



Integral University, Lucknow

Effective from Session: 2022-2023							
Course Code	DS158	Title of the Course	Design Fundamentals-I	L	T	P	C
Year	1 st	Semester	1 st	1	1	4	6
Pre-Requisite	None	Co-requisite	None				
Course Objectives	To develop base of design aspects, in terms of design elements and principles that are generically applicable to any design stream including interior design. The subject aims at developing observational and creative skills that would enhance the visual perception of students and evolve aesthetic sensitivity.						



Course Outcomes	
CO1	To understand the elements of design and its applications.
CO2	To learn about perception of colors and its basic classification
CO3	To train the ability to develop regular/ irregular patterns and tessellations.
CO4	To develop understanding of principles of design.
CO5	To familiarize the students with the various rating systems of building practices with case.

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	Elements of Design	Line, Dot, Shape, Texture, Space, Form, Unity/harmony & color. Its types and characteristics, characteristics of a shape, concepts of positive and negative space, types of shapes, visual and emotional interpretations.	20	1,2,3
2	Principles of Design	Introduction to the principles of design in 2-D & 3D: unity, balance, symmetry, proportion, scale, hierarchy, rhythm, contrast, harmony, focus, etc.	24	4,5
3	Concepts of geometry	Introduction to different 3-D forms and primitive forms, shapes and understanding the behavior when combined. Transformation of 2-D to 3-D.	16	3,5
4	Patterns, abstraction and tessellations	Pattern recognition, abstraction and construction. Developing patterns by repetition of points, dots, rectilinear elements, curvilinear elements, shapes, regular and Irregular patterns. Fractals, Tessellation.	16	3,4
5	Design process	Understanding the design process, Exposure to various design terminologies, Case studies on Design process, Overview of system design	20	3,4,5

Reference Books:	
Samara Timothy, Design Elements, 2 nd Edition: Understanding The Rules And Knowing When To Break Them, Rockport Publishers, 2014	
Evans Poppy And Thomas Mark A., Exploring The Elements Of Design, Delmar Cengage Learning, 2012	
Beech R., Origami -The Complete Guide To The Art Of Paper Folding, Lorenz Books, 2001	
Wong W., Principles of Two-Dimensional Design, John Wiley & Sons, 1972	
White Alex W., The Elements Of Graphic Design, Allworth Press, 2011	
Gail Greet Hannah, Elements Of Design, Princeton Architectural Press, 2002	
e-Learning Source:	
https://www.brightonk12.com/site/handlers/filedownload.ashx?moduleinstanceid=273&dataid=1168&FileName=design-elements-principles.pdf	
https://www.teacheroz.com/apah-elements.pdf	

Course Articulation Matrix: (Mapping of COs with POs and PSOs)																		
PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	2	1	3	3	2	2	2	1					1	3	3	2	3	
CO2	2	1	3	3	2	1	2	2					1	3	3	2	3	
CO3	2	2	3	3	3	1	3	2					2	2	3	3	2	
CO4	3	1	2	1	2	1	2	1					2	2	2	3	2	
CO5	2	1	3	3	2	2	2	1					3	2	2	3	3	

1- Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

 Ar. Safa Seraj Name & Sign of Program Coordinator	 Sign & Seal of HoD
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Integral University, Lucknow

Effective from Session: 2022-2023							
Course Code	DS159	Title of the Course	Anthropometrics & Ergonomics	L	T	P	C
Year	1 st	Semester	1 st	2	1	-	3
Pre-Requisite	None	Co-requisite	None				
Course Objectives	To introduce ergonomics and its significance in design and the impact of anatomy, anthropometry, and the physical environment on physical activity.						

Course Outcomes	
CO1	To understand the importance Ergonomics and study the effects in day-to-day lifestyle.
CO2	To understand the factor affecting the ergonomics especially in Indian context.
CO3	To learn the application of human physical measurement and its techniques in designing the furniture and other different product.
CO4	To understand the behavior of human body in different conditions and study different outcomes.
CO5	To understand ergonomics for product design

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	Need for Study	Introduction to Ergonomics, Need for study of anthropometric and ergonomics. , Design today- Human aid to lifestyle.	8	1
2	Ergonomics in India	Environmental factors influencing human performance, Ergonomics in India. Ergonomics/ human Factors fundamentals, Physiology (work physiology) and stress	10	2
3	Human Physical Dimension	Human physical dimension concern: Human body- structure and function, anthropometrics, Anthropometry: body growth and somatypes, Static and dynamic anthropometry, Stand Posture erect, Anthropometry landmark: Sitting postures, Anthropometry: squatting and cross-legged postures, Anthropometric measuring techniques, Statistical treatment of data and percentile calculations	10	3
4	Human Body Structure and Function	Posture and job relation, Posture and body supportive devices, Chair characteristics, Vertical work surface, Horizontal work surface, movement, work Counter.	10	4
5	Product Ergonomics	Understanding of product ergonomics; Man, machine and Interaction. Injury prevention, safety, vibration, shock, fatigue and occupational hazard; Error handling	10	5

Reference Books:

- Bridger, RS: Introduction To Ergonomics, 2nd Edition, Taylor & Francis, 2003.
- Dul, J. and Weerdmeester, B. Ergonomics For Beginners, A Quick Reference Guide, Taylor & Francis, 2008
- G.Salvendy (4TH Edition), Handbook Of Human Factors And Ergonomics, John Wiley & Sons, Inc., 2012
- Singh, S (Edt), Ergonomics Interventions For Health And Productivity, Himanshu Publications, Udaipur, New Delhi, 2007

e-Learning Source:

- <https://nptel.ac.in/courses/107103004>
- https://onlinecourses.swayam2.ac.in/aic20_ed03/preview

Course Articulation Matrix: (Mapping of COs with POs and PSOs)

PO-PSO CO	Course Articulation Matrix: (Mapping of COs with POs and PSOs)																	
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO4	PSO4	PSO5	PSO6
CO1	3	1	3	3	2	2	3	2					1	3	3	3	3	
CO2	3	1	3	3	3	2	3	2					3	2	2	2	2	
CO3	3	1	3	3	2	2	3	3					3	2	2	3	2	
CO4	3	1	3	3	3	2	3	2					1	3	1	3	1	
CO5	2	1	3	3	2	2	2	3					1	3	1	2	1	

1- Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

<p>Ar. Safa Seraj Name & Sign of Program Coordinator</p>	<p>Sign & Seal of HoD</p>
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Integral University, Lucknow

Effective from Session: 2022-2023							
Course Code	DS 160	Title of the Course	History of Design – I	L	T	P	C
Year	1 st	Semester	1 st	2	1	-	3
Pre-Requisite	None	Co-requisite	None				
Course Objectives	To learn about development of interior elements in response to social, religious, aesthetic and environmental factors						

Course Outcomes	
CO1	To understand the importance, Purpose and relevance of art development
CO2	To understand and Study traditional and contemporary art forms.
CO3	To understand the use of ornaments & accessories in previous era.
CO4	To study the evolution of interiors in different parts of India.
CO5	To learn about the new western art styles developed in 19 th and 20 th century

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	Purpose and Relevance of Art Development	A survey of history of art forms: pre historic times to present times: changing nature of art through time in terms of content: form and material.	6	1
2	Exploration of Art Forms	Study of traditional and contemporary art forms – painting, sculpture, architecture, decorative arts, design arts, digital art. Relationship between art and design from the earliest time	12	2
3	Study of Ornaments & Accessories	Ornaments & Accessories in Interior Design. Different types of Ornamentation & Accessories in the interiors. Study and evaluation of artefacts, historic examples and their applicability.	12	3
4	Introduction to Heritage Interiors	Heritage Interiors Buddhist, Islamic and Hindu: Evolution of Interiors in different regions of India with examples. Heritage and identity at different spatial scales.	6	4
5	New Directions in Art	Context for new directions in art in the late 19th and early 20th century - Impressionism - post Impressionism – Fauvism- Expressionism- Cubism– Dadaism – Surrealism - abstract art – Futurism - Constructivism – Suprematism –De-Stijl -Abstract Expressionism - Pop art - Op art- new forms and media of art. Study of famous and influential Artists, Craftsmen and people who pioneered innovations in their own fields and their influence on design and other fields. Works of Van Gogh, Dali, William Morris, Picasso, Da Vinci.	12	5

Reference Books:

- Alan Barnard. Jonathan Spencer, Encyclopaedia Of Social And Cultural Anthropology, Routledge; 1 Edition, 2002
- Niggel Rapport, Social And Cultural Anthropology: The Key Concepts, Routledge, 2000
- Kumar Raj (Ed) Essays On Indian Art And Architecture. Discovery Pub., New Delhi, 2003
- Sunil Sethi, Angelika Taschen, Indian Interiors, Taschen America Ltd; 25th Ed. Edition, 2009

e-Learning Source:

- <https://www.khanacademy.org/humanities/art-history>
- <https://www.britannica.com/art/art-history>
- <https://www.iesa.edu/paris/news-events/contemporary-art-definition>
- <https://www.toptal.com/designers/creative-direction/art-vs-design>

Course Articulation Matrix: (Mapping of COs with POs and PSOs)

PO-PSO CO	Course Articulation Matrix: (Mapping of COs with POs and PSOs)																	
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	3	3	2	2	3	2	1	2					3	2	3	3	3	
CO2	2	3	2	1	3	1	2	2					2	2	2	3	2	
CO3	3	3	3	3	3	2	2	1					3	2	3	2	3	
CO4	3	2	2	2	3	2	1	1					2	3	2	2	3	
CO5	2	2	1	2	2	2	1	2					2	3	3	2	2	

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Ar. Safa Seraj

Name & Sign of Program Coordinator



Sign & Seal of HoD



Integral University, Lucknow

Effective from Session: 2022-2023							
Course Code	DS161	Title of the Course	Creative Visualization Techniques	L	T	P	C
Year	1 st	Semester	1 st	1	-	2	3
Pre-Requisite	None	Co-requisite	None				
Course Objectives	To create compelling and detailed line drawings of real and imaginary objects						

Course Outcomes	
CO1	To knowledge about the use of different pencils in sketching
CO2	To learn the free hand technical sketching
CO3	To develop an understanding of perspectives and foreshortening of objects
CO4	To develop the skills of rendering and lighting
CO5	To develop the skill of sketching from imagination

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	Introduction to pencil exercises	Introduction to Handling of pencils, practicing lines and tone building exercises. Representing the observed, representing concepts - Sketching for ideation; Lines; Geometric Shapes.	10	1,2,3
2	Drawing techniques	Grid based freehand drawing, analytical representation; Inside-out sketching; Construction Drawing	10	4,5
3	Perspective projection	Sketching freehand One point, two point and three-point Perspective	12	1,3,5
4	Rendering and sciography	Studies in light and shadow of 3-dimensional form representations; pencil rendering, Representing reality Mimetic Imagery and	10	1,3,4
5	Representing imagination	Sociography Memory and Imagination; Object representation; Nature and life Representing nature; Figure drawing gestures and movements	8	1,3,4

Reference Books:

Betty Edwards, New Drawing on the Right Side of the Brain, 2002

Dalley Terence ed., The complete guide to illustration & design, Phaidon, Oxford, 1980

T. C. Wang, Pencil Sketching, John Wiley & Sons, 1997

Willy Pogony, The Art of Drawing, Madison Books, 1996

R. Kasprin, Design Media - Techniques for watercolour, pen and ink, pastel and coloured markers, John Wiley & Sons, 1999



e-Learning Source:

https://drive.google.com/drive/folders/1Pw627yqOmH810Jf9Ax5BVt3sRNpi0vyl?usp=share_link

Course Articulation Matrix: (Mapping of COs with POs and PSOs)

PO-PSO CO	Course Articulation Matrix: (Mapping of COs with POs and PSOs)																	
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	2	1	3	3	2	2	2	1					2	2	3	1	2	
CO2	2	1	3	3	2	1	2	2					2	3	3	1	3	
CO3	2	2	3	3	3	1	3	2					1	2	3	2	2	
CO4	3	1	2	1	2	1	2	1					3	2	2	2	2	
CO5	2	1	3	3	2	2	2	1					3	2	1	1	2	

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Integral University, Lucknow

Effective from Session: 2022-2023							
Course Code	DS162	Title of the Course	Drawing & Rendering-I	L	T	P	C
Year	1 st	Semester	1 st	1	-	4	5
Pre-Requisite	None	Co-requisite	None				
Course Objectives	To familiarize students with drawing tools and accessories, develop comprehension and visualization of geometrical forms and to give them basic knowledge of good drafting techniques.						

Course Outcomes	
CO1	To learn about basics of hand drafting.
CO2	To understand the concept of projection taking.
CO3	To develop the ability to visualize and draft projection for various simple solids
CO4	To visualize the sectional projections and intersections of solid bodies
CO5	To learn the construction of various orthographic views.

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	Introduction	Importance of design drawing, Conventions and standards: ISO; Scales; Line types; Line Weights; Hatching Types; Lettering	20	1
2	Projections of Points, Lines, Planes	Projection, Orthographic projections: Points, Lines, Planes	10	2
3	Projection of Solids	Orthographic projections: Solids	25	3
4	Sectioning & Intersection	Section of Solids, Intersection of Solids	10	4
5	Axometric Views & Development of Surfaces	Isometric view, Development of surfaces, sociography	15	5

Reference Books:

Engineering Drawing by N.D. Bhatt

Design Drawing by D.K. Ching, Francis

Architectural Graphics by D.K. Ching, Francis

K Venugopal, Engineering Drawing And Graphics, 3rd Ed., New Age International, 1998

A.J. Dhananjay, Engineering Drawing, Tmh, 2008

N D Bhatt And V M Panchal, Engineering Drawing, 43rd Ed., Charotar Publishing House, 2001

M B Shah And B C Rana, Engineering Drawing, 2nd Ed., Pearson Education, 2009

W J Luzadder And J M Duff, Fundamentals Of Engineering Drawing, 11th Ed., PHI, 1995

T E French, C J Vierck And R J Foster, Graphic Science And Design, 4th Ed., Mcgraw Hill, 1984.

e-Learning Source:

<http://www.cs.brown.edu>



<http://www.dtcc.edu/-document,project info-Arch.dwg>

<http://www.technologystudent.com/designpro/ortho1.html>

http://www3.ul.ie/~rynet/orthographic_projection_fyp/webpages/what-is-ortho.html

Course Articulation Matrix: (Mapping of COs with POs and PSOs)																		
PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	2	1	3	-	-	1	1						1	2	1	1	1	
CO2	2	1	3	-	-	1	1						1	2	1	1	1	
CO3	2	1	3	-	-	1	1						1	3	1	1	2	
CO4	2	1	3	-	-	1	1						1	3	2	1	3	
CO5	2	1	3	-	-	1	1						1	3	2	1	1	

1- Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

 Ar. Safa Seraj Name & Sign of Program Coordinator	 Sign & Seal of HoD
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Integral University, Lucknow

Effective from Session: 2022-2023							
Course Code	DS163	Title of the Course	Materials and processes	L	T	P	C
Year	1 st	Semester	1 st	2	1	-	3
Pre-Requisite	None	Co-requisite	None				
Course Objectives	To aware where most materials come from and ability to identify which processes are used to make a product.						



Course Outcomes	
CO1	To understand the usage and significance of materials in design
CO2	To learn about the various materials, their behavior and area of their usage
CO3	To learn about the physical properties of various metals and nonmetals by hands on activities
CO4	To learn about machining and manufacturing processes
CO5	To develop the skill of model making using various materials

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	Introduction to Materials	Classification of materials, History of significant materials.	6	1
2	Properties and Applications of Materials	Properties and Applications Wood, bamboo, cane, leather, fabric, jute, Steel, Brass, Bronze, Copper, Aluminum, Nickel, Tin, Lead, Zinc and Alloys etc.	8	2
3	Exploration of Materials	Exploration of materials such as fabrics, leather, wood and metals, Steel, Brass, Bronze, Copper, Aluminum, Nickel, Tin, Lead, Zinc and Alloys	10	2,3
4	Conventional Manufacturing Processes	Manufacturing process introduction - Casting, Forging, lathe, drilling, milling, welding, grinding, knurling, Foundry Tools and Equipment, Metal Cutting, other industrial practices	10	4
5	Basic Hands-on Practices	Primary Importance of hands-on practices in product design; working with wood, paper, fabric, leather thread, wire, acrylic sheets, sun board, fiber board, Introduction to making material boards.	14	3,4,5

Reference Books:	
William D. Callister Jr., Materials Science And Engineering, Wiley, 2015	
S. K. Hajra Choudhary And A. K. Hajra Choudhary, Elements Of Workshop Technology Vol. I	
C. Baillie And L. Vanasupa, Navigating The Materials World, Academic Press, San Diego, Ca, 2003	
e-Learning Source:	
https://www.uwosh.edu/facstaff/mihalick/Materials/CHAPTER%201.pdf	
https://archive.nptel.ac.in/courses/112/104/112104203/	
https://archive.nptel.ac.in/content/storage2/courses/112107085/module1/lecture1/lecture1.pdf	

Course Articulation Matrix: (Mapping of COs with POs and PSOs)																			
PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	
	CO1	2	1	3	2	1	3	2	1					2	1	1	3	2	
CO2	2	1	3	2	1	2	2	1					2	2	3	3	2		
CO3	2	1	3	2	1	1	2	1					2	2	1	1	2		
CO4	2	1	3	2	1	3	2	1					3	1	3	2	3		
CO5	2	1	3	2	1	3	2	1					3	2	2	2	3		

1- Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

 Ar. Safa Seraj Name & Sign of Program Coordinator	 Sign & Seal of HoD
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Integral University, Lucknow

Effective from Session: 2022-2023							
Course Code	DS168	Title of the Course	Design Fundamentals II	L	T	P	C
Year	1 st	Semester	2 nd	1	1	4	6
Pre-Requisite	Design Fundamentals-I	Co-requisite	None				
Course Objectives	To develop a base of design aspects, in terms of design elements and principles that are generically applicable to any design stream including interior design. The subject aims at developing observational and creative skills that would enhance the visual perception of students and evolve aesthetic sensitivity.						



