ANNA UNIVERSITY, CHENNAI
AFFILIATED INSTITUTIONS (NON-AUTONOMOUS)
REGULATIONS 2021
B.Des – CURRICULUM AND SYLLABI

B.Des Curriculum Structure R 2021 (Full-time UG Degree Programme - 4 years)

(Applicable to Students admitted from the Academic Year 2024-2025)

SEMESTER I

S. No	Course Code	Course Title	Category	Periods Per Week			Contact Periods	Credits
				L	T	P/S		
1	IP3151	Induction Programme	-	-	-	-	-	0
THEORY								
2	BD3101	Design Appreciation through History I	PCC	3	0	0	3	3
3	BD3102	Principles of Design	PCC	3	0	0	3	3
4	BD3103	Introduction to Language and English Skills	SEC	3	0	0	3	3
THEORY CUM STUDIO								
5	BD3104	Visual Arts & Crafts - I	PCC	1	0	4	5	3
6	BD3105	Geometrical UnderstandIng and Representation I	PCC	1	0	4	5	3
STUDIO								
7	BD3106	Studio I - Basic Design Studio	PCC	0	0	12	12	6
			TOTAL	**11**	**0**	**20**	**31**	**21**

SEMESTER II

S. No	Course Code	Course Title	Category	Periods Per Week			Contact Periods	Credits
				L	T	P/S		
THEORY								
1	BD3201	Design Appreciation through History II	PCC	3	0	0	3	3
2	BD3202	Ergonomics - Fundamentals & Advanced	PAECC	3	0	0	3	3
		NCC/NSS/NCC/YRC Credit Course Level 1*						
THEORY CUM STUDIO								
3	BD3203	Geometrical Understanding and Representation- II	PCC	1	0	4	5	3
4	BD3204	Visual Arts & Crafts - II	PCC	1	0	4	5	3
5	BD3205	Computer Modelling and Simulation Techniques - I	PCC	1	0	4	5	3
STUDIO								
6	BD3206	Studio II - Foundation Design Studio	PCC	0	0	12	12	6
			TOTAL	**9**	**0**	**24**	**33**	**21**

*NCC / NSS Credit Course level 1 is offered for NCC/NSS students only. The grades earned by the students will be recorded in the Mark Sheet, however the same shall not be considered for the computation of CGPA.

SEMESTER III								
S. No	**Course Code**	**Course Title**	**Category**	**Periods Per Week**			**Contact Periods**	**Credits**
				L	**T**	**P/S**		
THEORY								
1	BD3301	Applied Science for Interior Environments	BSC & AEC	3	0	0	3	3
2	BD3302	Product Form Design	PCC	3	0	0	3	3
3	BD3303	Materials and Manufacturing I	BSC & AEC	3	0	0	3	3
THEORY CUM STUDIO								
4	BD3304	Digital illustrations	SEC	1	0	4	5	3
STUDIO								
5	BD3305	Computer Modelling and Simulation Techniques II	PCC	0	0	6	6	3
6	BD3306	Studio III - Space Design Studio	PCC	0	0	12	12	6
			TOTAL	**10**	**0**	**22**	**32**	**21**

SEMESTER IV								
S. No	**Course Code**	**Course Title**	**Category**	**Periods Per Week**			**Contact Periods**	**Credits**
				L	**T**	**P/S**		
THEORY								
1	BD3401	Professional Ethics & Law	PAECC	3	0	0	3	3
2	BD3402	Interior landscape design	PCC	3	0	0	3	3
3	BD3403	Interior Services I	BSC & AEC	3	0	0	3	3
4	BD3404	Materials and Manufacturing II	BSC & AEC	3	0	0	3	3
		NCC/NSS/NSO/YRC Credit Course Level 2*						
THEORY CUM STUDIO								
5	BD3405	Design Detailing I	PAECC	1	0	4	5	3
STUDIO								
6	BD3406	Studio IV - Design Studio II	PCC	0	0	12	12	6
		Internship Training*	PCC	-	-	-	-	3
		TOTAL		**13**	**0**	**16**	**29**	**24**

* Summer Internship Training during May/June (45 days) -Focus on industry experience in an organization /office engaged in Interior Design and approved by the Department

* NCC/NSS Credit Course level 2 is offered for NCC/NSS students only. The grades earned by the students will be recorded in the Mark Sheet, however the same shall not be considered for the computation of CGPA.

SEMESTER V								
S. No	**Course Code**	**Course Title**	**Category**	**Periods Per Week**			**Contact Periods**	**Credits**
				L	**T**	**P/S**		
THEORY								
1	BD3501	Estimation ,Costing & Economics	PCC	3	0	0	3	3
2		Elective I	PEC	3	0	0	3	3
THEORY CUM STUDIO								
3	BD3502	Design Detailing II	PAECC	1	0	4	5	3
4	BD3503	Interior Services II	BSC & AEC	1	0	4	5	3
STUDIO								
5	BD3504	Digital Fabrication	PAECC	0	0	6	6	3
6	BD3505	Studio V - Design Studio III	PCC	0	0	12	12	6
			TOTAL	**8**	**0**	**26**	**34**	**21**

SEMESTER VI								
S. No	**Course Code**	**Course Title**	**Category**	**Periods Per Week**			**Contact Periods**	**Credits**
				L	**T**	**P/S**		
THEORY								
1	BD3601	Professional Management I	PCC	3	0	0	3	3
2	BD3602	Textile in Interior Design	BSC &AEC	3	0	0	3	3
3	BD3603	Ceramic Products and Design	PCC	3	0	0	3	3
4		Elective II	PEC	3	0	0	3	3
STUDIO								
5	BD3604	Integrated Design Seminar	PAECC	0	0	6	6	3
6	BD3605	Studio VI - Design Studio IV	PCC	0	0	12	12	6
		Internship Training*	PCC	-	-	-	-	3
		TOTAL		**12**	**0**	**18**	**30**	**24**

* Summer Internship Training during May/June (45 days) -Focus on industry experience in an organization /office engaged in Interior Design and approved by the Department

SEMESTER VII								
S. No	**Course Code**	**Course Title**	**Category**	**Periods Per Week**			**Contact Periods**	**Credits**
				L	**T**	**P/S**		
THEORY								
1	BD3701	Professional Management II	PCC	3	0	0	3	3
2	BD3702	Public Design Research	PAECC	3	0	0	3	3
3		Elective III	PEC	3	0	0	3	3
4		Elective IV	PEC	3	0	0	3	3

STUDIO								
5	BD3703	Dissertation	PAECC	0	0	6	6	3
6	BD3704	Studio VII - Packaging and Printing Design Studio	PCC	0	0	12	12	6
			TOTAL	**12**	**0**	**18**	**30**	**21**

SEMESTER VIII

S. No	**Course Code**	**Course Title**	**Category**	**Periods Per Week**			**Contact Periods**	**Credits**
				L	**T**	**P/S**		
THEORY								
1		Elective V	PEC	3	0	0	3	3
2		Elective VI	PEC	3	0	0	3	3
STUDIO								
3	BD3801	Project	PCC	0	0	20	20	10
						TOTAL	**26**	**16**
							Total	**169**

PROFESSIONAL ELECTIVE COURSES (PEC)

S. No	**Course Code**	**Course Title**	**Category**	**Periods Per Week**			**Contact Periods**	**Credits**
				L	**T**	**P/S**		
Elective I								
1	BD3001	Visual tools and Typographic Form	PEC	3	0	0	3	3
2	BD3002	Communication Theories, Visual Perception and Semiotics	PEC	3	0	0	3	3
3	BD3003	Environmental Science	PEC	3	0	0	3	3
Elective II								
1	BD3004	Craft documentation	PEC	3	0	0	3	3
2	BD3005	Design,Media and technology	PEC	3	0	0	3	3
3	BD3006	Digital Portfolio Development	PEC	3	0	0	3	3
Elective III								
1	BD3007	Lighting design	PEC	3	0	0	3	3
2	BD3008	Beyond the Box: Introduction Packaging Design	PEC	3	0	0	3	3
3	BD3009	Printing Design and Technology	PEC	3	0	0	3	3
Elective IV								
1	BD3010	Advertising Design	PEC	3	0	0	3	3
2	BD3011	Introduction to Accessibility and Inclusivity Design	PEC	3	0	0	3	3
3	BD3012	Brand Identity Design	PEC	3	0	0	3	3

Elective V								
1	BD3013	Visual Grammar For Diversity:Social Design	PEC	3	0	0	3	3
2	BD3014	AI in Interior Design	PEC	3	0	0	3	3
3	BD3015	Emerging design technology-AR/VR/Immersive experiences	PEC	3	0	0	3	3
Elective VI								
1	BD3016	Indian Symbology and Knowledge	PEC	3	0	0	3	3
2	BD3017	Fundamentals of User Experience Design	PEC	3	0	0	3	3
3	BD3018	Cultural forms	PEC	3	0	0	3	3

Semester I

BD3101 DESIGN APPRECIATION THROUGH HISTORY – I L T P/S C

3 0 0 3

OBJECTIVES:

- To understand the origins and development of design and art in prehistoric and early civilizations.
- To explore the evolution of design and art in classical Greek and Roman civilizations. To examine classical design techniques and their influence on subsequent art and design movements.
- To examine the evolution of Christian and Islamic art and design from the early to Baroque periods.
- To explore the impact of the Industrial Revolution on art, design, and production.
- To investigate the characteristics of Colonial and Victorian design and their historical context.

UNIT I EVOLUTION OF DESIGN: FROM PREHISTORIC TIMES TO RIVER VALLEY CIVILIZATIONS 9

Design and Art in the Prehistoric Era - Early tools and their design, Pottery as both a practical object and an art form, cave paintings and carvings. Art and Design in River Valley Civilizations- Sumerian Civilization- cylinder seals, relief sculptures, jewellery, and innovations in cuneiform writing, temple art and votive offerings. Ancient Egypt- amulets, scarabs, and wall art.

UNIT II DESIGN IN CLASSICAL CIVILIZATIONS 9

Evolution of Greek art- sculpture, pottery, and frescoes-key artists and design techniques, the use of proportion and idealization in sculpture. Design and layout of Greek domestic spaces (Oikos) - frescoes, mosaics, and decorative elements. Common Greek furniture styles (klismos chairs, couches); materials used and craftsmanship; the role of furniture in daily life.
Roman contributions to art - advancements in sculpture, painting, and mosaics- realism in portraiture, and historical reliefs. Interior design features, such as frescoes, mosaics, wainscots, and the integration of decorative arts; use of colour and design in domestic settings. Common Greek furniture styles (klismos chairs, couches); materials used and craftsmanship; the role of furniture in daily life.

UNIT III DESIGN AND SYMBOLISM - CHRISTIANITY AND ISLAM 9

Christianity through early Christian - Medieval - Renaissance and Baroque period. Major symbols in Christian art-symbols used in painting, sculpture, and stained glass. The use of design elements -colour, light, and space in Christian art and decoration. Symbolic elements in altars, frescoes, and mosaics.

Islamic Design and Symbolism- Calligraphy, geometric patterns, arabesques used in painting, architecture, and decorative arts- symmetry and abstraction in Islamic art - decorative tiles (zellij), and textiles.

UNIT IV IMPACT OF THE INDUSTRIAL REVOLUTION ON DESIGN 9

Examination of Realism, Impressionism in art – Innovations in materials - mass-produced furnishings and new materials- Evolution of decorative arts including textiles and ceramics-Study of influential designers -and their contributions to design.

UNIT V EVOLUTION OF COLONIAL AND VICTORIAN DESIGN 9

Key features of Colonial architecture - symmetrical facades, use of local materials, simple forms - Typical Colonial interior design elements - furniture, textiles, colour schemes - influence of European styles and local adaptations.

Features of Victorian design - ornate details, use of new materials, eclectic styles -elaborate furniture, wallpaper patterns, colour schemes - influence of technological advancements on design**.**

TOTAL 45 PERIODS

OUTCOMES:

- Ability to identify key design elements and artefacts from prehistoric times and river valley civilizations, including tools, pottery, cave paintings, and early writing systems.
- Insight into Greek and Roman art forms, including sculpture, pottery, frescoes, and furniture design.
- Identify major symbols and design elements in Christian and Islamic art, and use of design elements such as colour, light, and space in religious art.
- Identify key features of Colonial and Victorian architecture and interior design, including furniture styles, colour schemes, and decorative elements.

REQUIRED READING:

1. "The Art of Prehistoric Man" by H. L. Schaffer.
2. "The Art of Ancient Egypt" by Gay Robins.
3. “Greek Art and Architecture" by John Griffiths Pedley.
4. "Roman Art" by Nancy H. Ramage and Andrew Ramage.
5. “Signs and Symbols in Christian Art” by George Ferguson.
6. "Islamic Art and Architecture: An Introduction" by Robert Hillenbrand.
7. “A Companion to Renaissance and Baroque Art” by Babette Bohn.
8. "Victorian Design and Decoration" by Barbara Ann McLaughlin.
9. "The Industrial Revolution and British Society" by Patrick O'Brien.
10. "Colonial Architecture and Interiors: The British Tradition" by David Watkin.

REFERENCES:

1. "The Story of Art" by E.H. Gombrich.
2. "Ancient Near Eastern Art" by Henri Frankfort.
3. "The Art of Ancient Greece" by Nigel Spivey.
4. "Daily Life in Ancient Rome" by Jérôme Carcopino.
5. “A Complete Guide to Christian Symbols” by Riojas, Edward.
6. "The Art and Architecture of Islam 1250–1800" by Sheila Blair and Jonathan Bloom.
7. "Victorian Interior Decoration: American Interiors 1830-1900" by Annette Stott.
8. "The Colonial Revival House" by Richard Guy Wilson.

BD3102 PRINCIPLES OF DESIGN

L	T	P/S	C
3	0	0	3

OBJECTIVES:

- To introduce students to the fundamental elements and principles of design.
- To understand the cultural influences on the interpretation and evolution of form.
- To explore basic geometric shapes and their applications in design.
- To analyse form and space in design.

UNIT I INTRODUCTION TO ELEMENTS AND PRINCIPLES OF DESIGN 9

Primary elements of Design – line, shape, form, colour, tone, texture and space– Geometry in Design - texture, and colour – in relation to light, and pattern. Synthesis of these elements evolves understanding of basics of design - static and dynamic aspects of different compositions of design elements– order to chaos - Regularity and irregularity.

UNIT II ORDERING PRINCIPLES 9

Introduction to various ordering principles: Axis, Symmetry, Hierarchy, Rhythm, Repetition, Transformation, and Balance - symmetrical, radial, occult; harmony; unity; variety; rhythm; emphasis, - scale - proportion -- Golden Section, Le modular, Fibonacci series Renaissance Theories. Introduction to Gestalt Principles. Figure and ground, positive and negative spaces.

UNIT III FORM & SPACE 9

Form and Space, Basic Forms, Transformation of Forms, Formal Collisions of Geometry, Defining Space, Spatial Organization, Spatial Relationships, and Circulation.

UNIT IV CONCEPT OF GEOMETRY & VISUAL COMPOSITION 9

Introduction to different 3-D forms and primitive forms, shapes - characteristic features and their behaviour - understanding the behaviour when combined. Transformation of 2-D to 3-D - process - principles - types - Composition - types - Principles of composition using grids, symmetrical/ asymmetrical, Rule of Thirds, Centre of Interest, Gestalt's Theory of Visual Composition.

UNIT V COLOUR THEORY 9

Introduction colour theory - spectrum of colours - application - concept - Colour wheel – primary, secondary, tertiary colours, colour wheel, colour schemes colour value, intensity, and modification of colour hues – tints, shades, neutralization. Colour chart types, making and using. colour harmony, use of colour harmony. The psychological impact of colour – warm, cool and neutral colours, impact of specific hues, meanings of colour, colour and form, colour and light, colour and surface qualities, colour and distances and scales.

TOTAL : 45 PERIODS

OUTCOMES:

- Identify and apply elements such as line, shape, form, space, color, texture, and value in design.
- Understanding Historical and Cultural Influences.
- Skill in Geometry and Proportion.

REQUIRED READING

1. Johannes Itten, "The Art of Color: The Subjective Experience and Objective Rationale of Color," John Wiley & Sons,1997.
2. Wucius Wong, "Principles of Form and Design," John Wiley & Sons, 1993.
3. Rudolf Arnheim, "Art and Visual Perception: A Psychology of the Creative Eye," University of California Press, 1974.
4. Hugh Honour and John Fleming, "A World History of Art," Laurence King Publishing, 2009.
5. Ernst Gombrich, "The Story of Art," Phaidon Press, 1995.
6. Kimberly Elam, "Geometry of Design: Studies in Proportion and Composition," Princeton Architectural Press, 2001.
7. Jay Hambidge, "The Elements of Dynamic Symmetry," Dover Publications, 2005.
8. Francis D. K. Ching, "Architecture: Form, Space, and Order," John Wiley & Sons, 2014.
9. Simon Unwin, "Analysing Architecture," Routledge, 2014.
10. Robert McCarter, "Louis I. Kahn," Phaidon Press, 2005.
11. Gail Peter Borden, "Material Precedent: The Typology of Modern Tectonics," John Wiley & Sons, 2010.
12. Peter Zumthor, "Atmospheres: Architectural Environments - Surrounding Objects," Birkhäuser, 2006.

REFERENCES

1. Nikolaus Pevsner, "An Outline of European Architecture," Pelican Books, 1963.
2. Mario Livio, "The Golden Ratio: The Story of Phi, the World's Most Astonishing Number," Broadway Books, 2003.
3. John F. Pile, "Interior Design," Pearson, 2014.

BD3103 INTRODUCTION TO LANGUAGE AND ENGLISH SKILLS

L	T	P/S	C
3	0	0	3

OBJECTIVES:

- To give an introduction to the concepts and evolution of language in human society including its various expressions and functions
- To give basic skills of English language in everyday situations involving speaking, listening, reading, writing, presenting.
- To enable the use of language to think, express experience and communicate larger meaning.

UNIT I INTRODUCTION TO LANGUAGE AND LINGUISTICS 9

Communication in humans and animals. Language in humans– definition, function and hypotheses of evolution. Some concepts of language- Phonetics, Phonology, Morphology, Syntax, Semantics, Pragmatics.

UNIT II ENGLISH- SPEAKING AND LISTENING 9

Everyday communication and human interaction through language. Speaking and listening. Simple class exercises.

UNIT III ENGLISH- READING, WRITING, PRESENTING 9

Reading and writing. Language comprehension skills through reading and writing. Presenting information and ideas. Simple exercises.

UNIT IV LANGUAGE AS EXPRESSION AND COGNITION 9

Language as expression – poetry, prose, literature, etc., Cognitive function of language. Cognitive role of language in constructing reality, abstracting, and projecting the future. Simple exercises.

UNIT V LANGUAGE AS DISCOURSE 9

Thinking, talking and writing about ideas and situations within a social context and conveying broader meaning and abstraction. Discourse, dialectic. Simple class exercises.

TOTAL: 45 PERIODS

OUTCOMES

- An understanding of basic role of language in humans.
- Skill and confidence in everyday requirements of the English language.
- Ability to express experience, explore meaning and construct reality through language.

REQUIRED READING:

1. Sharon Hendenreich, ‘English for Architects and Civil Engineers’, Springer, 2014
2. www.cambridgescholars.com
3. www.robertdwatkins.com/Englishworkbook.pdf
4. N. Chomsky, ‘Reflections on Language’, Fontana, 1975.
5. Steve Pinker, ‘The Language Instinct’, Penguin, 2015.
6. R.L. Trask, ‘Language and Linguistics: The Key Concepts’, Routledge, 2007.
7. R.L. Trask, ‘Language: The Basics’, Routledge 1999

REFERENCES

1. Chris Mounsey, ‘Essays and Dissertation’, Oxford University Press, 2005.
2. Sidney Greenbaum, ‘The Oxford English Grammar’, Oxford University Press, 2005.
3. Krishna Mohan and Meera Banerji, ‘Developing Communication Skills’, 2nd edition, Laxmi Publications, 2009.

BD3104	VISUAL ARTS AND CRAFTS – I	L T P/S C 1 0 4 3

OBJECTIVES:

- To understand how to use different mediums to represent ideas on paper.
- To give an introduction to the discipline of visual art and its various facets.
- To introduce the importance of art and its relation to design through study and hands-on work of techniques and mediums of Art.
- To introduce the vocabulary of Visual Arts in terms of elements and principles in application.
- To explore the historical and cultural contexts of notable Indian art forms and their transformation over time.
- To explore the rich tradition and diversity of Indian crafts across different regions and historical periods.

UNIT I INTRODUCTION TO FREEHAND SKETCHING 15

Exercises include freehand drawing and sketching studies - Exploring Line, Shape, Tone, Texture and Depth. Quality of line, Drawing shapes in proportion, Composition of shapes, Contour Drawing, Still Life Drawing, Line Studies. Basics of drawing one-point and two-point perspectives. Construct basic to complex 3d platonic forms using the freehand method. Value Studies.

UNIT II INTRODUCTION TO ART MEDIUMS 20

Explore different mediums for sketching - Pencil, Ball pen, Ink pen, Charcoal sticks, brush pen etc. Explore different mediums and their techniques for artwork - oil and dry Pastels, Poster colours, Watercolours, Oil colours, Glass colours, Fabric colours etc.

UNIT III MAJOR ART MOVEMENTS AND THEIR INFLUENCE 20

Characteristics & Influence – Renaissance- Baroque – Romanticism- Impressionism- Cubism – Surrealism - Pop Art- Contemporary Art.

UNIT IV INTRODUCTION TO ARTS – INDIA 20

Outline the characteristics of exemplary arts in India across the ages, including living folk traditions. Case studies- Madhubani, Miniature Painting Warli, Tanjore, Pattachitra, Kalamkari. Phad, Kalighat, Gond, Cheriyal Scrolls, Pichwai, Kerala Mural, and Bhil. Decoding systems and Exercises in understanding historical aspects of the art sector, transformation through Time including works of contemporary artists- M.F. Husain, Tyeb Mehta, and S.H. Raza. Digital and Experimental Art- contemporary practices using new media, technology, and experimental methods to reflect current trends.

TOTAL:75 PERIODS

OUTCOMES:

- Proficiency in Freehand Sketching Techniques.
- Expertise in Art Mediums and Techniques.
- Understanding of Gestalt Principles and Color Theory.
- Ability to identify and describe the characteristics and historical significance of traditional Indian art forms
- Ability to identify and describe key characteristics of traditional Indian art, including those from both North and South India.

REQUIRED READING:

1. Bert Dodson, "Keys to Drawing," North Light Books, 1990.
2. Betty Edwards, "The New Drawing on the Right Side of the Brain," Tarcher, 1999.

3. Arthur L. Guptill, "Rendering in Pen and Ink," Watson-Guptill, 1997.
4. Bert Dodson, "Keys to Drawing with Imagination," North Light Books, 2006.
5. Rudolf Arnheim, "Art and Visual Perception: A Psychology of the Creative Eye," University of California Press, 1974.
6. Stephen Palmer, "Vision Science: Photons to Phenomenology," MIT Press, 1999.
7. Josef Albers, "Interaction of Color," Yale University Press, 1971.
8. Johannes Itten, "The Art of Color," John Wiley & Sons, 1974.
9. Carol Wax, "The Mezzotint: History and Technique," Abrams, 1990.
10. Adolf Dehn, "Water Color Painting," Studio Publications, 1950.

