



PROGRAM OUTCOMES

- [PO.1]. **Design knowledge:** Apply the knowledge of mathematics, science and design fundamentals to the solution of complex problems.
- [PO.2]. **Problem analysis:** Identify, formulate, research literature, and analyse complex problems reaching substantiated conclusions using principles of design and sciences.
- [PO.3]. **Design/development of solutions:** Design solutions for complex problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
- [PO.4]. **Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
- [PO.5]. **Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex design activities with an understanding of the limitations.
- [PO.6]. **The Designer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional practice.
- [PO.7]. **Environment and sustainability:** Understand the impact of the professional design solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
- [PO.8]. **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the design practice.
- [PO.9]. **Individual and teamwork:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
- [PO.10]. **Communication:** Communicate effectively on complex design activities with the related community and society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
- [PO.11]. **Project management and finance:** Demonstrate knowledge and understanding of the design and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
- [PO.12]. **Life-long learning:** Recognize the need for and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

PROGRAM SPECIFIC OUTCOMES

- [PSO.1]. **Academic and Industry:** Apply creative, innovative, intellectual learning to establish academic and professional excellence in the field of Interior Design.
- [PSO.2]. **Critical Thinking:** To produce technical, communicative and conscious design of interior spaces and related products.
- [PSO.3]. **Global Standards:** Meet global standards to underpin design, technological & business development.

PROGRAM ARTICULATION MATRIX

Semester	Course Code	PROGRAM OUTCOMES												PROGRAM SPECIFIC OUTCOMES		
		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
I	ID1101	2	1	0	1	3	0	1	0	1	3	0	3	3	2	1
	ID1102	3	1	3	1	2	0	2	0	0	3	0	3	3	3	2
	ID1103	3	2	2	0	1	0	2	2	0	3	1	3	2	2	1
	ID1104	3	2	2	0	1	0	2	2	0	3	1	3	2	2	1
	ID1105	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	ID1106	3	3	2	2	1	1	3	2	3	1	2	2	1	3	1

Semester	Course Code	PROGRAM OUTCOMES												PROGRAM SPECIFIC OUTCOMES		
		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
II	ID1201	3	3	3	1	0	0	0	0	0	0	0	3	3	3	2
	ID1202	3	3	3	1	1	0	3	0	0	0	0	3	3	3	2
	ID1203	3	0	1	0	0	0	0	0	0	3	0	3	3	2	3
	ID1204	3	3	3	3	2	3	2	2	3	2	2	3	3	3	2
	ID1205	2	3	3	3	3	2	1	2	3	2	3	2	3	3	0
	ID1206	0	0	0	2	3	1	0	0	2	3	0	3	1	1	0

Semester	Course Code	PROGRAM OUTCOMES												PROGRAM SPECIFIC OUTCOMES		
		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
III	ID2101	3	3	2	1	0	1	3	0	0	0	1	1	1	3	3
	ID2102	3	1	3	3	1	0	0	0	0	1	0	3	3	3	3
	ID2103	3	0	3	0	0	3	1	0	0	1	0	3	2	3	1
	ID2104	3	1	1	3	2	2	3	2	2	1	2	2	2	2	3
	ID2105	0	3	0	0	0	0	3	0	0	0	0	0	2	1	2
	ID2106	3	3	2	1	0	1	3	0	0	1	1	0	1	3	3

Semester	Course Code	PROGRAM OUTCOMES												PROGRAM SPECIFIC OUTCOMES		
		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
IV	ID2201	1	2	2	1	1	3	2	0	3	1	2	2	1	2	2
	ID2202	3	2	3	2	1	2	3	0	0	1	0	3	3	2	2
	ID2203	3	3	3	0	1	3	3	0	0	0	0	0	3	3	3
	ID2204	2	3	2	3	3	2	1	2	3	3	3	2	3	3	0
	ID2205	1	3	2	1	2	3	3	2	3	3	2	2	1	3	1
	ID2206	2	0	0	0	3	0	0	0	0	3	0	3	2	3	3

MANIPAL UNIVERSITY JAIPUR

School of Planning and Design

Department of Interior Design

Course Hand-out

Interior Design I | ID 1101 | 6 Credits

Session: Jul 20 – Nov 21 | Faculty: Ar. Apoorva Agarwal, Ar. Sneha Singh & Ar. Heena Ajmera | Class: Studio + Practical



A. Introduction: This course is offered in the first semester of B. Des Interior Design in order to develop a perception of spaces through interior elements and understand the relation between them. It should help students to be able to understand and follow the process of design and visual concepts.

B. Course Outcomes: At the end of the course, students will be able:

[1101.1]. To Interpret and illustrate elements & principles of design.

[1101.2]. Analyse interior space through various aspects such as form, scale, light, dimensions etc to inculcate basics of designing skills.

[1101.3]. Apply anthropometrical study of various spaces & it's applications in interior design.

C. Program Outcomes and Program Specific Outcomes:

[PO.1]. **Design knowledge:** Apply the knowledge of mathematics, science and design fundamentals to the solution of complex problems.

[PO.2]. **Problem analysis:** Identify, formulate, research literature, and analyse complex problems reaching substantiated conclusions using principles of design and sciences.

[PO.3]. **Design/development of solutions:** Design solutions for complex problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

[PO.4]. **Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

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[PSO.2]. **Critical Thinking:** To produce technical, communicative and conscious design of interior spaces and related products.

[PSO.3]. **Global Standards:** Meet global standards to underpin design, technological & business development.

D. Assessment Rubrics:

Criteria	Description	Maximum Marks
Internal Assessment (Summative)	In class Assignments, Activity feedbacks, Internal evaluation by design reviews of drawings and models	60
	External evaluation by Jury	40
	Total	100
Attendance (Formative)	A minimum of 75% Attendance is required to be maintained by a student to be qualified for taking up the End Semester examination. The allowance of 25% includes all types of leaves including medical leaves.	
Make up Assignments (Formative)	Students who misses a class will have to report to the teacher about the absence. A makeup assignment on the topic taught on the day of absence will be given which has to be submitted within a week from the date of absence. No extensions will be given on this. The attendance for that particular day of absence will be marked blank, so that the student is not accounted for absence. These assignments are limited to a maximum of 5 throughout the entire semester.	
Homework/ Home Assignment/ Activity Assignment (Formative)	There are situations where a student may have to work in home, especially before a flipped classroom. Although these works are not graded with marks. However, a student is expected to participate and perform these assignments with full zeal since the activity/ flipped classroom participation by a student will be assessed and marks will be awarded.	

E. Syllabus

INTRODUCTION TO DESIGN- Definition & importance, Elements & Principles of Design with respect to interiors: Ratio; proportions – golden ratio. Interior space – spatial qualities: form, scale, composition. Understanding Aesthetics: Materials, Textures, Colours, Light in space design., height of space; spatial transitions – openings within wall planes, doorways, windows, stairways.

ANTHROPOMETRY: Definition, theory of standard dimension based on human figures for activities, functions, circulation, furniture, spatial requirements etc. Basic Study of Ergonomics. Visual analysis of designed spaces for comfort.

SUGGESTED DESIGN PROJECTS: Integration of spaces and function in the design of bus shelter, milk booth, watchman's cabin, flower stall, ATM centre, small cafeteria, food truck etc.

F. Reference Book

R1 Joseph D Chiara, Julius Panero, & Martin Zelnick, (2001), Time Saver standards for Interior Design & space planning, 2nd edition.

