems in interior spaces.	TPS2 10%	70	70
CO2	Identify key building regulations, safety codes, and industry standards related to electrical, lighting, and HVAC design.	TPS2 15%	70	70
CO3	Explain how electrical, lighting, and HVAC systems interact to enhance functionality, comfort, and efficiency in built environments.	TPS2 15%	70	70
CO4	Adapt knowledge of system installation, operation, and maintenance procedures to ensure safe and effective interior service management.	TPS3 20%	70	70
CO5	Implement smart lighting, energy-efficient electrical systems, and HVAC principles to improve performance and sustainability.	TPS3 20%	70	70
CO6	Produce conceptual layouts for power distribution, lighting placement, and control systems based on building requirements.	TPS3 20%	70	70

Mapping with Programme Outcomes and Programme Specific Outcomes

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	M	L	L	L	L	L	L	L	L	M	L	S
CO2	M	L	L	L	M	S	L	L	L	M	L	S
CO3	M	M	M	L	M	S	L	L	L	S	L	S
CO4	M	M	M	L	M	S	S	L	L	S	L	S
CO5	M	L	L	L	S	M	S	L	L	S	L	S
CO6	M	M	M	L	S	S	L	S	S	S	L	S

S- Strong; M-Medium; L-Low

Assessment Pattern: Cognitive Domain

Cognitive Levels	CAT 1		Assignment 1		CAT 2		Assignment 2		Terminal	
TPS Scale	2	3	2	3	2	3	2	3	2	3
CO1	10		10		10		10		10	
CO2	20		10		20		10		15	
CO3	20		10		20		10		15	
CO4		20		10		20		10		20
CO5		20		10		20		10		20
CO6		10		50		10		50		20

Syllabus

Electrical System Basics – Principles of electricity – Static electricity – Lightning – Electrical Current – Circuits – Amperage – Voltage – Watts – Resistance,conductors,insulators – DC & AC **Electrical Power sources** – Photovoltaic power : codes and standards, systems – Stand alone and Grid connected systems **Electricity and Safety** – Electrical shock – Grounding – Electrical fire safety – Fuses and Circuit breakers – Ground fault circuit interrupters – Electronic equipment protection

Electrical Distribution - Electrical power distribution systems – Building transformers – Swtichboards – Panelboards – Energy conservation considerations **Interior Distribution** – Branch circuits – Circuit design guidelines – Electrical wiring and distribution – Interior Wiring systems – Exposed and insulated cables – Prefab assemblies – Conduits – Full access floors and wiring – Low voltage wiring – Power line carrier system **Wiring devices** – outlet and device boxes – electrical plugs : polarized, grounded – electrical receptacles – Surge suppression and equipment grounding **Electrical loads** – residential – kitchen appliances – refrigerators and freezers – stoves and ovens – dishwashers – laundry equipment – appliance control and energy conservation Electrical Design for Residences – branch circuits – circuit guidelines – **Electrical drawings**

Lighting Systems - Light and Vision – Physics of light – Reflectance – Transmittance – Measuring intensity – Human brain and eye – Colour and light – Colour temperature – Colour rendering Index – Glare – Lighting effects : diffusion, accents and sparkle **Daylighting** – Characteristics – Design – Fenestrations – Sidelighting – Toplighting – Skylights - Heliostats (with case examples) **Electric Lighting** – design considerations – Light sources – Incandescent lamps – Fluorescent lamps – Solid state lighting and LEDs – High intensity discharge lamps – Luminaire light control – Diffusers, Lenses, Reflectors – Fibre optics – Prismatic light guides (with case examples) **Luminaires** – Light fixtures characteristics – Cove, Cornice, Coffer, Valance lightings – Luminous wall panels – Lighting system distribution – Mounting – Fixture selection – Occupancy sensors – Emergency lighting (with case examples) **Simple Numerical design calculations for illumination schemes**.Codes and Standards – **Lighting Design Applications (Residential and Retail)** Application and Choice of Lighting -Classification of lighting based on activities - ambient, task, focal and decorative, etc.