REFERENCES:

1. Kimon Nicolaides, "The Natural Way to Draw: A Working Plan for Art Study," Houghton Mifflin Harcourt, 1990.
2. Robert S. Oliver, "Perspective Drawing: A Step-by-Step Handbook," Dover Publications, 1995.
3. William F. Powell, "Color Mixing Recipes for Portraits," Walter Foster, 2005.
4. Ray Smith, "The Artist's Handbook," DK Publishing, 2009.
5. Richard Zakia and Per Madsen, "Perception and Imaging: Photography as a Way of Seeing," Focal Press, 2012.
6. Maurice Merleau-Ponty, "Phenomenology of Perception," Routledge, 2012.
7. Patti Mollica, "Color Theory: An Essential Guide to Color," Walter Foster Publishing, 2013.
8. Michael Wilcox, "Blue and Yellow Don't Make Green," School of Color Publishing, 2001.
9. William M. Ivins Jr., "Prints and Visual Communication," MIT Press, 1969.
10. Bamber Gascoigne, "How to Identify Prints: A Complete Guide to Manual and Mechanical Processes from Woodcut to Ink Jet," Thames & Hudson, 2004.

BD3105 GEOMETRICAL UNDERSTANDING AND REPRESENTATION - I

L	T	P/S	C
1	0	4	3

OBJECTIVES:

- To develop an understanding of Geometrical Drawing.
- To master drawing the Geometric Shapes and Surfaces.
- To enable students to construct physical planar models of geometric shapes and surfaces.
- To familiarize students with the terminology and methods of orthographic, isometric, axonometric, and perspective projections.

UNIT I INTRODUCTION TO DRAWING 15

Introduction and setting to the drawing equipment, Concept of line, its types, Line thickness quality, grade, divisions and angles, polygons, circles, geometrical curves, helix etc., Concept of Dimensioning & dimension line. Freehand and Architectural lettering, proportion of letter size as per scale and size of the sheet. Scales- Types of scales: Plain scale and Diagonal scale.

Introduction to point, line, plane. Definition of geometrical drawing. Drawing lines and angles Drawing shapes/ planar surfaces - triangle, square, rhombus, rectangle, polygon, hexagon, etc. Drawing of circles, tangents, curves, and conic sections (hyperbola, parabola, ellipse).

UNIT II GEOMETRICAL CONSTRUCTION 15

Solids - cube, cuboids, cylinders, prisms, pyramids, spheres, cones- Sections of solids - The true shape of solids. - Plan, elevation, and section of simple solids.

UNIT III INTRODUCTION TO AXONOMETRIC PROJECTIONS 20

Isometric and Axonometric projection of planes, solids and combinations of solids etc. Isometric and Axonometric projection of simple objects. Study of concepts, types and terminologies such as picture plane, station point, vanishing point, eye level, ground level, Horizon etc.

UNIT IV MEASURED DRAWING 25

Introduction to fundamentals of measured drawing, line value, lettering, drawing representation, format for presentation methods and technique of measuring buildings and their details. Measured drawings of simple objects like furniture, detailing in terms of construction, ornamentation, measured drawings of building components like columns, doors, windows, cornices, etc.

TOTAL: 75 PERIODS

OUTCOMES:

- Proficiency in geometric drawing.
- Skill in Drawing Complex Geometric Shapes.
- Competence in Constructing and Sketching Physical Models.
- Advanced Understanding of Projections.

REQUIRED READING

1. Robert S. Oliver, "Perspective Drawing: A Step-by-Step Handbook," Dover Publications, 1995.
2. Francis D. K. Ching, "Architectural Graphics," John Wiley & Sons, 2015.
3. David H. Ross, "Freehand Figure Drawing for Illustrators," Watson-Guptill, 2015.
4. Paul Laseau, "Freehand Sketching: An Introduction," W. W. Norton & Company, 2000.
5. Matthew Frederick, "101 Things I Learned in Architecture School," MIT Press, 2007.
6. Peter Stanyer, "The Complete Book of Drawing Techniques," Arcturus Publishing, 2012.
7. Francis D. K. Ching, "Design Drawing," John Wiley & Sons, 2010.
8. Keith H. Cullum, "Perspective Drawing," McGraw-Hill, 1989.

9. John Raynes, "The Complete Guide to Perspective Drawing: From One-Point to Six-Point," North Light Books,2005.
10. Ernest R. Norling, "Perspective Made Easy," Dover Publications, 1999.

REFERENCES:

1. Ivor H. Seeley, "Building Quantities Explained," Macmillan, 1993.
2. John Montague, "Basic Perspective Drawing: A Visual Approach," John Wiley & Sons, 2012.
3. James Richards, "Freehand Drawing and Discovery," John Wiley & Sons, 2013.
4. Michael E. Doyle, "Color Drawing: Design Drawing Skills and Techniques for Architects, Landscape Architects, and Interior Designers," John Wiley & Sons, 2011.
5. Charles B. Wiest, "The Art of Perspective Drawing," McGraw-Hill, 2004.

BD3106	STUDIO I – BASIC DESIGN STUDIO	L	T	P/S	C
		0	0	12	6

OBJECTIVES:

- To give an understanding of design as creating form towards a purpose at various scales.
- To enable exploration of the universal visual, experiential and cognitive aspects of design through engaging elements and principles of form.
- To give an insight into the ways in which form/ morphology and use/effect can come together.

Architecture as a discipline starts with morphology as the answer to questions and needs of human society. While the needs are multifarious, including shelter and comfort, social and psychological well-being, culture and meaning, expression of time and context, etc., the means are negotiated through the fundamentals of form in its various attributes. In the foundational studio, the exploration would be on understanding these fundamentals as universals as well as in terms of particular manifestations in specific cultural and temporal contexts. The word form here means all physical manifested aspects.

The explorations in the foundational studio would be of two types. One would be to understand and break down form to its component elements and principles in order to get insight into the most important aspects that give a totality of cognitive effect(perceptive, behavioural, cultural etc.,) or use (anthropometrics, activities, scale, etc.,).Design exploration would continue after this to create a form for use/effect. Another would be to explore component elements like point, line, planes, volume, shape, colour, texture light, pattern, etc., using principles such as balance, unity, dominance, transparency, proportion, scale, solid, void, fluidity, movement, fractal, order, chaos, gestalt, etc., This exploration could be an end in itself or could lead to the creation of a higher level of or composite form/design through using elements and principles in conjunction towards human need/ use (perceptive, behavioural, cultural, anthropometrics, activities, scale, etc.,).
The whole studio would be conducted through a series of related design exercises with multiple stages as well as standalone independent exercises. Observational/ analytical study and design exploration could go hand in hand or one could precede the other, based on the specific project. The exercises would be mediated through situations and contexts, historic and contemporary references, local or global character, aesthetics, basics of human response and behaviour, etc., Different media would be explored in 2D and 3D. The final exercise(s) would be focussed towards small product/ furniture/ architectural design/ component design in urban context, etc.,

TOTAL:180 PERIODS

OUTCOMES:

- Awareness of the totality and components of form in the creation of design.
- Ability to explore the visual/ cognitive language and grammar of the universal elements and principles of design.
- Ability to understand needs as encompassing functional, behavioural, cultural, experiential, etc.,
- Ability to engage awareness towards creating a morphology that fulfils stated intents and needs.

REQUIRED READING:

1. Kumar Vyas, ‘Design and Environment- A Primer’, National Institute of Design, 2009.
2. Pierre von Meiss, ‘Elements of Architecture: From Form to Place’, Routledge, 2014.
3. James F. Eckler,’ Language of Space and Form: Generative Terms for Architecture’, Wiley, 2012.

4. Owen Cappleman and Michael Jack Jordon, ‘Foundations in Architecture: An Annotated Anthology of Beginning Design Project’, Van Nostrand Reinhold New York, 1993.
5. Charles Wallschlacgerm and Cynthia Busic-Snyder, ‘Basic Visual Concepts and Principles for Artists, Architects and Designers’, McGraw Hill, New York 1992.
6. Victor Papanek, 'Design for the Real world, Human Ecology and Social Change', Chicago Review Press, 2005.

REFERENCES:

1. Taiji Miyasaka, ‘Seeing and Making in Architecture: Design Exercises’, Routledge, 2013.
2. V.S. Pramar, ‘Design Fundamentals in Architecture’, Somaiya Publications, New Delhi, 1997.
3. Francis D. K. Ching, ‘Architecture: Form Space and Order’, Van Nostrand Reinhold Co., (Canada), 1979.

Semester II

BD3201 DESIGN APPRECIATION THROUGH HISTORY – II L T P/S C
3 0 0 3

OBJECTIVES

- Explore the key symbols and motifs in Hindu, Buddhist, Jain, and Islamic art and design, and their cultural significance across regions.
- Investigate the relationship between religious beliefs and architectural styles in historical and contemporary contexts.
- Evaluate the effects of colonialism on Indian art, design, and vernacular traditions, highlighting resistance and adaptation.
- Identify the characteristics and cultural influences of vernacular architecture in India and their relevance in modern design.
- Assess the emergence of modernism in design, its principles, and its interaction with traditional practices across various cultures.

UNIT I DESIGN AND SYMBOLISM – HINDU, BUDDHIST AND JAIN CULTURE 9

Hindu Art and Symbolism - Overview of paintings like Madhubani, Warli, sculptures, and textiles. **Key Symbols -** Analysis of symbols such as the Om, lotus, and trident. Understanding the visual representation of gods and goddesses. Buddhist Art and Symbolism- Thangka paintings, sculptures, and mandalas. The significance of the lotus, wheel, and bodhi tree. Various mudras and their meanings. **Cross-Cultural Analysis:** Similarities and differences in symbols across the three traditions. Exploration of recurring designs and their interpretations.

UNIT II DESIGN AND SYMBOLISM – BUDDHIST AND ISLAM IN SOUTHEAST AND FAR EAST REGIONS 9

Buddhist Arts and Symbolism in Southeast Asia - Focus on Thailand, Indonesia, and Cambodia Overview of sculptures, paintings, and textiles. The lotus, dharma wheel, and Bodhisattvas.
Buddhist Arts and Symbolism in Far East Asia - Focus on China, Korea and Japan- Thangka paintings, Zen ink wash, and sculptures. Exploration of the Buddha's iconography and mudras.

Islamic Art and Symbolism in Southeast Asia - Influence of local traditions on Islamic artistic expressions in countries like Indonesia and Malaysia - Calligraphy, textiles, and ceramics. Geometric patterns, arabesques, and floral designs. Far East Asia - Miniature paintings and textiles. Understanding the significance of patterns and colour use. Influence of Persian and Central Asian styles in Chinese Islamic art.

Traditional methods, such as silk painting and natural pigments. Carving and modelling methods in both traditions. Textile Arts: Exploration of weaving, dyeing, and embroidery techniques

UNIT III COLONALISM IN INDIA 9

Pre-Colonial Art Forms - Overview of major Indian art forms before colonialism like Mughal, Rajput, and Pahari. Characteristics of traditional Indian painting, sculpture, and crafts. Early Colonial Influences - Arrival of European artists and the introduction of Western styles and impact of the British East India Company on local art practices - Case studies of early colonial art - company paintings.

The British Raj and Artistic Transformation – Introduction of New Mediums – Photography, Printmaking. The establishment of art schools and their influence on Indian artists- The Bengal School- Influence of the British aesthetic on Indian textiles and decorative arts. Progressive Artists' Group- Formation and Goals- Prominent artists like F.N. Souza, M.F. Husain, and S.H. Raza- Themes and Techniques- focus on themes of nationalism, identity, and human experience, reflecting the complexities of post-colonial society.

UNIT IV VERNACULAR TRADITIONS IN INDIA 9

Cultural and context of Vernacular traditions in India – Building and materiality of Art & Crafts in vernacular architecture like Rajasthan Havelis - Bhunga Houses – Bohra Housing – Chettinad Houses – Nalukettu Houses & Mansions in Bengal.

UNIT V MODERNISM IN DESIGN 9

Introduction to Modernism- Key characteristics and history. Key Movements in Modern Art. Fauvism, Cubism, and Expressionism-Works of Artists: Matisse, Picasso, Kandinsky. The Bauhaus Movement-Origins and Principles. Key figures: Gropius, Moholy-Nagy. Graphic Design in Modernism-Evolution of typography and layout. Key designers- El Lissitzky, Paul Rand. Modern Art Movements-Surrealism and Dadaism-Key artists Dalí, Duchamp- Critique of Modernism-Introduction to Postmodernism. Discussion on Modernism's legacy.

TOTAL: 45 PERIODS

OUTCOMES:

- Understand how history and religion shape design and symbolism in Hindu, Buddhist, Jain, and Islamic traditions.
- Examine how traditional and modern design practices influence each other.
- Develop design projects that blend insights from different cultures and histories.

REQUIRED READING

1. *Hindu Art and Architecture by S. P. Gupta*
2. *Buddhist Art and Architecture by David Snellgrove*
3. *Islamic Art: A Very Short Introduction by Stefano Carboni*
4. *Buddhism and Islamic Art: A Cultural History by John Guy*
5. *Colonialism in India: A History by G. B. Singh*
6. *The Discovery of India by Jawaharlal Nehru*
7. *Vernacular Architecture in India by K. K. Shukla*
8. *Indian Vernacular Architecture: The Regional and Cultural Context by G. K. Chellappa*
9. *Modernism: A Very Short Introduction by Christopher Butler*
10. *Designing Modern India by K. P. R. Krishna*

REFERENCES:

1. The Art of Indian Asia: Its Mythology and Transformations by Joseph Needham
2. Jain Art and Architecture by Kumkum Sangari
3. Art and Architecture of the Islamic World by Robert Hillenbrand
4. Buddhist Art in Asia by John Guy
5. The Invention of Tradition by Eric Hobsbawm and Terence Ranger
6. India: A History by John Keay
7. The Architecture of the Indian Subcontinent by Donald Leslie
8. Traditional Indian Architecture: Space and Place by V. K. Jain Design as Art by Bruno Munari
9. The International Style: Architecture Since 1922 by Henry-Russell Hitchcock and Philip Johnson

BD3202	ERGONOMICS – FUNDAMENTALS & ADVANCED	L	T	P/S	C
		3	0	0	3

OBJECTIVES

- Understand key concepts and terminology in ergonomics.
- Analyze ergonomic challenges in various settings.
- Apply ergonomic principles to design solutions.

UNIT I ERGONOMICS, HUMAN FACTORS AND ANTHROPOMETRY 9

Definition, scope, and importance of ergonomics in various fields - Human capabilities, limitations, and the role of anthropometry in ergonomic design. Hands-on activity measuring anthropometric data.

UNIT II ERGONOMICS – COGNITIVE, PHYSICAL & ENVIRONMENTAL 9

Mental workload, cognitive processing, and designing for user experience. Analyse case studies focusing on cognitive load. Body mechanics, posture analysis, and the impact of physical ergonomics on health. Design considerations for lighting, noise, temperature, and their effects on performance.

UNIT III ERGONOMICS FOR SPECIAL POPULATIONS 9

Designing for diversity, including age, disability, and cultural considerations. Designing for Women and Men - Designing for Pregnant Women - Designing for the Aging - Designing for Disabled Individuals - Designing for Overweight/Obese Workers - Designing for Patients and Healthcare Providers.

UNIT IV DESIGN PRINCIPLES FOR WORKSTATIONS & ADVANCED ERGONOMICS IN TECHNOLOGY 9

Best practices in spaces - workstation, kitchen, and bathroom design; understanding user-centred design principles- Exercises to redesign existing spaces. The impact of emerging technologies on ergonomics, including VR and AR applications.

UNIT V PRODUCT DESIGN AND FUTURE TRENDS IN ERGONOMICS 9

Principles of ergonomic product development; Modern approach to design and analyse the flaws - chairs and furniture. Case studies - chair designed by Hans Wegner, Verner Panton, Ludwig Mies van der Rohe, Warren Platner, Le Corbusier, Thonet, Eero Saarinen, Arne Jacobsen, Marcel Breuer, Eileen Gray & Charles & Ray Eames. Japanese approach to design - Pod hotels. Emerging trends, sustainable practices, and the future of ergonomic design.

TOTAL: 45 PERIODS

OUTCOMES

- Ability to apply ergonomic principles and anthropometric data to create effective and user-friendly designs.
- Critically assess workstation designs and technology interfaces for ergonomic compliance and make informed recommendations for improvement.
- Design innovative products that address the unique needs of various populations and reflect emerging trends in ergonomics.

REQUIRED READING

1. *Introduction to Ergonomics* by Robert Bridger
2. Ergonomics - How to design for ease and efficiency by Katrin E. Kroemer Elbert, Henrike B. Kroemer Anne D. Kroemer Hoffman
3. Design for Ergonomics by Francesca Tosi

4. *Cognitive Ergonomics: The Design of Human-Computer Interaction* by Andrew D. Hollands and D. J. M. K. van der Voordt
5. *Designing the User Experience: Patterns for Effective Interaction Design* by David R. Benyon
6. *Workstation Design: A Guide to Ergonomics* by Michael L. Smith
7. *Inclusive Design: Design for the Whole Population* by P. A. Langdon, J. Clarkson, and P. Robinson

REFERENCES

1. *Human Factors in Engineering and Design by Mark S. Sanders and Ernest J. McCormick*
2. *Anthropometry and Biomechanics in Ergonomics by Paul A. T. H. Alphan*
3. *The Psychology of Human-Computer Interaction by Stuart K. Card, Thomas P. Moran, and Allen Newell*
4. *Environmental Ergonomics: A Review of the Literature by Peter M. D. Smith*
5. *Ergonomics for Special Populations by Janis L. McCarthy*

BD3203 GEOMETRICAL UNDERSTANDING AND REPRESENTATION - II

L	T	P/S	C
1	0	4	3

OBJECTIVES

- Explore the fundamental principles of perspective in drawing, focusing on solid forms and their spatial representation.
- Explore the fundamental principles of perspective in drawing, focusing on solid forms and their spatial representation.
- Gain proficiency in measured drawing techniques, emphasizing accuracy in proportions and dimensions of objects.
- Integrate perspective drawing skills into design projects, effectively communicating three-dimensional concepts.

UNIT I PERSPECTIVE – SOLIDS 15

Introduction to Perspective- One-point, Two-point & Three-point perspective of Solids- cube, cuboids, cylinders, prisms, pyramids, spheres, cones.

UNIT II PERSPECTIVE – SPACES & BUILDINGS 20

One-Point Perspective for Interiors- Understanding the vanishing point and horizon line in interior spaces. Simple interior layouts- rooms, furniture using one-point perspective. Two-Point Perspective for Buildings- Two vanishing points for exterior views- Building facades and street views. Three-Point Perspective- Three-point perspective for dramatic viewpoints (high/low).

UNIT III FAST TECHNIQUES FOR PERSPECTIVE DRAWINGS 20

One-Point Perspective - Simplified approach to one-point perspective. Practice quick sketches of simple interiors and objects. Two-Point Perspective - Rapid techniques for two-point perspective- Using Grid Systems for Speed. Expressive Line Work -Using loose, expressive lines to convey perspective Light and Shadow in Perspective- Adding light and shadow in sketches.

UNIT IV MEASURED DRAWING 20

Measured drawings of interior spaces, including furniture and fixtures, and measured drawings of small-scale buildings.

TOTAL: 75 PERIODS

OUTCOMES:

- Ability to produce accurate perspective drawings of solid forms using proper techniques.
- Ability to employ fast sketching techniques to convey ideas and concepts quickly while maintaining clarity and proportion.
- Produce precise measured drawings that accurately represent the dimensions and spatial relationships of objects.

REQUIRED READING

1. *The Art of Perspective: The Ultimate Guide for Artists in Every Medium* by Phil
2. Robert S. Oliver, "Perspective Drawing: A Step-by-Step Handbook," Dover Publications, 1995.
3. *Perspective Made Easy* by Ernest R. Norling
4. *Drawing Perspective: How to See It and How to Draw It* by Barbara A. D. Reynolds
5. *Sketching for Architecture + Interior Design* by Stephanie S. Travis

REFERENCES

1. *Perspective for Artists* by Rex Vicat Cole
2. *The Complete Guide to Perspective* by William F. Powell
3. *Architectural Drawing: A Visual Compendium of Types and Methods* by David D. L. McCarthy
4. *Architectural Graphics* by Francis D. K. Ching

BD3204 **VISUAL ARTS AND CRAFTS – II** **L T P/S C**
1 0 4 3

OBJECTIVES

- Understand the diversity and significance of traditional crafts in India, including techniques, materials, and cultural contexts.
- Examine the major art movements in Western art history and their influence on artistic expression and techniques.
- Analyze the differences and similarities between Indian crafts and Western art, considering cultural and historical influences.
- Cultivate a critical appreciation of artworks through visual analysis and contextual understanding.

UNIT I INTRODUCTION TO CRAFTS - INDIA 20

Outline the characteristics of exemplary crafts in India across the ages, including living folk traditions. Exercises in understanding historical aspects of the Craft Sector, Decoding Systems, and Transformation through Time. Case studies- crafts from north and south India - Bagh, Dhokra, Bidriware, Kantha, Meenakari, Saharanpur Wood Carving, Terracotta Pottery, Blue Pottery, Kondapalli Dolls.

UNIT II WORKS OF THE WESTERN ARTISTS - ARTS 15

Leonardo da Vinci- Michelangelo- Vincent van Gogh- Pablo Picasso - Claude Monet - Georgia O'Keeffe **-** Jackson Pollock - Andy Warhol- Frida Kahlo - Henri Matisse.

UNIT III WORKS OF THE WESTERN ARTISTS - CRAFTS 20

Woodworks and Furniture Design - Gustav Stickley, Thomas Chippendale, George Nakashima, Charles and Ray Eames, Sam Maloof. Metalworks - Paul Revere, David Smith. Ceramics and Textiles - Bernard Leach, William Morris, Lucy Rie, Maria Martinez, Anni Albers, Kaffe Fassett, Sheila Hicks. Glass- Louis Comfort Tiffany, Dale Chihuly.

UNIT IV WORKSHOP 20

Hands-on workshop – Woodworking – Furniture – Ceramics & Glass.

TOTAL: 75 PERIODS

OUTCOMES

- Ability to demonstrate knowledge of significant Indian crafts, their origins, and their contemporary relevance.
- Ability to critically evaluate and interpret the works of major Western artists, identifying stylistic and thematic elements.
- Synthesize insights from Indian crafts and Western art to articulate their impacts on global art practices.

REQUIRED READING

1. Jaitly, Jaya. “The Craft Traditions of India”, Lustre Press Pvt.Ltd, New Delhi, 1990.
2. Jaitly Jaya. “Crafts Atlas of India”, Niyogi Books, N.Delhi, 2012.
3. *The Story of Art* by E.H. Gombrich
4. *Art: A World History* by Robert Cumming
5. Art in Theory 1900-2000: An Anthology of Changing Ideas edited by Charles Harrison and Paul Wood
6. The Shock of the New: Art and the Century of Change by Robert Hughes

REFERENCES

1. Traditional Indian art and culture by P. C. Jain
2. *Crafts of India: A Comprehensive Guide* by D. R. K. Bhattacharya

3. *Indian Handicrafts* by M. A. K. Karamchandani Western Art: A History by Andrew Graham Dixon
4. The Lives of the Artists by Giorgio Vasari
5. *Art Since 1900: Modernism, Antimodernism, Postmodernism by Hal Foster et al.*
6. *The Art Book by Phaidon Press*

BD3205 COMPUTER MODELLING AND SIMULATION TECHNIQUES I

L	T	P/S	C
1	0	4	3

OBJECTIVES:

- To introduce computer operation principles and explore image editing through software like Autocad, SketchUp, Photoshop and Illustrator.
- To impart training in computer-aided 2D drafting and 3D modelling through projects.
- To enable the use of computer applications to develop a design from the initial stages to the outcome.
- To enable the rendering of a building to create a photo-realistic image.

