Integral University, Lucknow

Effective from Session: 2025-26							
Course Code	**DS158**	**Title of the Course**	**Design Fundamentals-I**	**L**	**T**	**P**	**C**
Year	1st	**Semester**	1st	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 colours 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	Definitions and meaning of design, importance of design, examples of design from nature. Line, Dot, Shape, Texture, Space, Form, Unity/harmony & colour. 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 of2-D to 3-D.	16	3,5
4	Patterns, abstraction and tessellations	Principles of composition using grids, symmetrical/asymmetrical, Rule of Thirds, Center of Interest, Gestalts' Theory of Visual Composition. Pattern recognition, abstraction and construction using points, dots, shapes, etc. 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, 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:

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. Mohammad Fahad Aslam **Name & Sign of Program Coordinator**	**Sign & Seal of HoD**

Integral University, Lucknow

Effective from Session: 2025-26							
Course Code	**DS159**	**Title of the Course**	**Anthropometrics & Ergonomics**	**L**	**T**	**P**	**C**
Year	1st	**Semester**	1st	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 somatotypes, Static and dynamic anthropometry, Stand Posture erect, Anthropometry landmark: Sitting postures, Anthropometry: squatting and cross-legged postures, Anthropometric measuring techniques.	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. Analyzing how humans and furniture relate, investigating terms such as "user- friendly", "user-centered" and "inclusive" design.	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	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**

Ar. Mohammad Fahad Aslam **Name & Sign of Program Coordinator**	**Sign & Seal of HoD**

Integral University, Lucknow

Effective from Session: 2025-26							
Course Code	**DS 160**	**Title of the Course**	**History of Design – I**	**L**	**T**	**P**	**C**
Year	1st	**Semester**	1st	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 19th and 20th century & evolution of product design

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 Direction in Art & Evolution of Product Design	*Context for new directions in art* in the late 19th and early 20th century. Study of famous and influential Artists, Craftsmen and people who pioneered innovations in their own fields and their influence on design and other fields. *Evolution of Product Design* - Effects of Industrial Revolution, James Hargreaves' spinning jenny, Josiah Wedgwood' pottery factory, Art Nouveau, Bauhaus Movement, Experimentation and Anti Design in 1970s and Neo Modernist Design.	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	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	

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

Ar. Mohammad Fahad Aslam **Name & Sign of Program Coordinator**	**Sign & Seal of HoD**

Integral University, Lucknow

Effective from Session: 2025-26							
Course Code	**DS161**	**Title of the Course**	**Creative Visualization Techniques**	**L**	**T**	**P**	**C**
Year	1st	**Semester**	1st	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	Object drawing fundamentals; Principles of drawing in perspective. Sketching freehand One point, two point and three-point Perspective. Guides to representing design features/elements in 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. Improving mind-eye co-ordination for sketching; types of design sketches.	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 Pogany, 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/1Pw627yqOmH8l0Jf9Ax5BVt3sRNPi0vyl?usp=share_link

	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					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	

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

Ar. Mohammad Fahad Aslam **Name & Sign of Program Coordinator**	**Sign & Seal of HoD**

Integral University, Lucknow

Effective from Session: 2025-26							
Course Code	**DS162**	**Title of the Course**	**Drawing & Rendering-I**	**L**	**T**	**P**	**C**
Year	1st	**Semester**	1st	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	*Orthographic projections:* Definition. Planes of projection, Four Quadrants, First Angle Projections, Third Angle Projections. Projection of Point when point is situated in first & third quadrant. Projection of Line parallel to one or both the planes, etc.	10	2
3	Projection of Solids	*Orthographic projections:* Solids	25	3
4	Sectioning & Intersection	Section of Solids, Intersection of Solids	10	4
5	Axonometric 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,projectinfo-Arch.dwg

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

http://www3.ul.ie/~rynnet/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 2Correlation; 3- Substantial Correlation**

Integral University, Lucknow

Ar. Mohammad Fahad Aslam **Name & Sign of Program Coordinator**	**Sign & Seal of HoD**