- R2 Francis.D. Ching & Corky Bingelli, (2004), Interior Design Illustrated.
 R3 Julius Panero & Martin Zelnick, (1979), Human Dimension & Interior Space: A source book of Design Reference standards.
 R4 Broomer, F. Gerald, (1974), Elements of Design: Space.
 R5 Simon Dodsworth (2009), The Fundamentals of Interior Design.
 R6 Karlen Mark, Kate Ruggeri & Peter Hahn, (2003), Space Planning Basics.

G. Lecture Plan:

Lec No	Topics	Session Objective	Mode of Delivery	Corresponding CO	Mode of Assessing the Outcome
1	Orientation Lecture about the profession of interior design and role of an interior designer as the team member.	To make students comfortable with basic design terms and its culture.	Lecture (Ar. Sneh Singh)	1101.1	<p>ASSIGNMENT 1 T shirt printing – Symbolic abstraction of yourself Theme: Represent yourself Write 10 words that come to mind when you think about yourself. They can be any words. They may represent different facts, thoughts, ideas, taste, habits & hobbies of yourself. Each student can either draw, sketch, paint, write, cut & paste or adopt any medium to design the portrait which give an introduction of yourself to your teachers and friends & As this is your new Phase of Life. Don't forget to put your photo in the portrait.</p> <p>Submissions:- a) Composition on A2 sheet (landscape). Space for T shirt picture b) Showcasing the printed T shirt</p>
2	Introduction to the Elements of Design.	Student will be able to know their profession & explore the use of visual language of communication.	Lecture & Discussion (Ar. Sneh Singh)	1101.1	<p>ASSIGNMENT 2 (Elements in Space) To explore the environment with a camera, looking for interesting visual examples of Point, Line and Plane of your residence and near proximity and choose two best examples of each element of Design.</p> <p>Studio Work: - Identifying the elements of design within the pictures selected overlaying tracing sheets.</p> <p>Submission: - a) Composition on A2 size sheet (landscape) with two 2 A5 size pictures each.</p>
3	Introduction to the Principles of Design – Symmetry / Asymmetry Balance, Harmony, Unity and variety, Rhythm, Emphasis.	Student will be able to know the application of principles of design in 3D compositions.	Lecture & Discussion (Ar. Apoorva Agarwal)	1101.2	<p>Composition should be executed in 300mmX300mm box on an A2 size cartridge sheet</p> <p>ASSIGNMENT 3 (Principles in Composition) Design. A Kids play area using principles of design. Use a single shape of variable sizes (size of shape of your own choice) exploring the implementation of elements & principles in design. The students are required to develop 1 composition each depicting a specific principle.</p> <p>Pre requirements:- Specific shape of various sizes.</p> <p>Submission: - Composition on a square of 400mm X400mm and presented on an A2 sheet.</p>
4	Basics of Composition: Concept of Figure and Ground (Positive & Negative Spaces) and Organization of Shapes and Forms	Student will be able to know how elements are important in visual context & the importance of positive and negative spaces in design.	Lecture & Discussion (Ar. Apoorva Agarwal)	1101.1 1101.2	Module Break
5	Colour and Textures in Design	Student will be able to know & realize the strength of colour & Textures as an element in design and its application in interior design.	Lecture & Discussion (Ar. Apoorva Agarwal)	1101.3	<p>Colour and Texture: Recreate Interior Space</p> <p>ASSIGNMENT 4 (Colour and Texture in Design) Select an interior space and trace it on a A2 cartridge sheet. Then reimagine the space using colour scheme of your choice and textures for the same composition and compare their impact.</p> <p>Submission: -</p>

					1 A2 size sheet with 2 compositions of colour and texture each.
6	Introduction to Form & Space.	Students shall be able to understand the concept of scale and proportion and its implication in design.	Lecture (Ar. Sneh Singh)	1101.2 1101.3	ASSIGNMENT 5 (Transition from 2D to 3D) To create a space using the elements and principles of design. Use of one element is allowed. The students are required to develop volume through planes. Students are free to use any materials like ivory sheet, sun sheet, mound board, sun board, threads, cloth, jute, jute, wire, toothpicks, ice cream sticks etc. Submission: - 1 A2 size sheet and base is limited to 400mmX400mm for the volume.
7,8,9	<ul style="list-style-type: none"> Anthropometry and Human Scale Introduction to Design Project 	Student will be able to analyse the space requirements based on human body proportions.	Lecture & Discussion (Ar. Apoorva Agarwal)	1101.3	ASSIGNMENT 6 (Anthropometric Study) All students are required to understand the human body proportions, and draw plans & elevations of certain human postures and furniture with all critical dimensions Submission: - a) 3 A2 size sheets with study of basic human postures including their plans and elevations with dimensions
10,11,12,13	Design Discussion	Framing of design, the concept.	Discussion	1101.1 1101.2	ASSIGNMENT 7 (Design Problem – Time Travel) Imagine yourself 200 years back or 50 years forward of the current time frame stuck alone. Create a single unit living space for yourself imagining the situation. Submission: - a) Present the design and designing process on the A2 sheet with plan section and elevation and sketches with supporting texts (suitable scale) b) Submission of models on appropriate scale.
12	Pre-Final Review, Portfolio & Model Submission	Final Submission	Final Submission	1101.1 1101.2 1101.3	Design Project

H. Course Articulation Matrix: (Mapping of COs with POs)

CO	STATEMENT	CORRELATION WITH PROGRAM OUTCOMES												CORRELATION WITH PROGRAM SPECIFIC OUTCOMES		
		PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3
ID 1101.1	To Interpret and illustrate elements & principles of design.	2	1		1					1	2		3	3	2	1
ID 1101.2	Analyse interior space through various aspects such as form, scale, light, dimensions etc to inculcate basics of designing skills.	1	1			2		1		1	3		3	3	2	1
ID 1101.3	Apply anthropometrical study of various spaces & it's applications in interior design.		1			3				1	2		2	3	2	1

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

Construction & Materials I | ID 1102 | 4 Credits

Session: Jul 20 – Nov 20 | Faculty: Ar. Sonali Jain & ar. Richa Jagtramka | Class: Studio + Practical

A. Introduction: This course is offered in the first semester of B. Des. Interior Design in order to familiarise them with variety of materials, tools and technology available in the market, used for construction and the execution, to be able to comprehend with the standard graphical detailing techniques in Interior Design practice. Students are expected to be able to appreciate the innovation in building technology and materials in the process.

B. Course Objectives: At the end of the course, students will be able to

[1102.1] To develop comprehension of standard graphical detailing techniques in Interior Design practice.

[1102.2] To understand building- materials, components, use and techniques for construction.

[1102.3] To understand innovation in building materials.

C. Program Outcomes and Program Specific Outcomes:

[PO.1]. **Design knowledge:** Apply the knowledge of mathematics, science and design fundamentals to the solution of complex problems.

[PO.2]. **Problem analysis:** Identify, formulate, research literature, and analyse complex problems reaching substantiated conclusions using principles of design and sciences.