HVAC Systems - HVAC design process – localized vs centralized units – heat exchangers – codes and standards **Heating systems** – central systems – building heating fuels – solar space heating – active solar heating systems – fireplaces and wood stoves – chimneys and flues – mechanical heating systems – hot water and steam heating systems – boilers – radiant heating – natural convection heating units – warm air heating – forced air distribution **Cooling systems** – passive cooling – solar cooling – Mechanical cooling – compressive refrigeration – absorption refrigeration – evaporative cooling – heat pumps **HVAC systems** – components – distribution – terminal delivery devices – control systems

Course Contents and Lecture Schedule

Module No.	Topic	No. of Hours	Course Outcome
1.	**ELECTRICAL SYSTEM BASICS**	**3**	
1.1	Principles of electricity – Static electricity – Lightning – Electrical Current – Circuits – Amperage – Voltage – Watts – Resistance,conductors,insulators – DC & AC	1	CO1, CO2
1.2	Electrical Power sources – Photovoltaic power : codes and standards, systems – Stand alone and Grid connected systems	1	CO1, CO2
1.3	Electricity and Safety – Electrical shock – Grounding – Electrical fire safety – Fuses and Circuit breakers – Ground fault circuit interrupters – Electronic equipment protection	1	CO1, CO2
2.	**ELECTRICAL DISTRIBUTION**	**12**	
2.1	Electrical power distribution systems – Building transformers – Swtichboards – Panelboards – Energy conservation considerations	1	CO1, CO2, CO3, CO4
2.2	Interior Distribution – Branch circuits – Circuit design guidelines – Electrical wiring and distribution – Interior Wiring systems – Exposed and insulated cables – Prefab assemblies – Conduits – Full access floors and wiring – Low voltage wiring – Power line carrier system	2	CO1, CO2, CO3, CO4, CO5
2.3	Wiring devices – outlet and device boxes – electrical plugs : polarized, grounded – electrical receptacles – Surge suppression and equipment grounding	1	CO1, CO2, CO3, CO4, CO5
2.4	Electrical loads – residential – kitchen appliances – refrigerators and freezers – stoves and ovens – dishwashers – laundry equipment – appliance control and energy conservation	2	CO1, CO2, CO3, CO4, CO5
2.5	Electrical Design for Residences – branch circuits – circuit guidelines – Electrical drawings	6	CO6
3.	**LIGHTING SYSTEMS**	**16**	
3.1	Light and Vision – Physics of light – Reflectance – Transmittance – Measuring intensity – Human brain and eye – Colour and light – Colour temperature – Colour rendering Index – Glare – Lighting effects : diffusion, accents and sparkle	1	CO1, CO2
3.2	Daylighting – Characteristics – Design – Fenestrations – Sidelighting – Toplighting – Skylights – Heliostats (with case examples)	1	CO1, CO2
3.3	Electric Lighting – design considerations – Light sources – Incandescent lamps – Fluorescent lamps – Solid state lighting and LEDs – High intensity discharge lamps – Luminaire light control – Diffusers, Lenses, Reflectors – Fibre optics – Prismatic light guides (with case examples)	3	CO1, CO2, CO3, CO4, CO5
3.4	Luminaires – Light fixtures characteristics – Cove, Cornice, Coffer, Valance lightings – Luminous wall panels – Lighting system distribution – Mounting –	3	CO1, CO2, CO3,

	Fixture selection – Occupancy sensors – Emergency lighting (with case examples)		CO4, CO5
3.5	Simple Numerical design calculations for illumination schemes.	2	CO2, CO3, CO5
3.6	Codes and Standards – Lighting Design Applications (Residential and Retail) Application and Choice of Lighting -Classification of lighting based on activities - ambient, task, focal and decorative, etc.	6	CO2, CO6
4	**HVAC SYSTEMS**	**14**	
4.1	HVAC design process – localized vs centralized units – heat exchangers – codes and standards	2	CO1, CO2
4.2	Heating systems – central systems – building heating fuels – solar space heating – active solar heating systems – fireplaces and wood stoves – chimneys and flues – mechanical heating systems – hot water and steam heating systems – boilers – radiant heating – natural convection heating units – warm air heating – forced air distribution	3	CO1, CO2, CO3, CO4, CO5
4.3	Cooling systems – passive cooling – solar cooling – Mechanical cooling – compressive refrigeration – absorption refrigeration – evaporative cooling – heat pumps	3	CO1, CO2, CO3, CO4, CO5
4.4	HVAC systems – components – distribution – terminal delivery devices – control systems HVAC layouts	6	CO1, CO2, CO3, CO4, CO5, CO6
	Total Number of Hours	**45**	

Learning Resources

1. Corky Binggeli, ASID, Building Systems for Interior Designers, Third Edition, 2016, John Wiley & Sons
2. B C Punmia, Building Construction, Tenth Edition, 2012, Laxmi Publications Ltd.