Course Outcomes	
CO1	To develop the ability to create 2d compositions and learn about various grids and methods of composition
CO2	To learn about the creating experience through form and spaces by the basic ordering principles
CO3	To understand spatial relationships and organization of forms
CO4	To learn about the basic principles of typography
CO5	To understand design thinking process and its stages

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	Principles of visual design	Principles of composition using grids, symmetrical/ asymmetrical, Rule Of Thirds, Center of interest, Gestalts Theory of Visual composition	16	1,2
2	Ordering principles	Ordering Principles such as Axis, Symmetry, Hierarchy, Datum, Rhythm & Repetition	16	1,4,5
3	Organization of forms	Spatial Relationships: i) Space within space, ii) Interlocking spaces, iii) Adjacent spaces, iv) Space linked by a common space b) Spatia	24	3,5
4	Principles of composition; typography and layout	Organization: influencing factors and their types i) Centralized, ii) Linear, iii) Radial, iv) Clustered, v) Grid c) Articulation of forms and spaces pes: i) Edges and corners, ii) Surface. A Project on Creation of forms & spaces using the principles learnt. Basics of Calligraphy and typography, Understanding structure and proportion of types of(Roman Serif and San Serif)	24	3,4
5	Design thinking process	Understanding Design thinking process and its stages, Various types of design approaches (models like double diamond, Stanford, IDEO	16	1,3,4,

Reference Books:	
Samara Timothy, Design Elements, 2nd Edition: Understanding The Rules And Knowing When To Break Them, Rockport Publishers, 2014	
Evans Poppy And Thomas Mark A., Exploring The Elements Of Design, Delmar Cengage Learning, 2012	
Beech R., Origami -The Complete Guide To The Art Of Paper Folding, Lorenz Books, 2001	
Wong W., Principles Of Two-Dimensional Design, John Wiley & Sons, 1972	
White Alex W., The Elements Of Graphic Design, Allworth Press, 2011	
Gail Greet Hannah, Elements Of Design, Princeton Architectural Press, 2002	
e-Learning Source:	
http://site.iugaza.edu.ps/sammar/files/2014/03/Lecture-11-principles-of-ordering-2019.pdf	

Course Articulation Matrix: (Mapping of COs with POs and PSOs)																		
PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	3		3	1			2	1					2	2	3	1	2	
CO2	3		3	1	3	1	2	1					2	3	3	2	3	
CO3	3		3	1	2	2	2	1					3	2	2	3	2	
CO4	2		3	1	2	2	2	1					2	2	2	2	2	
CO5	2	1	3		3	1	2	3					3	3	3	1	3	

1- Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

 Ar. Safa Seraj Name & Sign of Program Coordinator	 Sign & Seal of HoD
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Integral University, Lucknow

Effective from Session: 2022-2023							
Course Code	DS 169	Title of the Course	Construction Techniques & Representation-I	L	T	P	C
Year	1 st	Semester	2 nd	-	-	4	4
Pre-Requisite	None	Co-requisite	None				
Course Objectives	To provides information on the properties, management, specifications, use, application and rates of the materials used in the interiors.						

Course Outcomes	
CO1	To study the hardware used in the interiors
CO2	To learn the detailing in interiors using various types of stones.
CO3	To learn the properties and applications of various types of plastics
CO4	To understand the usage of rubber in product and interior industry
CO5	To study various types of partitions and false ceilings

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	Hardware	Hardware Accessories: all hardware required for residences, offices, other public & private spaces, etc., including all types of hinges, drawer slides, handles, locks, wire managers, etc., accessories for toilet, kitchen, office, glass patch fittings, profiles, etc.,	12	1
2	Stones	Stones: Igneous, metamorphic & sedimentary – classifications, types, properties, availability, applications	12	2
3	Rubber	Rubber – Natural rubber, latex, coagulation, vulcanizing and synthetic rubber-properties and application	12	3
4	Plastic	Plastics – Types, thermosetting and thermoplastics, resins, common types of moldings, fabrication of plastics, polymerization and condensation. Plastic coatings reinforced plastic, plastic laminates – properties, uses and applications.	18	4
5	Partitions and False Ceiling	Partition walls : all types of partitions – full height, half & dwarf, double skinned, single skinned, frameless glass, etc., Wall paneling : plywood, leather, acoustic boards, etc., False Ceiling : all types, with full system, insulation, acoustical, etc.,	12	5

Reference Books:

- Moxley, R. Mitchell's Elementary Building Construction, Technical Press Ltd.
- Rangwala, S.C. Building Construction 22nd Ed. Charota Pub. House Anand, 2004
- Sushil Kumar. T.B. of Building Construction 19th Ed. Standard Pub. Delhi, 2003
- Francis D. Ching, Building Construction Illustrated, Wiley Publishers, 2008.

E-Learning Source:

- <https://www.thomasnet.com/articles/hardware/types-of-hinges/>
- <https://www.ozone-india.com/>

Course Articulation Matrix: (Mapping of COs with POs and PSOs)

PO-PSO CO	Course Articulation Matrix: (Mapping of COs with POs and PSOs)																	
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	1	2	3	1	1	2	3	1					2	2	3	3	3	
CO2	1	1	3	1	1	1	2	1					1	2	3	2	3	
CO3	2	2	2	3	3	3	2	2					1	3	2	2	2	
CO4	2	3	3	2	2	2	2	3					2	3	2	2	2	
CO5	3	3	2	1	2	3	3	3					2	3	3	2	2	

1- Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

<p>Ar. Safa Seraj Name & Sign of Program Coordinator</p>	<p>Sign & Seal of HoD</p>
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Integral University, Lucknow

Effective from Session: 2022-2023							
Course Code	DS170	Title of the Course	History of Design-II	L	T	P	C
Year	1 st	Semester	2 nd	2	1	-	3
Pre-Requisite	History of Design-I	Co-requisite	None				
Course Objectives	To provides information on the properties, management, specifications, use, application and rates of the materials used in the interiors.						

Course Outcomes	
CO1	To study Architectural elements, furniture, decorative arts, colors & materials
CO2	Student learn Greek, Roman architecture and Eastern influences
CO3	To study Early Christian and Byzantine, Romanesque and Gothic, Renaissance
CO4	To learn about Hindu, Islamic and Buddhist architecture
CO5	To learn about the indigenous craft in architecture and interior from different states of India.

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	Elements of Style	Elements of style and determinants of Interior environments in Ancient Civilization, Classical world & the Middle ages: emphasis shall be on Architectural elements, furniture, decorative arts, colors & materials. Egyptian - Indus Valley Civilization - The ancient Near East - Samaritans, Babylonians, Assyrians, Persians	8	1
2	Classical World	Greek, Roman architecture and Eastern influences - China and Japan.	7	2
3	The Middle Ages	Early Christian and Byzantine, Romanesque and Gothic, Renaissance in Italy, Spain, France and England, Baroque, Rococo, Neoclassicism-Boulle, LeDoux.	8	3
4	Indian Architecture and Interiors	Hindu, Islamic and Buddhist architecture, Secular architecture of the princely states like Rajasthan, etc.	9	4
5	Study of Vernacular Architecture and Interiors	Jammu and Kashmir, Southern India, Gujarat, Himachal Pradesh, states of North & eastern India, Maharashtra, Uttar Pradesh, Orissa etc.	7	5

Reference Books:	
Water Resources Engineering, R K Linsley and J L H Paulhus	
Hydroelectric Handbook, W P Creager and J D Justin	
Water Resources Engineering, Larry W Mays	
e-Learning Source:	
https://www.onlinedesignteacher.com/2016/02/furniture-design-history.html	
https://www.britannica.com/technology/furniture	
https://www.thestatesman.com/supplements/section/voyage-indian-handicraft1502703518.html#:~:text=Brief%20history,be%20found%20in%20museums%20today	

Course Articulation Matrix: (Mapping of COs with POs and PSOs)																		
PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	2	2	2	2	2	2	3	3					2	3	1	3	3	
CO2	2	2	1	2	3	2	3	2					2	3	2	2	3	
CO3	2	2	2	2	3	2	3	2					2	2	2	3	3	
CO4	2	2	1	2	3	2	3	3					2	3	1	3	3	
CO5	2	3	1	2	3	2	3	3					2	3	2	3	3	

1- Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

 Ar. Safa Seraj Name & Sign of Program Coordinator	 Sign & Seal of HoD
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Integral University, Lucknow

Effective from Session: 2022-2023							
Course Code	DS171	Title of the Course	Computer Design & Digital Fabrications	L	T	P	C
Year	1 st	Semester	2 nd	1	1	2	4
Pre-Requisite	None	Co-requisite	None				
Course Objectives	To orient the student to create two and three-dimensional objects in space with special emphasis on presentation and visualization of interiors using rendering techniques using CAD and to explore computer modelling techniques using CAD.						

Course Outcomes	
CO1	To know the detailed knowledge of MS Office suits and its feature.
CO2	To draw the template and will know the basic outline and axis point.
CO3	To aware of basic commands and its drawing properties.
CO4	To aware of the calculation method, usage of symbols & blocks.
CO5	To know basic knowledge of adobe photoshop and its tool bar details.



Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	Introduction - Ms Office	Computer Orientation, Microsoft word, Microsoft excel, Microsoft presentation software, scanning and MS Paint.	6	1,2
2	Basic Outline, Axis Points	Introduction to the menu, starting drawings from scratch. Creating and using templates- starting drawings with setup wizards. Saving and closing a file.	4	1,2,3
3	Units, Limits and Layers	Setting up the drawing environment — setting the paper size, setting units, grid limits, drawing limits, snap controls. Use of paper space and model space. Basic commands dealing with drawing properties: Layer control, change properties, line weight control, etc.	6	1,2,3,4
4	Dimensions, Calculations and Grouping	Inquiry methods: Using data base information for objects, calculating distance, angle, areas etc. Dimensioning commands and blocks: Dimensioning the objects in linear, angular fashions along with quick time dimensioning etc. Creating and working with blocks, creating symbols, use of blocks in creating a layout, of a residential area- one exercise to be done as lab assignment.	4	1,2,3,5
5	Basics of Adobe Photoshop	Tool box (Moving, marque tool), Magic ward selection, Crop tool, Paint Brush, Opacity, Tent Styles, Blue tool, Sharpening Tool, Color correction, Layers, moving Tool, Masking Tool.	6	1,2,3,4,5

Reference Books:
Auto Desk, Revit 2017 for Architecture, Sybex, 2016.
Auto Desk, 3DS MAX comprehensive tutorial resources Wiley 2014.
Sketch up for interior Design. 3D visualising designing & space planning by Lidya Sloan, Wiley Publisher —2014.
Auto Desk, Revit 2017 for Architecture, Sybex, 2016.

e-Learning Source:
https://www.youtube.com/results?search_query=ms+office+tutoring+in+english

Course Articulation Matrix: (Mapping of COs with POs and PSOs)																		
PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	1	3	3	2	1	2	2	3					1	1	1	2	2	
CO2	1	2	2	1	1	3	2	2					2	1	1	1	1	
CO3	2	2	2	2	1	3	2	1					1	3	2	2	2	
CO4	1	3	3	1	2	3	2	2					2	2	3	2	3	
CO5	3	3	2	1	1	3	2	3					1	2	3	2	3	

1- Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

 Ar. Safa Seraj Name & Sign of Program Coordinator	 Sign & Seal of HoD
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Integral University, Lucknow

Effective from Session: 2022-2023							
Course Code	DS172	Title of the Course	Drawing & Rendering II	L	T	P	C
Year	1 st	Semester	2 nd	1	-	4	5
Pre-Requisite	Drawing & Rendering I	Co-requisite	None				
Course Objectives	To impart skills related to the preparation of detailed drawings for Interior Design execution.						

Course Outcomes	
CO1	Able to explore various types of staircase and draw detailed technical sections of staircase and wall.
CO2	Understand the wood joinery details, partition walls and wall paneling through market survey and practical exposure.
CO3	Develop and design residential furniture and producing the isometrics view of sofa, table, etc.
CO4	Understanding the standards of furniture and Kitchen and executing it in detail.
CO5	Explore the types of furniture used in office and their joinery details.

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	Finishes & Staircase	Wall finishes, wall plastering, chamfered corners, dado, wall cladding, fixing of doors & windows, etc Details of floor finishes: tiling/ stone flooring, wooden flooring, access flooring Plans, sections & elevations of staircases : Types of staircase, different materials – RCC, wood, steel staircase, etc	16	1
2	Woodwork Representation	All woodworks : joinery, types of doors, windows, etc Detailed drawing of Partition walls : all types of partitions – full height, half & dwarf, double skinned, single skinned, frameless glass, etc Wall paneling : plywood, leather, acoustic boards, etc False Ceiling : all types, with full system, insulation, acoustical, etc	16	2
3	Residential Furniture	Detailed plan, sections, elevations and isometrics of the standard residential furniture like: Sofas – double, single seat Tables – peg, nested, dining, etc Chairs – study, dining, sofa chairs, etc Beds with side tables – TW frame, box frame, with storage, etc	16	3
4	Storage Representation	Storage & display units: dressing table units, showcase, China cabinets, home bar, entertainment units, book case, tall boy units, chest of drawers, etc Bar counter with bar stool. Detailed plan, sections, elevations with one point perspectives of kitchen with details of each units, etc .	16	4
5	Office Furniture	Detailed plan, sections, elevations and isometric views of office furniture – hierarchy of work stations, tables, return units, filing units, Reception table, etc.	16	5

Reference Books:

Shah, M G & Others, Building Drawing: An Integrated Approach To Build Environment, 5TH Edition, Tata Mcgrow Hill Publications Company Ltd, New Delhi, 2012

Kilmer, Working Drawings & Details For Interiors, John Wiley & Sons., 2009

e-Learning Source:

<https://sjce.ac.in/wp-content/uploads/2018/01/Staircase.pdf>

https://iricen.gov.in/iricen/books_jquery/Carpentry%20and%20Woodwork.pdf



<http://www.survivorlibrary.com/library/the-complete-guide-to-home-carpentry.pdf>

<https://irp-cdn.multiscreensite.com/a3d978d0/files/uploaded/2017-PCFD-Redline-Catalog.pdf>

Course Articulation Matrix: (Mapping of COs with POs and PSOs)

PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
	CO1	2	1	3	2	1	2	3	3					2	2	2	2	1
CO2	1	2	3	2	1	2	2	3					2	3	2	3	1	
CO3	2	1	3	2	2	1	2	3					2	3	2	1	1	
CO4	3	3	3	2	2	1	2	3					2	2	2	2	1	
CO5	1	1	3	2	2	1	2	3					2	2	2	3	1	

1- Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

 Ar. Safa Seraj Name & Sign of Program Coordinator	 Sign & Seal of HoD
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Integral University, Lucknow

Effective from Session: 2023-24							
Course Code	DS 264	Title of the Course	Product & Furniture Design – I	L	T	P	C
Year	2 nd	Semester	3 rd	1	1	4	6
Pre-Requisite	None	Co-requisite	Product & Furniture Design – II				
Course Objectives	To understand the process of design and be able to find solutions to simple problems by modifying forms and functions.						

Course Outcomes	
CO1	Learn about the design processes and methods followed in development of products.
CO2	Learn the basics of design thinking to identify the design problem, create best solution for it.
CO3	Learn about conducting successful user research
CO4	Learn how to convert a conceptual idea into a functioning product
CO5	Learn the form development & prototyping techniques and skill.