[PO.3]. **Design/development of solutions:** Design solutions for complex problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

[PO.4]. **Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

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D. Assessment Rubrics:

Criteria	Description	Maximum Marks
Internal Assessment (Summative)	Sessional Exam I	10
	Sessional Exam II	10
	In class Quizzes and Assignments , Activity feedbacks	40
End Term Exam (Summative)	End Term Exam	40
	Total	100
Attendance (Formative)	A minimum of 75% Attendance is required to be maintained by a student to be qualified for taking up the End Semester examination. The allowance of 25% includes all types of leaves including medical leaves.	
Make up Assignments (Formative)	Students who misses a class will have to report to the teacher about the absence. A makeup assignment on the topic taught on the day of absence will be given which has to be submitted within a week from the date of absence. No extensions will be given on this. The attendance for that particular day of absence will be marked blank, so that the student is not accounted for absence. These assignments are limited to a maximum of 5 throughout the entire semester.	
Homework/ Home Assignment/ Activity Assignment (Formative)	There are situations where a student may have to work in home, especially before a flipped classroom. Although these works are not graded with marks. However, a student is expected to participate and perform these assignments with full zeal since the activity/ flipped classroom participation by a student will be assessed and marks will be awarded.	

E. Syllabus:

INTRODUCTION TO MATERIALS:

- Lime
- Cement
- Mortar
- Cement Concrete

- Clay, terra-cotta
- Bricks
- Stone

FOUNDATION: Types of Footing, plinth beam & floor finish.

WALLS: Different types - Stone masonry, Brick masonry and latest masonry types. Different types of bonds and application in masonry.

STRUCTURAL SYSTEMS: Structures – Components of a load bearing wall & RCC slab roof system – RCC beams, columns and framed structure. Superstructure- brickwork with sill, lintel, windows & sunshade.

ROOF SYSTEM: Types of roofs. Slope and flat RCC roof with weathering course, parapet & coping. Different types of roofs with Mangalore tiles, country tiles & pan tiles.

STAIRCASE: Introduction. Types and its components.

F. Reference Books:

1. Francis D.K. Ching (2014) *Building Construction Illustrated, 5th Edition.*
2. Francis D.K. Ching (2014) *Building structure Illustrated, 2nd edition.*
3. S.C Rangwala (2009) *Building construction.*
4. Philip Garrison (2011) *Basic Structures, 2nd edition.*
5. Edward Allen (2013) *Fundamentals of Building Construction: Materials and Methods, 6th edition.*
6. Stephen Emmitt (2010) *Barry's advanced construction of buildings, 2nd edition.*

G. Lecture Plan:

Lec No	Topics	Session Objective	Mode of Delivery	Corresponding CO	Mode of Assessing the Outcome
1	Introduction to Interior Design Construction Technology and the importance and practices in the profession. Lecture to introduce the Building systems: <ul style="list-style-type: none"> • Structural • Enclosure • Mechanical 	To acquaint students of basic elements of the built environment and their techniques of construction.	Lecture	1102.2 1102.3	5 pictures of the 3 building systems. @Report A4
2	In detail study of materials: <ul style="list-style-type: none"> • Clay • Terra-cotta • Bricks 	To introduce building materials to students and their uses.	Lecture	1102.2 1102.3	Research about Kilns and uploading in Homework section.
3	Brick Masonry: <ul style="list-style-type: none"> • Types of Bricks • Types of Brick masonry • Brick Bonds 	To understand brick masonry and its different applications.	Lecture	1102.1 1102.2	Types of Brick - Model
4	Structures in Brickwork: <ul style="list-style-type: none"> • Footing • Buttresses • Retaining Walls • Partitions 	To learn construction techniques.	Lecture	1102.1 1102.3	Report
5	In detail study of materials: <ul style="list-style-type: none"> • Lime • Cement • Mortar Introduction of Brick workshop.	To introduce building materials to students and their application.	Lecture	1102.2	Material description. Postcards @ A5
6	Workshop on Brick masonry: Designing a partition wall.	Hands-on training with the bricks.	Activity	1102.2 1102.3	Sheet – 1 @A2
7	Introduction to material: Stone Stone Masonry -Types of Stone Masonry	To understand stone masonry and its different applications.	Lecture	1102.2	Sheet – 2 @A2 On types of stone (in groups)
8	In detail study of Cement concrete. Introduction to Foundation <ul style="list-style-type: none"> • Object • Requirements • Types • Footings 	To introduce building materials to students and their different application.	Lecture	1102.1 1102.2	Sheet – 3 @A2 Foundation
9	Types of Foundations and their construction detailing.	To learn construction techniques.	Lecture	1102.1	Sheet – 3 @A2 Foundation
10	Structural system: Floors <ul style="list-style-type: none"> • Beams • Plinth beam • Slabs • Scaffolding • Shoring 	To understand different flooring systems.	Lecture	1102.1 1102.2	Sheet – 4 @A2 Floor Systems
11	Structural system: Walls <ul style="list-style-type: none"> • Column • Concrete walls • Formwork • Underpinning 	To understand different structural system.	Lecture	1102.1 1102.2	Sheet – 5 @A2 Wall Systems

12	Superstructure: <ul style="list-style-type: none"> Sill Lintel Windows & Doors 	To familiarize with different types of doors and windows, materials used, fittings and fixtures.	Lecture	1102.1 1102.2	Sheet – 6 @A2 Superstructure
13	Structural System: Roof <ul style="list-style-type: none"> Slopes Reinforced concrete roof slab Precast concrete roof systems 	To understand different ceiling systems.	Lecture	1102.1 1102.2	Sheet – 7 @A2 Roof Systems
14	Visit to a construction Site and Material Museum, Mansarovar.	Practical learning for students by visiting the site.	Site Visit	1102.2 1102.3	Site Visit
15	Staircases and Ramps: <ul style="list-style-type: none"> Introduction Components Types 	To understand the construction and effective functioning of staircase and ramps.	Lecture	1102.1 1102.2	Sheet – 8 @A2 Staircase

H. Course Articulation Matrix: (Mapping of COs with POs)

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		PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3
ID1102.1	To develop comprehension of standard graphical detailing techniques in Interior Design practice.	3									3		3	3	3	2
ID1102.2	To understand building- materials, components, use and techniques for construction.	2	1			2							3	3	3	
ID1102.3	To understand innovation in building materials.	1	1	3	1			2						3	3	1

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



MANIPAL UNIVERSITY JAIPUR

School of Planning and Design

Department of Interior Design

Course Hand-out

B. Des (Interior Design) I Graphics I | ID I 103 | 3 Credits

Session: July 20 – Nov 20 | Faculty: Ar. Akshita Joshi (CC) & Ar. Heena Ajmera & Ar. Apoorva Agarwal | Class: Studio (1) + Practical (4)

A. Introduction: This course is offered in the first semester of B. Des Interior Design in order to develop an understanding of basic fundamentals of graphic standard drawings of plane and solid geometry exercises of increasing complexity.

B. Course Outcome: Students shall be able to understand:

[1103.1] To understand the basic of plane and solid geometry through graphical exercises of increasing complexity.

[1103.2] To introduce design-drawing techniques and facilitate effective visual communication.

C. Program Outcomes and Program Specific Outcomes

- [PO.1]. **Design knowledge:** Apply the knowledge of mathematics, science and design fundamentals to the solution of complex problems.
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- [PO.10]. **Communication:** Communicate effectively on complex design activities with the related community and society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
- [PO.11]. **Project management and finance:** Demonstrate knowledge and understanding of the design and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
- [PO.12]. **Life-long learning:** Recognize the need for and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.
- [PSO.1]. **Academic and Industry:** Apply creative, innovative, intellectual learning to establish academic and professional excellence in the field of Interior Design.
- [PSO.2]. **Critical Thinking:** To produce technical, communicative and conscious design of interior spaces and related products.
- [PSO.3]. **Global Standards:** Meet global standards to underpin design, technological & business development.