UNIT I THE BASICS OF MODELLING 15

Introduction - Overview of CAD applications - Interface and basic drawing tools - Advanced Techniques - Project Work - Geometric Patterns, Stained Glass Window Design, Abstract Shapes, Mosaic Design, and Perspective Drawing.

UNIT II INTRODUCTION TO 3D MODELLING 20

Interface overview and navigation - Basic drawing tools. Components and Materials - Managing components and group. Applying textures and materials. Advanced Sketch-Up Techniques - Using layers and scenes, importing models from 3D Warehouse and using plugins.

UNIT III RENDERING 20

Rendering and scene setting to create a photo-realistic picture, understanding material mapping, Environment setting and image-filling. Understanding bitmap images and vector graphics, image size and resolution. Basic tools for editing and creating graphics.

UNIT IV DESIGN AND DETAILING USING SOFTWARE 20

Design and detailing exercise using software. Exercises - Illustrative Map - Sculptural Forms- Experiment with curves and shapes to make unique 3D forms. Interior Space Design - Model the interior paying attention to layout, furniture, and lighting. Use textures to enhance the atmosphere. Custom Furniture Design - Create a unique piece of furniture that incorporates both function and aesthetics. Consider ergonomic design principles. Visual Storytelling - Design a scene that tells a story. Art Installation Design - Create a conceptual design for an art installation.

TOTAL: 75 PERIODS

OUTCOME

- Ability to express using digital tools in the realm of visual composition,
- Developing skill set to aid drafting 3D visualisation, and rendering.
- Ability to develop design using computer applications.

TEXTBOOKS

1. Photoshop for Designers: A Comprehensive Guide" by Andrew Faulkner
2. AutoCAD 2024 for the Interior Designer" by Dean Muccio
3. Mastering AutoCAD 2024 and AutoCAD LT 2024" by Brian C. Benton
4. SketchUp Pro 2024: A Comprehensive Guide" by Darlene W. H.
5. "Vector Basic Training: A Systematic Creative Process for Building Precision Vector Artwork" by Von Glitschka

REFERENCES

1. Adobe Photoshop Classroom in a Book" by Conrad Chavez and Andrew Faulkner
2. "AutoCAD 2024: A Power Guide for Beginners and Intermediate Users" by John Carline
3. "Mastering AutoCAD 2024 and AutoCAD LT 2024" by Brian C. Benton

4. "SketchUp for Dummies" by Bill Fane and Ted Gargiulo
5. "Adobe Illustrator Classroom in a Book" by Brian Wood
6. "Illustrator CC: Visual QuickStart Guide" by Elaine Weinmann and Peter Lourekas.

BD3206	STUDIO II – FOUNDATION DESIGN STUDIO	L	T	P/S	C
		0	0	12	6

OBJECTIVES:

- Foster creativity in generating innovative product ideas for daily use, focusing on personal products, homeware, gifts and stationery.
- Equip students with essential skills in sketching, prototyping, and using design software.
- Teach students how to conduct user research and incorporate feedback into their designs to meet real-world needs.
- Instil knowledge about sustainable design practices and material selection for everyday products through model making.
- Engage in discussion and analytical thinking through seminars/ workshops.
- Develop effective presentation skills to communicate design concepts clearly to diverse audiences.

CONTENT:

Prototype / project typology: Design of simple products - daily use – commonly used – stationaries – simple furniture like bookrack with prototype models.

Areas of focus/ concern:

• Aesthetic and useability in terms of scale, colour, texture, etc.
• Function and need: user requirements, anthropometrics, and ergonomics.
• Detailing of the product image and symbolism.

TOTAL: 180 PERIODS

OUTCOMES:

- Apply design thinking methodologies to solve everyday problems through innovative product solutions.
- Effectively gather and analyse user feedback to enhance design outcomes.
- Create prototypes that effectively communicate design concepts and usability.
- Make informed decisions about materials and processes that minimize environmental impact.

TEXTBOOKS:

1. The Design of Everyday Things" by Don Norman.
2. "Design Basics" by David A. Lauer and Stephen M. Pentak
3. "Cradle to Cradle: Remaking the Way We Make Things" by William McDonough and Michael Braungart
4. "Designing for Sustainability: A Guide to Building Greener Digital Products" by Tom Giannattasio
5. *The Art of Innovation* by Tom Kelley

REFERENCES:

1. Will Jones; Architects Sketch books; Thames & Hudson; 2011.
2. "Creative Confidence: Unleashing the Creative Potential Within Us All" by Tom Kelley and David Kelley
3. "Design Thinking: Understanding How Designers Think and Work" by Peter G. Rowe

Semester III

BD3301	APPLIED SCEINCE FOR INTERIORS	L	T	P/S	C
		3	0	0	3

COURSE OBJECTIVES

1. To introduce the fundamental scientific principles relevant to interior spaces and materials.
2. To explore the role of natural and physical sciences in human-centric design.
3. To analyze environmental and climatic factors influencing interior comfort and health.
4. To understand lighting, acoustics, and thermal performance for efficient space planning.
5. To encourage the application of scientific reasoning in sustainable and ergonomic interior design solutions.

UNIT I INTRODUCTION TO APPLIED SCIENCE IN INTERIORS 9

Role of science in interior design. Human body-environment relationship. Basics of environmental science. Introduction to comfort parameters (thermal, visual, acoustic)

UNIT II LIGHT AND ILLUMINATION 9

Nature and behavior of light. Day lighting vs artificial lighting. Lumen, lux, glare, CRI, color temperature. Lighting standards for different spaces. Energy-efficient lighting solutions

UNIT III ACOUSTICS IN INTERIOR SPACES 9

Basics of sound: frequency, amplitude, decibel. Sound behavior in enclosed spaces. Materials for sound absorption, insulation, and diffusion. Acoustic design for homes, offices, and auditoriums

UNIT IV THERMAL COMFORT AND INDOOR CLIMATE 9

Heat transfer mechanisms: conduction, convection, radiation. Thermal insulation and building materials. HVAC systems and indoor air quality. Passive design strategies for thermal comfort

UNIT V ERGONOMICS AND ANTHROPOMETRY 9

Human dimensions and spatial requirements. Functional design based on user comfort and efficiency. Furniture design considerations. Health and safety standards in interior design

TOTAL 45 PERIODS

LEARNING OUTCOMES

1. Apply scientific concepts to enhance interior environmental quality.
2. Design lighting layouts and select fixtures based on functional and aesthetic needs.
3. Integrate appropriate acoustic materials and strategies into interior design projects.
4. Evaluate materials and systems for thermal efficiency and indoor comfort.
5. Employ ergonomic principles and anthropometric data in space planning and furniture design.

RECOMMENDED READING / REFERENCE BOOKS:

1. “Time-Saver Standards for Interior Design and Space Planning” by Joseph DeChiara, Julius Panero, and Martin Zelnik
2. “Human Dimension and Interior Space” by Julius Panero and Martin Zelnik
3. “Interior Design Illustrated” by Francis D.K. Ching
4. “Lighting for Interior Design” by Malcolm Innes
5. “Building Construction Illustrated” by Francis D.K. Ching
6. IS Codes and NBC (National Building Code) sections related to lighting, ventilation, and acoustics

BD3302	PRODUCT FORM DESIGN	L	T	P/S	C
		3	0	0	3

COURSE OBJECTIVES:

1. Understand the aesthetics and semantics of product form in the context of function and user experience.
2. Explore the evolution and trends in product form across cultures and design movements.
3. Develop the ability to analyze, conceptualize, and articulate form in relation to material, manufacturing, and ergonomics.
4. Learn methods to ideate and iterate forms through sketching, prototyping, and digital tools.
5. Evaluate product forms based on visual harmony, emotional appeal, and market relevance.

UNIT I INTRODUCTION TO FORM IN PRODUCT DESIGN 10

Definition of form in design: shape, contour, volume, silhouette. Form vs Function: Understanding balance and tension Historical overview of product form evolution. Iconic product forms from Bauhaus to Contemporary design. Introduction to form language and design semantics. Expressive vs restrained forms – emotional vs rational design

UNIT II FORM, STRUCTURE AND MATERIAL 9

Structural implications of form. Influence of material choice on form and vice versa. Visual and tactile qualities of materials (wood, metal, plastic, glass, composites). Manufacturing processes and constraints on form generation. Case studies: Classic products where form follows material. Design for durability, assembly, and disassembly'

UNIT III FORM DEVELOPMENT AND EXPLORATION TECHNIQUES 10

2D and 3D form ideation techniques: sketching, foam modelling, CAD. Principles of form: symmetry, asymmetry, hierarchy, rhythm, contrast. Organic vs geometric forms. Exploring form through abstraction and metaphor. Exercises in form transformation: addition, subtraction, rotation, mirroring. Exploring visual weight, balance, and orientation in design

UNIT IV ERGONOMICS AND USER PERCEPTION OF FORM 8

Human interaction with product forms – touchpoints and usability. Anthropometry and ergonomic considerations in shaping form. Cognitive and emotional response to form. Cultural perceptions and aesthetic preferences in form. Color, texture, and finish as form enhancers

UNIT V FORM STRATEGY AND CONTEMPORARY PRACTICE 8

Form as brand identity – language, consistency, signature styles. Form and sustainability: minimalism, dematerialization, repairable design. Trends in product form: biomimicry, modularity, smart products. Critiquing and presenting product form: visual boards, models, mock-ups. Form development within interdisciplinary team. Case studies: Successful product redesigns based on form evolution

TOTAL 45 PERIODS

LEARNING OUTCOMES:

1. Analyze and critique product forms from functional, aesthetic, and cultural perspectives.
2. Generate and refine product form concepts using manual and digital techniques.
3. Apply ergonomic and material considerations to inform form development.
4. Create form models and articulate design intent effectively.
5. Integrate form strategy within brand, market, and sustainability contexts.

RECOMMEDED READINGS

1. "Industrial Design" – John Heskett, Thames & Hudson – 1980.
2. "Universal Principles of Design" – William Lidwell, Rockport Publishers – Revised Edition, 2010.
3. "Designing for People" – Henry Dreyfuss, Allworth Press – Reprint Edition, 2003.
4. "Materials and Design: The Art and Science of Material Selection in Product Design" – M.F. Ashby, Kara Johnson, Butterworth-Heinemann – 2nd Edition, 2010.
5. "The Meanings of Modern Design" – Peter Dormer, Thames & Hudson – 1990.

BD3303 MATERIALS AND MANUFACTURING I L T P/S C
3 0 0 3

OBJECTIVES

1. To introduce students to the physical, chemical, and mechanical properties of traditional building materials like brick, stone, and timber.
2. To study the methods and technologies involved in the production and processing of natural and processed construction materials.
3. To enable students to evaluate and select appropriate materials based on environmental conditions, functional requirements, and sustainability.
4. To develop the ability to incorporate material knowledge into functional and aesthetic aspects of architectural and product design.

UNIT I BRICK IN THE BUILT ENVIRONMENT 9

Brick as key architectural materials, examining their history, properties, sourcing, and manufacturing processes. Traditional and modern techniques, types of brick, joints, finishes, usage in building components and assess environmental impacts. Integrating these materials into sustainable, interdisciplinary design solutions for contemporary environments using relevant architectural and interior case studies

UNIT II STONE IN BUILT ENVIRONMENT 9

Stone as key architectural materials, examining their history, properties, sourcing, and manufacturing processes. Traditional and modern techniques, types of stone, joints, finishes, usage in building components and assess environmental impact. Integrating these materials into sustainable, interdisciplinary design solutions for contemporary environments using relevant architectural and interior case studies.

UNIT III NATURAL TIMBERIN BUILT ENVIRONMENT 9

Outline of timber as a key material, examining their history, properties, sourcing, and manufacturing processes. Traditional techniques- Vernacular Indian design, Scandinavian, Japanese etc., and Contemporary techniques. Types of wood, joints, finishes, usage in building components-door windows false ceiling partitions, paneling, flooring. Introduction to types of tools and safe handling of hand and power tools. Orientation for operating different types of machines.

UNIT IV PROCESSED TIMBER IN BUILT ENVIRONMENT 9

Outline of processed timber like plywood, MDF, particle board, laminated wood, laminated veneer lumber, composite board etc. as a key material, examining their history, properties, sourcing, and manufacturing processes. Contemporary techniques. Types of joints, finishes, usage in building components-door windows, false ceiling, partitions, paneling, furniture, storage &flooring. Introduction to types of tools and safe handling of hand and power tools. Orientation for operating different types of machines.

UNIT V INTERIOR CLADDING & BAMBOO 9

Outline of applied finishes and their techniques like floor tiling- ceramic, vitrified, terracotta, mosaic, Athangudi; wall cladding- stone and stone based, terracotta, stucco, wood and wood based, terracotta. Sustainability, durability and versatility of bamboo as an interior material for wall cladding, flooring and furniture. Studied also through relevant case studies

TOTAL: 45 PERIODS

OUTCOMES:

- Ability to identify and select appropriate types of bricks, stones, and timber for various design and construction contexts.

- Understanding of manufacturing and processing techniques for natural and processed building materials.
- Capability to integrate material characteristics into the conceptual and practical aspects of design projects.
- Awareness of sustainability and environmental impact in material selection and application.

REQUIRED READING

1.Ashby, Michael, Johnson, Kara, ‘Materials and Design: The Art and Science of Material Selection in Product Design’, Butterworth-Heinemann, 2002.
2. Thompson R, ‘Manufacturing process for design professionals’, Thames and Hudson, London, 2007. Garratt J, ‘Design and Technology’, Cambridge University Press, UK, 2004.
3.American Institute of Timber Construction (AITC), 'Timber Construction Manual', Wiley Publishers, 2004.
4.Willis H Wagner and Howard Bud Smith, 'Modern Carpentry', Good Heart–Wilcox Publishers, Portland, 2007.

REFERENCES

1.S. C. Rangwala, 'Engineering Materials', Charotar Publishing House India, 2015.
2. Roy Chudley, Roger Greeno, 'Building Construction Handbook', Routledge, 2017.

BD3304	DIGITAL ILLUSTRATIONS	L T P/S C
		1 0 4 3

OBJECTIVES

- Demonstrate proficiency in digital illustration tools and software.
- Apply principles of drawing, color, composition, and storytelling to digital media.
- Create original illustrations for a variety of real-world applications.
- Develop and present a professional illustration portfolio.

UNIT I DIGITAL TOOLS & DRAWING FOUNDATIONS 15

Introduction to digital illustration and its interdisciplinary relevance using Illustrator, Raster vs. vector graphics (Photoshop vs. Illustrator), Digital drawing tools and techniques (line, shape, value, brushes), Pressure sensitivity, tablets, and file setup. Composition and basic color theory.

UNIT II VISUAL LANGUAGE – COLOR, TEXTURE & FORM 20

Advanced color theory psychological impact. Principles of composition, balance visual hierarchy and mood creation. Brush settings, texture creation, pattern and layering techniques. Light, shadow, and volume in digital illustration. Stylization and building a visual language developing a personal visual style. Preparation of a poster using the above tools.

UNIT III STORYTELLING, CHARACTERS & CONTEXTUAL ILLUSTRATION 20

Narrative structures and their application in illustration. Character and environment design. Creating environments and backgrounds to support storytelling. Narrative illustration: storyboards, editorial illustration. Integrating text and image in editorial and advertising contexts. Preparation of an Illustration for branding, packaging, products, and UX/UI.

UNIT IV PORTFOLIO DEVELOPMENT 20

Understanding the professional applications of digital illustration in various industries. Preparing illustrations for different media: print, web, and mobile. Creating a cohesive portfolio showcasing a previous semester academic work with digital illustration.

TOTAL: 75 PERIODS

OUTCOMES

- Gain hands-on expertise in industry-standard digital illustration tools (e.g., Photoshop, Illustrator, Procreate) and master digital drawing techniques including color, texture, and composition.
- Develop the ability to create original illustrations with strong visual narratives, characters, and environments for diverse applications such as editorial design, branding, and digital media.
- Build a cohesive body of work, document creative processes, and present a professional illustration portfolio suitable for internships, freelance work, or industry engagement.

REQUIRED READING

1. Digital Painting Techniques: Practical Techniques of Digital Art Masters– 3DTotal Publishing.
2. Illustration That Works: Professional Techniques for Artistic & Commercial Success – Greg Houston.
3. Adobe Photoshop Classroom in a Book – Conrad Chavez & Andrew Faulkner (Adobe Press).
4. Vector Basic Training: A Systematic Creative Process for Building Precision Vector Artwork – Von Glitschka.

REFERENCES

1. The Illustrator's Guide to Procreate: How to Make Art on an iPad – Ruth Burrows
2. Creative Illustration – Andrew Loomis
3. Drawing on the Right Side of the Brain – Betty Edwards
4. Illustration Now! – Julius Wiedemann (TASCHEN)
5.

BD3305 COMPUTER MODELLING AND SIMULATION TECHNIQUES II

L	T	P/S	C
0	0	6	3

OBJECTIVES

- To introduce advanced concepts in Building Information Modeling (BIM) and its application in design and construction.
- To develop proficiency in using BIM software tools for creating and managing digital representations of physical and functional characteristics of buildings.
- To understand the integration of various disciplines within the BIM environment, facilitating collaborative design and documentation processes.
- To analyze and simulate building performance using BIM, enhancing decision-making in the design and construction phases.

FUNDAMENTALS OF BIM AND DESIGN INTEGRATION

Introduction to BIM: concepts, benefits, and comparison with CAD. Role of BIM in collaborative, interdisciplinary design. BIM applications in architecture, interiors, product, and systems design. Case studies and workflow examples

BIM – MODELLING BASICS AND TOOLS

Introduction to BIM software (e.g., Revit). Creating core building elements: walls, floors, roofs, components. Levels, grids, views, and annotation tools. Working with families and parametric components

VISUALIZATION, DATA, AND COLLABORATION

Materials, visualization, and basic rendering. Creating schedules, tags, and extracting quantities. Linked models and team collaboration tools (e.g., BIM 360). Introduction to clash detection and coordination

APPLIED BIM STUDIO PROJECT

BIM-driven design project integrating multiple disciplines. Use of schedules, annotations, and views for documentation. Introduction to sustainability tools and energy analysis. Final project presentation and critique. STUDIO III –design project to be modelled using BIM.

TOTAL: 90 PERIODS

OUTCOME

- Students will be able to create detailed BIM models that accurately represent architectural, structural, and MEP components.
- Students will demonstrate the ability to perform simulations within the BIM environment to assess building performance aspects such as energy efficiency and structural integrity.
- Students will collaborate effectively within multidisciplinary teams, utilizing BIM to coordinate and integrate various design elements.
- Students will apply BIM methodologies to optimize design processes, reduce errors, and improve overall project outcomes.

TEXTBOOKS

1. BIM Handbook: A Guide to Building Information Modelling for Owners, Managers, Designers, Engineers and Contractors. By: Chuck Eastman, Paul Teicholz, Rafael Sacks, Kathleen Liston
2. Mastering Autodesk Revit 2024 (or latest edition) By: Robert Yori, Marcus Kim, Lance Kirby.
3. Design Integration Using Autodesk Revit 2024 *By*: Daniel John Stine

REFERENCES

1. National BIM Report (NBS UK)
2. Autodesk University – Free BIM Courses & Lectures
3. Building SMART International – BIM Standards & IFC Resources

BD3306 STUDIO III – SPACE DESIGN STUDIO L T P/S C
0 0 12 6

OBJECTIVES:

- To enable the understanding of the qualitative and quantitative aspects of basic space design for human use.
- To facilitate exploration of ways to address timeless aspects involved in the design of interior in a residential scale.
- To enable a sensitivity towards the cultural, particular and temporal aspects of interior architecture.

CONTENT:

Humans create and shape spaces/ forms for use. Use includes all aspects of human life- starting from containing the human as a unit (anthropometrics), the needs for carrying out of basic activities, spatial requirements for them, relationship between spaces, requirements of shelter, privacy, social and cultural factors, environmental response, psychological wellbeing, light and air, meaning and symbolism, structure and economy, and so on. Interior design as a discipline brings all these needs together into a coherent totality through the act of conscious design. Conscious design involves the study/analysis of the existing and extrapolating towards the future through speculation.

In the Studio, the focus would be on simple interior design projects that would enable the learning of the fundamentals of space with respect to all the above. The projects would be based on small, everyday situations involving simple circulation, materials and use in project such as residence, farm house, apartment etc. Detailing of living room/ bedroom/ kitchen/ toilets/ storage/ study including furniture design.

TOTAL: 180 PERIODS

OUTCOMES:

- Ability to design simple spaces for human use addressing spatial, social, cultural and temporal human needs.
- Ability to consider the particular context in the process of designing interior spaces and the components within.

TEXTBOOKS:

1. Kent C. Bloomer, Charles W. Moore, ‘Body, Memory and Architecture’, Yale, 1977.
2. Gaston Bachelard, ‘Poetics of Space’, Beacon Press, 1994.
3. Juhani Pallasmaa, 'The Eyes of the Skin - Architecture and the Senses', John Wiley,2012. Joseph De Chiara, Michael J Crosbie, ‘Time Saver Standards for Building Types’, McGraw Hill Professional 2001.
4. Julius Panero, Martin Zelnik, ‘Human Dimension and Interior Space,’ Whitney Library of Design, 1975.
5. Joseph De Chiara, Julius Panero, Martin Zelnik, Time Saver Standards for Interior Design and Space Planning, McGraw Hill 2017.

REFERENCES:

1. Hideaki Hareguchi, A Comparative Analysis of 20th Century Houses, Academy Editions, 1988.
2. Sam F.Miller, Design Process: A Primer for Architectural and Interior Design, Van Nostrand Reinhold, 1995.
3. Ernst Neuferts Architects Data, Wiley, 2012.
4. Philip Plowright, ‘Revealing Architectural Design: Methods, Frameworks and Tools’, Routledge, 2014.

Semester IV

BD3401	PROFESSIONAL ETHICS AND LAW	L T P/S C
		3 0 0 3

OBJECTIVES

1. To understand issues in professional practice
2. To setup an individual business
3. To explain about tender and its applications
4. To explore materials and its application in interiors.
5. To explain about volumetric estimation in interiors.

UNIT I FOUNDATION OF DESIGN ETHICS 9

Professional Components of Managing Interior Work -Office managing, code/conduct -Scale of professional fee & charges, -Duties of employer under labour welfare provisions, -Structure of interior designer's office,

UNIT II SOCIAL RESPONSIBILITY, SUSTAINABILITY, AND INCLUSIVITY IN INDIAN DESIGN 9

Exploring the role of design in addressing Indian societal issues, such as poverty, accessibility, and marginalization. Examining India's environmental challenges and how design can contribute to sustainability (e.g., use of local materials, waste management). Addressing design for differently-abled users, elderly, and other marginalized communities in India. Socially responsible design projects, including design for rural India, urban planning for the underprivileged, and eco-friendly initiatives.