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	Overview of design process and its ecosystem	Design Relevance: Exposure and analysis, Case studies	06	1
2	Ideation	Brainstorming; Differential Discussion; group methods to generate ideas; solitary methods to generate ideas; Lateral Thinking	12	2
3	Case Studies & Research	Conducting User surveys, and case studies	12	3
4	Concept Detailing	User Journey maps, User stories, activity mapping	06	4
5	Design Project	Design and Development of Product as per the brief	12	3, 4

Reference Books:

D.Norman; The Design of Everyday things, London, The MIT Press, 1998

A.Forty; Objects of Desire, Thames & Hudson, 1995

J. de Noblet ed., Industrial Design- Reflections of a century, Thames & Hudson, 1993

Potter, Norman; What is a Designer: Things, Places, Messages, Princeton Architectural Press, 2002

e-Learning Source:



<https://www.archdaily.com/tag/furniture-design>

<https://designwanted.com/tag/furniture-design/>

<https://www.architonic.com/en/products/furniture/0/3210002/1>

Course Articulation Matrix: (Mapping of COs with POs and PSOs)																		
PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	2	2	3	1	2	-	2	3					3	2	2	3	3	
CO2	2	2	3	3	2	2	1	3					2	3	2	2	2	
CO3	2	2	3	3	2	1	1	3					3	3	3	3	2	
CO4	3	2	3	3	2	1	1	3					1	2	3	2	2	
CO5	3	2	3	2	2	1	1	3					2	1	3	2	3	

1- Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

 Ar. Safa Seraj Name & Sign of Program Coordinator	 Sign & Seal of HoD
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Integral University, Lucknow

Effective from Session: 2023-24							
Course Code	DS 265	Title of the Course	History of Design– III	L	T	P	C
Year	2 nd	Semester	3 rd	2	1	-	3
Pre-Requisite	History of Design-II	Co-requisite	History of Design – IV				
Course Objectives	The course emphasizes on developments of interior elements in response to social, religious, aesthetic and environmental factors.						

Course Outcomes	
CO1	Study Industrial revolution and its influence on art, architecture and design of that period
CO2	Study Indian Colonial Architecture-Portuguese, French and British
CO3	Study modernism and its subsequent art movements.
CO4	Study modernism and its subsequent art movements.
CO5	Study and understand the works of notable architects and designers.



Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	Industrial Revolution	Reviewing Industrialization :- Industrial revolution and its influence on social, economic conditions of that period, Scientific and technological progress, invention of new materials. –Joseph Paxton – Gustav Eiffel etc. An overview of Art and Crafts movement in Europe and America.	06	1
2	Ancient History	Indian Colonial Architecture-Portuguese, French and British : The styles and trends of architecture and design brought to India and their evolution – Their impact on architecture and design in India – The characteristics of Colonial Architecture with examples from Goa-Bom Jesus Cathedral Complex-Old Goa- Fountainahs , Puducherry, Mahe and Edwin Lutyen etc.,	12	2
3	Modernism - I	Impressionism –Expressionism – Cubism – Neoclassicism – Neo plasticism Suprematicism – Art Noveau Constructivism – Futurism	12	3
4	Modernism - II	– Post modernism- Post- Post Modernism– Deconstructivism Antonio Gaudi, Victor Horta, Charles Renee Mackintosh, Le Corbusier	06	4
5	Work of Architects	Works of Indian Architects – Laurie Baker, Charles Correa, B.V. Doshi, A.P. Kanvinde, Raj Rewal	12	3, 4

Reference Books:
 John F. Pile, A history of interior design, 2nd edition, Laurence King Publishing, 2005. Jeannie Ireland, History of Interior Design, air child publications, illustrated ed., 2009.
 Elaine, Michael Dywer, Christopher Mackinnon, Norman A. J. Berisford Denby , A History of Interior Design, Rhodoc International, 2000.

e-Learning Source:
<https://www.britannica.com/event/Industrial-Revolution>
<https://www.clearias.com/colonial-architecture/>
<https://www.utoledo.edu/library/canaday/guidepages/Modernism2.html>

Course Articulation Matrix: (Mapping of COs with POs and PSOs)																		
PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	1	1	1	2	2	-	3	1					3	2	3	2	3	
CO2	1	1	1	2	2	-	3	1					2	3	2	1	3	
CO3	1	1	1	2	2	-	3	1					3	3	2	2	2	
CO4	1	1	1	2	2	-	3	1					3	2	2	2	2	
CO5	1	1	1	2	2	-	3	1					3	3	2	2	3	

1- Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

 Ar. Safa Seraj Name & Sign of Program Coordinator	 Sign & Seal of HoD
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Integral University, Lucknow

Effective from Session: 2023-24							
Course Code	DS 266	Title of the Course	Construction Techniques & Representation-II	L	T	P	C
Year	2 nd	Semester	3 rd	-	-	4	4
Pre-Requisite	Construction Techniques & Representation-I	Co-requisite	None				
Course Objectives	The course provides information on the properties, management, specifications, use, application and rates of the materials used in the interiors.						

Course Outcomes	
CO1	Study specifications, application and rates of the materials used in the interiors.
CO2	Understand the manufacturing processes of the materials.
CO3	Study Physical and behavioral properties of materials.
CO4	Study Visual quality of materials in terms of finishes through color, texture, modulations and pattern evolution.
CO5	Learn about various types of adhesive available in the market and their applications

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	Terracotta and Tiles	Roofing tiles : terracotta, sheets and fibre boards – properties and application. Flooring tiles : Various natural as well as artificial flooring materials like, ceramic tiles, full body vitrified tiles, terracotta tiles, glass mosaic tiles, stone tiles, Mosaic, Rubber, Linoleum, PVC and PVA flooring, their Properties, other uses and applications in the interiors	8	1
2	Glass and glass products	Glass and glass products – Composition and fabrication of glass, classification, all types of glass annealed, float, mirrored, tinted, etc. – including wired glass, fiber glass, laminated glass, glass blocks, etc - their properties and uses in buildings. Commercial forms available – their physical and behavioral properties. Application of glass : tools and technology of its application in built forms – glass doors, partitions, etc. Material and workmanship, specifications.	12	2
3	Fabrics and other furnishing materials	Fabrics and other furnishing materials – fibers – natural – silk, cotton, linen, damask, furs, etc: artificial - polyester, nylon, rayon, etc , textiles, fabric treatments, carpets, durries, tapestries, Drapery, upholstery, wall coverings, etc. – properties, uses and application in the interiors.	12	3
4	Soft Furnishing	Details of soft furnishings : types of Draperies, curtains, blinds, types of stitches, valences, linings, tiebacks, hanging details, etc.	8	4
5	Adhesive	Adhesives – Natural and Synthetic, their varieties, thermoplastic and thermosetting adhesives, epoxy resin. Method of application, bond strength etc	4	5

Reference Books:	
Shah, M G & others, Building Drawing: An Integrated approach to build Environment, 5th edition, Tata McGraw Hill Publications Company Ltd, New Delhi, 2017	
Kilmer, Working Drawings & Details for Interiors, John Wiley & Sons..	
e-Learning Source:	
https://www.ripublication.com/ijaer18/ijaerv13n10_161.pdf	
https://www.britannica.com/technology/glass	
https://constrofacilitator.com/what-are-the-different-types-of-adhesives-used-in-construction/	

Course Articulation Matrix: (Mapping of COs with POs and PSOs)																		
PO-PSO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	-	2	3	-	1	2	2	-					2	3	2	3	3	
CO2	-	2	3	-	1	2	2	-					2	2	2	3	2	
CO3	-	2	3	-	1	2	2	-					1	2	2	2	2	
CO4	-	2	3	-	1	2	2	-					3	2	2	2	2	
CO5	-	2	3	-	1	2	2	-					2	1	3	3	2	

1- Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation



Ar. Safa Seraj

Name & Sign of Program Coordinator



Sign & Seal of HoD



Integral University, Lucknow

Effective from Session: 2023-24							
Course Code	DS 267	Title of the Course	Development of Product Form & Process	L	T	P	C
Year	2 nd	Semester	3 rd	1	-	2	3
Pre-Requisite	None	Co-requisite	None				
Course Objectives	The main objective of the course is to visualize and develop the form step by step.						



Course Outcomes	
CO1	Understand the difference between shape and form.
CO2	Know the development of form by visualizing it in different coordinates.
CO3	Brainstorming through subtraction & addition of a form
CO4	Understand the value of adding color, texture, etc
CO5	Apply different materials on the surface to bring the transformation & aesthetics.

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	Introduction to Form	Definition of form, evolution of a flat shape into a volume, Classification of form 2D & 3D, Solids (Platonic, Archimedean)	3	1
2	Volume Relationship	Dominant, subdominant & subordinate	12	2
3	Transformation	Radii manipulation, Form transition (addition & subtraction)	12	3
4	Form, emotions & Identity	Abstraction & expression of form, Identity experimentations with form, texture & colour, Family of forms	12	4
5	Form exploration	Through different materials (Like- Paper Mache, thread, Plaster of Paris, Clay etc.)	6	5

Reference Books:
Gyorgy Kepes, Language of Vision, Dover Publications, 1995
Kimberly Elam, Geometry of Design: Studies in Proportion and Composition, Princeton Architectural Press, 2001
Gaston Bachelard and Maria Jolas (Translator), The Poetics of Space, Beacon Press
e-Learning Source:
https://www.hmhco.com/blog/teaching-flat-plane-shapes-solid-shapes
https://www.dsource.in/course/form/form-and-abstraction
https://www.researchgate.net/figure/Reporting-accuracy-of-color-and-identity-in-different-surprise-tests-in-Experiment-1-The_fig2_331416060

Course Articulation Matrix: (Mapping of COs with POs and PSOs)																		
PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	2	3	2	2	3	3	3	2					1	2	3	2	2	
CO2	2	2	3	3	3	2	3	3					2	2	2	3	2	
CO3	3	2	3	3	2	2	3	3					3	2	3	3	3	
CO4	3	2	3	2	3	2	2	2					1	2	2	2	2	
CO5	2	3	1	2	2	3	2	2					2	1	3	3	2	

1- Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

 Ar. Safa Seraj Name & Sign of Program Coordinator	 Sign & Seal of HoD
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Integral University, Lucknow

Effective from Session: 2023-24							
Course Code	DS 268	Title of the Course	Computer Design & Digital Fabrication-II	L	T	P	C
Year	2 nd	Semester	3 rd	1	1	2	4
Pre-Requisite	Computer Design & Digital Fabrication-I	Co-requisite	Computer Design & Digital Fabrication-III				
Course Objectives	Ability to create Engineering CAD ready Surface and Solid Models, Ability to conduct design iterations in CAD software.						



Course Outcomes	
CO1	Understand the role of Computer in designing Geometric Modeling Software.
CO2	Develop modeling of curves and surfaces through software.
CO3	Understand the representation of solid modelling
CO4	Execute the Animation and can develop the motion.
CO5	Know the Computer Aided Manufacturing

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	Computer as an aid to the designer	Role of Computer in Designing; Computer Graphics, Systems and Hardware; Graphics Standards; Different types of Geometric Modeling Software	6	1
2	Modeling and generation of curves and surfaces	Geometric figures and their representation; Types of curves and surfaces; Scanning and tracing Sketches; Modeling of curves and surfaces using software; Freeform surface modelling; Generating 2D designs using computers (engraving and routing)	16	2
3	Solid modeling	Representation of solids: wireframe, B-rep and CSG; Modeling of simple solids using software; Modeling of complex solids using software; Generation of 2D drawings from 3D model	12	3
4	3d modeling of assemblies	Modeling of Machine elements; Modeling of assemblies; Modeling of moving systems; Animation	12	4
5	Computer aided manufacturing and project work	Introduction to Computer Aided Manufacturing; Project Work in Modeling of a Product	16	5

Reference Books:	
William Howard and Joseph Musto. Introduction to Solid Modeling Using solid works. McGraw Hills	
Ibrahim Zeid (2009), Mastering CAD/CAM, 2nd Edition, Tata McGraw Hill International Edition	
P N Rao (2010), CAD/CAM Principles and Applications, 3rd Edition, Tata McGraw-Hill Education	
e-Learning Source:	
https://blogs.oregonstate.edu/learnfromscratch/2021/11/16/geometric-modeling-methods/#:~:text=There%20are%20three%20main%20types.surface%20models%2C%20and%20solid%20models.	
https://www.solidprofessor.com/blog/quickly-create-2d-drawings-3d-models-manufacturing/	

Course Articulation Matrix: (Mapping of COs with POs and PSOs)																		
PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	3	2	2	2	3	2	3	1					3	2	3	3	3	
CO2	3	3	3	2	3	3	2	2					2	2	2	3	2	
CO3	2	2	2	3	3	3	2	2					3	2	3	3	3	
CO4	3	1	3	2	1	2	2	1					1	2	2	2	2	
CO5	2	3	2	3	2	3	2	2					1	2	3	2	2	

1- Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

 Ar. Safa Seraj Name & Sign of Program Coordinator	 Sign & Seal of HoD
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Integral University, Lucknow

Effective from Session: 2023-24							
Course Code	DS269	Title of the Course	Interior Design Studio I	L	T	P	C
Year	2 nd	Semester	3 rd	1	1	4	6
Pre-Requisite	None	Co-requisite	None				
Course Objectives	This course is intended to provide skills for designing single use interior spaces or products etc.						

Course Outcomes	
CO1	Students will be able to understand designing of interior spaces or products like furniture.
CO2	Students will be able to develop creative conceptual visualization, hand skill building, and the process of design;
CO3	Students will understand the Use of anthropometry, ergonomics, and handling of space after this course.
CO4	Students will gain application of knowledge gained from other subjects, in design.

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	Unit 1	<ul style="list-style-type: none"> · Anthropometry · Design methodology · Conceptual exploration and representation. · Creativity · Scale/proportion 	12	1,2,3
2	Unit 2	<ul style="list-style-type: none"> · Documenting space · Graphic design (page layout and composition) · Concepts sketching 	12	1,2,3
3	Unit 3	<ul style="list-style-type: none"> · Application of design principles and elements · Portfolio development 	15	1,2,3
4	Unit 4	The list of suggested topics to be covered as design problems shall be a single space like: Single room residence, Doctor’s clinic, kindergarten class room, Crèche, Architect’s studio, Lawyer’s office, small cafeteria, bank extension counter, florist shops, medical outlets, clothing store, shoe store, accessory store, book shop, waiting lounges for – hospitals, corporates, hotels, etc.	18	4
5	Unit 5	At least three major exercises and four minor design/time problems should be given. Internal marking shall be done in stages project wise: <ul style="list-style-type: none"> · Schematic layouts · Final layout · Sectional elevations · Typical details · Complete project with all details · 3D drawings with color rendering 	23	4

Reference Books:

Joseph D Chiara, Julius Panero, & Martin Zelnick, Time Saver standards for Interior Design & space planning, 2nd edition, Mc-Graw Hill professional, 2001.

Francis.D. Ching & Corky Bingelli, Interior Design Illustrated, 2nd edition, Wiley publishers, 2004.

Maureen Mitton, Interior Design Visual Presentation: A Guide to Graphics, Models, and Presentation Techniques. John Wiley and Sons, 2003

Robert Rengel, Shaping Interior Space, Fairchild Books & Visuals ,2002

e-Learning Source:

https://www.researchgate.net/publication/348321185_Learning_Anthropometry_from_Rendered_Humans

<https://www.sciencedirect.com/science/article/pii/S2215098616304578>

Course Articulation Matrix: (Mapping of COs with POs and PSOs)																		
PO-PSO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PO6
CO1	3	3	2	3	-	1	2	3					2	3	2	3	1	
CO2	3	2	2	2	1	2	1	2					2	3	2	3	1	
CO3	3	2	3	1	-	2	2	3					2	3	2	3	1	
CO4	3	2	2	2	1	2	2	2					2	3	2	3	1	

1- Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation



Ar. Safa Seraj
Name & Sign of Program Coordinator



Sign & Seal of HoD



Integral University, Lucknow

Effective from Session: 2023-24							
Course Code	DS 270	Title of the Course	Elective-I: Visual & Performing Arts	L	T	P	C
Year	2 nd	Semester	3 rd	1	1	0	2
Pre-Requisite	None	Co-requisite	None				
Course Objectives	The course provides information on the properties, management, specifications, use, application and rates of the materials used in the interiors.						

Course Outcomes	
CO1	Understand the historical background of visual arts.
CO2	Aware of the types of music, popular music and its salient features.
CO3	Perform the different poses of dance style its background.
CO4	Understand the mythological, philosophical, and literary content of the dance compositions.
CO5	Detail knowledge of theatre, its types, spaces in theatre and performing characteristics of the art form.

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	Visual Art	History of art and aesthetics theoretically, nature of time, space, colour, form, tone and texture; masters and contemporary artists	8	1
2	Introduction to Performing Arts (Theatre) Infrastructure	History, evolution & types of theatre since ancient time	8	2
3	Drawing Technique	Plan, section and elevation along with standards study of the theatre	8	3
4	Acoustic	Types of material used on floor, wall & roof for acoustical treatment.	4	4&5

Reference Books:
Media Literacy. Sage Publications Potter, James W (2016).
Media-Making: Mass Media in a Popular Culture. Sage Publications Grossberg, Lawrence et al (2005).
Media Analysis Techniques. Sage Publications Berger, Asa Authur (2017).
e-Learning Source:
https://www.britannica.com/topic/aesthetics
https://www.britannica.com/art/theater-building
https://illuminated-integration.com/blog/7-types-of-acoustic-treatments/

Course Articulation Matrix: (Mapping of COs with POs and PSOs)																		
PO-PSO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	1	1	2	3	3	1	2	1					1	2	3	2	3	
CO2	1	3	2	2	3	2	1	3					2	1	2	3	3	
CO3	1	2	2	1	3	2	2	3					2	2	3	2	3	
CO4	1	3	1	2	3	2	2	1					3	2	3	3	2	
CO5	1	3	1	2	3	1	1	1					2	2	3	2	2	

1- Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

 Ar. Safa Seraj Name & Sign of Program Coordinator	 Sign & Seal of HoD
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Integral University, Lucknow

Effective from Session: 2023-24							
Course Code	DS 271	Title of the Course	Elective-I: Interior Photography	L	T	P	C
Year	2 nd	Semester	3 rd	1	1	0	2
Pre-Requisite	None	Co-requisite	None				
Course Objectives	To understand the principles and technology of Photography.						