D. Assessment Rubrics:

Criteria	Description	Maximum Marks
Internal Assessment (Summative)	In form of sheets	60
End Term Exam (Summative)	External jury on sheets made in the entire semester	40
	Total	100
Attendance (Formative)	A minimum of 75% Attendance is required to be maintained by a student to be qualified for taking up the End Semester examination. The allowance of 25% includes all types of leaves including medical leaves.	
Make up Assignments (Formative)	Students who misses a class will have to report to the teacher about the absence. A makeup assignment on the topic taught on the day of absence will be given which has to be submitted within a week from the date of absence. No extensions will be given on this. The attendance for that particular day of absence will be marked blank, so that the student is not accounted for absence. These assignments are limited to a maximum of 5 throughout the entire semester.	
Homework/ Home Assignment/ Activity Assignment (Formative)	There are situations where a student may have to work in home, especially before a flipped classroom. Although these works are not graded with marks. However, a student is expected to participate and perform these assignments with full zeal since the activity/ flipped classroom participation by a student will be assessed and marks will be awarded.	

E. Syllabus

Introduction to drawing equipment: Fundamentals of drawing and its practice, use and handling; Methods of Interior Drawings – lettering types, dimensioning and nomenclature; Scale & its applications in geometric shapes; Graphical Standards in relevance to Interiors and Furniture Drawings. Geometrical drawing: Study of points, lines and planes leading to simple and complex solid geometrical forms (2D); Orthographic projections – Points, lines, first angle projections of planes and simple solids; Development of surfaces of solids. Rendering techniques: In 2D surfaces by using different media (colour and black & white) to render plans, elevations etc. which has been made in the subject.

F. Reference Book

- Bhatt N.D. and Panchal, V.M. Engineering Drawing: Plane and Solid Geometry, Charotar Publishing House Pvt. Ltd., 2000.
- Kataria Dewan Suhil Kumar, Geometrical Drawing, Ludhiana, 1986.
- Ching Francis D.K., Architectural Graphics, Wiley, 2002.
- Ching Francis D.K., Design Drawing, Wiley, 1998.

5. Drpic Ivo.D., Sketching and Rendering of Interior Space, Watson-Guptill, 1988.
6. Mitton Maureen, Interior Design Visual Presentation: A Guide to graphics, models and presentation techniques, (3e), Wiley, 2007.
7. Yanes Mogali Delgade and Dominquez Ernest Redondo, Freehand drawing for Architects and Interior Designers, W. W. Norton & Company, (2005)
8. Nichols, T.B. and Keep, Norman, Geometry of Construction, (3e), Routledge, 1959.
9. Kliment Stephen, Architectural Sketching and Rendering: Techniques for Designers and Artists, Watson-Guptill, 1984.
10. French Thomas E., Graphics Science and Design, Mcgraw-hill Inc, 1970.

G. Lecture Plan:

Lec No	Topics	Session Objective	Mode of Delivery	Corresponding CO	Mode of Assessing the Outcome
1	Introduction of the subject, various drawing instruments and their uses.	Students should be able to understand the importance of the subject in professional practice.	Lecture + Discussion		Assignment 1: Free hand sketching - Making straight lines / shapes on newspaper/A1 Tracing Sheet.
2	Fundamentals of drawing and its practice - Free hand sketching	Students should be able to understand the sheets, sheets size & sheets layout. Students should be able to understand the drawing instruments and their uses.	Lecture + Studio	1103.1	Assignment 2: Format making and drawing different type of lines (curved/straight/diagonal) using drafting tools on A1 sheets.
3	Fundamentals of drawing and its practice	Students should be able to draw basic geometrical drawings.	Lecture + Studio	1103.1	Assignment 3: Making of basic geometrical drawings on A1 sheet with the help of drafting tools.
4	Lettering	Students should be able to make presentable drawings.	Lecture + Studio	1103.1 1103.2	Assignment 4: A to Z letter writing on A1 sheet.
5	Scale, Dimensioning & Nomenclature	Students should be able to understand the dimensions of any objects and should be able to draw them with actual/scaled dimensions. Students should be able to understand the scale of the drawings.	Lecture + Studio	1103.1 1103.2	Assignment 5: Making of basic drawings on A1 sheet.
6	Introduction to graphical standards	Students should be able to understand the Graphical Standards in relevance to Interiors and Furniture Drawings.	Lecture + Studio	1103.1 1103.2	Assignment 6: Representation of the topics on A1 sheet.
7	Introduction to geometrical construction - Study of points, lines and planes leading to simple and complex solid geometrical forms (2D)	Students should be able to represent plane geometry, which includes drawing points, lines, planes and solids on a flat surface (sheet/paper).	Lecture + Studio	1103.1 1103.2	Assignment 7: Making of basic geometrical drawings on A1 sheet with the help of drafting tools. - Bisecting lines - dividing lines - dividing circle - bisecting angles - trisecting angle - constructing regular polygons - constructing polygons inscribed in circles
8,9	Introduction to Orthographic projections - Points, lines, first angle projections of planes and simple solids	Students should be able to represent points, lines, planes and solids on a flat surface. Thus will be able to determine the relative positions and true forms of the geometrical drawing made.		1103.1 1103.2	Assignment 8: Representation of the topics on A1 sheet.
10	Development of surfaces of solids.	Students should be able to understand the process of converting 3D drawing into 2D drawings.	Lecture + Studio	1103.1 1103.2	Assignment 9: Representation of the topics on A1 sheet.
11	Rendering techniques - In 2D surfaces by using different media (colour and black & white) to render plans, elevations.	Learning different ways of presentation. - Hatching - Cross-Hatching - Scribble - Stippling	Lecture + Studio	1103.2	Assignment 10: Representation of the topics on A1 sheet.
12	LAST DAY – FINAL SUBMISSION				

H. Course Articulation Matrix: (Mapping of COs with POs)

CO	STATEMENT	CORRELATION WITH PROGRAM OUTCOMES							CORRELATION WITH PROGRAM SPECIFIC OUTCOMES		
		PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PSO 1	PSO 2	PSO 3
ID 1103.1	To understand the basic of plane and solid geometry through graphical exercises of increasing complexity.	1	2	-	-	-	-	2	2	-	-
ID 1103.2	To introduce design-drawing techniques and facilitate effective visual communication.	3	2	2	-	1	-	2	2	2	1

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



MANIPAL UNIVERSITY JAIPUR

School of Planning and Design

Department of Interior Design

Course Hand-out

Visual Arts I | ID 1104 | 3 Credits

Session: Jul 20 – Nov 20 | Faculty: Ar. Heena Ajmera | Class: Studio (1) + Practical (4)

A. Introduction: This course is offered in the first semester of B.Des. Interior Design in order to appreciate grammar of visual design and application in Interior Design. The idea is to study and analyse planar forms and an understanding of generation of a form from a two-dimensional abstract idea.

B. Course Outcomes: At the end of the course, students will be able to:

[ID1104.1] Appreciate visual form and grammar of visual design

[ID1104.2] Create 2D & 3D Visual Composition, generation of a form from a two-dimensional /abstract idea.

[ID1104.3] Develop drawing skills using different mediums.

C. Program Outcomes and Program Specific Outcomes

[PO.1]. **Design knowledge:** Apply the knowledge of mathematics, science and design fundamentals to the solution of complex problems.