Course Designers:

1. Prof. Dr. Jinu Louishidha Kitchley hodarch@tce.edu
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24ID440	WORKSPACE INTERIOR DESIGN

Category	L	T	P	Credit
PCC	-	4	12	12

Preamble

This course explores the design of functional, ergonomic, and engaging work environments. It introduces students to evolving workspace typologies, spatial planning, furniture systems, and services integration. Through a hands-on studio project, students learn to create workspace interiors that reflect brand identity, support productivity, and promote user well-being.

Prerequisite

NIL

Course Outcomes

On the successful completion of the course students will be able to

CO	Course Outcome Statement	TCE Proficiency Scale	Expected Proficiency in %	Expected Attainment Level %
CO1	Explain the evolution and typologies of workspace interiors, and their relation to organizational culture and function.	TPS2 10%	70	70
CO2	Illustrate user needs, workflows, and space requirements to develop effective workspace zoning and layout strategies.	TPS3 10%	70	70
CO3	Examine ergonomic standards and anthropometric data to design flexible and user-friendly workstation environments.	TPS4 20%	70	70
CO4	Assess and integrate appropriate lighting systems, acoustic solutions, and building services in workspace interiors	TPS5 20%	70	70
CO5	Develop detailed design proposals for workspace interiors, incorporating concept development, planning, and technical drawings.	TPS6 20%	70	70
CO6	Formulate workspace designs for sustainability, user well-being, and alignment with contemporary workplace trends.	TPS6 20%	70	70

Mapping with Programme Outcomes and Programme Specific Outcomes

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	S	M	S	L	M	S	S	S	M	M	L	S
CO2	S	S	S	L	M	S	S	S	M	M	L	S
CO3	S	M	S	L	M	S	S	S	M	M	L	S
CO4	S	M	S	L	S	M	S	S	M	M	L	S
CO5	S	M	S	L	M	M	S	S	M	S	L	S
CO6	S	S	S	L	L	M	S	S	M	S	L	S

S- Strong; M-Medium; L-Low

Assessment Pattern: Cognitive Domain

Cognitive Levels	Continuous Assessment (Reviews)					Terminal (Viva Voce)				
TPS Scale	**2**	**3**	**4**	**5**	**6**	**2**	**3**	**4**	**5**	**6**
CO1	10					10				
CO2		10					10			
CO3			20					20		
CO4				20					20	
CO5					20					20
CO6					20					20

Syllabus

Workspace Interior Design –

This course is designed to introduce students to the complexities and opportunities of creating workspace interiors that are not only functional and efficient but also responsive to the **changing nature of work** and the well-being of users. The course examines a range of workspace typologies—**from traditional office setups to agile, co-working, hybrid, and activity-based work environments**—highlighting how each typology supports different organizational cultures and operational models. Students will delve into core aspects of **spatial planning, including circulation, zoning, density**, and the relationship between **public, semi-private, and private zones** within an office.

Emphasis is placed on **ergonomics, user comfort**, and **inclusivity**, enabling students to design spaces that cater to diverse physical and cognitive needs. Throughout the course, students will gain familiarity with **modular furniture systems, flexible layouts, acoustics, lighting strategies,** and the integration of **building services** such as HVAC, data networks, and power systems—all essential for the functionality and sustainability of a well-designed workspace. This project requires them to interpret a **brand's identity**, corporate values, and operational goals into spatial solutions that enhance productivity, creativity, and collaboration.

By the end of the course, students will have a strong foundation in workspace design, capable of addressing contemporary challenges such as hybrid work models, wellness integration, and environmental responsibility while producing interiors that are both strategically informed and aesthetically compelling.