Course Outcomes	
CO1	Understand the historical background of visual arts.
CO2	Aware of the types of music, popular music and its salient features.
CO3	Perform the different poses of dance style its background.
CO4	Understand the mythological, philosophical, and literary content of the dance compositions.
CO5	Detail knowledge of theatre, its types, spaces in theatre and performing characteristics of the art form.

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	Principles of Composition	Rule of third, perspective- worm eye view, normal eye view, bird eye view, one-point perspective, two- point perspective, three- point perspective, exercises in composition	6	1
2	Principles of Photography	Technical definition, understanding a camera, anatomy of a SLR camera, different types of lenses	6	2
3	Principles of Interior Lighting	Technical definition, lighting sources, types of lighting fixtures, types of lamps, calculating lighting levels, flash photography, types of flashes, calculating lighting levels with flash photography, exercise in interior lighting photography with artificial light and black and white photos	8	3
4	Principles of Colour	Color rendering in photographic medium, color rendering in photographs under different lighting condition, lighting colors, color filter in a camera, Exercise on color photography of interiors	4	4
5	Integration	Project work/ Exercise in integrating all prior units	8	5

Reference Books:	
Point view- The Art of architectural Photography, E. Manny & A. Ballan, VNR.	
Professional Photography- photographing buildings, David Wilson, Rotovision	
e-Learning Source:	
https://www.photographymad.com/pages/view/rule-of-thirds	
https://www.designingbuildings.co.uk/wiki/Perspective#:~:text=Perspective%20is%20a%20technique%20for,they%20are%20from%20the%20observer.	

PO- PSO CO	Course Articulation Matrix: (Mapping of COs with POs and PSOs)																	
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	2	3	3	2	3	2	3	3					2	3	2	3	3	
CO2	2	3	3	2	3	1	3	3					3	3	2	2	3	
CO3	1	2	3	2	3	2	3	2					2	2	2	3	3	
CO4	2	3	3	2	3	2	3	3					3	3	2	2	3	
CO5	1	3	3	2	3	2	3	3					2	3	2	3	2	

1- Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

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Integral University, Lucknow

Effective from Session: 2023-24							
Course Code	DS 273	Title of the Course	Product & Furniture Design – II	L	T	P	C
Year	2 nd	Semester	4 th	1	1	4	6
Pre-Requisite	Product & Furniture Design – I	Co-requisite	None				
Course Objectives	To familiarize the students about the knowledge of furniture design and various aspects involved in the design of furniture for various spaces.						



Course Outcomes	
CO1	Understand the functionality, typology and ergonomics of a kitchen and learn about modular kitchen systems, hardware.
CO2	Gain knowledge about various modular storage systems, their functionality and respective hardware.
CO3	Identify various hardware, materials and their application in modular systems
CO4	Knowledge about various industrial processes and materials used in furniture design
CO5	Identify famous designers and their notable works

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	Storage system - kitchen	Storage systems: Functional analysis of storage systems and thereby deriving types of cabinets needed for interior spaces – kitchen cabinets, wardrobes closets & respective hardware for modular kitchen. Assignment: Exercise to design kitchen cabinets for a given kitchen in details.	06	1
2	Storage systems – book cases & showcase	Storage systems: Functional analysis book cases, show cases, display systems, compactors, mechanical storage, etc. and respective hardware for these. Survey of several modular systems available for different functions in the market.	12	2
3	Modular approach to furniture design	Various materials, combination of materials, their hardware and applications. Cost criteria of furniture design. Assignments : Survey of several modular systems available for different functions in the market..	12	3
4	Design approaches in furniture design	An introduction of various manufacturing processes most frequently adopted in furniture design such as Injection Molding, investment casting, sheet metal work, die casting, vacuum - forming etc. Assignments : Survey of different types of moulded or casted furniture available for different functions in the market	06	4
5	Famous designers	Charles & Ray Eames, Eero Saarinen, Jean Prouve, Paul McCobb, Ettore Sottsass, Knoll, Jens Risom etc.	12	3, 4

Reference Books:
D.Norman; The Design of Everyday things, London, The MIT Press, 1998
A.Forty; Objects of Desire, Thames & Hudson, 1995
J. de Noblet ed., Industrial Design- Reflections of a century, Thames & Hudson, 1993
Potter, Norman; What is a Designer: Things, Places, Messages, Princeton Architectural Press, 2002
e-Learning Source:
https://www.archdaily.com/tag/furniture-design
https://designwanted.com/tag/furniture-design/
https://www.mhi.org/fundamentals/storage

Course Articulation Matrix: (Mapping of COs with POs and PSOs)																		
PO-PSO-CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	2	2	3	1	2	-	2	3					3	2	2	3	3	
CO2	2	2	3	3	2	2	1	3					2	3	2	2	2	
CO3	2	2	3	3	2	1	1	3					3	3	3	3	2	
CO4	3	2	3	3	2	1	1	3					1	2	3	2	2	
CO5	3	2	3	2	2	1	1	3					2	1	3	2	3	

1- Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

 Ar. Safa Seraj Name & Sign of Program Coordinator	 Sign & Seal of HoD
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Integral University, Lucknow

Effective from Session: 2023-24							
Course Code	DS 274	Title of the Course	History of Design– IV	L	T	P	C
Year	2 nd	Semester	4 th	2	1	-	3
Pre-Requisite	History of Design-III	Co-requisite	None				
Course Objectives	To help the student understand the designs from prehistoric period to the middle ages and modern movements in interior design from the beginnings of 20th century.						

Course Outcomes	
CO1	Gain knowledge about modern movement and its various expressions along with works of notable designers.
CO2	Learn about international style in architecture.
CO3	Know the philosophy of post modernism in design and architecture.
CO4	Learn about hi-tech architecture and structural expressionism.
CO5	Gain knowledge about deconstructivism and the works of notable architects.

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	Modern movement	Return to the fundamentals and origins in nature and geometry; new inventions of iron and glass; horizontal and vertical expansions; responses to the vernacular. Social intentions and the search for the ‘ideal’ world; simplicity, abstraction, non-objective, nonrepresentative and neglect of content and ornament; new notions of technology; importance and precedence of function; De Stijl, etc. – an overview of the works of Louis Sullivan, C. R. Mackintosh, Edwin Lutyens, Antoni Gaudi, Walter Gropius, Frank Lloyd Wright, Le Corbusier, Mies van der Rohe.	06	1
2	The international style	Simplification of the Modern architecture into steel and glass cubes – an overview of the works of Philip Johnson.	12	2
3	Post modernism of reaction	Architecture entrenched in place and history; sarcastic approval of expression, ornament, symbolism and context – an overview of the works of James Stirling, Michael Graves, Charles Moore. Post modernism of Resistance: Disregard for historical imagery; revival of the ideals of the Modern Architecture of the 20’s; exaggerated and sophisticated revival of the grid and Corbusier’s geometry – an overview of the works of Richard Rogers, Norman Foster, Richard Meier.	12	3
4	Hi-tech and historicism	Synthesis of the Hi-Tech and Historicism – an overview of the works of Cesar Pelli, Aldo Rossi	06	4
5	Deconstructivism	Deconstruction as a reaction to the Post Modern; non-perfection as important as perfection, narrative and representational; traditional purity of form, geometry and structure in question – an overview of the works of Frank O. Gehry, Peter Eisenman, Bernard Tschumi, Rem Koolhaas, Zaha Hadid.	12	3, 4

Reference Books:

John F. Pile, A history of interior design, 2nd edition, Laurence King Publishing, 2005. Jeannie Ireland, History of Interior Design, air child publications, illustrated ed., 2009.
 Elaine, Michael Dywer, Christopher Mackinnon, Norman A. J. Berisford Denby , A History of Interior Design, Rhodoc International, 2000.

e-Learning Source:

- <https://www.architecturaldigest.com/gallery/philip-johnson-architecture-buildings>
- <https://www.scmp.com/magazines/style/tech-design/article/2096492/13-best-works-zaha-hadid-who-won-architectures-biggest>
- <https://www.casatigallery.com/designers/aldo-rossi/>

Course Articulation Matrix: (Mapping of COs with POs and PSOs)																		
PO-PSO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	1	1	1	2	2	-	3	1					3	2	3	2	3	
CO2	1	1	1	2	2	-	3	1					2	3	2	1	3	
CO3	1	1	1	2	2	-	3	1					3	3	2	2	2	
CO4	1	1	1	2	2	-	3	1					3	2	2	2	2	
CO5	1	1	1	2	2	-	3	1					3	3	2	2	3	

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Ar. Safa Seraj
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Integral University, Lucknow

Effective from Session: 2023-24							
Course Code	DS 275	Title of the Course	Interior Services -I	L	T	P	C
Year	2 nd	Semester	4 th	2	1	-	3
Pre-Requisite	None	Co-requisite	Interior Services -II				
Course Objectives	Gaining overall knowledge of general services in a building.						

Course Outcomes	
CO1	Learn about General idea of sources of water supply. Standards for quality of water.
CO2	Gain knowledge about various types of fittings like taps, ball valves, hot water supply systems
CO3	Learn about Basic principles of sanitations and disposal of waste materials from building
CO4	Aware about Waste management and rain water harvesting practices.
CO5	Prepare electrical layout scheme for interior using standard electrical symbols

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	Water supply	General idea of sources of water supply. Standards for quality of water. Domestic water systems, suction and storage tanks and their capacity. Pipes and their sizes and jointing. Consumption of water. Down take supply to various fittings.	06	1
2	Sanitary fittings	Types of fittings like taps, ball valves, hot water supply systems, bathtubs, showers, jets, cocks, valves etc. Faucets for kitchens, bathrooms and toilets. Check valves, foot valves, sump pump check valves etc.	12	2
3	Sanitation	Basic principles of sanitations and disposal of waste materials from buildings. Connection to outdoor drainage system, size requirements, types of pipes available in the market. Water carriage systems, standard sanitary fittings, traps, pipes and their jointing. Flushing systems. Bathroom interior layouts, extensive market survey of products available, economies of products available, fixing of the products with other finishing materials.	12	3
4	Solid waste	Waste management : Refuse, different forms of refuse garbage, house refuse , refuse chutes , rain water harvesting etc	06	4
5	Electricity	Electrical Installations : Building wiring system. Service wires, metering distribution boards, circuits, MCB cutouts. Conductors, wiring methods, switch boards, electrical devices in the buildings, light and power circuits. Indian electricity rules, relevant provisions of NBC. Preparation of electrical layout scheme for a interior using standard electrical symbols	12	3, 4

Reference Books:

Rangwala, S.C. water supply and Sanitary Engineering : Environmental Engineering, 19th ed, Charotar pub house, Anand, 2004
 Derek Clements-Croome, Derek J. Croome, Intelligent buildings: Design, Management and Operation, Thomas Telford Books, London, 2004.

e-Learning Source:

<https://abhacharya.com/wp-content/uploads/2017/01/Sources-of-Water.pdf>
<https://www.earthreminder.com/waste-management-principles-methods-benefits/>

Course Articulation Matrix: (Mapping of COs with POs and PSOs)																		
PO-PSO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	1	1	3	1	3	1	2	1					3	2	3	2	3	
CO2	1	1	3	1	3	1	3	1					2	3	2	1	3	
CO3	1	2	3	2	3	2	3	1					3	3	2	2	2	
CO4	1	2	3	1	3	2	3	1					3	2	2	2	2	
CO5	1	1	3	2	3	1	3	1					3	3	2	2	3	

1- Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation



Ar. Safa Seraj

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Integral University, Lucknow

Effective from Session: 2023-24							
Course Code	DS276	Title of the Course	Rapid Prototyping	L	T	P	C
Year	2 nd	Semester	4 th	2		3	4
Pre-Requisite	None	Co-requisite	None				
Course Objectives	The course shall be able to introduce student latest prototyping technologies used in the industry like 3d printing, laser, etc for making prototypes close to the actual products.						

Course Outcomes	
CO1	Students will learn, what rapid prototyping is and classification in rapid manufacturing.
CO2	Students will gain knowledge about CAD modelling and model preparation for additive prototyping
CO3	Students will gain the knowledge about various RP processes, materials and technological advancements in the domain of rapid prototyping.
CO4	Students will learn how to control error in prototyping process and part building.
CO5	Students will get hands on experience in 3d printing

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	Rapid Prototyping (or 3D Printing)	Introduction to Rapid Prototyping (or 3D Printing), Rapid Prototyping Data Formats, Rapid Tooling	16	1
2	Rapid Prototyping Systems I	RP Processes: Process Physics, Tooling, Process Analysis, Material and technological aspects, Applications, limitations and comparison of various rapid manufacturing processes. Photopolymerization (Stereolithography (SL), Micro stereolithography),	16	2
3	Rapid Prototyping Systems II	Powder Bed Fusion (Selective laser Sintering (SLS), Electron Beam melting (EBM)), Extrusion-Based RP Systems (Fused Deposition Modelling (FDM)), 3D Printing, Sheet Lamination (Laminated Object Manufacturing (LOM), Ultrasonic Consolidation (UC)), Beam Deposition (Laser Engineered Net Shaping (LENS), Direct Metal Deposition (DMD)).	16	3
4	Computer Aided Manufacturing	Details of different types of Computer Aided Manufacturing Systems, Role of CAM in today's world, Recent Advances in CAM	16	4
5	Product Design and Manufacturing	(using Reverse Engineering and Rapid Prototyping) Project Work	16	4, 5

Reference Books:	
New Product Shots by Alex Larg & Jane Wood.	
Lighting for Food & Drink by Steve Bavister.	
Practical Photography by Michael Freeman.	
Magazines vide WEB. Magazines on Advertising.	
e-Learning Source:	
https://www.researchgate.net/publication/226038981_Rapid_prototyping_technology_Applications_and_benefits_for_rapid_product_development	
https://www.researchgate.net/publication/339659534_RAPID_PROTOTYPING_TECHNOLOGY_APPLICATIONS_ADVANTAGES_AND_LIMITS_A_REVIEW	
https://www.iare.ac.in/sites/default/files/IARE_RPT_PPT.pdf	

Course Articulation Matrix: (Mapping of COs with POs and PSOs)																		
PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	1	1	3	1	1	1	1	1					1	2	2	3	1	
CO2	2	1	3	1	1	2	2	2					1	2	2	3	1	
CO3	2	1	3	1	1	2	2	2					1	2	1	3	2	
CO4	3	1	3	1	1	3	3	1					1	3	1	3	1	
CO5	1	1	3	1	1	1	1	1					1	2	2	3	1	

1- Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation



Ar. Safa Seraj

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Integral University, Lucknow

Effective from Session: 2023-24							
Course Code	DS277	Title of the Course	Layout Drawing & Display Techniques	L	T	P	C
Year	2 nd	Semester	4 th	1		2	2
Pre-Requisite	None	Co-requisite	None				
Course Objectives	To familiarize the students with some of the concepts of 3D modeling and the presentation techniques.						



Course Outcomes	
CO1	To make student understand about water colors and rendering techniques.
CO2	To make student understand and learn techniques of perspective drawing.
CO3	To understand and learn pen and ink rendering, materials, media and tools.
CO4	Understand about the Rendering interior perspectives with color pencils and sketch pens
CO5	Learn about creating various textures using watercolors and poster colors

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	Coloring study	Introduction of colors, Usage of water colors, poster colors, pen & ink, rendering techniques, etc.	8	1,3,5
2	Drawing and sketching interior environments	Drawing and sketching interior environments, one point interior perspective, two-point interior perspective, refined linear perspective methods, two point plan projection method, and perspective traced from photographs	10	2,4
3	Rendering with pen and ink	Introduction to pen and ink rendering, materials, media and tools, rendering orthographic projection drawings, rendering perspective drawings.	10	2,3
4	Rendering with colour pencils and sketch pens	Rendering of interior perspectives with colour pencils and sketch pens – stroke effects, smudge effects – use of schoeller and kent sheets – leather cartridge etc.	10	4
5	Rendering with poster/water colours	Use of kent / cartridge sheets for poster colours and waterman/cartridge sheets for water colours – transparency effects in water colours – block effects in poster colours.	10	5

Reference Books:	
Interior Design Visual Presentation 2nd and 3rd Edition-Maureen Mittom	
Architectural Rendering Techniques-A Color Reference-Mike.W.Lin	
Color Drawing-Design drawing skills & techniques for architects-Michael.E.Doyle.	
Architects Sketching and Rendering techniques for designers and architects.-Stephen.A.Klimet	
Color Vision-Leo Marvullo 6. Water Color-Hon graham Scholes	
e-Learning Source:	
https://www.skillshare.com/en/browse/architectural-rendering	
https://archive.org/details/FrancisD.K.ChingArchitecturalGraphics6thEd2015	
https://www.re-thinkingthefuture.com/architectural-community/a2419-10-online-courses-for-architectural-rendering/	

Course Articulation Matrix: (Mapping of COs with POs and PSOs)																		
PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO 10	PO 11	PO12	PSO1	PSO2	PSO3	PSO 4	PS O5	PS O6
CO1	2	1	3	2	1	1	2	1					2	1	2	2	1	
CO2	2	2	3	2	1	1	2	1					3	2	3	3	2	
CO3	2	1	3	2	1	1	2	1					2	1	2	2	2	
CO4	2	1	3	2	1	1	2	1					3	2	3	3	2	
CO5	2	-	3	1	1	1	2	1					2	1	2	2	2	

1- Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

 Ar. Safa Seraj Name & Sign of Program Coordinator	 Sign & Seal of HoD
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Integral University, Lucknow

Effective from Session: 2023-24							
Course Code	DS278	Title of the Course	Interior Design Studio-II	L	T	P	C
Year	2 nd	Semester	4 th	1		8	5
Pre-Requisite	Interior Design Studio-I	Co-requisite	None				
Course Objectives	To develop creative conceptual visualization, hand skill building, and the process of design and emphasis shall be on graphic layout and elevations as a design process.						