[PO.2]. **Problem analysis:** Identify, formulate, research literature, and analyse complex problems reaching substantiated conclusions using principles of design and sciences.

[PO.3]. **Design/development of solutions:** Design solutions for complex problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

[PO.4]. **Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

[PO.5]. **Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex design activities with an understanding of the limitations.

[PO.6]. **The Designer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional practice.

[PO.7]. **Environment and sustainability:** Understand the impact of the professional design solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

[PO.8]. **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the design practice.

[PO.9]. **Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

[PO.10]. **Communication:** Communicate effectively on complex design activities with the related community and society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

[PO.11]. **Project management and finance:** Demonstrate knowledge and understanding of the design and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

[PO.12]. **Life-long learning:** Recognize the need for and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

[PSO.1]. **Academic and Industry:** Apply creative, innovative, intellectual learning to establish academic and professional excellence in the field of Interior Design.

[PSO.2]. **Critical Thinking:** To produce technical, communicative and conscious design of interior spaces and related products.

[PSO.3]. **Global Standards:** Meet global standards to underpin design, technological & business development.

D. Assessment Rubrics:

Criteria	Description	Maximum Marks
Internal Assessment (Summative)	Studio + Practical	60
End Term Exam (Summative)	End Term Exam	40
Total		100
Attendance (Formative)	A minimum of 75% Attendance is required to be maintained by a student to be qualified for taking up the End Semester examination. The allowance of 25% includes all types of leaves including medical leaves.	
Make up Assignments (Formative)	Students who misses a class will have to report to the teacher about the absence. A makeup assignment on the topic taught on the day of absence will be given which has to be submitted within a week from the date of absence. No extensions will be given on this. The attendance for that particular day of absence will be marked blank, so that the student is not accounted for absence. These assignments are limited to a maximum of 5 throughout the entire semester.	
Homework/ Home Assignment/ Activity Assignment (Formative)	There are situations where a student may have to work in home, especially before a flipped classroom. Although these works are not graded with marks. However, a student is expected to participate and perform these assignments with full zeal since the activity/ flipped classroom participation by a student will be assessed and marks will be awarded.	

E. Syllabus

Elements of Visual Composition: Basic elements of visual design - Dots, Lines, Planes, Patterns, Shapes, Forms, Spaces, Color, Texture, Levels, Light, Fenestration's.

Principles of Visual Compositions: Repetition, Rhythm, Radiation, focal point, Symmetry, Background, Foreground, Sense of Direction, Harmony, Balance and Proportion.

Exploring Color Schemes and its application in Interior Forms & spaces: Color Schemes based on principles of Harmony and Contrast and degree of Chromatism.

Study of Textures and Textures Schemes.

Study of Planar Forms: Abstract sculptures out of Mount Board, Box Board, Metal Foils and any other planer material and also exploring the adaptability of these sculptures to Interior functions.

F. Reference Book

- R1. Broome F. Gerald, (1974), Elements of Design: Space, Davis Publications Inc., Worcester, Massachusetts.
 R2. Bruce D. Kurty, (1987), Visual imagination – An Introduction of Art, Prentice Hall, New Jersey.
 R3. Hayashi, Studio, (1994), Water Colour Rendering. Graphic, - Sha Publishing Co. Ltd.
 R4. Richard Rochan & Herald Linton, (1989), Colour in Architectural Illustration, Van Nostrand Reinhold.
 R5. Robert W. Gill, (1984), Manual of Rendering in Pen and Ink. Thames and Hudson, London.
 R6. Wong Wucius, (1977), Principles of Three-Dimensional Design, Van Nostrand Reinhold, NY.
 R7. Hanlon, Don, (2009), Compositions in Architecture, John Wiley and Sons.
 R8. Doyle M.E, (2007), Colour Drawing, John Wiley and Sons.
 R9. Wallschlaeger, Charles Busic-Snyder, Cynthia, (1992), Basic Visual Concepts and Principles For Artists, Architects and Designers
 R10. Yot, Richard, (2011), Light for Visual Artists: Understanding & Using Light in Art & Design, Laurence King Publishers.

G. Lecture Plan:

Lec No	Topics	Session Objective	Mode of Delivery	Corresponding CO	Mode of Assessing the Outcome
1	Introduction of Visual Arts Elements of Visual Composition: Basic elements of visual design - Dots, Lines, Planes, Patterns, Shapes, Forms, Spaces (negative positive)	To understand basic fundamentals of Design, study of design theories and principles	Lecture + Studio Activity	ID1104.1 ID1104.3	Representation of the topics on A2 sheet.
2	Elements of Visual Composition: Basic elements of visual design - Color, Texture, Levels, Light, Fenestration's.	To understand basic fundamentals of Design, study of design theories and principles	Lecture + Studio	ID1104.1 ID1104.2 ID1104.3	Representation of the topics on A2 sheet.
3	Elements of Visual Composition: Basic elements of visual design - Color, Texture, Levels, Light, Fenestration's.	To understand basic fundamentals of Design, study of design theories and principles	Lecture + Studio	ID1104.1 ID1104.2 ID1104.3	Representation of the topics on A2 sheet.
4	Principles of Visual Compositions: Background, Foreground, Sense of Direction, Harmony, Balance and Proportion.	To be able to create visually appealing compositions through different mediums	Lecture + Studio	ID1104.2 ID1104.3	Representation of the topics on A2 sheet.
5	Principles of Visual Compositions: Background, Foreground, Sense of Direction, Harmony, Balance and Proportion.	To be able to create visually appealing compositions through different mediums	Lecture + Studio	ID1104.2 ID1104.3	Representation of the topics on A2 sheet.
6	Color Schemes and its application in Interior Forms & spaces: Color Schemes based on principles of Harmony and Contrast	To be able to explore various color schemes and its importance in Interior Design	Lecture + Studio	ID1104.1	Representation of the topics on A2 sheet.
7	Color Schemes and its application in Interior Forms & spaces: Color Schemes based on principles of Harmony and Contrast	To be able to explore various color schemes and its importance in Interior Design	Lecture + Studio	ID1104.1 ID1104.2 ID1104.3	Representation of the topics on A2 sheet.
8	Study of Textures	To develop harmonious texture schemes inspired from day-to-day life.	Lecture + Studio	ID1104.1 ID1104.3	Representation of the topics on A2 sheet.
9	Study of Textures Schemes	To develop harmonious texture schemes inspired from day-to-day life.	Lecture + Studio	ID1104.1 ID1104.2	Representation of the topics on A2 sheet.
10	Study of Planar Forms: Abstract sculptures out of Mount Board, Box Board, Metal Foils and any other planer material and also exploring the adaptability of these sculptures to Interior functions.	Experience of imposition of graphics and colours on the interlocking planes converting into sculptures	Lecture + Studio	ID1104.1 ID1104.2 ID1104.3	Representation of the topics by model
11	Study of Planar Forms: Abstract sculptures out of Mount Board, Box Board, Metal Foils and any other planer material and also exploring the adaptability of these sculptures to Interior functions.	Experience of imposition of graphics and colours on the interlocking planes converting into sculptures	Lecture + Studio	ID1104.1 ID1104.2 ID1104.3	Representation of the topics by model
12	Study of Planar Forms: Abstract sculptures out of Mount Board, Box Board, Metal Foils and any other planer material and also exploring the adaptability of these sculptures to Interior functions.	Experience of imposition of graphics and colours on the interlocking planes converting into sculptures	Lecture + Studio	ID1104.2 ID1104.3	Representation of the topics by model
13	Study of Planar Forms: Abstract sculptures out of Mount Board, Box Board, Metal Foils and any other planer material and also exploring the adaptability of these sculptures to Interior functions.	Experience of imposition of graphics and colours on the interlocking planes converting into sculptures	Lecture + Studio	ID1104.2 ID1104.3	Representation of the topics by model
14	FINAL SUBMISSION				