UNIT III LEGAL FRAMEWORKS FOR DESIGNERS IN INDIA 9

Indian Intellectual Property Rights (IPR): Overview of Indian copyright law, trademarks, patents, and design rights under the Indian Copyright Act, 1957, Indian Patents Act, 1970, and Design Act, 2000.Copyright and Design Patents in India: Protecting creative works and industrial designs in India; implications for designers. Contracts and Agreements: Understanding contractual obligations in Indian design practice, including agreements with clients, collaborators, and manufacturers.

UNIT IV ETHICAL AND LEGAL CHALLENGES IN DIGITAL AND EMERGING DESIGN IN INDIA 9

Ethics in Digital Design in India: Understanding user privacy, data protection, and the ethics of digital platforms in India, with references to The Information Technology Act, 2000 and Data Protection Law. Emerging Technologies and Ethics in Indian Design: Ethical considerations in the use of emerging technologies like AI, AR/VR, and blockchain in Indian contexts.

UNIT V DESIGNER CLIENT RELATIONSHIP, CONTRACT AND TENDER 9

Designer-client relationships, handling conflicts, and understanding professional accountability in the Indian market. How to ensure ethical decision-making in design practice, avoiding exploitation, and respecting traditional and indigenous knowledge. Drafting basic contracts and understanding design-related legal documentation in the Indian context.

TOTAL: 45 PERIODS

OUTCOME

1. Identify and analyze ethical issues in design practice and apply appropriate solutions within diverse cultural and legal frameworks.
2. Understand key legal principles related to intellectual property, contracts, and design rights, ensuring legal protection for design work.
3. Evaluate the societal, cultural, and environmental impact of design decisions and their potential consequences.

4. Apply ethical decision-making to real-world design projects, addressing challenges in sustainability, inclusivity, and social responsibility.

TEXTBOOKS

1."Intellectual Property Rights and the Law" – N.S. Gopalakrishnan & T.G. Agitha Roshan, Nanavati, 2."Design and the Law" – Prof. A. R. M. Ramaswamy
3."Design Ethics" – Prof. R. S. Bawa

REFERENCES

1. "Design for Social Change: New Approaches to Design and Ethics" – A. S. Tiwari
2. "Contract Law for Designers" – P. Kumar

BD3402	INTERIOR LANDSCAPE DESIGN	L T P/S C 3 0 0 3

COURSE OBJECTIVES

1. Understand the principles and aesthetics of integrating greenery within interior spaces.
2. Identify and select suitable plant species based on interior conditions and design intent.
3. Learn the practical requirements of plant care, lighting, irrigation, and maintenance in enclosed environments.
4. Develop design strategies that blend nature with interiors for wellness, biophilic impact, and spatial enhancement.
5. Apply technical and creative skills to conceptualize and present interior landscape proposals.

UNIT I INTRODUCTION TO INTERIOR LANDSCAPING 9

History and evolution of interior landscaping. Importance of nature in interiors: psychological and physiological benefits. Biophilic design principles. Types of interior landscapes: vertical gardens, atriums, planters, rooftop conservatories, indoor green walls

UNIT II PLANT SELECTION AND CLASSIFICATION 9

Categories of plants: ornamental, foliage, flowering, succulents, air-purifying, edible herbs. Light-loving vs. shade-tolerant plants. Climatic compatibility and microclimates in interior spaces. Toxic vs. non-toxic plant types (safety for children/pets). Soil types, plant nutrition, and growing media (soil, cocopeat, LECA, etc.)

UNIT III DESIGN PRINCIPLES AND APPLICATIONS 9

Spatial planning with greenery. Color, texture, and scale in plant selection. Integration of planters, green partitions, hanging gardens. Design for residential, commercial, hospitality, and wellness interiors. Use of artificial plants vs. live plants. Case studies of award-winning interior landscapes

UNIT IV SYSTEMS, SERVICES, AND MAINTENANCE 9

Lighting systems for plant growth (natural, LED grow lights). Irrigation systems: manual watering, drip irrigation, self-watering pots. HVAC impacts and humidity control. Pest management and plant health care. Maintenance schedules and lifecycle management

UNIT V PROJECT DEVELOPMENT AND PRESENTATION 9

Site analysis and client brief. Concept development and thematic planning Mood boards, plant palettes, planter design. Technical drawings and 3D visualizations. Final design proposal and presentation with sustainability and maintenance strategy

TOTAL 45 PERIODS

LEARNING OUTCOMES

1. Identify suitable plant species and materials for diverse interior conditions.
2. Design functional and aesthetic green elements within interior spaces.
3. Apply biophilic design principles to enhance well-being and indoor air quality.
4. Develop drawings and visual documentation for interior landscape projects.
5. Understand and integrate the technical systems required for plant survival and growth indoors.

RECOMMENDED READINGS & RESOURCES

1. April Philips. Designing Urban Agriculture: A Complete Guide to the Planning, Design, Construction, and Maintenance of Edible Landscapes. Wiley.
2. Linda Chalker-Scott. The Informed Gardener. University of Washington Press.
3. Susan E. Taylor. Indoor Garden Design. Timber Press.
4. Stephen Anderton. Gardening Indoors: Creative Design Ideas for Indoor Green Spaces. Dorling Kindersley.
5. Robin Horton (Editor). Biophilic Design: The Theory, Science, and Practice of Bringing Buildings to Life. Wiley.

BD3403	INTERIOR SERVICES I	L	T	P/S	C
		3	0	0	3

UNIT I: ELECTRICAL **9**

Information and telecommunications systems - Control systems - Security and access - Detection and alarm systems; Electrical circuits - Transformer substations, Emergency power, UPS / Central battery, Voice / Data communication, TV, Security systems like CCTV surveillance system, Access control System, Public address system, Building management system (BMS), Fire alarm system, aircraft warning lights, Traffic Barrier, Surge Protection system, and Lightning protection system; Power supply and distribution.

UNIT II: PLUMBING **9**

Water Supply – Potable water (hot & cold) - Drainage and Sanitation - Solid Waste Management - Gas Supply – system of pipes, valves, plumbing fixtures & fittings, tanks, and other apparatus.

UNIT III: HVAC **9**

Importance of human comfort in interior spaces - Heat flow within buildings - Thermal properties of materials - Climate and material choices for interior spaces - Human response to the thermal environment – HVAC - Air Conditioning, Heating and Mechanical Ventilation, Air Conditioning methods &equipment - Air distribution system - Calculation of Ac loads.

UNIT IV: REGULATIONS **9**

Regulations of NBC, standards of ISHRAE, ECBC for the services – BIM (building information modelling

UNIT V: CASE STUDY & DESIGN INTEGRATION **9**

Understanding HVAC, Electrical and Plumbing in a specific case of Interior Architecture by means of a case study – Applying the knowledge of services in anyone of the ongoing design studio project part of Interior Design Studio – 1 and produce necessary service drawings.

TOTAL: 45 PERIODS

TEXTBOOKS:

1. R. Chudley – Building Construction Handbook – BLPD, London 1990.
2. Charangith shah, Water supply and sanitary engineering, Galgotia Publishers.
3. William. J. Guinness; Mechanical and Electrical Systems for Buildings.
4. M.H. Lulla, Air conditioning.
5. Peter Templeton & Saunders – Detailing for Architectural Acoustics – Architectural press, 1994.
6. TTT Institute (Madras), Environmental Engineering, Tata McGraw – Hill publishing Company Limited.
7. V.K. Jain, Fire Safety in Buildings.

REFERENCES:

1. Godsey, Lisa. Interior design materials and specifications. A&C Black, 2012.
2. Mehta, Madan, Building construction: Principles, materials, and systems. Pearson Prentice Hall, 2008.
3. Bindra, S.P. and Arora, Building Construction: Planning Techniques and methods of Construction.
4. J. Rosemary Riggs: Materials and Components of Interior Architecture.

BD3404	MATERIALS AND MANUFACTURING II	L T P/S C
		3 0 0 3

OBJECTIVES

- Explore the fundamental principles of perspective in drawing, focusing on solid forms and their spatial representation.
- Explore the fundamental principles of perspective in drawing, focusing on solid forms and their spatial representation.
- This course aims the exploration of interior construction concepts, materials, and assemblies and their influence on interior design.
- This course covers concepts, materials, and assemblies associated with development of planar interior elements as well as attention to related human factors, testing, detailing, specifications writing and end-use application.

UNIT I STEEL **9**

Outline of metal as a key material, examining their history, properties, sourcing, and manufacturing processes. Types of metal, joints- welding, riveting, bolting, finishes, usage in building components-door windows false ceiling partitions, paneling, flooring. Outline of manufacture of steel and steel alloys. Their properties, types, uses, protection and finishes. Corrosion of ferrous metals and its prevention. Fire protection of steel. Steel sections and products for structural and non-structural use including current innovations. Metal profiles -processes, typical products, joining profiles. (Welding, Adhesives, fasteners, etc.,) Finishes- (Plating, Printing, polishing, coating, etc.,). Preparation of plates to understand their usage in building components and finishes.

UNIT II ALUMINIUM **9**

Aluminum as a key construction material, covering its history, properties, sourcing, and manufacturing. Aluminum types and alloys, joining methods (welding, riveting, adhesives), and surface finishes (anodizing, coating, polishing). Applications in building components such as doors, windows, ceilings, partitions, and cladding. aluminum profiles used in architectural and structural elements, emphasizing fabrication techniques and current innovations for efficient and sustainable building design.

UNIT III PLASTIC **9**

Plastic as a building material. Brief history, manufacture, properties, types, uses and application. Different types of adhesives and sealants. Plastic joints. Plastic based materials for roofs such as fibre glass, etc., Specific materials such as polymers, polycarbonate sheet and Teflon. Understanding of product literature and site visits with documentation in the form of sketches/ photos for all the above.

UNIT IV GLASS **9**

Glass as a building material. Brief history, manufacture, properties and uses of glass. Types of glass - float glass, cast glass, glass blocks, foamed glass, solar control, toughened glass, wired glass, laminated glass, fire-resistant glass, glass blocks, etc. Current innovations in the application of Glass in interiors.

UNIT V INTERIOR FINISHES **9**

Introduction to interior finishes. Different types of paints, their composition, characteristics and uses. Types to include enamels, distemper, plastic emulsion, polyurethane, special paints such as fire retardant, luminous and bituminous paints. Preparation of surface and application for different paints/ textured finishes. Gypsum and POP finishes. Adhesives and sealants. Understanding of product literature. Understanding construction techniques through site visits/ case studies

TOTAL: 45 PERIODS

OUTCOMES

- Knowledge of properties of ferrous and nonferrous metals as materials for buildings.
- Knowledge of the use of glass and plastics in building industry.
- An understanding of possibilities of steel as an important building construction material.
- Ability to use steel, glass and plastic appropriately in building projects.

REQUIRED READING

1. Gorenc, Tinyou, Syam, 'Steel Designer's Handbook', CBS Publishers and Distributors, New Delhi, Bangalore, 2012.
2. P.C Vargheese, 'Building Materials', Prentice Hall of India, 2015.
3. S.K. Duggal, 'Building Materials', New Age International Publishers, 2016.
4. B.C.Punmia et al, 'Building Construction', Laxmi Publications, 2016.
5. Roy Chudley, Roger Greeno, 'Building Construction Handbook', Routledge, 2010.

REFERENCES

1. Alan Blanc, 'Architecture and Construction in Steel', E and FN Spon, London, 1993
2. Allan Brookes, 'Cladding of Buildings', Taylor and Francis,2008.
3. Mark Lawson, Peter Trebilcock, 'Architectural Design in Steel', Taylor and Francis, 2004.
4. Terri Meyer Boake, 'Understanding Steel Design', Birkhauser, 2011.
5. R.M. Davis, 'Plastics in Building Construction', Battersea College of Technology, Blackie, London, 1966
6. Ralph Monletta, 'Plastics in Architecture– A Guide to acrylic and Polycarbonate', Marcel Dekker Inc, New York, 1989
7. 'IS 7883. Code of Practice for the Use of Glass in Buildings ', Bureau of Indian Standards,2013.
8. Billie Faircloth, 'Plastics Now: On Architecture's Relationship to a Continuously Emerging Material', Routledge, 2015.

BD3405	DESIGN DETAILING I	L T P/S C
		1 0 4 3

OBJECTIVES

- To introduce various aspects involved in the construction of buildings through the understanding of different types of architectural and technical drawings.
- To enable the understanding of architectural design as integrating spatial and technical concerns.
- To enable development of an architectural design project into schematic drawings through integrating concerns of structure, construction and services.
- To give knowledge to create architectural drawings for construction and as a base for structures and services drawings.
- To give knowledge to design, incorporate and detail architectural and interior components of the architectural design project.

UNIT I UNDERSTANDINGARCHITECTURAL /BUILDING DRAWINGS 15

Understanding comprehensive set of drawings for any live building project, interpreting them and presenting their characteristics through seminars/ assignments. The drawings to be studied should include working drawings from macro to micro scale-interior plans, staircase details, kitchen and toilet detail of joinery, etc., structural drawings and service drawings to include electrical, plumbing, mechanical and HVAC details.

UNIT II SCHEMATIC DESIGN INTEGRATING STRUCTURES &SERVICES 20

Evolving a schematic design, balancing different technical considerations including appropriate structural, plumbing, electrical, mechanical and HVAC systems. Working out schematics for small to medium projects. Typology -residences (studio 3 project).

UNIT III INTERIOR WORKING DRAWINGS 20

Preparation of working drawings for the resolved schematic design. Drawings to include, detailed drawings of specific areas like bedrooms, staircases and wall sections, dimensions explaining the various components, joinery schedule. Design and preparation of layouts of service intensive rooms like kitchens and toilets.

UNIT IV DETAILED DRAWINGS OF INTERIOR COMPONENTS 20

Design and preparation of detailed drawings of joinery including doors, windows and ventilators. Design and detailing: floor, wall and ceiling finishes/ construction details.

Design and preparation of detailed drawings of built in furniture and components: counters, cabinets, wardrobes, storage, fittings and fixtures, display units, workstation etc.

TOTAL: 75 PERIODS

OUTCOMES

- An understanding of all the aspects that go into the making of a building through study of drawings related to construction.
- Ability to resolve spatial concerns with technical aspects of a building.
- Ability to design and detail components within a building.

TEXTBOOKS

1. Joseph De Chiara, Michael Crosby, 'Time Saver Standards for Building Types', McGraw Hill Co, 2001.

2. Richardson Die truck, 'Big Idea and Small Building', Thames and Hudson, 2002.

3. Edward D Mills, 'Planning–The Architect's Handbook, Butterworths, 1985.

4. Roy Chudley, Roger Greeno, 'Building Construction Handbook', Routledge, 2016.

REFERENCES

1. Susan Dawson, 'Architect’s Working Details -Volume 1-10', E- Map Construct, 2004.

2. Nelson L Burbank, 'House Carpentry Simplified', McGraw Hill, 1985.

3. David Sauter, 'Landscape Construction', Delmar Publishers, 2010.

4. Grant W. Reid, 'Landscape Graphics', Watson-Gup till, 2002. 5. Francis. D. K. Ching, 'Building Construction Illustrated', John Wiley and Sons, 2014.

BD3406	STUDIO IV - DESIGN STUDIO II	L T P/S C 0 0 12 6

OBJECTIVES:

- To enable an understanding of the fundamental possibilities of architectural form and space in relation to human experience and use within the context of the immediate living environment.
- To get the above understanding through personal, first-hand exploration as well as through theoretical and literature studies.
- To use this understanding to create meaningful built environment in the context of small-scale projects that involve simple function and experience.

CONTENT:

Designing a built environment requires the development of individual capacity for thought with respect to subjective and objective aspects. Studying and designing projects of small scale that involve a more immediate and basic experience is important in this context. The study and project exploration will involve the following aspects from first principles as well as through live studies and theory – human behaviour, activities and needs for various purposes, lighting and ventilation, potential of materials and construction. Through this, both the qualitative and quantitative attributes of design can be understood and engaged. This would give training in the ingenious use of architecture to fulfil goals towards a responsive and stimulating environment.

The scale of projects - small to medium size hospitality projects such as cafes/ restaurants/ hotel lobby/hotel room interiors with toilets. Detailing interior finishes for the same along with furnishings; designing for service integration, furniture design, etc. may be some of the outcomes of this studio exercise. Any two projects from the above are to be completed.

TOTAL: 180 PERIODS

OUTCOMES:

- Ability to perceive, understand and represent fundamental attributes of form-space with respect to human experience and use.
- Ability to ideate, innovate and create meaningful built environment in basic human situations.

TEXTBOOKS:

1. Joseph De Chiara, Michael J Crosbie, 'Time Saver Standards for Building Types', McGraw Hill Professional, 2001.
2. Kevin Lynch, 'Site Planning', MIT Press, Cambridge, 1967.
3. Steen Eiler Rasmussen, Experiencing Architecture, MIT Press, 1962.
4. Kent C. Bloomer and Charles W. Moore, 'Body, Memory, and Architecture', Yale University Press, 1977.
5. Juhani Pallasmaa, 'The Eyes of the Skin - Architecture and the Senses', John Wiley: New York, 2005.

REFERENCES:

1. Julius Panero, Martin Zelnik, 'Human Dimension and Interior Space', Whitney Library of Design, 1975.
2. Richard P. Dober, 'Campus Planning', Society for College and University Planning ,1996.3. Sam F. Miller, 'Design Process: A Primer for Architectural and Interior Design', Van Nostrand Reinhold, 1995. 4. Dudek M, 'Schools and Kindergartens', Birkhauser 2007.

Semester V

BD3501	ESTIMATION, COSTING & ECONOMICS	L T P/S C
		3 0 0 3

COURSE OBJECTIVES:

1. Understand the fundamental principles of estimation and costing in design and construction projects.
2. Develop the ability to prepare detailed estimates, quantity take-offs, and cost abstracts.
3. Evaluate and control project costs through budgeting and economic decision-making.
4. Understand building economics and the financial implications of design decisions.
5. Gain knowledge of specification writing, rate analysis, tendering, and valuation techniques.

UNIT I: INTRODUCTION TO ESTIMATION AND COSTING 9

Definition, scope, and importance of estimation and costing in design practice. Objectives and role of estimation in design planning and decision-making. Types of estimates: Preliminary, Detailed, Revised, Supplementary – case examples. Cost components: Direct costs (materials, labor), Indirect costs, Overheads, Contingencies, Profit margins. Introduction to units of measurement as per IS 1200 and standard measurement formats. Introduction to schedules of rates. Application of estimation in different project stages – concept design to execution.

UNIT II: QUANTITY SURVEYING AND COST ESTIMATION 9

Principles and procedures of quantity surveying. Methods of estimating quantities: Centre line method, long wall-short wall method. Quantity take-off for structural and non-structural elements: Foundation, walls, flooring, ceiling, joinery (doors/windows). Estimating finishes and fit-outs: Painting, cladding, tile work, partitions. Preparation of abstract of quantities and Bill of Quantities (BOQ). Introduction to cost estimation. Quantity estimation for interiors: Modular furniture, lighting, HVAC, soft furnishings

UNIT III: RATE ANALYSIS AND SPECIFICATION WRITING 9

Concept and need for rate analysis – components of rates. Material cost, labour cost, tools and plant, overheads, profit. Rate analysis of key work items: Brickwork, plastering, flooring, woodwork, painting. Market rate survey techniques – collecting real-time data for local materials and services. Productivity norms and time estimation for labour- intensive work. Introduction to specification writing: Purpose, types – general and detailed specifications. Writing clear, concise specifications for selected design elements (flooring, painting, furniture, lighting). Significance of specifications in tendering and cost control

UNIT IV: TENDERING, CONTRACTS, AND VALUATION 9

Tendering: Definition, purpose, types (open, selective, negotiated, e-tendering). Tender process: Notice inviting tender, tender documents, pre-bid meetings, bid evaluation. Types of contracts: Item-rate, Lump-sum, Cost-plus, EPC contracts – pros and cons. Contractual documentation: Agreements, general and special conditions, BOQ, schedule of quantities. Valuation techniques: Depreciation methods (straight line, sinking fund), Rent fixation, Book value, Salvage value. Valuation for insurance and taxation. Roles and responsibilities of stakeholders: Architect, Quantity Surveyor, Contractor, Client. Dispute resolution and contract management basics

UNIT V: ECONOMICS OF DESIGN AND BUDGET MANAGEMENT 9

Basics of building economics – principles of demand, supply, cost, and value. Economic feasibility in design projects. Life Cycle Costing (LCC): Initial cost, maintenance cost, replacement cost. Financial tools: Time-value of money, Net Present Value (NPV), Internal Rate of Return (IRR). Budget preparation for design projects: Itemized budgeting, contingencies, allowances. Cost

control techniques: Variance analysis, cost reporting, and monitoring. Case studies on sustainable and innovative projects with cost-benefit analysis. Integrating economic decisions with aesthetic and functional design outcomes.

TOTAL: 45 PERIODS

OUTCOMES:

1. Prepare accurate quantity take-offs and detailed cost estimates for interior and architectural design projects.
2. Analyze market rates and perform rate analysis for various items.
3. Draft clear and technically sound specifications for design elements.
4. Understand tendering procedures and the legal aspects of contracting.
5. Apply basic economic principles to design decision-making and budget planning.

REQUIRED READING:

1. Dutta, B.N. – Estimating and Costing in Civil Engineering
2. Rangwala, S.C. – Estimating, Costing and Valuation
3. Joy, P.K. – Handbook of Construction Management
4. Ashworth, A. – Cost Studies of Buildings
5. Chudley, R. & Greeno, R. – Building Construction Handbook

REFERENCES AND SUGGESTED READINGS

- McCaffer, R. & Baldwin, A. – Modern Construction Management
- Peurifoy, R.L., Oberlender, G.D. – Estimating Construction Costs
- Malkani, R.C. – Project Planning and Control
- CPWD Schedule of Rates (latest edition)
- IS 1200 series – Method of Measurement of Building and Civil Engineering Works
- Journals: International Journal of Project Management, Cost Engineering Journal

BD3502 **DESIGN DETAILING II** **L T P/S C**
1 0 4 3

OBJECTIVES

- Understand the role of detailing in the design-to-execution process.
- Analyze and apply material properties and fabrication techniques in detail development.
- Produce accurate technical drawings and prototypes for interior and product designs.
- Address construction logic, ergonomics, assembly, and user interaction through detailing.
- Integrate sustainability, durability, and aesthetics in design detailing decisions.

UNIT 1: INTRODUCTION TO PRODUCT DESIGN AND DETAILING **15**

Role of detailing in design development and execution, Scales of detailing: from macro-concept to micro-construction, Case studies in product detailing, Types of detail drawings: exploded views, sections, joinery diagrams. Material selection based on function, context, and aesthetics. Product finishes: coatings, textures, fabrication impacts, understanding tolerance, fit, and precision.