Course Outcomes	
CO1	Students will be able to understand designing of interior spaces or products like furniture.
CO2	Students will be able to develop creative conceptual visualization, hand skill building, and the process of design;
CO3	Students will understand the Use of anthropometry, ergonomics, and handling of space after this course.
CO4	Students will gain application of knowledge gained from other subjects, in design.

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	Unit 1	Documenting space (sketch and photo documentation); Space planning process (block diagram, concept statement); Concept sketching.	12	1,2,3
2	Unit 2	Application of design principles and Elements; Creativity / originality; Design; Process/methodology; Structural integration.	12	1,2,3
3	Unit 3	Style; Color Rendering; Anthropometry and ergonomics; Furniture Design; Material selection; Graphic design (page layout and composition).	12	1,2,3
4	Unit 4	Portfolio development: Design portfolio to include designs in response to today's situation of urban society, i.e., contemporary spaces required in modern society – needs, realities, value system etc. The spaces to be considered shall be: home, office, bank, school, college, public level spaces - restaurant, lounge (hotel), etc.	12	4
5	Unit 5	The list of suggested topics to be covered as design problems: Thematic space making with Art and craft forms of our own culture in India – East, West, North, Central and so on; Design of built units of various geographical locations and culture by involving historical periods, styles and use of craft in its inherent quality and form - integrating craft and living environment. <i>Note: At least two major exercises and three minor time problems should be given. Internal marking shall be done in stages and project wise:</i> Schematic layouts; Final layout; Sectional elevations; Designs & details.	96	4

Reference Books:
Joseph D Chiara, Julius Panero, & Martin Zelnick, Time Saver standards for Interior Design & space planning, 2nd edition, Mc-Graw Hill professional, 2001.
Francis.D. Ching & Corky Bingelli, Interior Design Illustrated, 2nd edition, Wiley publishers, 2004.
Maureen Mitton, Interior Design Visual Presentation: A Guide to Graphics, Models, and Presentation Techniques. John Wiley and Sons, 2003
Robert Rengel, Shaping Interior Space, Fairchild Books & Visuals ,2002
Neufert Ernest, Architect's Data, Granada pub. Ltd. London, 2000.
John F. Pile, A history of interior design, Laurence King Publishing, 2005.
Robin D. Jones, Interiors of Empire: Objects, Space and Identity within the Indian Subcontinent, Manchester University Press; illustrated edition, 2008
e-Learning Source:
https://www.researchgate.net/publication/348321185_Learning_Anthropometry_from_Rendered_Humans

Course Articulation Matrix: (Mapping of COs with POs and PSOs)																		
PO- PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	3	3	2	3	-	1	2	3					1	3	2	1	3	
CO2	3	2	2	2	1	2	1	2					1	3	2	1	3	
CO3	3	2	3	1	-	2	2	3					1	3	2	1	3	
CO4	3	2	2	2	1	2	2	2					1	3	2	1	3	

1- Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

 Ar. Safa Seraj Name & Sign of Program Coordinator	 Sign & Seal of HoD
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Integral University, Lucknow

Effective from Session: 2023-24							
Course Code	DS279	Title of the Course	Elective-II: Product Photography	L	T	P	C
Year	2 nd	Semester	4 th	2	-	-	2
Pre-Requisite	None	Co-requisite	None				
Course Objectives	The major objective of this course is known about the types of equipment required and expertise knowledge for product photography						

Course Outcomes	
CO1	Learning about the basics of photography and product photography.
CO2	Learning about the use of camera and its settings.
CO3	Understanding the use of different rules of photography.
CO4	Understanding the products and lighting scheme.
CO5	To enable the students to understand the applications of photography in interior.

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	Overview Of Product Photography	Product Photography significance - role in promotion of products - categorization of products - The lighting Equipment - Types of lighting units - Accessories - Digital Lights - Study of Concepts - Accessories - Props - Backgrounds - Models - Locations - hiring of studios - equipment.	8	1,3,4
2	Electronics Products	Shooting Script - Lighting Schemes - Exercises.	10	2,3,4
3	Household Products	Shooting Script - Lighting Schemes - Exercises Liquid Products - Shooting Script - Lighting Schemes - Exercises.	12	2,3,4,
4	Executive Products	Shooting Script - Lighting Schemes - Exercises. - Concept Photography - Shooting Script - Lighting Schemes Exercises	12	2,3,4
5	Industrial Photographer	Lighting in Natural & Artificial	6	1,2,3,4,5

Reference Books:

- New Product Shots by Alex Larg & Jane Wood.
- Lighting for Food & Drink by Steve Bavister.
- Practical Photography by Michael Freeman
- Professional photography -photographing buildings, David Wilson, Rotovision

e-Learning Source:

- <https://www.udemy.com/course/photography-masterclass-complete-guide-to-photography/>
- <https://www.udemy.com/course/mobile-photography-masterclass-for-instagram/>
- <https://www.udemy.com/course/mobile-photography-for-beginners-master-your-smartphone/>
- <https://www.udemy.com/course/diy-product-photography/>

Course Articulation Matrix: (Mapping of COs with POs and PSOs)																		
PO-PSO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	2	1	1	1	1	1	3	2					1	1	1	1	1	
CO2	3	2	2	1	1	1	3	2					2	1	2	2	1	
CO3	1	3	3	2	1	1	2	2					2	1	3	2	1	
CO4	1	3	3	3	1	1	2	2					2	2	3	3	1	
CO5	1	3	1	1	1	1	3	3					1	3	1	3	1	

1- Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

<p>Ar. Safa Seraj Name & Sign of Program Coordinator</p>	<p>Sign & Seal of HoD</p>
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Integral University, Lucknow

Effective from Session: 2023-24							
Course Code	DS280	Title of the Course	Elective-II: Craft & Technology in Interiors	L	T	P	C
Year	2 nd	Semester	4 th	2	-	-	2
Pre-Requisite	None	Co-requisite	None				
Course Objectives							



Course Outcomes	
CO1	Understand the importance of Art and Craft.
CO2	Aware about the Traditional Knowledge Systems and the Indigenous materials
CO3	Know the Significance and Scope, Building Crafts.
CO4	Explore the crafts of different states of India.
CO5	Aware about the Issues and Challenges of Craft Sector Today

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	Introduction Interior-Architecture:	Definition and Understanding, Craft: Definition and Understanding (Varied Perspectives on Art and Craft), Interior- Architecture and Craft & Technology: Establishing Inter- Relationships and Exploring Applications. Discourse	8	1,3,4
2	Interior-Architecture:	Documenting Knowledge and Skills, Traditional Knowledge Systems and the Ingenious skills of the communities, and Documenting Materials; Tools and Techniques, Traditional Knowledge Systems and the Indigenous materials; tools and techniques, Discourse	10	2,3,4
3	Creative and Cultural Industries & Building Crafts	Understanding Definition; Significance and Scope, Building Crafts: Definitions; perspectives and frameworks, Craft and Technology and its Role in creating/enhancing Interior- Architecture, Discourse	12	2,3,4,
4	Building Crafts	Craft Sector, Case Studies From Gujarat, Rajasthan, Uttarakhand, Miscellaneous Case Studies	12	2,3,4
5	Overview of the Craft Sector	Craft Sector Today, Issues and Challenges, Policies and Reforms, Gaps, Summary & Discourse	6	1,2,3,4,5

Reference Books:	
Boner, A; Sarma, SR; Baumer, B. “Vāstusūtra Upaniṣad”, Motilal Banarsidass Publishe, 1996	
Coles, J and House, N. “The Fundamentals of Interior-Architecture”, Ava Publishing, 2007	
Hudson, J. “Interior-Architecture Now”, Laurence King Publishers, 2007	
Jaitly Jaya. “Crafts Atlas of India”, Niyogi Books, N.Delhi, 2012	
e-Learning Source:	
https://onlinecourses.nptel.ac.in/noc19_ar15/preview	
https://youtu.be/EUQpc0KJhx0	

Course Articulation Matrix: (Mapping of COs with POs and PSOs)																		
PO-PSO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	2	1	1	1	1	1	3	2					1	1	1	1	1	
CO2	3	2	2	1	1	1	3	2					2	1	2	2	1	
CO3	1	3	3	2	1	1	2	2					2	1	3	2	1	
CO4	1	3	3	3	1	1	2	2					2	2	3	3	1	
CO5	1	3	1	1	1	1	3	3					1	3	1	3	1	

1- Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

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Integral University, Lucknow

Effective from Session: 2022-2023							
Course Code	DS 358	Title of the Course	Interior Landscape	L	T	P	C
Year	3 rd	Semester	5 th	2	1	-	3
Pre-Requisite	None	Co-requisite	None				
Course Objectives	To familiarize with the basic fundamentals of landscaping of interior spaces and application of basic fundamentals and parameters of landscaping in design.						

Course Outcomes	
CO1	To understand the role of landscape in built environment and it's types
CO2	To understand the selection of flowers, trees, shrubs & herbs for visual aesthetics and its characteristics
CO3	To develop an understanding of designing by including the nature
CO4	To know landscape its types and usage and its meaningful compositions for visual and functional effects
CO5	To know the design parameters of built forms- indoor and outdoor linkage to spaces

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	Landscape and Built Environment	Introduction and role of landscape design in the built environment. Types of natural elements – stones, rocks, pebbles, water forms, plants and vegetation. Introduction to the study of plants in relation to landscape design and interiors. Types of indoor plants, visual characteristics: i.e., color, texture, foliage.	15	1,3
2	Visual Perception	Flowers- its colors, texture and its visual perception in various indoor spaces and science of flower arrangement Indoor plants in Indian context. Plant biology, soil, moisture, light nutrient, atmospheric conditions, growing medium, pests & diseases. Botanical nomenclature, anatomy and physiology of plant growth. Market survey and costs.	12	2
3	Design with Plants	Design with plants – Basic principles of designs. The physical attribute of plants and relation to design. Appearance, functional and visual effects of plants in landscape design and built environment. Selection and management of plant material in relation to the built environment.	10	1,2
4	Hardscape	Design concepts related to use of sculpture, lightings, garden furniture, architectural feature and grouping them into meaningful compositions for visual and functional effects.	10	3
5	Landscape Design Parameters	Landscaping design parameters for various types of built forms- indoor and outdoor linkage to spaces. Landscaping of courtyards- residential and commercial forms. Indoor plants and their visual characteristics- . Science of maintaining and growing greenery. Automatic irrigation costing and installation of micro irrigation systems.	12	4,5

Reference Books:

Joseph Dechiara, Julius Panero, and Martin Zelnik Time-Saver Standards For Interior Design and Space Planning, 2nd Edition, Mc-Graw Hill Professional,2001.

Craig Berger, Wayfinding: Designing And Implementing Graphic Navigational Systems, Rotovision, 2009

Andreas Uebele, Signage Systems And Information Graphics , Thames And Hudson, 2007

e-Learning Source:

http://www.gardenvisit.com/landscape_architecture/landscape_debate/definition_eid

http://agritech.tnau.ac.in/horticulture/horti_Landscaping_types%20of%20garden.html

<http://www.localhistories.org/gardening.html>

Course Articulation Matrix: (Mapping of COs with POs and PSOs)																		
PO-PSO CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
	CO1	3	3	1	2	3	3	2	1					2	3	4	3	5
CO2	3	2	2	1	3	2	2	2					3	3	3	3	1	
CO3	3	2	1	1	3	2	3	1					1	3	2	3	3	
CO4	3	2	1	2	3	3	2	1					2	1	1	2	2	
CO5	3	3	2	2	3	3	2	2					1	2	2	2	2	

Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation



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Integral University, Lucknow

Effective from Session: 2022-2023							
Course Code	DS359	Title of the Course	Interior Services-II	L	T	P	C
Year	3 rd	Semester	5th	2	1	-	3
Pre-Requisite	Interior Services-I	Co-requisite	None				
Course Objectives	To expose the students to the basic principles of air conditioning, acoustics, electrification and mechanical services.						

Course Outcomes	
CO1	To aware with the HVAC system and its principles, functions and its types.
CO2	To understand the design consideration for fire safety and mechanism of firefighting devices.
CO3	To know services for multi storied buildings and its types.
CO4	To know details of security and safety systems and can apply it in future.
CO5	To understand the building automation and energy management.

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	HVAC	Heating Ventilation & Air Conditioning (HVAC) systems: Air conditioning, Mechanical ventilation – mechanical inlet and extraction systems. Functions of air conditioning, Principles of AC, capacity of AC, Types of AC systems – window AC, split, ductable, central AC and their details. Air distribution systems – ducts, air inlets.	7	1
2	Fire Safety	Fire – causes and spread of fire. Design considerations for fire safety, Devices for firefighting – portable, built in wet riser system, sprinkler system, fire hydrant. Class of fire and occupancy, study of fire regulations as per NBC	5	2
3	Vertical Transport	Services for multi storied buildings - Vertical transportation systems – Introduction – lifts, escalators vertical & horizontal, definition, location, arrangement, structure, drives, traffic analysis, supervisory control, remote monitoring.	8	3
4	Safety & Security	Security and safety systems – introduction, designing a security system – burglar alarm, CCTV, central alarm systems, intrusion sensors and space sensors. Other services – cable TV, PABX, computer labs – access flooring, server rooms.	4	4
5	Building Automation and Energy Management	Building automation and energy management – Introduction, History of development of BAS, typical BAS, criteria for choosing the right BAS, open system architecture. Information technology, communications & artificial intelligence in intelligent buildings. Design in computer age, engineering intelligence through nature.	8	5

Reference Books:

Rangwala, S.C. Water Supply and Sanitary Engineering : Environmental Engineering, 19th Ed, Charotar Pub House, Anand, 2004
 Electrical Wiring And Contracting (Vol. 1 To Vol.4), London. The New Era Publishing Company.
 Dr Frith Abnws And Others, Electrical Engineering Hand Book.
 William . J. Guinness, Mechanical And Electrical Systems For Buildings, New York : Mc Graw Hill.

e-Learning Source:

https://link.springer.com/chapter/10.1007/978-981-16-8456-2_43
<https://r.search.yahoo.com/ ylt=AwrPpiVwgJljal8NwCO7HAX.: ylu=Y29sbwNzZzMEcG9zAzEEdnRpZAMEc2VjA3Ny/RV=2/RE=1671033073/RO=10/RU=https%3a%2f%2fhvacnewsjournal.com%2f/RK=2/RS=IXwhZqne4SVHEeKIprHduQro.WA->
<https://dgfscdhg.gov.in/national-building-code-india-fire-and-life-safety>
<https://iieta.org/Journals/IJSSE>

Course Articulation Matrix: (Mapping of COs with POs and PSOs)

PO-PSO CO	Course Articulation Matrix: (Mapping of COs with POs and PSOs)																	
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO4	PSO4	PSO5	PSO6
CO1	2	2	2	2	1	1	2	2					3	3	3	3	1	
CO2	2	1	3	1	1	3	2	1					3	3	3	3	1	
CO3	2	2	2	2	2	2	2	2					3	3	3	3	1	
CO4	3	2	2	1	3	3	3	2					3	3	3	3	1	
CO5	2	2	2	1	1	3	2	1					3	3	3	3	1	

1- Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation



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Integral University, Lucknow

Effective from Session: 2022-2023							
Course Code	DS360	Title of the Course	llumination in Interiors	L	T	P	C
Year	3 rd	Semester	5 th	2	1	-	3
Pre-Requisite	None	Co-requisite	None				
Course Objectives	To equip the student to understand and successfully apply lighting techniques with colour effects.						