H. Course Articulation Matrix: (Mapping of COs with POs)

CO	STATEMENT	CORRELATION WITH PROGRAM OUTCOMES												CORRELATION WITH PROGRAM SPECIFIC OUTCOMES		
		PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3
ID 1104.1	Appreciate visual form and grammar of visual design	3	2	3	1	0	2	3	0	2	1	0	3	2	2	1
ID 1104.2	Develop 2D & 3D Visual Composition, generation of a form from a two-dimensional /abstract idea.	3	2	3	2	2	1	3	1	2	1	0	3	3	2	1
ID 1104.3	Create the drawing skills using different mediums.	3	1	3	1	2	0	3	2	1	0	0	3	2	1	1

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



MANIPAL UNIVERSITY JAIPUR

School of Humanities and Social Sciences

DEPARTMENT OF LANGUAGES

Course Hand-out

Communication Skills | ID 1105 | 2 Credits {1 0 2 3}

Session: July 20 – Nov. 20 | Faculty: Dr Keshav Nath | Year/Semester: I Year/ B.Des.. Interior Design I Semester

A. Introduction: This course is offered by Department of Languages as a core course to the students of B Sc. Interior Design in 1st Semester. The course offers an in-depth knowledge of Language as an important branch of English language studies. It covers basic concepts such as properties of human languages, word formation, Grammar, Comprehension and Composition. There is no specific prerequisite on the part of students as the course begins with the very basics of the field of study.

B. Course Outcomes: At the end of the course, students will be able to:

[ID1105.1] Understand the fundamental principles of effective communication skills and presentation skills.

[ID1105.2] Develop critical and creative thinking abilities for communicative competence.

[ID1105.3] Display enhanced competence in oral and written communication.

[ID1105.4] Improve ideas with precision and coherence in writing.

[ID1105.5] Recognize the importance of communication skills like listening, speaking, reading and writing with advancement of competitive world.

C. PROGRAM OUTCOMES AND PROGRAM SPECIFIC OUTCOMES

[PO.1]. **Design knowledge:** Apply the knowledge of mathematics, science and design fundamentals to the solution of complex problems.

[PO.2]. **Problem analysis:** Identify, formulate, research literature, and analyse complex problems reaching substantiated conclusions using principles of design and sciences.

[PO.3]. **Design/development of solutions:** Design solutions for complex problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

[PO.4]. **Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

[PO.5]. **Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex design activities with an understanding of the limitations.

[PO.6]. **The Designer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional practice.

[PO.7]. **Environment and sustainability:** Understand the impact of the professional design solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

[PO.8]. **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the design practice.

[PO.9]. **Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

[PO.10]. **Communication:** Communicate effectively on complex design activities with the related community and society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

[PO.11]. **Project management and finance:** Demonstrate knowledge and understanding of the design and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

[PO.12]. **Life-long learning:** Recognize the need for and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

[PSO.1]. **Academic and Industry:** Apply creative, innovative, intellectual learning to establish academic and professional excellence in the field of Interior Design.

[PSO.2]. **Critical Thinking:** To produce technical, communicative and conscious design of interior spaces and related products.

[PSO.3]. **Global Standards:** Meet global standards to underpin design, technological & business development.

D. Assessment Plan:

Criteria	Description	Maximum Marks
Internal Assessment (Summative)	Sessional Exam I (Closed Book)	20
	Sessional Exam II (Closed Book)	20
	In class Quizzes and Assignments , Activity feedbacks (Accumulated and Averaged)	10
End Term Exam (Summative)	End Term Exam (Closed Book)	50
	Total	100
Attendance (Formative)	A minimum of 75% Attendance is required to be maintained by a student to be qualified for taking up the End Semester examination. The allowance of 25% includes all types of leaves including medical leaves.	
Make up Assignments (Formative)	Students who misses a class will have to report to the teacher about the absence. A makeup assignment on the topic taught on the day of absence will be given which has to be submitted within a week from the date of absence. No extensions will be given on this. The attendance for that particular day of absence will be marked blank, so that the student is not accounted for absence. These assignments are limited to a maximum of 5 throughout the entire semester.	
Homework/ Home Assignment/ Activity Assignment (Formative)	There are situations where a student may have to work at home, especially before a flipped classroom. Although these works are not graded with marks. However, a student is expected to participate and perform these assignments with full zeal since the activity/ flipped classroom participation by a student will be assessed and marks will be awarded.	

E. SYLLABUS

Communication: meaning, its types, significance, process, channels, role in profession and society, communication model. 7C's for effective communication, interpersonal communication skills, verbal and non-verbal communication.

Principles of written English, sentence structure-transformation of sentences - active, passive, direct – indirect, reading comprehension, idiomatic expressions, English grammar and essay writing, vocabulary development, understanding tone and diction, common errors in writing
 Effective reading, note- taking, essay writing, dissertation / thesis statement-structure of the opening-concluding paragraphs-body of the essay-types of essays
 Soft skills: empathy (understanding of someone else’s point of view), intrapersonal skills, interpersonal skills, problem solving, critical thinking, negotiation skills

F. Reference Books:

- R1 Kaul, Asha Business Communication. New Delhi: Prentice Hall of India.2004.
- R.2 Little Peter: Communication in Business. Verdant : Pitman Publishing
- R.3. P D Chaturvedi, Mukesh Chaturvedi.Business Communication Skills, Concepts and Application. New Delhi: Pearson, 2013.
- R.4 Sharma, Meenakshi Raman Sangeeta. Technical Communication Principles and Practice. New Delhi: Oxford University Press, 2011.
- R. 5. G. David, Contemporary English Grammar, Structures and Composition, Macmillan Publications.
- R. 6. S. Mishra & C. Muralikrishna, Communication Skills for Engineers, Pearson Education. 2004.
- R 7 Tickoo, M L Intermediate Grammar Usage and Composition. Delhi: Orient BlackSwan.
- R 8 Thorpe, Edgar Objective English 6e. New Delhi Pearson, 2014.
- R 9 Hornby A S Guide to Patterns and Usage in English 2e Oxford Publication.1997.