Integral University, Lucknow

Effective from Session: 2025-26							
Course Code	**DS163**	**Title of the Course**	**Materials and Processes**	**L**	**T**	**P**	**C**
Year	1st	**Semester**	1st	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 behaviour 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 of Wood, bamboo, cane, leather, fabric & jute	8	2
3	Exploration of Materials	Exploration of materials such as Steel, Brass, Bronze, Copper, Aluminium, Nickel, Tin, Lead, Zinc and Alloys etc.	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, Overview of the process of creating material boards. Preparation of actual scale models.	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. Mohammad Fahad Aslam **Name & Sign of Program Coordinator**	**Sign & Seal of HoD**

Integral University, Lucknow

Effective from Session: 2025-26							
Course Code	**DS168**	**Title of the Course**	**Design Fundamentals II**	**L**	**T**	**P**	**C**
Year	1st	**Semester**	2nd	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 girds 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 Design* – grids, symmetry/asymmetry, scale, mass, proportion, contrast, Rule of Thirds, Center of Interest on the basis of design elements, Gestalts Theory of Visual composition, figure ground relationships.	16	1,2
2	Ordering principles	*Ordering Principles* such as Axis, Symmetry, Hierarchy, Datum, Rhythm & Repetition. Pattern, Movement, Harmony, Variety and Unity	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. Composition and Case studies of analyzing consumer products (2D & 3D) for their design language.	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. Mohammad Fahad Aslam **Name & Sign of Program Coordinator**	**Sign & Seal of HoD**

Integral University, Lucknow

Effective from Session: 2025-26							
Course Code	**DS 169**	**Title of the Course**	**Construction Techniques & Representation-I**	**L**	**T**	**P**	**C**
Year	1st	**Semester**	2nd	-	-	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, including accessories for toilet, kitchen, office, etc. *Development of Products:* Technological and structural aspects of development of Products.	12	1
2	Stones	*Stones:* Igneous, metamorphic & sedimentary – classifications, types, properties, availability, applications	12	2
3	Rubber and Bamboo	*Rubber:* Natural rubber, latex, coagulation, vulcanizing and synthetic rubber-properties and application *Bamboo:* Properties & Applications in Interior Design, Thatch, Coir etc.	16	3
4	Plastic	*Plastics:* Types, thermosetting and thermoplastics, resins, common types of mouldings, fabrication of plastics, polymerization and condensation. *Plastic coatings reinforced plastic, plastic laminates:* Properties, uses and applications.	14	4
5	Partitions and False Ceiling	*Partition walls:* all types of partitions – full height, half & dwarf, double skinned, single skinned, frameless glass, etc. *Wall Panelling:* Decorative and Commercial plywood, Ply-board, block boards, Particle board, Wood wool cement board, Fiber board (MDF), Insulation board, Compressed straw board, Veneers and Laminates *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

Binggeli, Corky. Materials for Interior Environments. John Wiley & Sons, 2008.

Francis D. Ching, Building Construction Illustrated, Wiley Publishers, 2008.

E-Learning Source:

https://www.theproductfolks.com/product-management-blog/tech-product-development-from-idea-to-launch

https://asana.com/resources/product-development-process

	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	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**

Ar. Mohammad Fahad Aslam **Name & Sign of Program Coordinator**	**Sign & Seal of HoD**

Integral University, Lucknow

Effective from Session: 2025-26							
Course Code	**DS170**	**Title of the Course**	**History of Design-II**	**L**	**T**	**P**	**C**
Year	1st	**Semester**	2nd	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 elements & style in interior environments
CO2	To study furniture, decorative arts, colours & materials
CO3	To study Greek, Roman, Chinese & Japanese Interior styles
CO4	To learn about elements used in interiors in Europe
CO5	To learn about the historical contribution of Product Designers