Course Outcomes	
CO1	To understand the role of illumination, it's importance and background history
CO2	To inform about the artificial lighting and its source and feature
CO3	To analyze the psychological impact of light and color on human
CO4	To decide the types of light to be installed by understanding the functionality and other factors
CO5	To calculate the luminaires and its quantity required in the project

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	Introduction To Illumination	Introduction and role of illumination in interiors, it's importance, an overview of the history of light - Electric Lamps, Incandescent/Halogen/Fluorescent/HID/LED - learn basic wiring and simple lighting effects, principles of lighting, types of lighting in interior design and its effect.. Impact of lighting on creating the ambience	12	1
2	Artificial Lighting	The importance of Artificial lighting in Architectural Design, vision and perception, color, and - understanding shade and shadow, Artificial light sources, types of artificial lighting and its feature.	12	2
3	Effect of Color In Lighting	The Psychological Impact of Light and Color, Environmental Cognition, Visible spectrum , Usage of color and its selection criteria by understanding the functionality of buildings.	12	3
4	Luminaires & Fixtures	Controlling light, luminaire optics and distributions - introduction to light fixture materials and construction, and components. Light a Surface: Horizontal, Light a Surface: Vertical, Light a Surface: For a Task	18	4
5	Lighting Design & Calculation	Lighting theory, Laws of Light, cosine law, relationship between candela and lumen, point source calculations, transmittance, reflectance and absorption, illuminance and visual performance, lumen method of light calculation, linear luminaires and uplighting.	12	5

Reference Books:
The Art of Living- Randall Whitehead
Lighting Design, Source Book- Randall Whitehead
Light Right- M.K.Halpeth, T.Senthil Kumar, G.Harikumar
Concepts Of Lighting, Lighting Design In Architecture- Torquil Barker
e-Learning Source:
https://www.hampshirelight.net/blog/importance-of-lighting-interior-design
https://www.easyrender.com/a/light-as-an-element-of-interior-design-and-how-they-transform-space
https://foyr.com/learn/psychology-of-colors-in-interior-design/

Course Articulation Matrix: (Mapping of COs with POs and PSOs)																		
PO-PSO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	1	2	2	2	2	3	3	2					2	2	3	3	3	
CO2	2	3	3	2	3	2	2	3					1	2	3	2	3	
CO3	2	2	3	2	3	3	3	2					1	3	2	2	2	
CO4	3	2	2	1	3	3	2	2					2	3	2	2	2	
CO5	1	2	2	2	2	3	3	2					2	3	3	2	2	

1- Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

 Ar. Safa Seraj Name & Sign of Program Coordinator	 Sign & Seal of HoD
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Integral University, Lucknow

Effective from Session: 2022-2023							
Course Code	DS361	Title of the Course	Digital Visualization-I	L	T	P	C
Year	3 rd	Semester	5 th	1	2	2	5
Pre-Requisite	None	Co-requisite	None				
Course Objectives	To enable students for using basic industry standard software like SketchUp, Lumion and Photoshop for 3D modelling and rendering.						



Course Outcomes	
CO1	To aware with the basic of Sketch up and its salient features of using SketchUp and its applicability.
CO2	To develop the Modelling complex forms through various plugins for enhancing the model.
CO3	To produce rendered model with brilliant lighting and exclusive materials details.
CO4	To make enhancing background of the model.
CO5	To know the basic of photoshop and its feature.

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	Introduction to Basic Modelling in Sketchup	Introduction to SketchUp interface and tools, introduction to basic operations in SketchUp, principles of 3d modelling in SketchUp, basic 3d modelling exercises of products and interiors.	16	1,2,3
2	Modelling Complex Forms in Sketchup	Modelling complex forms using curves, using plugins to assist modelling in SketchUp, Modelling Exercises of multi-part complex objects in SketchUp.	16	1, 2,3,
3	Lighting and Materials in Lumion	Basic principles of lighting in 3d. Introduction to Lumion interface and tools, importing files to Lumion, setting up basic scene for rendering, setting up basic environment lighting in Lumion, basics of materials and texturing in Lumion, Creating basic Materials in Lumion.	16	1,3,4
4	Rendering 3D Scenes in Lumion	Adding environment and vegetation in a 3d scene, rendering basic scene in studio setup using Lumion, rendering a basic scene using environment setup using Lumion. Exporting images from Lumion.	16	1,3, 4,
5	Photoshop: Elementary	Understanding Photoshop, Corel Draw and GIS.	16	2,4,5

Reference Books:
User manual & tutorials of Google Sketch Up software
e-Learning Source:
https://visualizingarchitecture.com/
https://support.lumion.com/hc/en-us/categories/360000646374-Tutorials

Course Articulation Matrix: (Mapping of COs with POs and PSOs)																		
PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	1	3	3	2	1	2	2	3					1	2	2	1	2	
CO2	1	2	2	1	1	3	2	2					2	2	2	2	2	
CO3	2	2	2	2	1	3	2	1					1	3	3	1	3	
CO4	1	3	3	1	2	3	2	2					3	3	2	1	3	
CO5	3	3	2	1	1	3	2	3					3	3	2	1	3	

1- Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

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Integral University, Lucknow

Effective from Session: 2022-23							
Course Code	DS362	Title of the Course	Product Design Studio-I (Residential Outdoor Setting)	L	T	P	C
Year	3 rd	Semester	5 th	1	1	2	4
Pre-Requisite	None	Co-requisite	None				
Course Objectives	To introduce the students to the technically complex product design challenges, considerations and deliverables						

Course Outcomes	
CO1	To learn about the design processes and methods followed in development of products.
CO2	To learn the basics of design thinking to identify the design problem, create best solution for it.
CO3	To learn about conducting successful user research
CO4	To learn how to convert a conceptual idea into a functioning product.
CO5	To learn the form development & prototyping techniques and skill.

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	Overview of Design Process and its Ecosystem	Design Relevance: Exposure and analysis, Case studies	10	1
2	Ideation	Brainstorming; Differential Discussion; group methods to generate ideas; solitary methods to generate ideas; Lateral Thinking	10	2,3
3	Case Studies & Research	Conducting User surveys, and case studies	12	3
4	Concept Detailing	User Journey maps, User stories, activity mapping	12	3,4
5	Design Project	Design and Development of Product as per the brief	20	4,5

Reference Books:	
D. NormanL: The Design of Everyday Things, London, The MIT Press, 1998	
A. Forty; Objects of Desire, Thames & Hudson, 1995	
J. De Noblet Ed., Industrial Design- Reflections of A Century, Thames & Hudson, 1993	
Julier, G.;20th Century, Design, Thames & Hudson, 1993	
Potter, Norman; What Is A Designer: Things, Places, Messages, Princeton Architectural Press, 2002	
e-Learning Source:	
Product Design and Manufacturing - Course (nptel.ac.in)	
Product Design and Innovation - Course (nptel.ac.in)	

Course Articulation Matrix: (Mapping of COs with POs and PSOs)																		
PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
	CO1	2	2	3	1	2	-	2	3					3	2	2	2	2
CO2	2	2	3	3	2	2	1	3					3	2	2	2	2	
CO3	2	2	3	3	2	1	1	3					2	2	2	1	2	
CO4	3	2	3	3	2	1	1	3					3	1	3	2	1	
CO5	3	2	3	2	2	1	1	3					3	2	2	2	2	

1- Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

<p>Ar. Safa Seraj Name & Sign of Program Coordinator</p>	<p>Sign & Seal of HoD</p>
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Integral University, Lucknow

Effective from Session: 2022-2023							
Course Code	DS363	Title of the Course	Interior Design Studio-III	L	T	P	C
Year	3 rd	Semester	5 th	1	-	6	7
Pre-Requisite	Interior Design Studio-II	Co-requisite	Interior Design Studio-II				
Course Objectives	To introduce the basics of designing for retail spaces including showrooms and restaurant interiors and to develop skills required for the same.						

Course Outcomes	
CO1	To understand the basic requirements of the project and its features
CO2	To deal with health care interior and understand the hierarchy of spaces
CO3	To deal with restaurant interior and understand the hierarchy of spaces
CO4	To develop the technical drawings and material details

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	Overview of Design Process and Its Ecosystem	Design Relevance: Exposure and analysis, case studies.	10	1
2	Case Studies & Research	Conducting user surveys, case studies, literature study, analysis of materials used and study of standards.	15	1, 2, 3
3	Concept Detailing	Form development, user journey maps, user stories, activity mapping.	15	1, 2, 3
4	Restaurant Interiors	Interior designing for multi-functional Restaurants and Banquet halls, multi-level planning, design and detailing of various work spaces, interactions zones. Design of hospitality spaces such as theme-based restaurants, corporate banquet venues etc.	35	1, 3, 4
5	Health Care Interiors	The design of Health care spaces, such as hospitals, consulting, treatment rooms, Diagnostic facilities – study of special acoustics and functional materials and furniture detailing.	40	1, 2, 4

Reference Books:

Joseph D Chiara, Julius Panero, & Martin Zelnick, Time Saver Standards For Interior Design & Space Planning, 2nd Edition, Mc-Graw Hill Professional, 2001

Francis.D. Ching & Corky Bingelli, Interior Design Illustrated, 2nd Edition, Wiley Publishers, 2004

Maureen Mitton, Interior Design Visual Presentation: A Guide To Graphics, Models, And Presentation Techniques. John Wiley And Sons, 2003

Robert Rengel, Shaping Interior Space, Fairchild Books & Visuals, 2002

e-Learning Source:

- <https://byarchlens.com/wp-content/uploads/2020/11/Neufert-4th-edition.pdf>
- <https://archive.org/download/avisualdictionaryofarchitecture/A%20Visual%20Dictionary%20of%20Architecture.pdf>
- <https://www.udemy.com/course/interior-architecture/>

Course Articulation Matrix: (Mapping of COs with POs and PSOs)																		
PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	3	3	2	3	-	1	2	3					3	3	2	3	1	
CO2	3	2	2	2	1	2	1	2					3	3	3	3	1	
CO3	3	2	3	1	-	2	2	3					3	3	3	3	1	
CO4	3	2	2	2	1	2	2	2					3	3	2	3	1	
CO5	3	2	3	1	-	2	2	3					3	3	3	3	1	

1- Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

<p>Ar. Safa Seraj Name & Sign of Program Coordinator</p>	<p>Sign & Seal of HoD</p>
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Integral University, Lucknow

Effective from Session: 2022-2023							
Course Code	DS364	Title of the Course	Elective-III (Barrier Free Design)	L	T	P	C
Year	3 rd	Semester	5 th	1	1	-	2
Pre-Requisite	None	Co-requisite	None				
Course Objectives	To understand communication channels, semiotics and its cultural aspects.						



Course Outcomes	
CO1	To understand the basic of Universal Design and its need in the current world
CO2	To know the Principles, Goals of Universal Design and various design spectrums
CO3	To understand the Universal - Inclusive - Accessible Design, Universal Design for Learning (UDL) and Use of Assistive technologies.
CO4	To know and apply the Physical accessibility standards for Barrier free environment
CO5	To make a mini project that will help the student to deal with projects in future

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	Orientation	What is Universal Design? Its Origin and emergence, Need and its relevance today, Examples of UD.	6	1, 2
2	Principles and Goals	Principles of universal design, Goals of Universal Design, Understanding above from various design spectrums- Product, building, information, service	7	2,3
3	Deep Dive	Universal - Inclusive - Accessible Design, Universal Design for Learning (UDL), Use of Assistive technologies, Research techniques like- AGNES (Age gain now empathy system simulation suit), Current ecosystem, Government Initiatives & policies.	5	C4
4	Accessibility Standards and Guidelines	Physical accessibility standards for Barrier free environment, Web accessibility, WAI (Web Accessibility Initiative), World Wide Web Consortium (W3C)	4	4, 5
5	Mini Project	As per brief	10	5

Reference Books:	
	Edward Steinfeld and Jordana L. Maisel, Universal Design – Creating Inclusive Environments, 2012
	William Lidwell, Kritina Holden, Jill Butler; Universal Principles of Design, 2003
	Bruce Hanington, Bella Martin; Universal Methods of Design, 2012
	James Holmes-Seidle , Barrier-Free Design, 1996 CPWD
e-Learning Source:	
	A Review of Barrier-Free Design In Built Environment by Anjali Sharma and Kuldeep Kumar
	Barrier Free Design For Disabled Persons by PI Falta
	Behavioral Factors In Barrier-Free Design by Adaptse EA UFMG

Course Articulation Matrix: (Mapping of COs with POs and PSOs)																		
PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
	CO1	3	1	2	2	3	3	1	1					3	3	1	2	3
CO2	3	1	1	2	3	2	1	2					2	2	2	1	2	
CO3	2	2	2	1	3	2	2	1					2	1	2	2	1	
CO4	2	1	2	2	3	3	2	1					3	1	2	2	1	
CO5	3	1	2	2	3	3	2	2					3	1	2	2	1	

1- Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

 Ar. Safa Seraj Name & Sign of Program Coordinator	 Sign & Seal of HoD
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Integral University, Lucknow

Effective from Session: 2022-2023							
Course Code	DS365	Title of the Course	Elective – III Sustainable Design	L	T	P	C
Year	3 rd	Semester	5 th	1	1	-	2
Pre-Requisite	None	Co-requisite	None				
Course Objectives	To enable the student to understand the need for adaptive reuse of old heritage buildings and applications of using recycled materials.						



Course Outcomes	
CO1	To understand the concept of adaptive reuse for heritage buildings and old structures
CO2	To know the importance of recycling and its value and need
CO3	To develop understanding for sustainability and issues related to it
CO4	To know the need for recycling the waste water and methods involved in treatment of waste water
CO5	To understand the importance of conservation and its intervention measures

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	Need for Adaptive Reuse	Cultural inheritance – heritage buildings and old structures – ascertaining the structural stability – estimation of the prolonged life of the building – strategies of adaptive reuse – investigation into material finishes etc.	8	1
2	Need for Recycling of Materials	The logic behind recycling – recycling of steel, wood, glass etc - estimation of the quality of recycled timber – criteria for recycling of steel, glass etc.	6	2
3	Concept of Sustainability	Earth summit declaration – definition of sustainability – economic, social and environmental issues – green rating of buildings – criteria for LEED rating.	6	3
4	Recycling of Waste Water	Sullage and sewage – techniques of water purification for sullage – treatment plant for sewage – techniques of biological and chemical purification.	6	4
5	Need for Conservation	Architectural conservation – conservation of heritage and important buildings – levels of intervention – structural, construction related, finishes etc. Revival of old building techniques and finishes	6	5

Reference Books:	
Harimohan Pillai – Heritage Conservation And Cultural Continuity – Saraswatham Publishers, 2002.	
Sustainable Building Design Manual – Teri Publication, 2004.	
Waste Management And Recycling – Compiled By C.T. Lakshmanan, Srm University.	
Sandra F Mandler - The Hok Guide Book For Sustainable Design – John Wiley And Sons, Canada,2002. 5. Conservation Guidelines For Pondichery – Dtcp, Pondichery – Intach 2000.	
e-Learning Source:	
https://sdgs.un.org/goals	
https://www.who.int/health-topics/air-pollution	
https://www.conserve-energy-future.com/causes-effects-solutions-depletion-naturalresources.php#:~:text=Resource%20depletion%20happens%20when%20the,fishing%2C%20mining%2C%20logging%20etc	
https://www.sciencedirect.com/science/article/abs/pii/S0360544220305168	

Course Articulation Matrix: (Mapping of COs with POs and PSOs)																		
PO-PSO CO	P O1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
	CO1	2	2	2	1	3	2	1	1					2	1	3	2	3
CO2	3	2	3	1	3	2	1	1					2	2	3	2	2	
CO3	2	1	3	1	2	1	1	1					2	2	3	3	3	
CO4	3	2	3	1	3	2	1	2					3	1	3	3	3	
CO5	3	2	2	1	3	2	1	1					3	1	3	2	2	

1- Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

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Integral University, Lucknow

Effective from Session: 2022-2023							
Course Code	DS368	Title of the Course	Working Drawing and Detailing	L	T	P/S	C
Year	3 rd	Semester	6 th	1	-	2	3
Pre-Requisite	None	Co-requisite	None				
Course Objectives	To learn & to draw working drawings used for interiors, building construction & Products						

Course Outcomes	
CO1	To prepare the technical drawing of door and windows details
CO2	To develop details of building surfaces - wall mural, ceiling and flooring
CO3	To develop the detail of drawing of furniture along with joinery details and materials details
CO4	To draw the working drawing for toilets with plumbing diagram
CO5	To understand and draw the working drawings of storage areas

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	Building Components	Working drawing of different types of doors and windows.	8	1
2	Building Surfaces	Working drawing of wall murals, reflected ceiling plans and flooring patterns.	6	1,2
3	Furniture	Working drawing of work station, living room furniture, bedroom furniture and dining tables.	15	3
4	Detailing of Special Areas	Working drawing for toilets with plumbing diagram – working drawing of kitchen with detailing of shelves and cupboards	10	4,5
5	Detailing of Storage Areas	Working drawing of wardrobes, TV cabinet and showcase, crockery shelves, cadenza, chest of drawers, dressing table, etc.	10	5

Reference Books:

De Chiara and Callender – Time Saver Standards for interior design, 1982

De Chiara et al – Time Saver standards for interior design and space planning, Mcgraw Hill, 1982

e-Learning Source:

https://www.designingbuildings.co.uk/wiki/Working_drawing

<https://www.slideshare.net/sanjibsengupta18/architectural-working-drawing-248307290>

<https://www.pearsonhighered.com/assets/samplechapter/0/1/3/2/0132740648.pdf>

Course Articulation Matrix: (Mapping of COs with POs and PSOs)																		
PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	3	2	2	2	3	3	1	1					2	3	2	1	2	
CO2	3	2	1	2	3	2	1	1					3	2	3	2	3	
CO3	2	2	2	1	3	2	2	1					3	3	3	1	3	
CO4	2	3	2	2	3	3	2	2					2	3	3	2	2	
CO5	3	3	2	2	3	3	2	2					2	2	3	1	1	

1- Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

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Integral University, Lucknow

Effective from Session: 2022-2023							
Course Code	DS369	Title of the Course	Estimation, Costing & Specification	L	T	P/S	C
Year	3 rd	Semester	6 th	2	1	-	3
Pre-Requisite	None	Co-requisite	None				
Course Objectives	To enables the students to calculate the estimated construction cost of a building and to know the present material and labour cost and to differentiate between them.						