G. Lecture Plan:

Lec. No	Topics	Session Outcome	Mode of Delivery	Corresponding CO	Mode of Assessing the Outcome
1	Introduction and Course Hand-out briefing.	To acquaint and clear teacher’s expectations and understand students’ expectations	Lecture & Discussion	NA	NA
2	Communication: meaning, its types, significance, process, channels, role in profession and society, communication model. 7C’s for effective communication	To develop communication skills	Lecture & Discussion	ID1105.1	I Sessional, Assignment-1, End Sessional
3	Communication barriers	To develop communication skills	Lecture & Discussion	ID1105.2	I Sessional, Assignment-1, End Sessional
4	Principles of written English,	To develop communication skills	Lecture & Discussion	ID1105.3	II Sessional, Assignment-1, End Sessional
5	sentence structure-transformation of sentences - active, passive, direct – indirect,	To develop communication skills	Lecture & Discussion	ID1105.3	II Sessional, Assignment-1, End Sessional
6	idiomatic expressions, English grammar	To develop LSRW skills.	Lecture & Discussion	ID1105.3	II Sessional, Assignment-1, End Sessional
7	vocabulary development, understanding tone and diction, common errors in writing	Development of LSRW Skills.	Lecture & Discussion	ID1105.3	II Sessional, End Sessional
8	essay writing, -body of the essay-types of essays	Writing skills.	Lecture & Discussion	ID1105.4	II Sessional, End Sessional
9	dissertation / thesis statement-structure of the opening-concluding paragraphs	Writing skills.	Lecture & Discussion	ID1105.4	II Sessional, End Sessional
10	Effective reading, reading comprehension note- taking	Development of Writing skills.	Lecture & Discussion	ID1105.4	End Sessional
11	Soft skills: empathy (understanding of someone else’s point of view), , critical thinking,	Development of Listening and reading skills	Lecture & Discussion	ID1105.2	End Sessional
12	intrapersonal - interpersonal skills, problem solving	Development of Communication skills.	Lecture & Discussion	ID1105.5	End Sessional
13	Negotiation Skills	Development of Verbal and Non Verbal Communication	Lecture & Discussion	ID1105.5	End Sessional

H. Course Articulation Matrix: (Mapping of COs with POs)

CO	STATEMENT	CORRELATION WITH PROGRAM OUTCOMES												CORRELATION WITH PROGRAM SPECIFIC OUTCOMES		
		PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3
ID 1105.1	Understand the fundamental principles of effective										3					

	communication skills and presentation skills.															
ID 1105.2	Develop critical and creative thinking abilities for communicative competence.										3					
ID 1105.3	Display enhanced competence in oral and written communication.										3					
ID 1105.4	Improve ideas with precision and coherence in writing.										3					
ID 1105.5	Recognize the importance of communication skills like listening, speaking, reading and writing with advancement of competitive world.										3					

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



MANIPAL UNIVERSITY JAIPUR

School of Planning and Design

Department of Interior Design

Course Hand-out

Workshop | ID 1106 | 3 Credits

Session: Aug 20 – Nov 20 | Faculty: Kush Jee Kamal | Class: Practical

A. Introduction: This course is offered in first semester B.Des Interior design to equip students with knowledge of various materials that are employed in the process of model making. The course also enables them to basic of interior and product photography.

B. Course Objectives: At the end of the course, students will be able to

[1106.1] To understand the practical aspects of interior build environment.

[1106.2] Apply tools and techniques to craft learning.

[1106.3] To understand the various schools of thought on interior environment.

C. Program Outcomes and Program Specific Outcomes

[PO.1]. **Design knowledge:** Apply the knowledge of mathematics, science and design fundamentals to the solution of complex problems.

[PO.2]. **Problem analysis:** Identify, formulate, research literature, and analyse complex problems reaching substantiated conclusions using principles of design and sciences.

[PO.3]. **Design/development of solutions:** Design solutions for complex problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

[PO.4]. **Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

[PO.5]. **Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex design activities with an understanding of the limitations.

[PO.6]. **The Designer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional practice.

[PO.7]. **Environment and sustainability:** Understand the impact of the professional design solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

[PO.8]. **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the design practice.

[PO.9]. **Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

[PO.10]. **Communication:** Communicate effectively on complex design activities with the related community and society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

[PO.11]. **Project management and finance:** Demonstrate knowledge and understanding of the design and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

[PO.12]. **Life-long learning:** Recognize the need for and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

[PSO.1]. **Academic and Industry:** Apply creative, innovative, intellectual learning to establish academic and professional excellence in the field of Interior Design.

[PSO.2]. **Critical Thinking:** To produce technical, communicative and conscious design of interior spaces and related products.

[PSO.3]. **Global Standards:** Meet global standards to underpin design, technological & business development.

D. Assessment Rubrics:

Criteria	Description	Maximum Marks
Internal Assessment (Summative)	Assignments	50
	Total	50
Attendance (Formative)	A minimum of 75% Attendance is required to be maintained by a student to be qualified for taking up the End Semester examination. The allowance of 25% includes all types of leaves including medical leaves.	

Make up Assignments (Formative)	Students who miss a class will have to report to the teacher about the absence. A makeup assignment on the topic taught on the day of absence will be given which has to be submitted within a week from the date of absence. No extensions will be given on this. The attendance for that particular day of absence will be marked blank, so that the student is not accounted for absence. These assignments are limited to a maximum of 5 throughout the entire semester.
Homework/ Home Assignment/ Activity Assignment (Formative)	There are situations where a student may have to work in home, especially before a flipped classroom. Although these works are not graded with marks. However, a student is expected to participate and perform these assignments with full zeal since the activity/ flipped classroom participation by a student will be assessed and marks will be awarded.

E. Syllabus

- Formation of basic geometrical shapes (Cube, Cuboid etc)
- Elements of style and shape in packaging
- Colour and geometric interpretation to understand the interior environment.
- Tie and process to help in crafting of interior product.
- Photography

F. Reference Book

- R1. Tadgell Christopher, (1990), The History of Architecture in India: From the dawn of civilization to the End of the Raj, Om Book Service, New Delhi.
R2. Rowland Bejamin, (1971), Art and Architecture of India, Puffin.
R3. J.C. Harle, (1994), the art and Architecture of the Indian Subcontinent, Yale University Press.
R4. R.J. Mehta, (1974), Masterpieces of Indian Temples, D.B. Taraporewals, India.

G. Lecture Plan:

Lec No	Topics	Session Objective	Mode of Delivery	Corresponding CO	Mode of Assessing the Outcome
1	Formation of basic geometrical shapes: Cube	To understand the basic shapes, surfaces and volume.	Lecture + Practical	[ID 1106.1] [ID 1106.2]	Studio work and Home Assignment
2	Formation of basic geometrical shapes: Cuboid	To understand the basic shapes, surfaces and volume.	Lecture + Discussion	[ID 1106.1]	Studio work and Home Assignment
3	Package formation: Soap	To understand the basic shapes, surfaces and volume.	Lecture + Discussion	[ID 1106.1] [ID 1106.2]	Studio work and Home Assignment
4	Package formation: Soap	To understand the basic shapes, surfaces and volume.	Lecture + Discussion	[ID 1106.1]	Studio work and Home Assignment
5	Geometric interpretation via colours	To understand the transformation of complex natural elements into simple geometric interior elements.	Lecture + Discussion	[ID 1106.1]	Studio work and Home Assignment
6	Geometric interpretation via colours	To understand the transformation of complex natural elements into simple geometric interior elements.	Lecture + Discussion	[ID 1106.1] [ID 1106.3]	Studio work and Home Assignment
7	Tie and Dye Process: Basic Colours productions	To understand the basic techniques of tie and dye using Vegetables: Producing Colours	Lecture + Discussion	[ID 1106.1]	Studio work and Home Assignment
8	Tie and Dye Process: Basic Patterns	To understand the basic techniques of tie and dye using Vegetables: Create Patterns	Lecture + Discussion	[ID 1106.1]	Studio work and Home Assignment
9	Photography Basic and Beyond: History of Photography	History of Photography and evolution of Camera	Lecture + Discussion	[ID 1106.1] [ID 1106.2]	Studio work and Home Assignment
10	Photography Basic and Beyond: ISO/Shutter Speed/ Aperture	Understanding of the Light sensitivity and functionality of camera.	Lecture + Discussion	[ID 1106.1] [ID 1106.2]	Studio work and Home Assignment
11	Photography Basic and Beyond: Camera Settings	Understanding of the basic settings in digital camera.	Lecture + Discussion	[ID 1106.1] [ID 1106.3]	Studio work and Home Assignment