UNIT 2: MATERIALS, PROCESSES, AND PRODUCT DETAILING **20**

Overview of materials: plastics, metals, wood, composites. Introduction to manufacturing processes (molding, forming, machining, 3D printing, etc.) Design for manufacturability and assembly (DFM, DFA). Fasteners, joints, and mechanisms in detailing. Tolerances, fit, and functionality

UNIT 3: TECHNICAL DRAWING, PROTOTYPING & COMMUNICATION **20**

Sketching and visual communication. Technical drawing basics: orthographic views, sections, exploded views. Introduction to digital tools (basic CAD). Model-making and prototyping techniques. Final design detailing and presentation. Product prototyping techniques: physical (foam, MDF, 3D printing) and digital (CAD, Rhino, SolidWorks), Documenting design intent for fabricators and contractors

UNIT 4: DETAILING FOR FUNCTION, USER, AND SUSTAINABILITY **20**

Ergonomics and human-centered detailing, Maintenance and durability considerations in detailing, Sustainable detailing: minimizing waste, choosing eco-materials, Case studies: green detailing in interiors and products, Final detailing project: integrated design (product or interior system).

TOTAL: 75 PERIODS

OUTCOMES:

- Apply the design process to conceptualize a product.
- Integrate ergonomic and functional needs into design.
- Select appropriate materials and understand basic manufacturing.
- Create detailed sketches, drawings, physical prototypes& product branding to communicate design ideas effectively.

TEXTBOOKS

- Drew Plunkett – Detail in Contemporary Interior Design 2. Caan, S. (2011). Rethinking Design and Interiors
- Maureen Mitton & Courtney Nystuen – Interior Design Visual Presentation: A Guide to Graphics, Models, and Presentation Techniques.
- Rob W. Pullman – Construction Drawings and Details for Interiors: Basic Skills

REFERENCES

- **Julius Panero & Martin Zelnik** – Human Dimension & Interior Space: A Source Book of Design Reference Standards
- **Pat Guthrie (Ed.)** – The Interior Designer's Portable Handbook: First-Step Rules of Thumb for the Design of Interiors
- **Lefteri, Chris** – Materials for Design
- **Berman, Mervyn** – Detail in Contemporary Product Design

BD3503	INTERIOR SERVICES II	L T P/S C 1 0 4 3

OBJECTIVES

- To give familiarity about the different requirements of electrical services in a building.

- To give knowledge about sources, principles, products and design of lighting from artificial sources. • To give knowledge about basics of acoustics and acoustical design of buildings.

UNIT I LIGHTING **15**

Laws and terminologies of light and lighting. Light from artificial sources, quantity and quality. Types of lamps and luminaires. Applications and choice of luminaires. Lighting level for different uses in outdoor and indoor environment. Supplementary electrical lighting. Site visits with documentation in the form of sketches/ photos. Understanding of products, product catalogues.

UNIT II LIGHTING DESIGN FOR BUILDINGS **20**

Lighting calculations. Brief overview of lighting simulation and performance analysis using software. Design exercise involving lighting design for appropriate projects of simple scale through choice, calculations, layout, drawings, physical models.

UNIT III FUNDAMENTALS OF ACOUSTICS DESIGN FOR ACOUSTICS **20**

Fundamentals – sound waves, frequency, intensity, wave length, measure of sound, decibel scale, speech and music frequencies. Material property - absorption, reflection, scattering, diffusion, transmission. Absorption co-efficient, NRC, Sound Transmission Class (STC), Impact Insulation Class (IIC). Understanding acoustic properties of materials/ products through study of product literature/ site visits. Environmental noise and its control. Structure borne and air borne noise control. Sound in enclosed space: Reverberation time, optimum reverberation time, echo, early decay time. Architectural acoustics. Importance of shape volume, treatment for interior surfaces, etc. Basic principles in acoustic designing of classroom, lecture and conference hall, offices, open air theatre, auditorium, concert hall, theatre, cinema, recording studio. Site visits with documentation in the form of sketches/ drawings/ photos.

UNIT IV FIRE SAFETY DESIGN FOR BUILDINGS **20**

Fire safety in interior design, focusing on fire behaviour. Passive: Fire-resistant materials andFire-rated walls, floors, doors, glazing etc. Active protection systems: smoke detector, heat detectors, sprinklers etc., emergency planning, and compliance with building codes. Integration of fire safety in design: materials, detection, suppression, and evacuation strategies, with practical exercises in layout planning and safety detailing.

TOTAL: 75 PERIODS

TEXTBOOKS:

1. **National Building Code of India (NBC) 2016 – Part 4: Fire and Life Safety** *Bureau of Indian Standards*
2. Peter Templeton & Saunders – Detailing for Architectural Acoustics – Architectural press, 1994.
3. V.K. Jain, Fire Safety in Buildings
4. **Fire Safety in Buildings***R. K. Sharma.*
5. **Lighting for Interior Design** *Malcolm Innes.*

REFERENCES:

1. Godsey, Lisa. Interior design materials and specifications. A&C Black, 2012.
2. **Interior Lighting for Designers** *Gary Gordon*

BD3504	DIGITAL FABRICATION	L T P/S C 0 0 6 3

OBJECTIVES:

- To Develop technical proficiency in 3D printing, laser cutting, CNC machining, and parametric design software.
- To outline the ability to prototype, test, and refine designs through hands-on fabrication cycles.
- To inform about material choices and fabrication methods for ecological impact and circular design principles.

INTRODUCTION TO DIGITAL FABRICATION

Definition, history, and evolution of digital fabrication - Overview of digital fabrication tools and machines (3D printers, laser cutters, CNC routers, etc.) - Role of digital fabrication in contemporary design practices - Case studies of innovative digital fabrication projects - Demonstration of basic digital fabrication tools.

COMPUTER-AIDED DESIGN (CAD) FOR FABRICATION

Fundamentals of CAD software (Rhino, Fusion 360, AutoCAD) - Parametric and generative design for fabrication - File formats for digital fabrication (STL, DXF, SVG, G- code) - Design optimization for manufacturing constraints - Creating 3D models for 3D printing and laser cutting

ADDITIVE AND SUBTRACTIVE MANUFACTURING

Types of Manufacturing - Additive Manufacturing- Types of 3D printing (FDM, SLA, SLS) - Materials and their properties (PLA, ABS, resin, etc.) - Post-processing techniques - Subtractive Manufacturing (CNC & Laser Cutting) - Basics of CNC machining and laser cutting - Material considerations (wood, acrylic, metal) - Toolpath generation and machine operation - Hands-on 3D printing and laser cutting projects.

ADVANCED DIGITAL FABRICATION & EMERGING TRENDS

The paradigms of DoX rules - Design for Machining, Design for Assembly, Design for Forming - Robotics in fabrication (robotic arms, automated construction) – Sustainable and bio-based materials in digital fabrication - Future trends: 4D printing, smart materials, AI-driven fabrication - Project integrating multiple fabrication techniques.

TOTAL: 90 PERIODS

OUTCOMES

- Operate digital fabrication tools independently and troubleshoot common issues.
- Produce functional prototypes that merge aesthetic, structural, and material considerations.
- Defend design choices in critiques, emphasizing sustainability and fabrication logic.

REFERENCES:

1. Fabricated: The New World of 3D Printing; – Hod Lipson, Melba Kurman, Wiley Publication – 2013.
2. Digital Fabrication in Architecture, Engineering, and Construction – Luca Cane Paro, Springer Publication - 2013
3. Parametric Design for Architecture – Wassim Jabi, Laurence King Publishing – 2013.

4. Fusion 360 for Makers: Design Your Own Digital Models for 3D Printing and CNC Fabrication – Lydia Sloan Cline, Shroff/Maker Media – 2018.
5. 4D Printing: Revolution in Manufacturing; – Rafiq Noorani by Lambert Academic Publication.

BD3505	STUDIO V -DESIGN STUDIO III	L T P/S C 0 0 12 6

OBJECTIVES:

- The focus of the Comprehensive Interior Design Studio is the integrated design and detailed development of a interior space including all of its requisite systems.
- Resolving complex issues in interior spaces through design language Evolving method of studies, analysis & design process.

CONTENT:

To come up with detailed design propositions and strategies for a small-scale Interior Project (with specified area) –Small level offices/startup offices/office interior/commercial spaces such as departmental/clothing/personal care etc. Spaces with emphasis on 'Sustainable Interiors'; Design Process : study stage, concept evolution with deeper understanding of the site (an existing Small scale built environment) and its context, Spatial conception, holistic Spatial design – Detailed Representation of the entire design process and its outputs – Design Representation: schematic sketches, schematic models, detailed drawings for each space through specific plan, sections, wall elevations, furniture detailing, joinery details, service drawings, detailed 3d models – Material specifications & other necessary details, Workable models, etc.

Develop a comprehensive communication design and branding strategy for a commercial/small scale office space that enhances its identity, customer engagement, and visibility. The scope includes logo design, visual language, signage, environmental graphics, and digital touchpoints. The branding should reflect the space's purpose, values, and target audience to ensure a consistent user experience.

The exercise will be to take any one interior project from the above listed and along with interior design develop the communication design for the same.

TOTAL: 180 PERIODS

OUTCOMES:

- Ability to perceive, understand and represent fundamental attributes of form-space with respect to human experience and use.
- Ability to ideate, innovate and create meaningful built environment in basic human situations.

TEXTBOOKS:

1. Language of Space by Bryan Lawson, ISBN 9781138581302, Published October 23, 2001 by Routledge the Fundamentals of Interior Architecture, Coles, AVA
2. Interior Design -John Pile; Harry N. Abraham, Inc. Publishers.

REFERENCES:

1. Interior design Illustrated; Francis D. K. Ching.
2. Time Saver standards for Interior Design & Space Planning – Joseph de Chiara, Julius Panero, and Martin Zelnic – 2003.

Semester VI

BD3601 PROFESSIONAL MANAGEMENT I L T P/S C
3 0 0 3

OBJECTIVES

- Develop managerial competencies that empower engagement in innovative projects, leveraging design as a strategic resource.
- Enhance the ability to effectively apply tools and methodologies acquired during the course, enabling confident handling of real-world challenges.
- Gain insight into real-world case studies where the design process has successfully addressed complex problems.
- Understand the key considerations involved in establishing and managing an independent design studio

UNITI SETTING UP A DESIGN OFFICE 9

Legal and administrative requirements. Business types: Sole proprietorship, partnership, LLP, private limited. Registration processes, licenses, and compliance, Studio space planning, equipment, and staffing.

UNITII OFFICE STRUCTURE AND OPERATIONS 9

Organizational hierarchy and roles. Time and task management. Studio workflows and communication protocols. Contracts and client agreements. Strategic role of design from a management perspective, design contribution to business success and industrial growth.

UNIT III SOFT SKILLS AND PROFESSIONAL DISCIPLINE 9

Communication, presentation, and negotiation skills. Leadership, team building, and conflict resolution. Personal discipline, time management, and work ethics. Building credibility and trust as a design entrepreneur.

UNIT IV FINANCIAL MANAGEMENT, MARKETING AND DETAILED PROJECT REPORT 9

Estimating project outlays and timelines. Budgeting and managing cash flow. Pricing design services. Marketing design work: strategies, client engagement, and brand building. Preparation of detailed project report.

UNIT V ACCOUNTING AND FINANCIAL TOOLS 9

Introduction to Tally and spreadsheet-based accounting. Maintaining ledgers, invoices, and receipts

Project-based financial tracking. Reporting and analysis for business decisions.

TOTAL: 45 PERIODS

OUTCOMES

- Exhibit a strong sense of professionalism, marked by initiative, innovation, and creative problem-solving.
- Communicate ideas clearly and convey information accurately through various channels, including digital and information technologies.
- Foster effective collaboration by applying teamwork and leadership abilities in professional settings.
- Critically evaluate their experiences in managing significant responsibilities, particularly in the context of establishing a design firm.

TEXT BOOKS

1. CHANGE BY DESIGN, Tim Brown (2009), Harper Collins Publishers, NY
2. Art of Innovation, Tom Kelly (2016), Profile Books Ltd, London
3. Known: The Handbook for Building and Unleashing Your Personal Brand in the Digital Age, Mark. SCHAEFER (2017), SCHAEFER MARKETING SOLUTIONS, USA

REFERENCES

1. LOONSHOTS: How to Nurture the Crazy Ideas That Win Wars, Cure Diseases, and Transform Industries, Safi Bahcall (2019), St. Martin's Press, NY

BD3602	TEXTILE IN INTERIOR DESIGN	L	T	P/S	C
		3	0	0	3

OBJECTIVES

- Analyze the significance of Textile Design in the global and Indian context.
- Analyze the historical development and evolution of textile design from ancient times to the present and future.
- Correlate traditional and modern techniques used in textile design, including printing, weaving, embroidery, dyeing, painting and digital technologies.
- Analyze the influence of designers on the evolution of textile design, both internationally and in India.
- Demonstrate the skills of drawing original textile designs using traditional and modern techniques, incorporating motifs and patterns relevant to different industries.

UNIT 1: INTRODUCTION TO TEXTILE DESIGN THROUGH HISTORY 9

Introduction of Textile Design Definition and scope of textile design. Importance of textile design in various industries. History and Evolution of Textile Design: Prehistoric era to ancient civilizations. Medieval and Renaissance periods. Industrial Revolution to the present. Future trends and innovations in textile design. Significance of Textile Design: Impact on culture, economy, and society. Role in preserving heritage and tradition. Contribution to innovation and sustainability.

UNIT 2: MOTIFS IN TEXTILE DESIGN 9

Motif as a fundamental visual unit in textile design, focusing on its **symbolic, cultural, and communicative role** across global traditions. By examining motifs from diverse regions—**India-, China, Japan, Australia, Africa, and America**—its**cultural identity, storytelling, spirituality**, and **social values**. Historical context with contemporary relevance, to analyze, reinterpret, and apply cultural motifs in original textile compositions.

UNIT 3: TECHNIQUES IN TEXTILE DESIGN 9

Repeats in Textile Design: Simple Repeat, Half-Drop Repeat, Full-Drop Repeat All Over Repeat, Mirror Repeat, Border Repeat Brick Repeat. Block printing, screen printing, tie-dye, weaving, and embroidery. Emphasis is placed on hands-on experimentation, understanding material behavior, and exploring surface development.

UNIT 4: STRUCTURE AND WEAVING FUNDAMENTALS 9

Loom basics: warp and weft mechanics, Weaving techniques: plain, twill, satin, dobby, Pattern development for weaving, Exploration of fibers and yarn textures in structural design, Sample development on frame/table looms

UNIT 5: TEXTILE APPLICATION, SUSTAINABILITY & DOCUMENTATION 9

Role of textiles in interdisciplinary design (fashion, interiors, lifestyle products). Sustainable practices in textile production and design. Waste reduction and reuse through textile innovation. Textile swatch book and process documentation. Final project: Concept to collection (theme-based).

TOTAL: 45 PERIODS

TEXTBOOKS

1. Anstey, H., & Weston, T. (2005). Guide to Textile Terms.
2. Collier, B. J., & Collier, J. R. (2010). Textile Design: Principles, Advances and Applications. Woodhead Publishing.
3. Joyce, C. (1997). Textile Design. Watson-Guptill.

4. Kadolph, S. J., Langford, A. L., & Hollen, N. R. (2009). Textiles. Pearson. Kissen, R. (2014). The Fabric of Civilization: How Textiles Made the World. Basic Books.

REFERENCES

1. Kissen, R. (2014). The Fabric of Civilization: How Textiles Made the World. Basic Books.
2. Meller, S., & Elffers, J. (2002). Textile Design. Thames & Hudson.
3. Phillips, P., & Bunce, G. (1993). Repeat Patterns: A Manual for Designers, Artists and Architects. Thames & Hudson. ISBN-10: 0500276870, ISBN-13: 978-0500276877.
4. Tortora, P. G., & Merkel, R. S. (2016). The Fairchild Books Dictionary of Textiles. Bloomsbury Academic.
5. Wingate, I. B. (2009). Textiles: Fabric Science. Fairchild Books.

BD3603 **CERAMIC PRODUCTS AND DESIGN** **L T P/S C**
3 0 0 3

COURSE OBJECTIVES:

- Understand the history, evolution, and cultural relevance of ceramics in product design.
- Gain knowledge of ceramic materials, processes, and techniques.
- Explore form, function, and surface design specific to ceramic products.
- Learn to conceptualize, prototype, and present ceramic product ideas.
- Understand contemporary practices and sustainability in ceramic design.

UNIT I: INTRODUCTION TO CERAMICS **9**

History and evolution of ceramics – traditional to modern. Types of ceramics: earthenware, stoneware, porcelain, terracotta. Role of ceramics in different cultures and crafts. Properties of ceramic materials. Overview of applications: tableware, sanitaryware, tiles, decorative products. Introduction to contemporary ceramic designers and studios

UNIT II: MATERIALS AND PROCESSES **10**

Basic raw materials: clay types, fluxes, glazes, additives. Hand-building techniques: pinching, coiling, slab building. Wheel-throwing basics and slip casting. Surface finishes: glazing, firing, decals, engraving, painting. Firing methods: kiln types, temperatures, single and double firing. Safety and handling in ceramic studios

UNIT III: CERAMIC PRODUCT DESIGN DEVELOPMENT **10**

Ideation techniques for ceramic forms. Functionality and ergonomics in ceramic products. Form exploration: symmetry, asymmetry, negative space. Surface design: textures, patterns, glazes, color. Making mock-ups and prototypes. Documentation and presentation of ceramic product concepts

UNIT IV: CONTEMPORARY TRENDS & SUSTAINABILITY **8**

Ceramic art vs industrial ceramic products. Minimalism, biomorphic forms, and experimental surfaces. Innovations in ceramic materials: smart ceramics, bio-ceramics. Sustainable ceramic practices: recycled clay, low-impact glazes, waste reduction. Cultural revival and fusion in ceramic crafts. Case studies: Indian and global ceramic brands/designers

UNIT V: STUDIO & INDUSTRY PRACTICES **8**

Design brief writing for ceramic products. Understanding batch vs mass production. Tolerances, shrinkage, and quality control in ceramic manufacturing. Working with artisans, clusters, and manufacturers. Portfolio development and exhibition planning

TOTAL: 45 PERIODS

LEARNING OUTCOMES:

1. Identify and classify different types of ceramic materials and techniques.
2. Design and prototype ceramic products with functional and aesthetic intent.
3. Apply surface treatment methods to enhance product appeal.
4. Understand sustainable approaches in ceramic design and production.
5. Present and document ceramic product designs professionally for review or industry use.

REQUIRED READINGS:

1. "Clay and Glazes for the Potter" – Daniel Rhodes, Krause Publications – Revised Edition, 2000.
2. "The Craft and Art of Clay" – Susan Peterson, Laurence King Publishing – 2011.
3. "The Potter's Dictionary of Materials and Techniques" – Frank Hamer, Janet Hamer, A & C Black – 2004.
4. "Ceramic Products: Design and Technology" – R. Ashok Kumar, CRC Press – 2020.
5. "Handbook of Ceramics and Composites" – J.G. Speight, CRC Press – 2022.

BD3604 **INTEGRATED DESIGN SEMINAR** **L T P/S C**
0 0 6 3

OBJECTIVES

- Introduce a topic of significance in the domain of design I through group research
- Introduce range of research methodologies and critical appraisal skills
- Enable students to present the conclusions drawn to an informed audience.
- Enable students to write a well-documented research paper and seminar presentation using multimedia techniques.

Content:

The Seminar Coordinators will select a theme for the semester relating to issues in architecture and planning. Students will conduct research in groups on the topic of their choice within the larger theme. The research may involve both secondary and primary data from field studies. The research will be presented in the form of a seminar presentation, followed by a paper of publishable quality. Overall supervision will be provided by the Seminar Coordinators from the internal faculty.

Research paper of 10,000 words to be prepared by the end of semester to be reviewed by an external examiner.

TOTAL: 90 PERIODS

OUTCOME

- Define a design research topic and formulate a clear hypothesis or design question.
- Ability to source information on the chosen topic, clearly understand, collate, analyze and reflect upon it.
- Conduct thorough research using appropriate qualitative and/or quantitative methods.
- Analyze contextual, cultural, social, and technological factors involved.
- Synthesize research outcomes in a well-documented research paper and seminar presentation using digital and visual tools.

TEXTBOOKS

- **Laurel, B.** (2003). *Design Research: Methods and Perspectives*. MIT Press.
- **Creswell, J. W.** (2018). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. SAGE Publications.
- **Crouch, C., & Pearce, J.** (2012). *Doing Research in Design*. Bloomsbury.
- **Frayling, C.** (1993). *Research in Art and Design*. Royal College of Art Research Papers, 1(1).

REFERENCES

- **Lupton, E.** (2008). *DIY: Design It Yourself*. Princeton Architectural Press.
- **Buchanan, R.** (1992). *Wicked Problems in Design Thinking*. Design Issues, 8(2), 5–21.
- **Biggs, M., &Büchler, D.** (2008). *Eight Criteria for Practice-Based Research in the Creative and Cultural Industries*.
- **Turabian, K. L.** (2018). *A Manual for Writers of Research Papers, Theses, and Dissertations*. University of Chicago Press.
- **Zuber-Skerritt, O.** (1996). *New Directions in Action Research*. Routledge.

BD3605	STUDIO VI - DESIGN STUDIO IV	L T P/S C 0 0 12 6

OBJECTIVES:

- To introduce the challenges involved in the design of projects and typologies related to diverse needs and ways of contemporary urban life.
- To enable exploration of the above projects and typologies with perception, socio-cultural awareness and innovation.

CONTENT:

To come up with design propositions and strategies for an interior space - This may include recreational/ cultural spaces like auditorium/multiplex/gaming alleys/exhibitions/ set design for an event.– Design Process starts from study stage, concept evolution with deeper understanding of context, Spatial conception, holistic Spatial design – Detailed Representation of the entire design process and its outputs – Design Representation: schematic sketches, schematic models, detailed drawings for each space through specific plan, sections, wall elevations, furniture detailing, joinery details, service drawings, detailed 3d models – Material specifications & other necessary details

Develop a comprehensive communication design and branding strategy for a institutional space that enhances its identity, signages and visibility. The scope includes logo design, visual language, signage, environmental graphics, and digital touchpoints. The branding should reflect the space's purpose, values, and target audience to ensure a consistent user experience.

One interior project from the above and communication design for the same to be submitted for evaluation.

TOTAL: 180 PERIODS

OUTCOMES:

- Ability to understand the nature, needs and ways of contemporary urban society as well as relate the existing built environment as a reflection of this.
- Ability to draw from this understanding and identify issues/ challenges involving contemporary urban life and the built environment.
- Ability to give appropriate/ innovative design solutions in the above context.

TEXTBOOKS:

1. Language of Space by Bryan Lawson, ISBN 9781138581302, Published October 23, 2001 by Routledge The Fundamentals of Interior Architecture, Coles, AVA
2. Interior Design -John Pile; Harry N.Abraham, Inc. Publishers.

REFERENCES:

1. Interior design Illustrated; Francis D. K. Ching.
2. Time Saver standards for Interior Design & Space Planning – Joseph de Chiara, Julius Panero, and Martin Zelnic – 2003.

Semester VII

BD3701 PROFESSIONAL MANAGEMENT II L T P/S C
3 0 0 3

OBJECTIVES

- Introduce different management techniques suitable for planning and construction projects.
- Enable understanding of management systems for accomplishing the task efficiently in terms of quality, time and cost.
- Understand the elements of network and be able to take the project completion analysis.
- Understand various methods for the analysis and hence arrive at the management procedures.