Course Outcomes	
CO1	To develop specification and analysis of all types of interior decoration materials
CO2	To know about detailed knowledge of estimation and preparation
CO3	To know the necessity of rate analysis and factors affecting rate analysis
CO4	To develop the essential of tender documents and preparation of schedules
CO5	To develop the BOQ measurement books

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	Specification	Specification and analysis of all types of interior decoration material such as panelling, partitioning, false ceilings, flooring and floor covering, furniture, making specification for modern materials	8	1
2	Estimating	Define term Estimating and Costing, Objectives of Estimating, Types of Estimate: - Approximate Estimate, Detailed Estimate. Methods of preparing approximate Estimate: - Service Unit Method, Plinth Area Method, Cubical Content Method, Typical bay Method, Data required to Prepare detailed Estimate, Methods of preparing detailed Estimate: - Long wall-Short wall method and Center line Method	6	1,2
3	Rate Analysis	Introduction Interior Design, Necessity of rate analysis, Data required for rate analysis, Factors affecting rate analysis, Task work: Factors affecting task work, Task work of various skilled and unskilled labour, Schedule of Rate and Market Survey and Rate analysis of various construction items	14	3
4	Tendering	Essential of tender documents, Preparation of schedules and progress charts, Study of writing schedules for civil work, furniture items finishing items, services, etc, Study of units, mode of measurements, system of calculating quantities of different items like furniture, wall finishes, floor finishes, civil and plumbing works related to interiors.	10	4,5
5	Preparation of Measurement Book for BOQ	Measurement book: data required for Measurement book, Units for measurement, Preparation of BOQ by considering examples and Units for measurement.	10	5

Reference Books:

Dutta, B. N., Estimating And Costing In Civil Engineering
Birdie, G. S., Text Book Of Estimating And Costing.
Chakraborty, M., Estimating, Costing, Specification & Valuation
CPWD Specifications And Schedule Of Rate Analysis
Kohli, D.D And Kohli, R.C., A Text Book Of Estimating And Costing, S.Chand & Company Ltd.
Brook, Martin., Estimating And Tendering For Construction Work, 3 rd Edition, Elsevier.
Ashworth, A., Cost Studies Of Buildings, Pearson Higher Education
Cross, D.M.G., Builders' Estimating Data, Heinemann-Newnes
Sher, W., Computer-Aided Estimating: A Guide To Good Practice.
Standard Handbook For Civil Engineers
Standard Schedule Of Rates For Delhi, CPWD & UPPWD.
Standard Specifications, Cpwd & Uppwd
I. S. 1200 Parts I To Xxv – Method Of Measurement Of Building And Civil Engineering Works, Bureau Of Indian Standards
National Building Code Of India (Latest Edition), Bureau Of Indian Standards
C.O.A., Handbook of Professional Documents
I.I.A., Handbook on Professional Practice
Namavati, R.H., Professional Practice

Namavati, R.H., Theory and Practice of Valuation

Symes, Martin, Architects and their Practices

Building Specification Vol – I: <https://cpwd.gov.in/Publication/Specs2009V1.pdf>

Building Specification Vol – II: <https://cpwd.gov.in/Publication/Specs2009V2.pdf>

Schedule of Rates Vol – I: https://cpwd.gov.in/Publication/DSR_Vol_1_Hindi_2018.pdf

Schedule of Rates Vol – II: https://cpwd.gov.in/Publication/DSR_Vol_2_Hindi_2018.pdf

http://www.designingbuildings.co.uk/wiki/Tender_documentation_for_construction_projects

<https://acquisition.gov/far/current/html/FARTOCP16.html>

<http://admis.hp.nic.in/himpol/Citizen/LawLib/c88.htm>

<http://en.wikipedia.org/wiki/Arbitration> www.coa.gov.in/acts/conduct1989.htm

Course Articulation Matrix: (Mapping of COs with POs and PSOs)

PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	1	2	2	2	3	3	1	1					3	3	1	3	3	
CO2	1	2	3	2	3	2	1	2					2	3	1	3	2	
CO3	1	2	3	1	3	2	2	1					2	3	3	1	2	
CO4	1	3	3	2	3	3	2	1					3	3	3	1	3	
CO5	1	3	2	2	3	3	2	2					2	3	3	2	2	

1- Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation



Ar. Safa Seraj

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Integral University, Lucknow

Effective from Session: 2022-2023							
Course Code	DS370	Title of the Course	Digital Visualization - II	L	T	P	C
Year	3 rd	Semester	6 th	1	2	2	5
Pre-Requisite	Digital Visualization-I	Co-requisite	None				
Course Objectives	To enable students for using basic industry standard software like SketchUp, Lumion and Photoshop for 3D modeling and rendering						

Course Outcomes	
CO1	To know basic of photo-shop and its salient features of using photo-shop and its applicability
CO2	To develop skill of rendering and selection of material
CO3	To produce rendered models with brilliant lighting and exclusive materials details
CO4	To make enhancing the background of the model
CO5	To know the basics of photo-shop and its features

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	Introduction to Adobe Photoshop	Raster vs. Vector, creating new images, saving files for print, saving files for web/screen, working with Adobe Bridge	6	1
2	Work Area	Using the tools, using the options bar and other panels, undoing actions in photoshop, customizing the workspace, tools panel overview	5	2
3	Basic Photo Corrections	Strategy for retouching resolution and image size, adjusting the color in camera raw straightening and cropping the image in photo-shop, replacing colors in an image, adjusting saturation with the sponge tool repairing areas with the clone stamp tool, using the spot healing brush tool, using content-aware fill, applying the un-sharp mask filter	8	3
4	Working with Selections	About selecting and selection tools, using the quick selection tool, moving a selected area, manipulating selections, using the magic wand tool, selecting with the lasso tools rotating a selection selecting with the magnetic lasso tool cropping an image and erasing within a selection refining the edge of a selection	9	4
5	Typographic Design	About type creating a clipping mask from type creating type on a path warping point type designing paragraphs of type	5	5

Reference Books:

Adobe Photoshop Classroom in a Book: Conrad Chavez, 2021

Photoshop Cc For Dummies: Peter Bauer, 2006

How Do I Do That `n Photoshop? The Quickest Ways To Do The Things You Want To Do, Right Now: Scott Kelby, 2016

Mastering Lumion 3D: Master The Art Of Creating Real-Time 3D Architectural Visualizations Using Lumion 3D: Ciro Cardoso, 2014

Rendering In Sketchup: From Modeling To Presentation For Architecture, Landscape: Daniel Tal, 2013

e-Learning Source:

<https://support.lumion.com/hc/en-us/categories/360000646374-Tutorials>

<https://visualizingarchitecture.com/>

<https://helpx.adobe.com/in/photoshop/tutorials.html>

<https://www.photoshoppessentials.com/>

<https://help.sketchup.com/en/sketchup/getting-started-self-paced-tutorials>

Course Articulation Matrix: (Mapping of COs with POs and PSOs)

PO-PSO CO	Course Articulation Matrix: (Mapping of COs with POs and PSOs)																	
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	1	3	3	2	1	2	2	3					3	1	2	2	1	
CO2	1	2	2	1	1	3	2	2					3	1	2	2	1	
CO3	2	2	2	2	1	3	2	1					3	1	3	2	1	
CO4	1	3	3	1	2	3	2	2					3	1	3	2	1	
CO5	3	3	2	1	1	3	2	3					3	1	3	2	1	

1-Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

<p>Ar. Safa Seraj Name & Sign of Program Coordinator</p>	<p>Sign & Seal of HoD</p>
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Integral University, Lucknow

Effective from Session: 2022-2023							
Course Code	DS371	Title of the Course	Product Design Studio-II (Retail & Commercial Setting)	L	T	P	C
Year	3 rd	Semester	6 th	1	1	2	4
Pre-Requisite	Product Design Studio-I	Co-requisite	None				
Course Objectives	To introduce the students to the system thinking challenges, considerations and deliverables. To understand the relationship of the variants processes, people, products and parts that contribute towards the functioning of a system.						

Course Outcomes	
CO1	To understand the need and requirement of retail and commercial interior products.
CO2	To conceptualize the product design by inclusive planning and considering all the factors such as – trend, material, techniques, function, etc.
CO3	To explore transformation in interior product with respect to time and trend.
CO4	To aware with the selection of color scheme on lights, furniture, fixtures and other furnishing
CO5	To develop product prototyping of 3D model, rendered drawing and technical drawing.

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	Overview of Design Process and Its Ecosystem	Introduction to the design intervention in the human realm which add value and quality to the life. Identifying system comprehensible, tangible and accessible environments. Research of the system, components and stakeholders, Understanding the interrelationship and interdependency of various components of identified system.	12	1,2
2	Ideation	Introducing students to critical creative thinking tools, Design Relevance: Exposure and analysis, Case studies, Brainstorming; Differential Discussion; group methods to generate ideas; solitary methods to generate ideas; Lateral Thinking, concept generation and explorations with quick explanatory models	8	2,3
3	Case Studeies & Research	Conducting User surveys, and case studies, Analysing and mapping the strengths and weakness of the system, Synthesizing and prioritizing the research observations leading to design brief	12	3
4	Concept Detailing	User Journey maps, User stories, activity mapping, Prototyping of 3D models, Evaluation of new concepts, Finalization of the concept with design development and detailing	12	3,4
5	Design Project	Design and Development of Product as per the brief, Hand and computer Renderings and finished model of the final design solution	20	4,5

Reference Books:

- M. Chakraborti, .Estimation, Costing, Specification And Valuation In Civil Engineering.
- Dutta, Estimating And Costing, S. Dutta And Co., Lucknow 1983
- S. C. Rangwala, Elements of Estimating and Costing, Charoter Publishing House, Anand, India, 1984
- The Interior Designers Guide: To Pricing, Estimating Budgeting. By Theo Susan

e-Learning Source:

- [Product Design and Manufacturing - Course \(nptel.ac.in\)](https://www.nptel.ac.in/courses/101/101010001/)
- [Product Design and Innovation - Course \(nptel.ac.in\)](https://www.nptel.ac.in/courses/101/101010002/)

Course Articulation Matrix: (Mapping of COs with POs and PSOs)																		
PO-PSO CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
	CO1	2	2	3	1	2	-	2	3					2	3	3	3	2
CO2	2	2	3	3	2	2	1	3					3	3	3	3	3	
CO3	2	2	3	3	2	1	1	3					1	3	2	3	1	
CO4	3	2	3	3	2	1	1	3					3	3	3	3	3	
CO5	3	2	3	2	2	1	1	3					1	3	2	3	1	

Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation



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Integral University, Lucknow

Effective from Session: 2022-2023							
Course Code	DS372	Title of the Course	Interior Design Studio-IV	L	T	P	C
Year	3 rd	Semester	6 th	1	-	6	7
Pre-Requisite	Interior Design Studio-III	Co-requisite	Interior Design Studio-II				
Course Objectives	To study and develop innovative schemes for hotel and auditorium interiors, knowledge of working drawings						

Course Outcomes	
CO1	To understand the building typology or its function and the nature of space
CO2	To frame the requirements by understanding and considering the human behavioral needs
CO3	To decide the color scheme, materials to be used, furnishing as per the project and its local context
CO4	To include the new technology by satisfying the need and the demand to achieve the maximum utilization
CO5	To develop various technical drawings including the material estimation and detailing along with sketches, views and videos

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	Overview of Design Process and its Ecosystem	Documenting space (sketch and photo documentation), Space planning process (block diagram, concept statement),	7	1,2
2	Methodology & Ideation	Application of design principles and Elements, Creativity /originality Design, Process/methodology, Structural integration	7	1,2
3	Concept Designing	Concept sketching , Style, Color Rendering , Anthropometry and ergonomics, Furniture Design , Material selection, Graphic design (page layout and composition), Portfolio development	7	1,2
4	Design Project-1	AUDITORIUM Spatial and environmental standards for various auditorium – performing arts, cinema, convention Centre. Detail schematics of wall paneling, false ceiling and carpeting to satisfy acoustic requirements. Lighting study to develop ideas for foyer, auditorium and stage requirements. <i>Note: At least two major exercises and three minor time problems should be given. Internal marking shall be done in stages and project wise: Schematic layouts, Final layout , Sectional elevations, Designs & details</i>	42	3,4
5	Design Project-2	FIVE STAR HOTELS Spatial and service standards for five star hotels – integration of interior design schemes for rooms, restaurants, bars, health clubs, shopping arcade and other guest areas with the general theme of the hotel. Special ideas for suites and banquet halls – contemporary interior schemes to integrate new concepts in lighting and materials. <i>Note: At least two major exercises and three minor time problems should be given. Internal marking shall be done in stages and project wise: Schematic layouts, Final layout , Sectional elevations, Designs & details</i>	49	3,4

Reference Books:	
Joseph D Chiara, Julius Panero, & Martin Zelnick, Time Saver Standards for Interior Design & Space Planning, 2 nd Edition, Mc-Graw Hill Professional, 2001	
Francis.D. Ching & Corky Bingelli, Interior Design Illustrated, 2 nd Edition, Wiley Publishers, 2004	
Maureen Mitton, Interior Design Visual Presentation: A Guide To Graphics, Models, And Presentation Techniques. John Wiley and Sons, 2003	
Robert Rengel, Shaping Interior Space, Fairchild Books & Visuals, 2002	
Neufert Ernest, Architect's Data, Granada Pub. Ltd. London, 2000	
e-Learning Source:	
https://www.researchgate.net/publication/348321185_Learning_Anthropometry_from_Rendered_Humans	
https://www.sciencedirect.com/science/article/pii/S2215098616304578	

Course Articulation Matrix: (Mapping of COs with POs and PSOs)																		
PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	3	3	2	3	-	1	2	3					2	3	2	3	3	
CO2	3	2	2	2	1	2	1	2					2	3	2	3	3	
CO3	3	2	3	1	-	2	2	3					2	3	2	3	3	
CO4	3	2	2	2	1	2	2	2					2	3	2	3	3	



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Integral University, Lucknow

Effective from Session: 2022-2023							
Course Code	DS373	Title of the Course	Portfolio Development	L	T	P	C
Year	3 rd	Semester	6 th	1	-	-	1
Pre-Requisite	None	Co-requisite	None				
Course Objectives	To develop methods and techniques for impressive and professional portfolios						

Course Outcomes	
CO1	To know the purpose of developing a professional portfolio and its arrangement.
CO2	To develop authenticity and originality in work done by them.
CO3	To arrange the portfolio heads and creative tolls in the sequential manner to enhance the overall portfolio
CO4	To upload portfolio on reputed website for more exposure of jobs and opportunities.
CO5	To develop the methodology for achieving a portfolio that resembles the interior designer profession.

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	Career Perspective	Discussions about career and transfer possibilities, with possible in-class visits	3	1,3
2	Portfolio Review	Initial group peer review of work, Individual portfolio review, discussion of design work, intent and skills and discussion on career possibilities with each student during Portfolio Review.	3	2
3	Portfolio Process	Presentation techniques and Graphic design perspectives to compose design work for interior design portfolios, Basic graphic design, digital concepts and techniques are demonstrated from a design and production perspective with In-Design, Acrobat, Photoshop and various software, Design principles for successful page layout and integrating text with images for a cohesive visual story are addressed for portfolios and design presentation and investigation of the process of creating a visual biography of design work through digital and hard copy output.	3	1,2
4	Portfolio Creation Items For Investigation	Portfolio Cover and Portfolio Content, CD Cover and CD Label, Website from template	3	3
5	Portfolio Production	Digital and Printed Portfolio Presentation – Final Project <i>Students are expected to prepare a professional portfolio for themselves which will include their CV and works which they have been done during the course period. The portfolio should have a proper layout and design and should maintain professional standards and norms.</i>	4	4,5

Reference Books:

[Maureen Mitton, Portfolios For Interior Designers: A Guide To Portfolios, Creative Resumes, And The Job Search](#), 2010

Dianne Bender, [Design Portfolios: Moving From Traditional To Digital](#), 2008

e-Learning Source:

Jana Rosenblatt, [Future Interior Designer's Handbook](#), 2022

[Steal Like an Artist: 10 Things Nobody Told You About Being Creative \(Austin Kleon\)](#), 2014

Course Articulation Matrix: (Mapping of COs with POs and PSOs)																		
PO-PSO CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	2	3	3	3	-	1	2	3					2	1	1	1	2	
CO2	1	3	3	2	1	2	1	3					3	3	2	2	3	
CO3	1	3	3	1	-	2	2	3					3	3	3	3	3	
CO4	3	3	3	2	1	2	2	3					2	1	1	2	2	
CO5	2	3	3	1	1	1	1	3					1	2	2	2	1	

Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation



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Integral University, Lucknow

Effective from Session: 2023-2024							
Course Code	DS463	Title of the Course	Practical Training	L	T	P	C
Year	4 th	Semester	7 th	-	-	-	12
Pre-Requisite	None	Co-requisite	None				
Course Objectives	To enable the students to gain the kind and range of practical experience, this will prepare them for their likely responsibilities, immediately after qualifying B. Des. Course.						