Course Contents and Lecture Schedule

Module No.	Topic	No. of Weeks	Course Outcome
1.	**WORKSPACE INTERIOR DESIGN**		
	This course is designed to introduce students to the complexities and opportunities of creating workspace interiors that are not only functional and efficient but also responsive to the **changing nature of work** and the well-being of users. The course examines a range of workspace typologies—**from traditional office setups to agile, co-working, hybrid, and activity-based work environments**—highlighting how each typology supports different organizational cultures and operational models. Students will delve into core aspects of **spatial planning, including circulation, zoning, density**, and the relationship between **public, semi-private, and private zones** within an office.	15	CO1, CO2, CO3, CO4, CO5, CO6

	Emphasis is placed on **ergonomics, user comfort**, and **inclusivity**, enabling students to design spaces that cater to diverse physical and cognitive needs. Throughout the course, students will gain familiarity with **modular furniture systems, flexible layouts, acoustics, lighting strategies,** and the integration of **building services** such as HVAC, data networks, and power systems—all essential for the functionality and sustainability of a well-designed workspace. This project requires them to interpret a **brand's identity**, corporate values, and operational goals into spatial solutions that enhance productivity, creativity, and collaboration. **By the end of the course, students will have a strong foundation in workspace design, capable of addressing contemporary challenges such as hybrid work models, wellness integration, and environmental responsibility while producing interiors that are both strategically informed and aesthetically compelling.**		
	Total Number of Weeks	**15**	

Learning Resources

1. Joseph de Chiara, Julius Panero, Martin Zelnik, Time-Saver Standards for Interior Design and Space Planning, 2001, Om Books
2. Ernst Neufert, Neufert Architect's Data, Fifth Edition, 2019, John Wiley and Sons
3. Diane Stegmeier, Innovations in Office Design – the Critical influence approach to effective work environments, First edition, 2008, John Wiley and Sons
4. Carles Broto, Pilar Chueca, Office Interiors, First edition, 2007, Links Internacional
5. Oriol Magrinya, Office Design : Architecture Today, First edition, 2019, Loft Publication
6. Nicola Gillen, Future Office : Next-generation workplace design, First edition, 2019, RIBA Publishing

Course Designers:

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24IDFA0	GRAPHIC DESIGN AND INFOGRAPHICS

Category	L	T	P	Credit
EFC	1	-	2	3

Preamble

In a world saturated with images, messages, and visual content, the ability to create clear, purposeful, and aesthetically engaging designs is more vital than ever. This course is designed to ground students in the core principles of visual design, with a strong focus on how and why design works. Rather than jumping straight into tools or trends, we take a principles-first approach, training the eye to recognize visual relationships, organize information effectively, and craft compositions that communicate with impact. Through a mix of guided exercises, critiques, and self-led projects, this course builds both creative confidence and technical skill—preparing students to design with intention, clarity, and visual intelligence.

Prerequisite

NIL

Course Outcomes

On the successful completion of the course students will be able to

CO	Course Outcome Statement	TCE Proficiency Scale	Expected Proficiency in %	Expected Attainment Level %
CO1	Identify and explain core visual design principles and how they apply to visual communication.	TPS2 10%	70	70
CO2	Adapt design principles to create visually effective layouts, using composition techniques	TPS3 15%	70	70
CO3	Experiment colour theory and typographic hierarchy to guide viewer attention, evoke emotion, and establish readability and emphasis in graphic design.	TPS4 15%	70	70
CO4	Assess and criticize visual designs through the lens of design principles, articulating strengths and opportunities for improvement.	TPS5 10%	70	70
CO5	Design clear and engaging infographics by transforming data and information into visually digestible formats	TPS6 20%	70	70
CO6	Develop mastery of visual principles by developing cohesive design projects that balance form and function, with a focus on clarity, structure, and purpose.	TPS6 30%	70	70

Mapping with Programme Outcomes and Programme Specific Outcomes

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	S	S	S	M	L	L	L	S	L	M	L	M
CO2	S	S	S	M	L	L	L	S	L	M	L	M
CO3	S	S	S	M	L	L	L	S	L	M	L	M
CO4	S	S	S	M	L	L	L	S	L	M	L	M
CO5	S	S	S	M	L	L	L	S	L	M	L	M
CO6	S	S	S	M	L	L	L	S	L	M	L	M

S- Strong; M-Medium; L-Low

Assessment Pattern: Cognitive Domain

Cognitive Levels	Assignment 1					Assignment 2					Terminal				
TPS Scale	**2**	**3**	**4**	**5**	**6**	**2**	**3**	**4**	**5**	**6**	**2**	**3**	**4**	**5**	**6**
CO1	10					10					10				
CO2		15					15					15			
CO3			15					15					15		
CO4				10					10					10	
CO5					20					20					20
CO6					30					30					30

Syllabus

Visual Foundations : Building form, movement and equilibrium – Form storming : iterations – daily collage project – process verbs – alter ego **Point, Line, Plane** : 3 objects,33 ways – spatial translation **Rhythm and Balance** : symmetry, asymmetry – repetition and change – ordered improvisation – spinal orientation