UNIT I INTRODUCTION 9

Project planning, project scheduling and project controlling. Role of Decision in project management, Method of planning and programming, Human aspects of project management, work breakdown structure, Life cycle of a project, Advantages and disadvantages of traditional and contemporary management system**.**

UNIT II 7

Event, activity, dummy, network rules, graphical guidelines for network, numbering of events.

UNIT III CRITICAL PATH METHODAND PERT ANALYSIS 10

: CPM network analysis & PERT time estimates, time computation &network analysis. Deterministic, Probabilistic estimates. Time-cost trade-offs.

UNIT IV PROJECT TIME REDUCTION AND OPTIMIZATION 10

Project cost, Indirect project cost, direct project cost, slope of the direct cost curve, total project cost and Optimum duration, contracting the network for cost optimization, steps in cost-time optimization.

UNIT V PROJECTUPDATING ANDALLOCATION 9

When to update? Data required for updating, steps in the process of updating Resource usage profile: Histogram, Resource smoothing and Resource levelling, Computer applications in project management.

TOTAL:45 PERIODS

TEXTBOOKS

1. Ceasar McDowell, Claudia Canepa, and Sebastiao Ferriera, 'Reflective Practice: An Approach for Expanding Your Learning Frontiers'. MIT Course No. 11.965, As Taught in January IAP 2007, Massachusetts Institute of Technology: MIT Open CourseWare, https://ocw.mit.edu. License: Creative Commons BY-NC-SA.
2. Dr. B. C. Punmia et al. Project planning and control with PERT and CPM, Laxmi Publications, 2002
3. JeromeD.WiestandFerdinandK.Levy,AManagementGuidetoPERT,CPM,prentice Hall of India Pub, Ltd., New Delhi, 2082
4. 4.R.A.BurgessandG.White,BuildingproductionandprojectManagement,Theconstructionpress, London,2097

REFERENCES

1. Jagat Trivedi, 'IIM: Insights Into Managing: A Must Read for Leaders, Managers, Aspiring Managers, Students, and Entrepreneurs', Outskirts Press, 2013.

BD3702	PUBLIC DESIGN RESEARCH	L T P/S C
		3 0 0 3

OBJECTIVES

- Develop a critical understanding of how design operates in public spaces, services, and systems, focusing on inclusivity, accessibility, and community engagement.
- Learn and apply participatory and ethnographic research methods to gather insights from diverse public stakeholders.
- Transform public research findings into actionable, human-centered design strategies and prototypes that respond to real-world needs
- Evaluate the social, cultural, and ethical implications of design decisions in public settings

UNIT 1: INTRODUCTION TO PUBLIC DESIGN AND INTERDISCIPLINARY TOOLS 9

Roles of design in public realm. Interdisciplinary perspectives: sociology, urban studies, policy, ethnography. Approaching public space through anthropology, environmental psychology, geography, and design. Observational methods: behavioural mapping, time-use surveys. Ethnographic and participatory approaches: interviews, storytelling, shadowing. Visual and spatial research tools: sketch-walks, photo essays, mapping

UNIT 2: RESEARCH FRAMING AND QUESTION FORMULATION 9

Identifying public issues through observation and discourse. Developing research questions, hypotheses, and focus areas. Stakeholder mapping and power dynamics. Scoping, feasibility, and ethical considerations.

UNIT 3: METHODS FOR PUBLIC AND PARTICIPATORY RESEARCH 9

Qualitative and Quantitative research methods: Field research tools: interviews, mapping, shadowing, and surveys. Participatory methods: co-creation, workshops, storytelling, probing. Visual and spatial documentation (photography, video, sketch mapping). Data synthesis: affinity mapping, personas, systems thinking tools

UNIT 4: ANALYSIS AND FRAMING OF DESIGN INSIGHTS 9

Interpreting qualitative data, Thematic and narrative analysis, Turning findings into insights, tensions, and opportunity areas, Design frameworks, journey maps, and speculative scenarios.

UNIT 5: COMMUNICATING RESEARCH AND INTERVENTIONS 9

Storytelling for public audiences: exhibitions, print and digital media, research outcomes: installations, policy ideas, toolkits, spatial interventions, Collaborative presentations and community feedback, Reflecting on impact, ethics, and positionality in public design

TOTAL: 45 PERIODS

OUTCOMES

- Ability to investigate public spaces through interdisciplinary methods, drawing from urban studies, sociology, ecology, and cultural theory.
- Engage with communities using ethical and participatory research practices to identify context-specific design needs.
- Translate research insights into inclusive and grounded spatial design proposals.
- Integrate theory and practice to address real-world challenges through design research and place-making strategies.

TEXTBOOKS

1. Anstey, H., & Weston, T. (2005). Guide to Textile Terms.
2. Collier, B. J., & Collier, J. R. (2010). Textile Design: Principles, Advances and Applications. Woodhead Publishing.
3. Joyce, C. (1997). Textile Design. Watson-Guptill.
4. Kadolph, S. J., Langford, A. L., & Hollen, N. R. (2009). Textiles. Pearson. Kissen, R. (2014). The Fabric of Civilization: How Textiles Made the World. Basic Books.

REFERENCES

1. Kissen, R. (2014). The Fabric of Civilization: How Textiles Made the World. Basic Books.
2. Meller, S., & Elffers, J. (2002). Textile Design. Thames & Hudson.
3. Phillips, P., & Bunce, G. (1993). Repeat Patterns: A Manual for Designers, Artists and Architects. Thames & Hudson. ISBN-10: 0500276870, ISBN-13: 978-0500276877.
4. Tortora, P. G., & Merkel, R. S. (2016). The Fairchild Books Dictionary of Textiles. Bloomsbury Academic.
5. Wingate, I. B. (2009). Textiles: Fabric Science. Fairchild Books.

BD3703	DISSERTATION	L T P/S C 0 0 6 3

OBJECTIVES

- To inculcate the spirit of exploration and research in architecture.
- To enable the acquisition of in-depth knowledge in a specific aspect/ issue in the discipline of architecture as well as develop perspectives on the same through thought, reading, study, analysis, expression, documentation.
- To enable the conversion of effort into a coherent line of thought through writing/ documentation/models/ any media.
- To serve as prelude to Thesis.

CONTENT

The dissertation offers students an opportunity to explore and understand design and the built environment through ideas, phenomena, texts, and intent. While the design studio emphasises learning through making, the broader field of design is shaped by both explicit and implicit perspectives of individuals and society. This process encourages observation, critical reflection, and abstraction. Students are free to choose topics of personal or academic interest, which may include studies on the work of a designer, design history, typological changes, materiality, visual culture, contemporary society, cities, or design processes. Research may draw from primary sources, such as fieldwork and surveys, and/or secondary sources, such as texts and archives. A dissertation proposal of around 1000 words, outlining the topic, scope, and key issues, must be submitted for approval at the semester's start. Once approved, students will conduct research throughout the semester, with periodic reviews. The final submission, not exceeding 60 pages, to include chapterisation based on written analysis, visual documentation, drawings, or other appropriate forms. Regardless of format, the work should be tied together by a written narrative that includes a background of the study, objectives or research questions, methodology, core content such as documentation and analysis, and a concluding section. The dissertation will be presented and defended in a viva-voce examination.

TOTAL:90 PERIODS

OUTCOME

- A dissertation report with a coherent line of thought as reflected in the written structure and the core content which could be open ended.
- Ability to research deeply into a subject and develop depth in thought in any specific area based on point of view, observation, analysis and study.
- Ability to look at architecture from an informed, analysed and well thought out personally unique or objective perspective which would help strengthen the thesis process.

TEXTBOOKS

1. Bjarke Ingels, 'Yes is More', Taschen, 2009
2. Bernard Tschumi, 'Manhattan Transcripts', Wiley, 1994.
3. Rem Koolhaas et al, 'Project on the City II: The Harvard Guide to Shopping', Taschen, 201.
4. Charles Correa, 'The New Landscape: Urbanisation in the Third World', Concept Media, 199.
5. Iain Borden and Kaaterina Ruedi; 'The Dissertation: An Architecture Student's Handbook', Architectural Press, 2006.
6. Linda Grant and David Wang, 'Architectural Research Methods', John Wiley Sons, 2013.
7. Vian Ahmed, Alex Opoku, Zeeshan Aziz, 'Research Methodology in the Built Environment', Rutledge, 2016.

BD3704 STUDIO VII- PACKAGING AND PRINTING DESIGN STUDIO L T P/S C
0 0 12 6

OBJECTIVES:

- To introduce the challenges involved in the packaging and printing design aspects of product development and branding.
- To enable exploration of brand identity through packaging and printing design

CONTENT:

To come up with design propositions and strategies for packaging design which while prioritizing functionality, should ensure the product is protected, easy to use and convenient to transport. The design should also consider aesthetics to create a visually appealing design that communicates the brand's identity and values, while considering technical requirements to ensure high quality packaging and printing. Other key considerations are to understand the target audience that is crucial in packaging and printing design, as it informs design decisions and ensures that the design resonated with the intended audience; while reinforcing the brand's values and personality. Relevant regulations, such as labeling requirements and safety standards are the key for good design and are to studied and incorporated.

The Design Studio will engage in the design of the following: Product packaging including labels, cartons and containers/ marketing materials involving printing design for brochures, flyers, business cards, etc. / Packaging and printing design that help establish a brand's identity and communication, etc.

The Design studio will focus on one or more of the outlined areas, while remaining flexible to accommodate other aspects of good design such as eco- friendly, sustainable, recycle and reuse, etc.

Design tools and software such as Adobe Creative Cloud and other Specialized software may be used for specific design tasks such as structural design and printing design.

TOTAL: 180 PERIODS

OUTCOMES:

- Ability to understand target audience and user needs.
- Ability to draw out design decisions that inform the design.
- Ability to give appropriate, contextual and innovative design solutions.

TEXTBOOKS:

1. Language of Space by Bryan Lawson, ISBN 9781138581302, Published October 23, 2001 by Routledge; The Fundamentals of Interior Architecture, Coles, AVA
2. Interior Design -John Pile; Harry N. Abraham, Inc. Publishers.

REFERENCES:

1. Interior design Illustrated; Francis D K Ching.
2. Time Saver standards for Interior Design & Space Planning – Joseph de Chiara, Julius Panero, and Martin Zelnic – 2003.

Semester VIII

BD3801	PROJECT	L T P/S C 0 0 20 10

OBJECTIVES

- To ensure consolidation and application of the knowledge gained in preceding years of design education in the context of a design project of the student's choice.
- To enable identification and addressing of key issues/aspects inherent in a project or to enable development of thought processes in specific issues/aspects/situations leading organically to a design project.
- To facilitate the development of the ability to handle and complete projects independently as a precursor to professional life in design.

CONTENT

The project represents the culmination of the design education journey, encapsulating the student's ability to explore ideas and execute a design project with depth and clarity. Students are encouraged to choose a thesis topic based on their interests, focusing on design potential and/or the exploration of specific ideas or issues. The topic may be project-based with defined study areas or issue/approach-based leading to a project. In the latter case, care must be taken to ensure a sufficient design component emerges from the chosen topic.

Students must submit their topic for approval with a brief outline covering their interest, the nature of the project, area of focus, scope of study and design, anticipated challenges, methodology, and potential case studies. The key considerations for deciding on a topic is to choose a project that is relevant to the interests and goals of the student / Complex enough that provides challenges and allows for the demonstration of skills and knowledge/ that which have the potential to make a positive impact on society or the environment/ Feasibility to deliver within the given time frame and resources.

Areas of exploration can include a wide range of themes within the discipline of design such as- to name a few -Interior fit out project /Product design/branding design, etc.; large scale projects/set design for design expos or movies.

Work will be reviewed periodically throughout the semester. The final submission for viva voce will include study sheets, optional study models, design approach documentation, optional design process models, final design presentation sheets, final model, detailed drawings of a key component, a project report summarizing the entire thesis work, and a soft copy of all materials.

OUTCOMES

- Development of advanced skill, knowledge, and expertise in the domain of design.
- Ability to independently manage and execute a comprehensive design project from concept to conclusion.
- Capacity to intensify and articulate a focused line of thought, translating it into a meaningful design outcome

TOTAL: 300 PERIODS

TEXTBOOKS

1. Linda Grant and David Wang, 'Architectural Research Methods', John Wiley and Sons, 2013.
2. Joseph De Chiara, Michael J Crosbie, 'Time Saver Standards for Building Types', McGraw Hill Professional, 2001.

REFERENCES

1. Stephen A. Kliment, Editor 'Building Type Basics' Series, Wiley.
2. Igor Marjanović, Katerina Rüedi Ray, Lesley Naa Norle Lokko, 'The Portfolio - An Architecture Student's Handbook', Routledge, 2015.

PROFESSIONAL ELECTIVES

BD3001 VISUAL TOOLS AND TYPOGRAPHIC FORM L T P/S C
3 0 0 3

COURSE OBJECTIVES

- To introduce students to the fundamental principles of visual communication and the role of typography in design.
- To develop proficiency in using visual tools to explore form, hierarchy, rhythm, and composition.
- To foster creative and critical thinking in applying typographic elements across various media.
- To enable students to analyze, interpret, and construct meaningful typographic solutions.
- To provide hands-on experience with both analog and digital tools for expressive and functional typography.

UNIT 1: FUNDAMENTALS OF VISUAL LANGUAGE 9

Elements & Principles of Visual Design. Visual Hierarchy, Contrast, Balance, and Rhythm. Grid Systems and Layout Basics. Introduction to Semiotics and Visual Narratives

UNIT 2: TYPOGRAPHIC ANATOMY AND PRINCIPLES 9

Type Anatomy: Baseline, X-height, Ascenders, Descenders. Typeface Classification and Styles Legibility vs. Readability. Type Measurement and Spacing: Kerning, Tracking, Leading

UNIT 3: HISTORY AND EVOLUTION OF TYPOGRAPHY 9

Origins of Writing Systems. Movable Type and the Printing Press. Modernist and Postmodernist Typography. Digital Typography and Contemporary Trends

UNIT 4: EXPRESSIVE TYPOGRAPHY AND VISUAL COMPOSITION 9

Typographic Form as Image. Type and Emotion: Tone of Voice in Typography. Experimental Typography and Deconstruction. Mixed Media and Collage with Type

UNIT 5: APPLICATION AND PRACTICE 9

Designing with Type: Posters, Editorial, UI/UX, Branding. Creating Visual Systems using Type Integrating Image and Type. Final Project: Visual Narrative or Typographic Poster Series

TOTAL 45 PERIODS

LEARNING OUTCOME

1. Understand and apply visual design principles to develop compelling compositions.
2. Identify and analyze different typefaces, their anatomy, and their historical context.
3. Skillfully use typographic form to convey meaning, hierarchy, and emotion.
4. Develop original typographic designs using both traditional and digital tools.
5. Synthesize learned concepts to create professional-level visual communication projects.

RECOMMENDED READING

1. Ellen Lupton – Thinking with Type: A Critical Guide for Designers, Writers, Editors, & Students
2. Josef Müller-Brockmann – Grid Systems in Graphic Design
3. Robert Bringhurst – The Elements of Typographic Style

4. Timothy Samara – Making and Breaking the Grid
5. Philip B. Meggs – Meggs' History of Graphic Design
6. Steven Heller & Gail Anderson – Typographic Universe
7. Adrian Frutiger – Signs and Symbols: Their Design and Meaning

BD3002 COMMUNICATION THEORIES, VISUAL PERCEPTION AND SEMIOTICS L T P/S C
3 0 0 3

COURSE OBJECTIVES

- Understand foundational communication theories and their relevance to design and media.
- Analyze how visual perception influences the interpretation of visual content.
- Explore the principles of semiotics and their application in decoding and constructing meaning in design.
- Develop critical thinking in evaluating visual messages through cultural, social, and psychological lenses.
- Apply communication and semiotic frameworks to create impactful and meaningful visual narratives.

UNIT 1: INTRODUCTION TO COMMUNICATION THEORIES 9

Definition, process, and models of communication. Linear, interactive, and transactional models. Shannon-Weaver model, Lasswell's formula, Berlo's SMCR model. Verbal vs. non-verbal communication. Application of communication theories in design and media

UNIT 2: VISUAL PERCEPTION IN DESIGN 9

Fundamentals of visual perception: Gestalt principles, figure-ground relationship, visual hierarchy. Color perception and psychology Perception of depth, motion, and space. Role of attention, memory, and cognition in perception. Cultural and contextual influences on perception

UNIT 3: FUNDAMENTALS OF SEMIOTICS 10

Introduction to semiotics: Saussure and Peirce. Signifier and signified; types of signs: icon, index, and symbol. Codes, conventions, and myths. Denotation vs. connotation. Semiotics in language, images, advertising, and branding

UNIT 4: INTERPLAY OF COMMUNICATION, PERCEPTION & SEMIOTICS IN DESIGN 8

How visual elements convey meaning. Case studies in advertising, UI/UX, packaging, and film. Audience decoding and misinterpretation. Designing with intent: encoding messages for target audiences. Visual rhetoric and symbolism in design

UNIT 5: APPLIED ANALYSIS AND VISUAL NARRATIVE PROJECTS 9

Semiotic analysis of real-world visuals (ads, logos, posters, etc.). Creating communication design projects with embedded semiotic layers. Presentation and critique of design concepts based on perception and meaning. Group project: Storyboarding and visual communication strategy. Reflective documentation of the design process

TOTAL 45 PERIODS

LEARNING OUTCOMES

1. Explain major communication theories and apply them to visual and design contexts.
2. Analyze how human perception influences the way visuals are understood and consumed.
3. Decode meaning from visual elements using semiotic frameworks.
4. Critically evaluate visual communication pieces for clarity, cultural relevance, and symbolic meaning.
5. Create design works that demonstrate intentional use of perception and semiotic principles to communicate effectively.

RECOMMENDED READINGS & REFERENCES

1. Berger, Arthur Asa. Seeing is Believing: An Introduction to Visual Communication. McGraw-Hill.
2. Chandler, Daniel. Semiotics: The Basics. Routledge.
3. Lester, Paul Martin. Visual Communication: Images with Messages. Cengage Learning.
4. Solomon, Michael R. Consumer Behavior: Buying, Having, and Being – Chapter on Perception and Semiotics.
5. McLuhan, Marshall. Understanding Media: The Extensions of Man. MIT Press.

BD3003 ENVIRONMENTAL SCIENCE L T P/S C
3 0 0 3

OBJECTIVES

- To introduce the basic concepts of environment, ecosystems and biodiversity and emphasise on the biodiversity of India and its conservation.
- To impart knowledge on the causes, effects and control or prevention measures of environmental pollution and natural disasters.
- To facilitate the understanding of global and Indian scenario of renewable and non-renewable resources, causes of their degradation and measures to preserve them.
- To familiarise about influence of societal use of resources on the environment and introduce the legal provisions, National and International laws and conventions for environmental protection.
- To inculcate the effect of population dynamics on human and environmental health and inform about human right, value education and role of technology in monitoring human and environmental issues.

UNIT I ENVIRONMENT, ECOSYSTEMS AND BIODIVERSITY 14

Definition, scope and importance of environment – need for public awareness - concept of an ecosystem – structure and function of an ecosystem – producers, consumers and decomposers – energy flow in the ecosystem – ecological succession – food chains, food webs and ecological pyramids – Introduction, types, characteristic features, structure and function of the (a) forest ecosystem (b) grassland ecosystem (c) desert ecosystem (d) aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries) – Introduction to biodiversity definition: genetic, species and ecosystem diversity – bio geographical classification of India – value of biodiversity: consumptive use, productive use, social, ethical, aesthetic and option values – Biodiversity at global, national and local levels – India as a mega-diversity nation – hot-spots of biodiversity – threats to biodiversity: habitat loss, poaching of wildlife, man-wildlife conflicts – endangered and endemic species of India – conservation of biodiversity: In-situ and ex-situ conservation of biodiversity. Field study of common plants, insects, birds Field study of simple ecosystems – pond, river, hill slopes, etc. Introduction to the design of built environment with consideration of environment, ecosystems and biodiversity.

UNIT II ENVIRONMENTAL POLLUTION 8

Definition – causes, effects and control measures of: (a) Air pollution (b) Water pollution (c) Soil pollution (d) Marine pollution (e) Noise pollution (f) Thermal pollution (g) Nuclear hazards – soil waste management: causes, effects and control measures of municipal solid wastes – role of an individual in prevention of pollution – pollution case studies – disaster management: floods, earthquake, cyclone and landslides. Field study of local polluted site – Urban / Rural / Industrial / Agricultural. Built environment and its relation to environmental pollution, both as a cause and as a response. Traditional methods, such as silk painting and natural pigments. Carving and modelling methods in both traditions. Textile Arts: Exploration of weaving, dyeing, and embroidery techniques

UNIT III NATURAL RESOURCES 10

Forest resources: Use and over-exploitation, deforestation, case studies- timber extraction, mining, dams and their effects on forests and tribal people – Water resources: Use and over-utilization of surface and ground water, floods, drought, conflicts over water, dams-benefits and problems – Mineral resources: Use and exploitation, environmental effects of extracting and using mineral resources, case studies – Food resources: World food problems, changes caused by agriculture and overgrazing, effects of modern agriculture, fertilizer-pesticide problems, water logging, salinity, case studies – Energy resources: Growing energy needs, renewable and non renewable energy sources, use of alternate energy sources. case studies – Land resources: Land as a resource, land 47 degradation, man induced landslides, soil erosion and desertification – role of an individual in conservation of natural resources – Equitable use of resources for sustainable lifestyles. Field

study of local area to document environmental assets – river / forest / grassland / hill / mountain. The use of natural resources in architecture and the built environment through principles and case studies.

UNIT IV SOCIAL ISSUES AND THE ENVIRONMENT 7

Cultural and context of Vernacular traditions in India–Building and materiality of Art & Crafts in vernacular architecture like Rajasthan Havelis - Bhunga Houses – Bohra Housing – Chettinad Houses – Nalukettu Houses & Mansions in Bengal.

UNIT V HUMAN POPULATION AND THE ENVIRONMENT 6

Population growth, variation among nations – population explosion – family welfare programme – environment and human health – human rights – value education – HIV / AIDS – women and child welfare – role of information technology in environment and human health – Case studies. Architectural design and density.

TOTAL: 45 PERIODS

OUTCOME

- Understanding of the functions of environment, ecosystems and biodiversity and their conservation.
- Ability to identify the causes, effects and environmental pollution and natural disasters and contribute to the preventive measures in the immediate society.
- Understanding of renewable and non-renewable resources and contribute to the sustainable measures to preserve them for future generations.
- Familiarity with different forms of energy and apply them for suitable applications in for technological advancement and societal development. Knowledge of societal activity on the long- and short-term environmental issues and abide by the legal provisions, National and International laws and conventions in professional and personal activities and to identify and analyse effect of population dynamics on human value education, consumerism and role of technology in environmental issues.
- An understanding of the design of built environment with due consideration of environmental implications.

REQUIRED READING

1. Anubha Kaushik and C. P. Kaushik, ‘Perspectives in Environmental Studies’, 6th Edition, New Age International Publishers (2018).
2. Benny Joseph, ‘Environmental Science and Engineering’, Tata McGraw-Hill, New Delhi, (2016). Gilbert M.Masters, ‘Introduction to Environmental Engineering and Science’, 2nd edition, Pearson Education (2004).