Course Outcomes	
CO1	To enable the student to gain the kind and range of practical experience which will prepare them for their likely responsibilities, immediately after qualifying Bachelor of Design (Product & Interior Design) course
CO2	To acquaint with various work, procedures etc. of the designer profession
CO3	To maximize exposure of new material, technologies, building practices, etc.
CO4	To sensitize to be more observant to their surroundings by visiting the site
CO5	To enhance the professional development skill to deal with the client, labor, vendor, etc.

S. No.	Title	Content
1	Training Rules: Practical Training	The Head of Department of Architecture will approve the office of the ‘Practical-Training’ for the student. The marks for ‘Practical Training’ will be awarded to each student in accordance with the Regulations and Guidelines issued separately by the University.
2	Aims of Practical Training	The aim of the ‘Practical Training’ is to enable the students to gain the kind and range of practical experience which will prepare them for their likely responsibilities, immediately after qualifying B. Des Course. The ‘Practical Training’ should be regarded as an important academic activity. Howsoever good the arrangement of training may be, the trainee student, still, has the responsibility to use his own initiative in making the best use of the opportunities which he/she gets during training period and prepare himself/herself for the profession. The student should try to seek a variety of experiences in his/her ‘Training office’ to acquaint himself/herself with various works, procedures etc.
3	Guidelines For a Student Trainee: Honorarium/Stipend	Offices usually pay some amount as honorarium/stipend to meet out of pocket expenditure to the trainee. The University shall have no objection if the trainees accept/receive such honorarium/stipend. The mode and amount of the honorarium shall depend upon the office and be based upon a mutual agreement between the employing Firm and the trainee. However, it shall neither be a claim of the trainee nor binding on the firm but for proper professionalism and to maintain the dignity of profession, the training office pay a respectable amount as stipend/honorarium. The University/Training and Placement cell of the Institute shall not in any way be responsible for the payment against any sorts of damages, whatsoever.
4	Code of Conduct for The Trainee	He/she shall abide by the rules, regulations and general instructions of the office/firm. He/she shall remain punctual and regular in attendance. He/she shall make all efforts to learn the work involved in the profession, and if so required for work, shall attend the office beyond the scheduled time in the office. He/she shall respect and obey the senior members of the office/firm. He/she shall take up the job with full responsibility and show utmost interest in the work allotted. He/she shall inform the institute/training and placement cell about joining in the training office, its address and contact numbers. He/she shall also inform the address of the accommodation acquired during the training period. He/she shall remain in regular touch with the University/ ‘Training and Placement Cell’ and shall keep the Training and Placement Cell fully informed about his/her progress in the training office. In case of any complaint or misconduct, the University/Training and Placement Cell may take suitable and strict action against the student.
5	Joining and the Leaving Training Office	The trainee is expected to join the training office on the scheduled date, and submit his ‘Joining Report’ on the letterhead of the office duly signed by Head of the Training to the Institute in the Performa prescribed for the purpose and contained in the Log Book. The trainee must obtain a ‘No Dues Certificate’ duly and get relived from the office at the end of the training period or before changing the ‘Training Office’. The trainee must submit this ‘No Dues Certificate’ along with the Log Book.
6	Change of Training Office	In case of any emergency, a trainee may be permitted to change the training office/place of training once only during the entire period of training. He/she shall inform the Principal/Director/Head of Department/Officer in-charge of the ‘Training and Placement Cell’, and seek prior permission for such a change. The total duration of the practical training shall be the sum of the period of stay in different offices. It shall be in conformity with the ‘Duration of Training’ as prescribed in the ‘Ordinances, Scheme of Examination & Syllabus’ of the University.

		<p>from the architect.</p> <p>‘Daily Diary’ with details of the day to day work record, which will be returned to the student after assessment and viva voce examination. The suggested ‘Proforma’ of the page of the daily diary is available in the prescribed ‘Log-Book’.</p> <p>‘Training report’ supplemented with the prints and documents of work done during practical training. The prints and documents shall be obtained with the permission of the office and shall be duly signed by the ‘Supervisor’.</p> <p>Training report shall be submitted in three copies. First copy shall be returned to the student after assessment of Continuous Assessment marks and viva voce examination. The second copy shall be retained by the Training and Placement Cell/library. These shall be presented in A-4 size with ring binding.</p>
8	Failures	In case the student/trainee remains unsuccessful or fails in completing his/her practical training or viva-voce examination, the matter shall be dealt with in accordance with the relevant ‘Rules and Regulations’ of the University.



Reference Books:

Tomris Tangaz, Interior Design Course, 2006

Tomris Tangaz, The Interior Design Course: Principles, Practices and Techniques for the Aspiring Designer, 2006

Course Articulation Matrix: (Mapping of COs with POs and PSOs)																		
PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	2	3	3	2	1	1	2	3					3	2	3	3	3	
CO2	2	3	3	1	1	2	3	3					3	2	3	3	2	
CO3	3	3	3	2	1	2	2	3					3	2	3	3	3	
CO4	2	3	3	1	1	1	2	3					3	2	3	3	2	
CO5	2	3	3	1	1	1	2	3					3	2	3	3	2	
CO6	2	3	3	2	1	1	2	3					3	2	3	3	3	

1- Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

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Integral University, Lucknow

Effective from Session: 2023-2024							
Course Code	DS465	Title of the Course	Professional Practice	L	T	P	C
Year	4 th	Semester	8 th	2	1	-	3
Pre-Requisite	None	Co-requisite	None				
Course Objectives	To expose students to professional practice in design; Looking at Design from a business perspective						

Course Outcomes	
CO1	To acknowledge the social responsibilities and duties of an interior designer
CO2	To comply with regulations, guidelines and should avoid any Conflict, if any conflict occurs then flexibility to resolve it
CO3	To recognize the various strategies to adopt for running a business and their start-up as well
CO4	To appraise the morals and ethics in Interior Designer profession, familiarity with the conditions of engagements
CO5	To aware with legal provisions for practice and develop the ability to set-up practice and office management

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	Entrepreneurship	Social Entrepreneurship, Business Entrepreneurship, Trading Entrepreneurship, Corporate Entrepreneurship, and Agricultural Entrepreneurship	8	1,2
2	Business Foundation	Timmons Model of Entrepreneurship, Investment Models, Startup Business Models, Business Plans, Pitch presentations, Small Business models	10	2
3	Legal Aspects of Business	Contracts and Agreements, Conflict Resolution, Arbitration	8	2,3
4	Running a Design Business	Set up of an independent design business, Hiring processes, Project Scheduling and work delegation, Cost Estimation; Billing, salaries and taxation	12	3,4
5	Professional Ethics	Ethics in Profession, Code of conduct	10	5

Reference Books:	
Riadh Habash, Green Engineering: Innovation, Entrepreneurship And Design, 2017	
Ted Crawford, AIGA Professional Practices In Graphic Design, Allworth Press, 2008	
Douglas Davis, Creative Strategy And The Business Of Design, 2016 Shan Preddy, How To Run A Successful Design Business	
The New Professional Practice, Gower Publishing, Ltd., 2011	
Min Basadur, Michael Goldsby, Design-Centered Entrepreneurship, 2016	
e-Learning Source:	
https://www.jstor.org/stable/1511851?seq=4#metadata_info_tab_contents	
https://onlinecourses.nptel.ac.in/noc19_hs35/preview	
https://nptel.ac.in/courses/110105097	

Course Articulation Matrix: (Mapping of COs with POs and PSOs)																		
PO-PSO CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
	CO1	2	3	1	2	3	1	2	3					2	3	2	3	2
CO2	2	3	1	1	3	2	3	3					3	3	3	3	1	
CO3	3	3	2	2	3	2	2	3					2	3	3	3	2	
CO4	2	3	1	1	3	1	2	3					3	3	3	3	1	
CO5	2	3	1	1	3	1	2	3					1	3	2	3	3	

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Integral University, Lucknow

Effective from Session: 2023-2024							
Course Code	DS466	Title of the Course	Graduation Project	L	T	P	C
Year	4 th	Semester	8 th	-	-	10	10
Pre-Requisite	None	Co-requisite	None				
Course Objectives	To expose students to professional practice in design; Looking at Design from a business perspective						

Course Outcomes	
CO1	To know the important heads required for Graduation Projects and its format in a sequential order
CO2	To understand various creative design thinking tools to execute the study and its evaluation for preparation of jury
CO3	To develop the ideas and concept for their own project and also knowing the execution in reality.
CO4	To produce the design by considering the context and future demand with schematic design solution and layout presentation
CO5	To develop the personality and confidence to take up any project and accomplish it in prescribed time

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	Preparation	Course description, Introduction and Getting to know the content required for Graduation Project-Preparation of list of design requirements and brief, Identification of the constraints and the design problem environment.	20	1,2
2	Concept Generation	Starting concept generation stage, Introduction to creative design thinking tools, Evaluating the work constantly, Continuation of concept generation and Preparation for the first jury evaluation	40	2,3
3	Design Development	Amending the design concepts, Developing the design ideas , Starting engineering drawings to scale to develop on real situations, Continue development, Preliminary evaluation of the developed designs, Discussions and Studying presentation layouts and Preparing for the second jury evaluation	40	2,3
4	Detailed Design	Taking the jury notes on board, production of final details, Producing detailed engineering drawings, Producing meaningful 3D shots and Studying the presentation scheme and layout	20	3,4
5	Submission	Preparing for the Final Presentation, Presentation preparations and Final Evaluation Submission	40	3,4,5

Reference Books:

Ahmed Mohammed Hassanien, Architecture Graduation Project Book, 2021

Omarntation, Graduation Project Book, 2017



e-Learning Source:

https://onlinecourses.nptel.ac.in/noc19_hs35/preview

<https://nptel.ac.in/courses/110105097>

Course Articulation Matrix: (Mapping of COs with POs and PSOs)																		
PO-PSO CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
	CO1	2	3	3	2	1	1	2	3					2	3	2	3	5
CO2	2	3	3	1	1	2	3	3					3	3	3	3	1	
CO3	3	3	3	2	1	2	2	3					1	3	2	3	3	
CO4	2	3	3	1	1	1	2	3					3	3	3	3	1	
CO5	2	3	3	1	1	1	2	3					1	3	2	3	3	

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Integral University, Lucknow

Effective from Session: 2023-2024							
Course Code	DS467	Title of the Course	Elective IV : Entrepreneurship Development	L	T	P	C
Year	4 th	Semester	8 th	1	2	-	3
Pre-Requisite	None	Co-requisite	None				
Course Objectives	To develop competencies in the students to setup small scale manufacturing unit related to interiors and interior accessories like furniture and interior product lineage and to encourage the concept of self-employment and to be an employer (job creator) accessories.						

Course Outcomes	
CO1	To understand the philosophy of Entrepreneurship and its importance in our country
CO2	To develop the mind set of the student through market survey and opportunity related to Interior Designer
CO3	To know the various management process and designations related to their expertise
CO4	To enhance the various ways of presentation and techniques to develop the presentation more accurate and legible. Also it helps to know the tips to make a presentation more attractive and trending through software
CO5	To understand the procedure for small industry start up through Policies for financial resources

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	Entrepreneur	Concept and nature, scope and philosophy of entrepreneurship, Distinction between self-employment and entrepreneurship, Importance of entrepreneurship and self-employment in our country, Entrepreneurial traits and Different forms of business organizations (sole proprietorship, partnership, co-operative societies, public and private undertakings)	8	1
2	Entrepreneurial Support System	Introduction, Sources of information and Market survey and opportunity identification	10	2
3	Elements of Management	Principles of management and managerial functions like planning, organizing, staffing, directing and controlling, industrial management and Value of human relations in management	8	3
4	Project Management : Elementary	Introduction to project management, Time of progress chart, bar chart, Gantt chart, CPM & PERT, Planning of activities, Allocation of time to various activities, Personal management and industrial relations- recruitments, selection, training, wage and salary administration related to small industries.	12	3,4
5	Project Management	Costing- methods and techniques of minimizing cost, Marketing- concept and functions, marketing mix, product planning, salesmanship and its principles, Sources of finance and Setting up of small scale industry with proper knowledge of Government Policies for financial resources (like banks and other financial bodies).	10	4,5

Reference Books:	
Ahmed Mohammed Hassanien, Architecture Graduation Project Book, 2021	
Omarnation, Graduation Project Book, 2017	
Entrepreneurship Development and Management by R. K. Singhal	
Strategic Entrepreneurship by P. K. Gupta	
Construction Management and Accounts by V. N. Vazirani & S. P. Chandola	
Principles of Management by Y. K. Bhushan	
e-Learning Source:	
https://onlinecourses.nptel.ac.in/noc19_hs35/preview	
https://nptel.ac.in/courses/110105097	

Course Articulation Matrix: (Mapping of COs with POs and PSOs)																		
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CO2	1	3	2	1	1	2	3	3					3	3	3	3	1	
CO3	1	3	2	2	1	2	2	3					1	3	2	3	3	
CO4	1	3	3	1	1	1	2	3					3	3	3	3	1	

CO5	1	3	3	1	1	1	2	3					1	3	2	3	3	
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1-Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation



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CO1	3	2	2	2	3	1	2	3					1	3	2	3	5	
CO2	3	1	2	1	3	2	3	3					3	1	3	2	1	
CO3	3	2	1	2	3	2	2	3					1	1	3	2	3	
CO4	3	2	2	1	3	1	2	3					3	3	3	3	1	
CO5	3	2	2	1	3	1	2	3					1	3	2	3	3	

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Integral University, Lucknow

Effective from Session: 2023-2024							
Course Code	DS469	Title of the Course	Elective IV: Green Interiors	L	T	P	C
Year	4 th	Semester	8 th	1	2	-	3
Pre-Requisite	None	Co-requisite	None				
Course Objectives	To develop awareness and familiarity with green design and its integration with Interior Design, assess the influence of green interior and distinguish green materials						

Course Outcomes	
CO1	To develop an understanding for concept of Green Interiors. Able to know the Principles and aim of green interiors
CO2	To understand the basic elements of Indoor Environmental Quality and the process involve in maintaining indoor environmental quality
CO3	To know the selection of material by understanding its demand, cost and environmental impact
CO4	To built a confidence in profession and decision making for green interiors projects
CO5	To know concept behind rating and how to achieve the rating in their own projects

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	Introduction to Green Interiors	Introduction to Green interiors. Definition and concept of Green interiors, aims and objectives. Importance and necessity of Green interiors. Brief history and development of green interiors. Principles of green interiors.	8	1
2	Indoor Environmental Quality	Efficient use of space, energy and water in green interiors. Elements associated with Indoor Environmental Quality like indoor air quality, acoustic comfort, thermal comfort and visual comfort. Constructional guide lines for maintaining indoor environmental quality. Green indoor landscape – plants, ground covers, green pavers.	10	2
3	Green Interior Materials and their Adaptation	Sustainable Environment in Interior Design: Design by Choosing Sustainable Materials- The Demand for Sustainable Solutions Sustainable materials, Source of Materials, Sustainable Interior Design and Sustainable design elements.	8	3
4	Interior Designer's Role	Selection of materials, climate consideration, available light, furnishing and Enhance Energy Efficiency. Design Principles that promote Sustainable Interior Planning. Considering the Environmental Impacts while Planning.	12	3,4
5	Rating System	Concept of rating in India, Indian rating systems for 'green' buildings : LEED/ IGBC (Indian Green Building Council) Green Ratings, GRIHA (Green Rating for Integrated Habitat Assessment) by TERI (The Energy and Resources Institute), IEP (Integrated Energy Policy), BEE Star Rating, etc.	10	4,5

Reference Books:

- Riadh Habash, Green Engineering: Innovation, Entrepreneurship And Design, 2017
- L. Dennis, C. Porter Green Interior Design: The Guide To Sustainable High Style, 2021
- William Richards , Bamboo Contemporary: Green Houses Around The Globe
- Ida Magntorn , The Sustainable Home: Easy Ways To Live With Nature In Mind
- Thad Orr And Mike Lucas , Architectural Gardens: Inside The Landscapes Of Lucas & Lucas

e-Learning Source:

- http://www.gardenvisit.com/landscape_architecture/landscape_debate/definition_eid
- http://agritech.tnau.ac.in/horticulture/horti_Landscaping_types%20of%20garden.html
- <https://dgfscdhg.gov.in/national-building-code-india-fire-and-life-safety>
- <https://iieta.org/Journals/IJSSE>

Course Articulation Matrix: (Mapping of COs with POs and PSOs)																		
PO-PSO CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
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CO2	1	3	1	3	1	1	2	2					3	1	3	2	1	
CO3	2	3	3	1	2	3	1	3					1	3	2	3	3	
CO4	3	3	2	2	1	2	2	3					2	3	2	2	1	

CO5	3	3	2	1	2	1	2	2					3	1	3	2	3	
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