Exploring visual dynamics : the interplay of scale, texture and colour : Scale : depth and motion – big type, small pages – scaling letterforms, images and objects **Texture** : surface manipulation – physical and virtual texture – five square ten inches **Colour** : basic colour theory – primary, secondary, tertiary, complements, analogous – shade, tint, saturation – Optical colour mixing – Interaction of colour – Monochrome – Selective emphasis – Palettes

Perception and Placement : **Gestalt Principles** : Figure/Ground – Grouping – Similarity – Negative space and white space **Framing** : Cropping – Margins and bleeds – framing text and image – borders

Building visual order with depth : Hierarchy : Typography hierarchy – Menu of options – Five fonts – Content vacuum **Layers** : Cut paste – Mix media – Printed layers – Typographic layers – Physical, digital and temporal layers **Transparency** : materials ad substances – typographic plaid – linear transparency – graphic transparency – digital transparency

Structured Beauty : Modularity : alphabet blocks – modular alphabets – nine square alphabets – Interlocking forms – symbol systems **Grid** : form and content – rhythm, form and frame – structure and colour – many columns, many choices – automated grids **Pattern** : dots, stripes and grids – repeating elements – one element many patterns – changing colour, scale and orientation – random repeat – grid as matrix

Mapping the Unseen : Diagram : designing networks – overlapping relationships – visualising everyday changing observations **Time and Motion** : implied motion – jiggle and animated letters – Change in position, rotation, scale, shape, colour, depth, transparency and combinations **Rules and Randomness** : number symphony – repeat and rotate – abstract alphabet

Course Contents and Lecture Schedule

Module No.	Topic	No. of Hours	Course Outcome
1.	**VISUAL FOUNDATIONS**	**7**	
1.1	Form storming : iterations – daily collage project – process verbs - alter ego	2	CO1 - CO6
1.2	Point, Line, Plane : 3 objects,33 ways – spatial translation	3	CO1 - CO6
1.3	Rhythm and Balance : symmetry, asymmetry – repetition and change – ordered improvisation – spinal orientation	2	CO1 - CO6
2.	**EXPLORING VISUAL DYNAMICS**	**8**	
2.1	Scale : depth and motion – big type, small pages – scaling letterforms, images and objects	3	CO1 - CO6
2.2	Texture : surface manipulation – physical and virtual	2	CO1 -

	texture – five square ten inches		CO6
2.3	Colour : basic colour theory – primary, secondary, tertiary, complements, analogous – shade, tint, saturation – Optical colour mixing – Interaction of colour – Monochrome – Selective emphasis – Palettes	3	CO1 - CO6
3.	**PERCEPTION AND PLACEMENT**	**5**	
3.1	Gestalt Principles : Figure/Ground – Grouping – Similarity – Negative space and white space	3	CO1 - CO6
3.2	Framing : Cropping – Margins and bleeds – framing text and image – borders	2	CO1 - CO6
4.	**BUILDING VISUAL ORDER WITH DEPTH**	**9**	
4.1	Hierarchy : Typography hierarchy – Menu of options – Five fonts – Content vacuum	3	CO1 - CO6
4.2	Layers : Cut paste – Mix media – Printed layers – Typographic layers – Physical, digital and temporal layers	3	CO1 - CO6
4.3	Transparency : materials ad substances – typographic plaid – linear transparency – graphic transparency – digital transparency	3	CO1 - CO6
5	**STRUCTURED BEAUTY**	**8**	
5.1	Modularity : alphabet blocks – modular alphabets – nine square alphabets – Interlocking forms – symbol systems	3	CO1 - CO6
5.2	Grid : form and content – rhythm, form and frame – structure and colour – many columns, many choices – automated grids	2	CO1 - CO6
5.3	Pattern : dots, stripes and grids – repeating elements – one element many patterns – changing colour, scale and orientation – random repeat – grid as matrix	3	CO1 - CO6
6	**MAPPING THE UNSEEN**	**8**	
6.1	Diagram : designing networks – overlapping relationships – visualising everyday changing observations	3	CO1 - CO6
6.2	Time and Motion : implied motion – jiggle and animated letters – Change in position, rotation, scale, shape, colour, depth, transparency and combinations	3	CO1 - CO6
6.3	Rules and Randomness : number symphony – repeat and rotate – abstract alphabet	2	CO1 - CO6
	Total Number of Hours	**45**	