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.	8	1
2	Classical World	Elements, furniture, decorative arts, colours & materials: Egyptian - Indus Valley Civilization - The ancient Near East - Samarians, Babylonians, Assyrians, Persians	7	2
3	The Middle Ages	Study of Decorative Styles and Elements of Greek, Roman Architecture and Eastern influences - China and Japan relevant to Interior Design.	8	3
4	European Architecture & Interiors	Studying the influence of Early Christian and Byzantine, Romanesque and Gothic, Renaissance in Italy, Spain, France and England, Baroque, Rococo, Neoclassicism – Boulle, LeDoux for the elements used in interiors.	9	4
5	Contribution of Product Designers	Contribution of Product Designers and their works with respect to products developed for interior spaces - Charles and Ray Eames, Achille Castiglioni, Marc Newson, Arne Jacobsen, Marcel Breuer, Philippe Starck, Ettore Sottsass, Naoto Fukasawa, Karim Rashid, Gae Aulenti and Norman Foster.	7	5

Reference Books:

Design History Handbook, Domtilla Dardi & Vanni Pasca

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.onlinedesignteacher.com/2016/02/furniture-design-history.html

https://www.britannica.com/technology/furniture

https://designwanted.com/10-most-influential-product-designers/

	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. Mohammad Fahad Aslam **Name & Sign of Program Coordinator**	**Sign & Seal of HoD**

Integral University, Lucknow

Effective from Session: 2025-26							
Course Code	**DS171**	**Title of the Course**	**Computer Design & Digital Fabrication**	**L**	**T**	**P**	**C**
Year	1st	**Semester**	2nd	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 know basic knowledge of Sketchup
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 to Microsoft Office	Computer Orientation, Microsoft word, Microsoft excel, Microsoft presentation software, scanning and MS Paint.	4	1
2	AUTOCAD: 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. Introduction to the menu, starting drawings from scratch. Creating and using templates- starting drawings with setup wizards. Saving and closing a file.	4	2,3
3	AUTOCAD: Limits & Layers, Dimensions, Calculations & Grouping	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. 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 residence- one exercise to be done as lab assignment.	8	2,3
4	Basics of Sketchup	Learning Navigation, Building the Platform Using Interface. Core Concepts: Edges and Surfaces, Interface, Axis. Push-Pull. Drawing Tools: Circles, Arcs, Rectangles, Offset, Eraser. Selection Methods, Grouping, Components. Understanding Versatile Move Tool & Follow Me.	4	4
5	Basics of Adobe Photoshop	Tool box (Moving, marque tool), Magic ward selection, Crop tool, Paint Brush, Opacity, Tent Styles, Blue tool, Sharpening Tool, Colour correction, Layers, moving Tool, Masking Tool.	6	5

Reference Books:

Auto Desk, Revit 2024 for Architecture, Sybex, 2024.

Auto Desk, 3DS MAX comprehensive tutorial resources Wiley 2024.

Sketch up for interior Design. 3D visualising designing & space planning by Lidya Sloan, Wiley Publisher —2020

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. Mohammad Fahad Aslam **Name & Sign of Program Coordinator**	**Sign & Seal of HoD**

Integral University, Lucknow

Effective from Session: 2025-26							
Course Code	**DS172**	**Title of the Course**	**Drawing & Rendering II**	**L**	**T**	**P**	**C**
Year	1st	**Semester**	2nd	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	Explore finishes, materials & study product design fundamentals
CO2	Understand the wood joinery details, partition walls and wall panelling 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, Materials and Texture Simulation:	*Finishes & Materials:* 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. Types of staircases, different materials – RCC, wood, steel staircase, etc. *Exploring different rendering media:* pencils and watercolour for sketching; different materials and their textures. Acrylic, gel pens and markers for sketching to simulate different materials and textures. *Product drawing fundamentals:* Communicating 3D in 2D; Revisiting perspective drawing of products; light, shade and reflectivity; Representing design elements and material thicknesses; representing detail as required for guiding manufacturing.	20	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 panelling*: 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.	15	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 unit, etc.	15	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.	14	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**

Integral University, Lucknow

Ar. Mohammad Fahad Aslam **Name & Sign of Program Coordinator**	**Sign & Seal of HoD**