REFERENCE

1. R.K. Trivedi, ‘Handbook of Environmental Laws, Rules, Guidelines, Compliances and Standards’, Vol. I and II, Enviro Media.
2. Cunningham, W.P. Cooper, T.H. Gorhani, ‘Environmental Encyclopedia’, Jaico Publ., House, Mumbai, 2001.
3. Dharmendra S. Sengar, ‘Environmental law’, Prentice Hall of India PVT. LTD, New Delhi, 2007.
4. Rajagopalan, R, ‘Environmental Studies-From Crisis to Cure’, Oxford University Press (2005).
5. Erach Bharucha,‘Textbook of Environmental Studies for Undergraduate Courses’, Orient BlackswanPvt. Ltd, 2013.

BD3004 **CRAFT DOCUMENTATION** **L T P/S C**
3 0 0 3

COURSE OBJECTIVES

- To understand the socio-cultural, historical, and economic context of traditional crafts in India and globally.
- To learn methods of documentation, analysis, and interpretation of craft processes, tools, materials, and community life.
- To sensitize students to the value of intangible heritage and the role of the artisan.
- To develop skills in field research, visual ethnography, and documentation through design mediums.
- To encourage creative engagement with crafts to explore their relevance in contemporary design practices.

UNIT 1: INTRODUCTION TO CRAFTS AND COMMUNITIES **8**

Definition and classification of crafts: Handloom, handicrafts, folk, tribal, contemporary. Role of crafts in cultural identity and livelihood. Overview of regional crafts across India (North-East, Rajasthan, South India, etc.) .Introduction to key institutions: Dastkari Haat Samiti, Crafts Council of India, etc. The artisan's ecosystem: materials, tools, transmission of knowledge

UNIT 2: TOOLS AND TECHNIQUES OF CRAFT DOCUMENTATION **9**

Methods of qualitative field research. Audio-visual documentation: photography, video, sketches, mapping. Conducting interviews and oral history collection. Craft mapping: spatial, material, and process-based approaches. Ethical considerations in documenting communities

UNIT 3: FIELD VISIT AND ON-GROUND STUDY **10**

Planning and preparing for fieldwork. Immersive interaction with artisans and local craft ecosystems. Recording processes: step-by-step craft techniques, workflows, challenges Understanding supply chains, sustainability, and market links. Observing social, cultural, and gender roles within craft communities

UNIT 4: ANALYSIS AND INTERPRETATION **10**

Translating field data into narratives and insights. Thematic analysis: heritage, livelihood, innovation, skill transfer. Visual storytelling methods: illustrated books, info graphics, short films. Comparative studies across craft clusters. Reflective critique: voice of the artisan vs. voice of the documenter

UNIT 5: CRAFT DOCUMENTATION PROJECT & PRESENTATION **8**

Compilation of a full documentation project (individual or team-based). Formats: report, booklet, documentary, exhibition, digital archive. Visual, textual, and audio integration. Presentation to peers, faculty, and possibly craft stakeholders. Submission of field journal, interviews, visual records, and final design response

TOTAL 45 PERIODS

LEARNING OUTCOMES

1. Identify and appreciate the socio-cultural significance of traditional crafts.
2. Demonstrate proficiency in research and documentation techniques relevant to craft ecosystems.
3. Conduct ethical and immersive fieldwork with craft communities.
4. Interpret and present craft knowledge using design-based communication tools.
5. Reflect critically on the role of designers in preserving, evolving, or commercializing traditional crafts.

RECOMMENDED READINGS & REFERENCES

1. Jyotindra Jain – Handcrafted Indian Textiles
2. Aditi Ranjan & M.P. Ranjan – Handmade in India: A Geographic Encyclopedia of Indian Handicrafts
3. Laila Tyabji – Threads and Voices: Behind the Indian Textile Tradition
4. T.N. Mukharji – Art-Manufactures of India (historical context)
5. Documentation Toolkit – NID or NIFT publications on field documentation
6. Academic Journals: Marg, Crafts Council Journal, Indian Anthropologist

BD3005 **DESIGN, MEDIA AND TECHNOLOGY** **L T P/S C**
3 0 0 3

COURSE OBJECTIVES

- To explore the evolving relationship between design, media, and technology in contemporary practice.
- To develop an understanding of various media formats (print, digital, interactive, immersive) and their applications in design.
- To analyze how emerging technologies influence user experience, communication, and storytelling.
- To introduce students to tools and platforms that enable design across multiple media.
- To encourage critical thinking about the social, cultural, and ethical implications of design in a tech-driven world.

UNIT 1: FOUNDATIONS OF MEDIA AND TECHNOLOGY IN DESIGN 10
Historical evolution: from analog to digital design. Understanding media: text, image, sound, motion, and interaction. Technology in design thinking and problem-solving. Media convergence and the digital shift. Case studies: traditional vs. new media in branding, advertising, and communication

UNIT 2: TOOLS, PLATFORMS, AND DESIGN PROCESSES 9
Introduction to design software (Adobe Creative Suite, Figma, Blender, etc.). Basics of UI/UX tools, animation, video editing, AR/VR applications. Cloud platforms, content management, and collaborative tools. Cross-platform design: responsive design principles. Prototyping with digital tools and real-time simulations

UNIT 3: DIGITAL NARRATIVES AND INTERACTIVE MEDIA 9
Principles of storytelling across media. Linear vs. nonlinear narratives in digital environments. Immersive media: AR, VR, MR, XR – definitions and applications. Interactive installations, game design elements, and motion graphics. Role of AI and generative tools in content creation

UNIT 4: DESIGN FOR A TECHNOLOGICAL SOCIETY 7
Social media, digital culture, and visual communication. Algorithmic aesthetics and automated design. Ethics in media: privacy, surveillance, misinformation, copyright. Sustainable design and digital waste. Media literacy and critical consumption of content

UNIT 5: INTEGRATED DESIGN PROJECT 10
Conceptualize and develop a media-rich design output. Choose a platform: digital campaign, motion graphic, website, mobile app, or interactive installation. Focus on audience engagement, platform specificity, and storytelling. Create prototypes and test on users. Final presentation and reflection on media choices and impact

TOTAL 45 PERIODS

LEARNING OUTCOMES

1. Understand and apply the principles of media and technology in contemporary design practices.
2. Use appropriate digital tools and platforms to create compelling design work.
3. Design interactive and media-rich experiences tailored to specific audiences.
4. Critically evaluate the role of technology in shaping communication and design outcomes.
5. Integrate ethical and sustainable approaches into media-based design projects.

RECOMMENDED READINGS & RESOURCES

1. **Lev Manovich** – *The Language of New Media*
2. **Marshall McLuhan** – *Understanding Media: The Extensions of Man*

3. **Ellen Lupton** – *Design Is Storytelling*
4. **Frank Chimero** – *The Shape of Design*
5. **Casey Reas & Ben Fry** – *Processing: A Programming Handbook for Visual Designers*
6. Journals & Platforms: *Eye Magazine*, *Smashing Magazine*, *Wired*, *Creative Applications*, *Fast Company Design*
7. Online Tutorials: Adobe tutorials, Figma community, Unity and Unreal Engine learning portals

BD3006 **DIGITAL PORTFOLIO DEVELOPMENT** **LT P/S C**
3 0 0 3

COURSE OBJECTIVES:

1. Understand the role of a portfolio in design communication and professional practice.
2. Learn the principles of layout, visual hierarchy, typography, and storytelling in digital media.
3. Gain hands-on skills in using digital tools (InDesign, Illustrator, Photoshop, Figma, etc.).
4. Organize academic and professional work into a coherent narrative.
5. Create an industry-ready digital portfolio for interviews, internships, and higher studies.

UNIT 1: INTRODUCTION TO PORTFOLIOS **9**
Purpose and types of design portfolios: Academic, professional, personal branding. Portfolio formats: Print, digital (PDF), interactive (web-based), video portfolios. Case studies of successful portfolios from different design disciplines.

UNIT 2: CONTENT CURATION AND STRUCTURING **9**
Selecting and evaluating works for inclusion. Categorizing work: Academic, freelance, conceptual, competition-based. Writing project briefs: Context, concept, process, outcome, reflection. Portfolio flow and logic: Cover, CV, table of contents, project sections, skills page, contact.

UNIT 3: VISUAL COMPOSITION AND LAYOUT DESIGN **9**
Design principles: Grid systems, alignment, white space, balance, consistency. Typography: Fonts, hierarchy, readability. Visual storytelling: Mood boards, process flows, timelines, diagrams. File formats, image resolutions, color modes (RGB vs CMYK).

UNIT 4: TOOLS AND PLATFORMS **10**
Software skills: Adobe InDesign: Layout and publishing. Adobe Illustrator/Photoshop: Graphics and image editing. Figma/Canva: Quick and collaborative layouts. Behance, Issuu, Wix, Squarespace: Hosting and presenting portfolios. Exporting and optimization: PDFs, interactive portfolios, web-safe files.

UNIT 5: BRANDING AND FINAL PRESENTATION **8**
Personal branding: Logo, visual identity, resume design. Digital presence: LinkedIn, Behance, personal website. Portfolio critique sessions, peer reviews, and feedback loops. Preparing for interviews: Verbal presentation of portfolio, online and offline pitch.

TOTAL 45 PERIODS

LEARNING OUTCOMES:

1. Curate a strong selection of design works that reflect their strengths and interests.
2. Design compelling layouts that communicate their design process and outcomes effectively.
3. Use industry-standard tools for creating and publishing digital portfolios.
4. Develop a personal visual identity and consistent branding language.
5. Present their portfolio confidently in academic and professional settings.

REQUIRED READING & REFERENCES:

1. Portfolio Design by Harold Linton
2. Graphic Design Portfolio Strategies for Print and Digital Media by Robert Rowe
3. How to Create a Portfolio & Get Hired by Fig Taylor
4. Show Your Work! by Austin Kleon

BD3007 **LIGHTING DESIGN** **L T P/S C**
3 0 0 3

COURSE OBJECTIVES:

1. Understand the fundamental principles and physics of light and vision.
2. Analyze the impact of natural and artificial lighting on interior and architectural spaces.
3. Develop skills in lighting design for various residential, commercial, and public settings.
4. Gain knowledge of lighting fixtures, controls, and their applications.
5. Learn to create sustainable, energy-efficient lighting solutions that enhance user experience and aesthetics.

UNIT 1: FUNDAMENTALS OF LIGHT AND VISION **10**

Physics of Light: Wavelength, frequency, intensity, reflection, refraction, absorption, transmission, diffusion. Photometric Terms: Illuminance (lux), Luminance (cd/m^2), Luminous flux (lumens), Luminous intensity (candela), efficacy. Color in Lighting: Correlated Color Temperature (CCT), Color Rendering Index (CRI), chromaticity diagrams. Human Visual System: Eye structure, adaptation to brightness and darkness, field of view, glare types (disability, discomfort).Natural Light: Sun path, daylight availability, window orientation, shading devices, daylight factor.

UNIT 2: LIGHTING SOURCES AND FIXTURES **9**

Light Sources: Traditional: Incandescent, Halogen, Fluorescent, CFL. Modern: LED, OLED, Induction, Fiber-optic. Properties of Sources: Lifespan, efficiency, heat generation, dimmability, maintenance. Luminaires (Fixtures): Categories: Down lights, up lights, wall washers, pendants, sconces, track lights, spotlights, chandeliers. Mounting Types: Surface, recessed, suspended, wall-mounted. Fixture Components: Ballasts, drivers, diffusers, reflectors, lenses. Lighting Controls: Manual switches, dimmers, motion sensors, daylight sensors, smart systems

UNIT 3: LIGHTING TECHNIQUES AND APPLICATIONS **9**

Lighting Types: Ambient Lighting: General illumination strategies. Task Lighting: Focused light for activities (reading, cooking, office work).Accent lighting: Highlighting artworks, architectural features. Decorative Lighting: Chandeliers, wall brackets, artistic luminaires. Lighting Strategies for Spaces: Residential: Living rooms, bedrooms, kitchens, bathrooms. Commercial: Offices, retail stores, restaurants, malls .Hospitality: Hotels, lounges, lobbies, banquet halls. Institutional: Schools, libraries, hospitals. Outdoor and Façade Lighting: Landscape lighting, security lighting, signage illumination, architectural highlights. Mood and Atmosphere: Color temperature manipulation, dimming, shadow play, lighting scenes.

UNIT 4: LIGHTING CALCULATIONS AND DOCUMENTATION **9**

Standards and Guidelines: IS Code 3646, NBC norms, IESNA recommendations. Lighting Calculation Methods: Lumen Method: Room cavity ratio, coefficient of utilization, maintenance factor. Point-by-Point Method: Illuminance at specific points using inverse square law and cosine law. Use of Software: Basics of DIALux, Relux – importing plans, selecting luminaires, simulating lux levels. Drafting Lighting Layouts: Schematic plans with symbols and legends. Reflected ceiling plans (RCP), wiring diagrams. Lighting schedules: fixture types, wattage, mounting, manufacturer details.

UNIT 5: SUSTAINABLE AND HUMAN-CENTRIC LIGHTING **8**

Sustainable Lighting: Energy-saving practices, sensor-based lighting, LED retrofitting. Life cycle assessment (LCA) of lighting products. LEED/IGBC/GRIHA points related to lighting. Daylight Integration: Light shelves, clerestories, skylights, solar tubes. Daylight-responsive controls, glare control strategies. Human-Centric Lighting: Circadian lighting design: Tunable white LEDs, blue light exposure. WELL Building Standard and lighting. Biophilic lighting principles. Case Studies: Net-zero energy buildings, museums with precision lighting, high-end retail stores with dynamic lighting.

TOTAL 45 PERIODS

LEARNING OUTCOMES:

1. Explain the scientific principles behind light and visual perception.
2. Identify appropriate lighting types, sources, and fixtures for different design scenarios.
3. Design layered lighting schemes to enhance spatial quality and function.
4. Perform basic lighting calculations and represent them in professional drawings.
5. Evaluate lighting solutions for sustainability, energy-efficiency, and human wellness.

REQUIRED READING:

1. "Lighting Design Basics" by Mark Karlen, Christina Spangler, and James Benya
2. "Interior Lighting for Designers" by Gary Gordon
3. "Lighting for Interior Design" by Malcolm Innes
4. "The Architecture of Light" by Sage Russell
5. IESNA Lighting Handbook (Latest Edition)

REFERENCES:

1. Illuminating Engineering Society (www.ies.org)
2. DIALux official website and tutorials (www.dialux.com)
3. Relux Lighting Design Software (www.relux.com)
4. IGBC and LEED guidelines for lighting
5. Journals: *Lighting Research & Technology*, *Journal of the Illuminating Engineering Society*
6. Architectural Digest and Dezeen articles on lighting trends

BD3008 BEYOND THE BOX: INTRODUCTION TO PACKAGING DESIGN L T P/S C
3 0 0 3

COURSE OBJECTIVE

- Understand the principles and history of packaging design.
- Learn about materials, form, function, and sustainability in packaging.
- Explore visual communication, branding, and user experience in packaging.
- Develop technical and creative skills to design innovative packaging solutions.
- Prototype and present package designs for real or conceptual products.

UNIT 1: FUNDAMENTALS OF PACKAGING DESIGN 9
History and evolution of packaging. Functions of packaging: Protection, preservation, marketing, and convenience. Types of packaging: Primary, secondary, tertiary. Industry examples: FMCG, luxury goods, electronics, fashion.

UNIT 2: MATERIALS, STRUCTURE, AND MECHANICS 9
Packaging materials: Paper, cardboard, plastic, glass, metal, sustainable alternatives. Basics of dielines, folds, flaps, locking mechanisms. Material behavior and strength.

UNIT 3: BRANDING AND VISUAL LANGUAGE IN PACKAGING 9
Role of packaging in branding and shelf impact. Layout, typography, color theory, icons, illustrations. Mandatory information: Barcode, nutritional label, manufacturing data, legal symbols. Unboxing experience and user interaction. Cross-cultural packaging design and localization.

UNIT 4: SUSTAINABLE AND INNOVATIVE PACKAGING 9
Eco-friendly packaging: Biodegradable, compostable, recyclable options. Minimalist and zero-waste packaging design. Reusable, refillable, and up cycled packaging. Innovations: Smart packaging, AR-enabled packaging, edible packaging.

UNIT 5: DESIGN PROCESS & PROJECT EXECUTION 9
Research, concept development, and mood boarding. Sketching and prototyping (paper/board mockups). Packaging design project: Logo, labels, box structure, and brand story. Final presentation with visuals, mockups, and storytelling.

TOTAL 45 PERIODS

LEARNING OUTCOMES:

1. Describe the key functions and classifications of packaging.
2. Select suitable materials and structures for different product categories.
3. Design visually impactful and brand-aligned packaging.
4. Integrate sustainable thinking into packaging solutions.
5. Execute and present a comprehensive packaging design project.

REQUIRED READING & REFERENCES:

- Packaging Design: Successful Product Branding from Concept to Shelf by Marianne R. Klimchuk and Sandra A. Krasovec
- The Packaging Designer's Book of Patterns by Lászlo Roth and George Wybenga
- Structural Packaging by Paul Jackson
- Box Bottle Bag: The World's Best Package Designs by Sterling Innovation

BD3009 PRINTING DESIGN AND TECHNOLOGY L T P/S C
3 0 0 3

COURSE OBJECTIVE

- To introduce students to the fundamentals of print design and the technical aspects of printing processes.
- To familiarize learners with the different types of printing techniques, substrates, and production workflows.
- To train students in preparing print-ready artworks and understanding color systems in print.
- To explore innovations in sustainable and digital printing technologies.
- To bridge the gap between design intent and print execution for effective visual communication.

UNIT 1: INTRODUCTION TO PRINT DESIGN 10
Evolution and history of printing. Basics of print design: Layout, margins, bleeds, grids. File formats and resolution. Understanding print vs digital media

UNIT 2: PRINTING PROCESSES AND TECHNIQUES 9
Relief printing: Letterpress, woodcut. Planographic printing: Lithography, offset printing. Intaglio and gravure. Screen printing, flexography, and digital printing (inkjet, laser)

UNIT 3: COLOR AND PREPRESS TECHNOLOGY 9
CMYK vs RGB: Color management in print. Pantone Matching System (PMS) and spot colors. Prepress processes: Proofing, trapping, imposition, plate-making. Software tools: Adobe InDesign, Illustrator, Photoshop for print

UNIT 4: SUBSTRATES, FINISHING, AND SPECIAL EFFECTS 9
Types of substrates: Paper, board, fabric, plastic, metal. Finishes: Matte, gloss, UV coating, varnish, embossing, foil stamping. Binding methods: Saddle-stitch, perfect binding, spiral binding. Packaging and label printing essentials

UNIT 5: INDUSTRY TRENDS, SUSTAINABILITY, AND CASE STUDIES 8
Print industry trends: Digital printing, variable data printing (VDP). Green printing: Eco-inks, recyclable materials, low-waste printing. Case studies: Print campaigns, branding collaterals, zines, and packaging. Studio visit / printer interaction / mini-project for practical exposure

TOTAL 45 PERIODS

LEARNING OUTCOMES

1. Students will demonstrate an understanding of major printing methods and their applications.
2. They will prepare industry-standard print-ready files with proper formatting and resolution.
3. Learners will apply color management techniques accurately for print production.
4. They will select appropriate materials, finishes, and techniques based on design intent and budget.
5. Students will evaluate and integrate sustainable printing practices into their projects.

REQUIRED READING / REFERENCES

1. "Printing Design and Layout" by Vincent Steer
2. "Production for Graphic Designers" by Alan Pipes
3. "Pocket Pal: A Graphic Arts Production Handbook" by Frank J. Romano
4. "The Print Handbook" by Andy Brown
5. Adobe Official Tutorials (InDesign, Illustrator, Photoshop – for print workflows)
6. Case studies from PrintMag, CreativeBloq, and The Dieline

BD3010	ADVERTISING DESIGN	L T P/S C
		3 0 0 3

COURSE OBJECTIVES:

- Understand the principles, history, and impact of advertising in design.
- Analyze various types and formats of advertising across media.
- Learn the creative and strategic process behind campaign development.
- Design and execute multi-platform advertising content.
- Build compelling ad narratives that align with branding and target audience behavior.

UNIT 1: INTRODUCTION TO ADVERTISING **9**

History and evolution of advertising. Role of design in advertising and branding. Types of advertisements: Print, digital, outdoor, ambient, guerrilla. Elements of an ad: Headline, visual, body copy, call-to-action, logo/tagline. Ethics and social responsibility in advertising.

UNIT 2: ADVERTISING MEDIA AND PLATFORMS **8**

Traditional media: Newspaper, magazines, TV, radio, outdoor (hoardings, billboards). Digital media: Social media ads, banner ads, Google ads, influencer campaigns. Experiential and ambient advertising. Cross-media campaigns and media planning basics.

UNIT 3: THE CREATIVE PROCESS IN ADVERTISING **8**

Understanding the brief: Client goals and communication objectives. Target audience profiling and psychographics. Ideation techniques: Brainstorming, mind mapping, lateral thinking. Concept development and storytelling. Creating ad copy: Taglines, slogans, persuasive messaging.

UNIT 4: VISUAL STRATEGY AND DESIGN PRINCIPLES **10**

Layout design for ads: Hierarchy, grid, balance, typography, and imagery. Color psychology and visual metaphors. Photography and illustration in advertising. Logo placement and brand consistency. Designing for emotion and impact.

UNIT 5: CAMPAIGN DESIGN AND EXECUTION **10**

Designing an integrated ad campaign for a product or service. Deliverables: Posters, magazine ads, Instagram/Facebook ads, banners, flyers. Prototyping and mockups for print and digital platforms. Presentation of campaign concept, storyboards, and final creatives. Industry case studies: Successful ad campaigns and what made them effective.

TOTAL 45 PERIODS

LEARNING OUTCOMES:

1. Understand the components and functions of advertising in design.
2. Create engaging advertisement concepts aligned with brand identity.
3. Develop copy and visuals that resonate with target audiences.
4. Design across multiple media formats with consistent branding.
5. Build a mini portfolio of advertising campaigns for presentation.

REQUIRED READING & REFERENCES:

Books:

- Ogilvy on Advertising by David Ogilvy
- Hey, Whipple, Squeeze This by Luke Sullivan
- Advertising Concept Book by Pete Barry
- Cutting Edge Advertising by Jim Aitchison
- Made You Look by Stefan Sagmeister

BD3011 INTRODUCTION TO ACCESSIBILITY AND INCLUSIVITY DESIGN L T P/S C
3 0 0 3

COURSE OBJECTIVES

1. To introduce the principles and importance of accessibility and inclusive design in contemporary practice.
2. To familiarize students with physical, sensory, cognitive, and socio-economic diversity.
3. To understand legal frameworks, guidelines (like ADA, WCAG), and universal design principles.
4. To develop skills in user research with marginalized and differently-abled communities.
5. To apply inclusive thinking in product, space, communication, and system design.