Learning Resources

1. Ellen Lupton and Jennifer Cole Phillips, Graphic Design the New Basics, Second edition, Revised and expanded, 2015, Princeton Architectural Press
2. David Dabner, Sandra Stewart and Abbie Vickress, Graphic Design School the Principles and Practice of Graphic Design, Eight edition, 2023, John Wiley & Sons
3. Josef Muller-Brockmann, Grid Systems in graphic design, 1999, Verlag Niggli
4. Aaris Sherin, Introduction to graphic Design A guide to Thinking, Process and Style, First edition, 20188, Bloomsbury Publishing

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24IDFB0	VERNACULAR INDIAN CRAFTS

Category	L	T	P	Credit
EFC	1	-	2	3

Preamble

Vernacular Indian Crafts introduces students to the rich and diverse craft traditions across India. This course explores zone-wise practices, materials, and techniques, emphasizing their cultural relevance and design potential. By understanding traditional knowledge systems, students will develop sensitivity towards craft preservation, sustainable use, and contemporary application in design.

Prerequisite

Nil

Course Outcome

On successful completion of the course, students will be able to

CO	Course Outcome	TCE Proficiency Scale	Expected Proficiency in %	Expected Attainment Level %
CO1	Discuss the cultural significance, historical context, and symbolic meanings embedded in vernacular craft traditions across India, recognizing their role in community identity and regional	TPS2 10%	70	70
CO2	Demonstrate the distinct craft forms and techniques practiced in various Indian states, including the materials used, region-specific processes, and characteristic visual features.	TPS3 10%	70	70
CO3	Discover how local environments, traditions, beliefs, and resources influence the development of different craft practices, with specific reference to motifs, symbols, and functional aspects.	TPS4 20%	70	70
CO4	Support the evolution of selected crafts over time, tracing the influence of modernization, market demands, and socio-political shifts on artisans and their craft ecosystems.	TPS5 20%	70	70
CO5	Combine the application of craft-based elements—such as patterns, textures, and materials—in the conceptualization of design or interior projects inspired by vernacular traditions.	TPS6 20%	70	70
CO6	Develop design proposals using knowledge of traditional craft systems to illustrate storyboards, or visual narratives that reflect contextual, cultural, and aesthetic sensitivity.	TPS6 20%	70	70

Mapping with Programme Outcomes and Programme Specific Outcomes

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	M	L	S	S	M	M	M	L	L	M	L	L
CO2	M	L	M	M	M	S	S	L	L	L	M	L
CO3	S	L	M	S	M	M	S	L	M	L	L	L
CO4	M	M	M	L	L	S	S	L	L	M	L	L
CO5	M	M	S	S	L	M	M	M	L	L	L	L
CO6	M	L	M	S	M	M	M	L	S	M	L	M

S- Strong; M-Medium; L-Low

Assessment Pattern: Cognitive Domain

Cognitive Levels	Assignment 1					Assignment 2					Terminal				
TPS Scale	**2**	**3**	**4**	**5**	**6**	**2**	**3**	**4**	**5**	**6**	**2**	**3**	**4**	**5**	**6**
CO1	10					10					10				
CO2		10					10					10			
CO3			20					20					20		
CO4				20					20					20	
CO5					20					20					20
CO6					20					20					20

Syllabus

Unit 01 - North Zone – Jammu & Kashmir – Sozni embroidery, Papier-mâché, Namda rugs – Punjab – Phulkari embroidery, Wood inlay – Uttarakhand – Aipan, Ringal crafts – Himachal Pradesh – Chamba rumal, Kullu weaving, Metal craft.

Unit 02 - Central Zone – Madhya Pradesh – Gond painting, Chanderi weaving, Bagh print – Chhattisgarh – Dhokra metal casting, Bastar woodcraft – Uttar Pradesh – Banarasi brocade, Terracotta of Gorakhpur, Zardozi embroidery.

Unit 03 - East Zone – West Bengal – Kantha embroidery, Sholapith craft, Terracotta of Bishnupur – Odisha – Pattachitra, Silver filigree of Cuttack, Appliqué of Pipli – Jharkhand – Sohrai and Khovar paintings, Stone carving.

Unit 04 - North East Zone – Assam – Muga silk weaving, Bamboo and cane craft – Manipur – Kauna grass weaving, Manipuri textiles – Nagaland – Wood carving, Tribal textiles –Meghalaya – Bamboo mat weaving, Cane furniture.