UNIT 1: FOUNDATIONS OF ACCESSIBILITY AND INCLUSIVE DESIGN 9

Definitions: Accessibility vs. Inclusivity vs. Universal Design. Historical context and social relevance. Models of disability: medical vs. social model. Equity, diversity, and belonging in design. Overview of inclusive design principles (7 Principles of Universal Design)

UNIT 2: UNDERSTANDING USERS AND BARRIERS 9

Types of disabilities: physical, visual, auditory, cognitive, neurodiversity. Age-related and temporary impairments. Social and cultural barriers to access. Empathy mapping, user personas, and user journeys. Intersectionality and identity-based exclusion'

UNIT 3: DESIGNING FOR INCLUSIVE EXPERIENCES 9

Inclusive product and service design. Inclusive UI/UX and communication design (WCAG guidelines). Spatial and environmental accessibility (ADA codes, barrier-free design). Assistive technologies and adaptive strategies. Participatory and co-design methods

UNIT 4: POLICIES, STANDARDS & CASE STUDIES 10

ADA (Americans with Disabilities Act), RPwD (India), UNCRPD. Web Content Accessibility Guidelines (WCAG) .National Building Code (India) – Accessibility standards. Global case studies: Microsoft Inclusive Design, OXO Good Grips, NID's Design for All projects. Local community design interventions and policy initiatives

UNIT 5: STUDIO PROJECT – DESIGNING FOR INCLUSION 8

Identify a real-world exclusion scenario .Conduct user research and barrier mapping. Develop an inclusive design intervention (product/service/environment/interface). Prototype and evaluate with target users. Final presentation and feedback

TOTAL 45 PERIODS

LEARNING OUTCOMES

1. Recognize the importance of inclusive design in achieving equity and social justice.
2. Identify various user needs and exclusion points across abilities and demographics.
3. Apply inclusive design principles to solve design problems across domains.
4. Conduct empathetic and ethical user research with marginalized groups.
5. Create prototypes that reflect inclusive, barrier-free, and accessible solutions.

REQUIRED READING & RESOURCES

1. Kat Holmes – *Mismatch: How Inclusion Shapes Design*
2. Elise Roy (TED Talk) – *When We Design for Disability, We All Benefit*
3. IDEO.org – *Design Kit: The Human-Centered Design Toolkit*
4. Microsoft Design Toolkit – *Inclusive Design Guidelines*
5. Shilpa Ranade – *Accessible India: Architectural Design for All*
6. UNCRPD and RPwD Act (India) – Legal framework documents
7. Web Content Accessibility Guidelines (WCAG) – www.w3.org/WAI

BD3012 **BRAND IDENTITY DESIGN** **L T P/S C**
3 0 0 3

COURSE OBJECTIVES

1. To understand the fundamentals of branding and the strategic role of visual identity.
2. To explore the process of building a brand—from positioning to visual execution.
3. To learn how typography, color, imagery, and form work cohesively in brand communication.
4. To analyze successful brand identity systems across industries and contexts.
5. To develop a complete brand identity system for a hypothetical or real client.

UNIT 1: INTRODUCTION TO BRANDING & BRAND STRATEGY 8

What is a brand? Difference between brand, branding, and brand identity. Components of a brand: vision, mission, values, personality, tone of voice. Target audience, market positioning, brand story. Types of brands: corporate, product, personal, place, service, NGO. Brand audit and competitive analysis

UNIT 2: BRAND NAMING, NARRATIVE & POSITIONING 7

The process of naming: types, techniques, trademarks. Crafting a compelling brand story Defining brand voice, messaging pillars, and taglines. Positioning strategies: unique value propositions and emotional connect. Exercises: creating mood boards, narrative frameworks

UNIT 3: VISUAL LANGUAGE & IDENTITY SYSTEM 10

Designing the logo: symbols, word marks, letter marks, emblems. Typography in branding: readability, personality, hierarchy. Color theory and its emotional impact. Imagery, iconography, patterns, textures. Creating cohesive brand identity systems and design grids

UNIT 4: APPLICATIONS & BRAND TOUCHPOINTS 10

Designing brand collaterals: stationery, merchandise, packaging. Digital presence: websites, social media, emailers. Environmental branding: signage, interiors, pop-ups. Motion branding: intros, transitions, animated logos. Brand experience: consistency across platforms and media

UNIT 5: BRAND IDENTITY PROJECT & GUIDELINES 10

Brand brief interpretation. Research and concept development. Designing brand identity and system. Creating a comprehensive Brand Guidelines Document. Final presentation: pitch, mockups, rationale, and critique

TOTAL 45 PERIODS

LEARNING OUTCOMES

1. Understand and apply the strategic foundations of branding.
2. Create a compelling brand narrative and positioning framework.
3. Develop a distinctive and functional visual identity system.
4. Design consistent brand applications across various media and platforms.
5. Compile a professional brand manual with comprehensive guidelines and rationale.

REQUIRED READING & RESOURCES

1. Alina Wheeler – Designing Brand Identity: An Essential Guide for the Whole Branding Team
2. Wally Olins – The Brand Handbook
3. Marty Neumeier – The Brand Gap and ZAG: The #1 Strategy of High-Performance Brands
4. Michael Johnson – Branding: In Five and a Half Steps
5. Debbie Millman (Podcast) – Design Matters
6. Case studies from Brand New (www.underconsideration.com/brandnew)
7. Visual identity manuals of brands like Google, Airbnb, IBM, and Spotify for reference

BD3013 VISUAL GRAMMAR FOR DIVERSITY: SOCIAL DESIGN L T P/S C
3 0 0 3

COURSE OBJECTIVE

1. To develop a foundational understanding of visual grammar and its role in social and cultural contexts.
2. To explore how design can communicate across diverse social, cultural, and economic backgrounds.
3. To train students to decode and encode messages using visual elements that reflect inclusivity and diversity.
4. To sensitize learners to the ethical and social responsibilities of a designer in representing marginalized voices.
5. To encourage critical thinking through design interventions that respond to real-world social challenges.

UNIT 1: FUNDAMENTALS OF VISUAL GRAMMAR 10
Elements of visual language: Line, Shape, Form, Colour, Texture, Space, Value. Principles of composition: Balance, Contrast, Rhythm, Unity, Emphasis, Hierarchy. Semiotics: Sign, symbol, index – visual literacy and perception. Cultural readings of visual symbols

UNIT 2: UNDERSTANDING DIVERSITY THROUGH VISUAL REPRESENTATION 8
Concepts of identity: Gender, ethnicity, ability, class, and age. Bias in design: Case studies of exclusion and misrepresentation. Inclusive design thinking: Universal Design principles. Language, typography, and imagery in inclusive communication

UNIT 3: SOCIAL DESIGN AS A TOOL FOR CHANGE 8
History and evolution of social design. Community-centered design: Co-creation and participatory design. Design activism and advocacy campaigns. Ethics and responsibilities in social design practices

UNIT 4: VISUAL STORYTELLING FOR SOCIAL NARRATIVES 10
Narrative structures and emotional resonance. Design for NGOs, non-profits, and social enterprises. Visual campaigns for awareness (e.g., gender equity, health, education). Empathy mapping and user personas

UNIT 5: CAPSTONE PROJECT – DESIGNING FOR INCLUSION 9
Identifying a local or global social issue. Conducting research and user engagement. Prototyping a visual solution (campaign, toolkit, app, publication, etc.). Presentation, critique, and documentation

TOTAL 45 PERIODS

LEARNING OUTCOMES

1. Students will demonstrate the ability to apply visual grammar in culturally responsive and inclusive design.
2. They will critically analyze how design can both include and exclude communities.
3. Learners will be able to ideate and prototype socially conscious visual communication strategies.
4. They will build the ability to empathize with diverse users and reflect their needs in design outcomes.
5. Students will produce a capstone project addressing a real-world social issue through inclusive design practice.

REQUIRED READING / REFERENCES

1. "Visual Grammar" by Christian Leborg
2. "Design for the Real World: Human Ecology and Social Change" by Victor Papanek
3. "Inclusive Design for a Digital World" by Regine M. Gilbert
4. "Do Good Design: How Designers Can Change the World" by David B. Berman
5. "The Politics of Design" by Ruben Pater
6. Articles & case studies from IDEO.org and Design Justice Network

BD3014 **AI IN INTERIOR DESIGN** **L T P/S C**
3 0 0 3

COURSE OBJECTIVES (COS)

1. Understand the foundational concepts of Artificial Intelligence (AI) and its relevance to the field of Interior Design.
2. Explore AI-powered tools and platforms used in space planning, material selection, lighting design, and furniture layout.
3. Evaluate the impact of AI on user experience, personalization, and sustainable interior environments.
4. Develop the ability to integrate AI applications in design processes, including generative design and parametric modeling.
5. Analyze real-world case studies to assess how AI enhances creativity, efficiency, and design outcomes.

UNIT 1: INTRODUCTION TO AI AND ITS ROLE IN DESIGN **7**
Basics of Artificial Intelligence, Machine Learning, and Deep Learning. History and evolution of AI in design fields. Overview of AI in architecture, interiors, and creative practices. Ethics and limitations of AI in design

UNIT 2: AI TOOLS AND SOFTWARE IN INTERIOR DESIGN **10**
Introduction to AI-powered design tools (e.g., Autodesk Revit with AI plugins, Rhino with Grasshopper, Midjourney, DALL·E, Canva AI). Automation in layout planning, lighting simulation, and furniture arrangements. Material selection and mood board generation using AI tools

UNIT 3: GENERATIVE AND PARAMETRIC DESIGN **10**
Concepts of generative design and parametric logic. Using AI for real-time space planning and modular design. Case studies on algorithm-based design in interiors. Hands-on with tools like Space Designer 3D, Planner 5D, Foyr Neo

UNIT 4: AI FOR PERSONALIZATION AND USER EXPERIENCE **10**
Behavioral data analysis and user-centric design solutions. Smart homes, IoT integration, and responsive environments. AI for inclusive design and accessibility improvements. Customization of interior elements through user data

UNIT 5: AI, SUSTAINABILITY, AND FUTURE TRENDS **8**
AI for energy-efficient and sustainable interiors. Predictive design and lifecycle analysis. Emerging trends: voice-activated design, virtual staging, AI in facility management. Challenges and future scope of AI in Interior Design practice

TOTAL 45 PERIODS

LEARNING OUTCOMES (LOS)

1. Explain the core principles and functions of AI in the context of interior design.
2. Apply AI tools to develop intelligent and efficient interior design solutions.
3. Use AI to enhance spatial planning, material selection, and lighting decisions.
4. Integrate user data and smart technologies for personalized interior spaces.
5. Critically analyze the ethical, social, and environmental implications of AI-driven design.

REQUIRED READINGS & RESOURCES

Books

1. *Artificial Intelligence for Designers* by Patrick Hebron
2. *Designing with AI: Concepts for the Creative Industries* by Marco van Hout
3. *Generative Design: Visualize, Program, and Create with JavaScript in p5.js* by Benedikt Groß & Hartmut Bohnacker
4. *Architectural Intelligence: How Designers and Architects Created the Digital Landscape* by Molly Wright Steenson

Web Platforms / Tools for Practice

- Foyr Neo
- Midjourney / DALL·E for concept visualization
- Planner 5D
- Autodesk Revit (with Dynamo or AI plugins)
- Canva AI for branding and presentation boards

BD3015 EMERGING DESIGN TECHNOLOGY- AR/VR/IMMERSIVE EXPERIENCES L T P/S C
3 0 0 3

COURSE OBJECTIVES

1. Understand the principles and technologies behind Augmented Reality (AR), Virtual Reality (VR), and immersive design.
2. Gain insight into hardware, software, and platforms used for experiential design in interior architecture and spatial storytelling.
3. Explore real-time rendering engines and their role in presenting design narratives and walkthroughs.
4. Develop interactive design content using AR/VR tools for enhanced user engagement and spatial simulation.
5. Analyze the future impact and potential of immersive technologies in various design fields.

UNIT 1: INTRODUCTION TO IMMERSIVE TECHNOLOGIES 9

Definitions: AR, VR, MR, XR. History and evolution of immersive design tools. Comparative overview: AR vs VR vs MR in design. Applications in architecture, interior design, branding, and exhibitions

UNIT 2: TOOLS, SOFTWARE, AND HARDWARE 8

AR/VR hardware: Oculus Rift, HTC Vive, HoloLens, AR glasses. Software: Unity, Unreal Engine, Blender, SketchUp + Enscape, Twinmotion. Mobile AR platforms: ARKit (Apple), ARCore (Google). Integrating CAD/BIM models into immersive environments

UNIT 3: DESIGNING FOR VIRTUAL AND AUGMENTED ENVIRONMENTS 8

Spatial storytelling and experiential design. UI/UX for immersive platforms. 3D modeling and texturing for real-time environments. Designing virtual showrooms, walkthroughs, and product experiences

UNIT 4: CASE STUDIES AND INDUSTRY APPLICATIONS 10

Virtual museums and galleries. Retail, real estate, and hospitality applications. AR in interior decoration and space visualization. Use in education, exhibitions, and brand experiences

UNIT 5: FUTURE TRENDS AND ETHICAL CONSIDERATIONS 10

Metaverse and the future of spatial design. AI + AR/VR convergence. Accessibility, data privacy, and ethical use. Sustainability and digital prototyping vs physical mockups

TOTAL 45 PERIODS

LEARNING OUTCOMES

1. Demonstrate a comprehensive understanding of AR/VR technologies in design applications.
2. Use industry-standard tools to develop immersive experiences for interior and spatial projects.
3. Create engaging virtual walkthroughs and AR simulations to present design ideas.
4. Critically evaluate the impact of immersive technologies on user behavior and spatial perception.
5. Conceptualize future-ready design solutions integrating immersive and interactive technologies.

REQUIRED READING & RESOURCES

Books

1. Understanding Virtual Reality: Interface, Application, and Design by William R. Sherman & Alan B. Craig
2. Augmented Human: How Technology Is Shaping the New Reality by Helen Papagiannis
3. Immersive Design: Creating Physical and Digital Experience Spaces by Adrianne Montgomerie
4. The UX of XR: User Experience Design and Strategies for Immersive Technologies by Cornel Hillmann
5. Unity Learn (https://learn.unity.com/)
6. Unreal Engine Tutorials (https://www.unrealengine.com/en-US/onlinelearning-courses)
7. Enscape and Twinmotion official learning portals
8. Spark AR Studio (Meta)
9. Sketchfab for 3D model publishing and AR/VR previews

BD3016	INDIAN SYMBOLOGY AND KNOWLEDGE	L T P/S C
		3 0 0 3

COURSE OBJECTIVES

1. Understand the cultural, spiritual, and philosophical foundations of Indian symbology across time and regions.
2. Identify and interpret traditional Indian symbols in art, architecture, design, rituals, and folk expressions.
3. Analyze the role of mythology, cosmology, and scriptural references in Indian symbolic systems.
4. Explore regional and community-based symbolism in textiles, crafts, and performing arts.
5. Apply knowledge of Indian symbolic systems in contemporary design contexts with cultural sensitivity.

UNIT 1: INTRODUCTION TO INDIAN SYMBOLOGY **9**

Meaning and significance of symbols and symbolism. Difference between sign, symbol, and icon. Roots in Vedic, Buddhist, Jain, and Hindu philosophies.The five elements (Pancha Bhoota) and their symbolic associations .Yantra, Mandala, and Sacred Geometry

UNIT 2: MYTHOLOGY AND COSMIC NARRATIVES **8**

Symbolism in Indian epics (Ramayana, Mahabharata). Avatars and their symbolic meaning. Deities, vehicles (vahanas), and attributes. Time cycles: Yugas, Kalachakra, and cosmology. Chakras, Kundalini, and metaphysical symbolism.

UNIT 3: ARCHITECTURE, TEMPLE DESIGN, AND SACRED SPACES **10**

Vastu Purusha Mandala and symbolic grid systems. Temple architecture (Garbhagriha, Shikhara, Gopuram) and their meanings. Stupas, Toranas, and Ashokan pillars. Symbolism in stepwells and indigenous architecture. Spatial symbolism and orientation

UNIT 4: FOLK ART, CRAFT, AND TEXTILE TRADITIONS **10**

Symbolism in Warli, Madhubani, Pattachitra, Gond art, etc. Textile motifs: Kalamkari, Bandhani, Chikankari, Kantha, etc. Tribal and regional iconography. Ritual symbols: Rangoli, Kolam, Alpana. Color symbolism in Indian culture

UNIT 5: CONTEMPORARY APPLICATIONS AND RELEVANCE **8**

Indian symbols in branding, film, fashion, and product design. Cultural appropriation vs. cultural inspiration. Design interventions for preservation and revival. De-coding traditional knowledge systems for design innovation. Case studies: Brands/Designers using Indian symbolism effectively

TOTAL 45 PERIODS

LEARNING OUTCOMES

1. Decode and analyze Indian symbols in diverse visual and spatial contexts.
2. Interpret cultural meanings rooted in myth, ritual, and traditional knowledge systems.
3. Develop culturally rich design concepts using Indian symbology responsibly.
4. Engage with indigenous crafts and communities through symbolic understanding.
5. Reflect on the relevance of Indian symbolism in global and contemporary design practice.

RECOMMENDED READINGS & REFERENCES

1. **Kapila Vatsyayan** – *Indian Symbolism*
2. **Alain Daniélou** – *The Myths and Gods of India*
3. **Ananda K. Coomaraswamy** – *The Dance of Shiva*
4. **Devdutt Pattanaik** – *7 Secrets of Indian Symbols*
5. **Stella Kramrisch** – *The Hindu Temple*
6. **Ajit Mookerjee** – *Kundalini: The Arousal of the Inner Energy*

BD3017 FUNDAMENTALS OF USER EXPERIENCE DESIGN L T P/S C
3 0 0 3

COURSE OBJECTIVES:

1. Understand the foundational principles and evolution of User Experience (UX) design.
2. Learn to identify user needs and behaviours through research and analysis.
3. Develop skills to create wireframes, user flows, and interactive prototypes.
4. Gain knowledge of usability testing methods and design evaluation.
5. Explore UX tools, digital platforms, and human-Centered design best practices.

UNIT I: INTRODUCTION TO UX DESIGN 9

Definition and scope of UX design. Evolution of UX from usability to experience design. Key concepts: usability, accessibility, interaction, and interface design. Differences between UX and UI. Importance of human-centered design. UX roles and workflows in the industry. Introduction to design thinking.

UNIT II: USER RESEARCH AND ANALYSIS 10

Importance of user research in UX. Types of research: qualitative vs quantitative. Techniques: interviews, surveys, shadowing, usability studies. Creating user personas, empathy maps, and journey maps. Defining user goals, pain points, and behaviour patterns. Translating insights into design direction.

UNIT III: INFORMATION ARCHITECTURE AND USER FLOWS 10

Basics of structuring digital content. Sitemaps, navigation models, and labelling systems. Creating user flows and task flows. Organizing information for clarity and efficiency. Wireframing basics: layout, hierarchy, and interface elements. Affordances, feedback, and interaction patterns.

UNIT IV: PROTOTYPING AND VISUAL DESIGN 8

Wireframes: low-fidelity to high-fidelity. Prototyping techniques: paper, digital, and interactive. Tools for prototyping: Figma, Adobe XD, InVision. Visual design principles: alignment, contrast, consistency, typography, and color in UX. Responsive and adaptive design principles. Branding and micro interactions.

UNIT V: USABILITY TESTING AND UX PRACTICE 8

Usability testing methods: A/B testing, heuristic evaluation, remote testing. Gathering and interpreting user feedback. Iterative design process. Accessibility and inclusive design considerations. Introduction to UX metrics and performance evaluation. Case studies on real-world UX projects and industry practices.

LEARNING OUTCOMES:

1. Demonstrate understanding of UX design concepts and human-centered methodologies.
2. Conduct user research and transform insights into actionable design solutions.
3. Create structured information flows and wireframes for digital products.
4. Design and test interactive prototypes using modern UX tools.
5. Apply usability evaluation techniques and iterate based on user feedback.

REQUIRED READINGS:

1. "The Elements of User Experience" – Jesse James Garrett, New Riders – 2010.
2. "Don't Make Me Think" – Steve Krug, New Riders – 2014.
3. "The Design of Everyday Things" – Donald Norman, Basic Books – Revised Edition, 2013.
4. "Mapping Experiences" – Jim Kalbach, O'Reilly Media – 2016.
5. "Universal Principles of Design" – William Lidwell, Kritina Holden, Jill Butler Rockport Publishers – Revised Edition, 2010.

BD3018 **CULTURAL FORMS** **L T P/S C**
3 0 0 3

COURSE OBJECTIVES

1. To introduce students to the diversity and richness of cultural expressions across time and geography.
2. To examine the relationship between cultural practices, material artifacts, and design.
3. To understand how cultural narratives shape identity, rituals, symbolism, and everyday life.
4. To analyze how tradition, heritage, and innovation interact in visual and spatial forms.
5. To encourage students to incorporate cultural awareness and sensitivity into their design thinking.

UNIT 1: UNDERSTANDING CULTURE AND CULTURAL PRODUCTION **8**

Definitions of culture: anthropological, sociological, aesthetic. High culture, popular culture, folk culture. The role of myths, rituals, customs, and beliefs. Everyday culture and the construction of meaning. Cultural transmission and transformation

UNIT 2: MATERIAL CULTURE AND DESIGN **8**

Objects as cultural texts: symbolism and usage. Textiles, crafts, tools, architecture, and adornment. Traditional vs. contemporary material culture. Cultural specificity in design objects. Preservation, appropriation, and innovation in material heritage

UNIT 3: VISUAL AND PERFORMING ARTS AS CULTURAL EXPRESSION **8**

Storytelling, dance, theatre, puppetry, murals, graffiti. Festivals and performance as cultural enactment. Case studies: Indigenous, tribal, urban subcultures. Role of community in sustaining visual traditions. Documentation and interpretation of cultural performance

UNIT 4: IDENTITY, POWER, AND REPRESENTATION **8**

Culture and identity: gender, class, caste, ethnicity, region. Stereotypes, marginalization, and cultural resistance. Post-colonial perspectives and cultural hybridity. Media, digital culture, and remixing identities.. Ethical implications in representing “the other”

UNIT 5: CONTEMPORARY PRACTICES AND STUDENT PROJECT **9**

Designers, artists, and collectives engaging with culture. Interpreting archives, oral histories, and cultural memory. Design project: Create a visual or spatial narrative around a cultural theme. Fieldwork, interviews, documentation, mapping. Exhibition, critique, and reflection

TOTAL 45 PERIODS

LEARNING OUTCOMES

1. Identify and interpret cultural forms across diverse communities and time periods.
2. Critically analyze material and performative aspects of culture in a design context.
3. Understand the impact of social structures and power on cultural expression.
4. Integrate cultural insights and sensitivity into design practice.
5. Apply ethnographic methods like observation, documentation, and visual storytelling to design projects.

REQUIRED READINGS & RESOURCES

1. *Raymond Williams – Keywords: A Vocabulary of Culture and Society*
2. *Arjun Appadurai – Modernity at Large: Cultural Dimensions of Globalization*
3. *Clifford Geertz – The Interpretation of Cultures*
4. *Stuart Hall – Cultural Identity and Diaspora*
5. *Anand Pandian – Ayya’s Accounts: A Ledger of Hope in Modern India*

6. *Case studies from Marg Magazine, Sahapedia, Scroll.in (Culture), Routledge Companion to Global Cultural Studies*
7. *Films and documentaries: Nainsukh, India Song, Pather Panchali, Crafts of India (IGNCA Archives)*