Unit 05 - South Zone – Tamil Nadu – Tanjore painting, Kanchipuram silk, Stone carving (Mahabalipuram) – Kerala – Nettur petti, Coir craft – Karnataka – Bidriware, Ilkal sarees – Andhra Pradesh & Telangana – Kalamkari, Nirmal paintings.

Unit 06 – West Zone - Rajasthan – Blue Pottery, Block printing (Bagru & Sanganer), Meenakari - Gujarat – Rogan art, Bandhani, Wood lacquer craft - Maharashtra – Paithani sarees, Warli painting, Leather puppets

Course Contents and Lecture Schedule

Module No	Topic	No. of Lecture Hours	Course Outcome
1	**North Zone**	**4**	
1.1	Jammu & Kashmir – Sozni embroidery, Papier-mâché, Namda rugs	1	CO1 – CO6
1.2	Punjab – Phulkari embroidery, Wood inlay	1	CO1 – CO6
1.3	Uttarakhand – Aipan, Ringal crafts	1	CO1 – CO6
1.4	Himachal Pradesh – Chamba rumal, Kullu weaving, Metal craft	1	CO1 – CO6
2	**Central Zone**	**3**	
2.1	Madhya Pradesh – Gond painting, Chanderi weaving, Bagh print	1	CO1 – CO6
2.2	Chhattisgarh – Dhokra metal casting, Bastar woodcraft	1	CO1 – CO6
2.3	Uttar Pradesh – Banarasi brocade, Terracotta of Gorakhpur, Zardozi embroidery	1	CO1 – CO6
3	**East Zone**	**3**	
3.1	West Bengal – Kantha embroidery, Sholapith craft, Terracotta of Bishnupur	1	CO1 – CO6
3.2	Odisha – Pattachitra, Silver filigree of Cuttack, Appliqué of Pipli	1	CO1 – CO6
3.3	Jharkhand – Sohrai and Khovar paintings, Stone carving	1	CO1 – CO6
	Assignment 1	**12**	
	Experimentation with one/two crafts as interior elements or products.	12	CO1 – CO6
4	**North East Zone**	**4**	
4.1	Assam – Muga silk weaving, Bamboo and cane craft	1	CO1 – CO6
4.2	Manipur – Kauna grass weaving, Manipuri textiles	1	CO1 – CO6
4.3	Nagaland – Wood carving, Tribal textiles	1	CO1 – CO6
4.4	Meghalaya – Bamboo mat weaving, Cane furniture	1	CO1 – CO6
5	**South Zone**	**4**	
5.1	Tamil Nadu – Tanjore painting, Kanchipuram silk, Stone carving (Mahabalipuram)	1	CO1 – CO6
5.2	Kerala – Nettur petti, Coir craft	1	CO1 – CO6
5.3	Karnataka – Bidriware, Ilkal sarees	1	CO1 – CO6
5.4	Andhra Pradesh & Telangana – Kalamkari, Nirmal	1	CO1 – CO6
6	**West Zone**	**3**	
6.1	Rajasthan – Blue Pottery, Block printing (Bagru & Sanganer), Meenakari	1	CO1 – CO6
6.2	Gujarat – Rogan art, Bandhani, Wood lacquer craft	1	CO1 – CO6
6.3	Maharashtra – Paithani sarees, Warli painting, Leather puppets	1	CO1 – CO6
	Assignment 2	**12**	

	Experimentation with one/two crafts as interior elements or products.	12	CO1 – CO6
	Total Hours	**45**	

Learning Resources

1. Ranjan, M.P. & Ranjan, Aditi. Handmade in India: A Geographic Encyclopedia of Indian Handicrafts. Council of Handicraft Development Corporations, 2007.
2. Lukose, Ritty A. Crafting the Nation in Colonial India. Duke University Press, 2009.
3. Chattopadhyay, K. Handicrafts of India. All India Handicrafts Board, Ministry of Textiles.
4. Jain, Jyotindra. Crafts of India: Handmade in India. Marg Foundation.
5. Mukherjee, Arundhati. Traditional Textiles of India. Ministry of Textiles Publication.
6. Roy Chudley, Roger Greeno, 'Building Construction Handbook', Routledge, 2017.
7. Dhamija, Jasleen. Living Traditions of India. NBT India.

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