H. Course Articulation Matrix: (Mapping of COs with POs)

CO	STATEMENT	CORRELATION WITH PROGRAM OUTCOMES												CORRELATION WITH PROGRAM SPECIFIC OUTCOMES		
		PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3
ID 1106.1	To understand the practical aspects of interior build environment.	1	1	1	2	1	1	3	1	1	0		1	0	2	1

ID 1106.2	Apply tools and techniques to craft learning.	2	0	1	3	2	1	0	1	0	0	1	1	1	1	2
ID 1106.3	To understand the various schools of thought on interior environment.	3	0	0	0	0	2	2	2	2	1	2	2	2	2	3

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



MANIPAL UNIVERSITY JAIPUR

School of Planning and Design

Department of Interior Design

Course Hand-out

Interior Design II | ID 1201 | 6 Credits

Session: Jan 21 – May 21 | Faculty: Ar. Akshita Joshi (CC) | Ar. Sneh Singh | Studio + Practical [6]

A. Introduction: This course is offered in the second semester of B. Des. Interior Design to develop an understanding of fundamentals of Space Planning and Interior Designing in context with the Site, Climatology and Anthropometry.

B. Course Outcome: At the end of the course, students will be able to:

[1201.1] Impart an understanding of perception of interior space through interior elements, study of user circulation, time-space relationship, designing simple building typologies in a presentable form.

[1201.2] Develop creative conceptual visualization skill and the process of design, helping in employability in practical aspects.

[1201.3] Perform the basic structural integration and working towards technical innovation & constructability.

C. Program Outcomes and Program Specific Outcomes

[PO.1]. **Design knowledge:** Apply the knowledge of mathematics, science and design fundamentals to the solution of complex problems.

[PO.2]. **Problem analysis:** Identify, formulate, research literature, and analyse complex problems reaching substantiated conclusions using principles of design and sciences.

[PO.3]. **Design/development of solutions:** Design solutions for complex problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

[PO.4]. **Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

[PO.5]. **Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex design activities with an understanding of the limitations.

[PO.6]. **The Designer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional practice.

[PO.7]. **Environment and sustainability:** Understand the impact of the professional design solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

[PO.8]. **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the design practice.

[PO.9]. **Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

[PO.10]. **Communication:** Communicate effectively on complex design activities with the related community and society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

[PO.11]. **Project management and finance:** Demonstrate knowledge and understanding of the design and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

[PO.12]. **Life-long learning:** Recognize the need for and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

[PSO.1]. **Academic and Industry:** Apply creative, innovative, intellectual learning to establish academic and professional excellence in the field of Interior Design.

[PSO.2]. **Critical Thinking:** To produce technical, communicative and conscious design of interior spaces and related products.

[PSO.3]. **Global Standards:** Meet global standards to underpin design, technological & business development.

D. Assessment Rubrics:

Criteria	Description	Maximum Marks
Internal Assessment (Summative)	In class Assignments, Activity feedbacks, Internal evaluation by design reviews of drawings and models	60
	External evaluation by Jury	40
	Total	100
Attendance (Formative)	A minimum of 75% Attendance is required to be maintained by a student to be qualified for taking up the End Semester examination. The allowance of 25% includes all types of leaves including medical leaves.	
Make up Assignments (Formative)	Students who misses a class will have to report to the teacher about the absence. A makeup assignment on the topic taught on the day of absence will be given which has to be submitted within a week from the date of absence. No extensions will be given on this. The attendance for that particular day of absence will be marked blank, so that the student is not accounted for absence. These assignments are limited to a maximum of 5 throughout the entire semester.	
Homework/ Home Assignment/ Activity Assignment (Formative)	There are situations where a student may have to work in home, especially before a flipped classroom. Although these works are not graded with marks. However, a student is expected to participate and perform these assignments with full zeal since the activity/ flipped classroom participation by a student will be assessed and marks will be awarded.	

E. Syllabus

Design methodology: Understanding user circulation and space requirements; area programming; mood board. Focus should be on: Anthropometry, Design methodology, Conceptual exploration; ability to integrate various individual spaces into one theme; integration of built form and open spaces; Creativity, Scale/proportion, Documenting space, graphic design (layout and composition). Suggested design project: Residential – Detailed study of Residential spaces such as living, dining, bedrooms, kitchen, toilet etc. including the furniture layout, circulation, clearances, lighting, and ventilation, etc.

F. Reference Book

- Francis.D. Ching & Corky Bingelli, 2004. Interior Design Illustrated, 2nd edition. Wiley publishers.
- Simon Dodsworth, 2009. The Fundamentals of Interior Design. Fairchild Books AVA.
- Joseph D Chiara, Julius Panero, & Martin Zelnick, 2001. Time Saver standards for Interior Design & space planning, 2nd edition. Mc-Graw Hill professional.

4. Julius Panero & Martin Zelnick, 1979. Human Dimension & Interior Space: A source book of Design Reference standards. Watson – Guptill.
5. Karlen Mark, 1992. Space planning Basics. Wiley publishers.
6. Maureen Mitton, 2003. Interior Design Visual Presentation: A Guide to Graphics, Models, and Presentation Techniques. John Wiley and Sons.
7. Robert Rengel, 2002. Shaping Interior Space. Fairchild Books & Visuals.
8. Mareen Mitton, 2016. Residential Interior Design, 2nd edition. Wiley

G. Lecture Plan:

Studio Dates	Stage	Programme	Mode of Delivery	of	Corresponding CO	MARKS (100)	Mode of Assessing the Outcome
00.00.21	PRE- DESIGN STAGE	Introduction to the Design project- Residence Design Ideal design methodology Exercise: Select 3 Residence design from books in library. Get Photostat and justify your selection in context with Space Planning/Climatology/Anthropometry	Lecture Discussion	+	CO 1201.1 CO 1201.2 CO 1201.3		Tracing A2 Sheet
00.00.21		-Introduction to Design brief & Program - Introduction to Case Studies (how to do it)			CO 1201.1 CO 1201.2 CO 1201.3		
00.00.21	CONCEPT DEVELOPMENT STAGE	-Discussion on Case Studies. -Introduction to Standards(NBC/JDA/NEUFERT/TSS) Exercise: Making of Final Case Studies Sheets in Class	Lecture Studio	+	CO 1201.1 CO 1201.2 CO 1201.3		
00.00.21		Exercise: Making of Final Case Studies & Standard Sheets in Class	Lecture Studio	+	CO 1201.1 CO 1201.2 CO 1201.3		
00.00.21		Review 1: Case Study + Standards: Analysis & Inferences	Lecture Studio	+	CO 1201.1 CO 1201.2 CO 1201.3		
00.00.21		-Introduction to User Profile Analysis Assignment: Make Analysis report of Users in the project			CO 1201.1 CO 1201.2 CO 1201.3		
00.00.21		-Lecture on : Site Analysis (Climatology), Circulation (Bubble Diagram), Zoning, Area Programming and Conceptual Designing Exercise: Work on Site (Brain Storming) and Discussion	Lecture Studio	+	CO 1201.1 CO 1201.2 CO 1201.3		
00.00.21		-Discussion on Mock Sheets Assignment: Bring Floor Plans (Single Line)	Lecture Studio	+	CO 1201.1 CO 1201.2 CO 1201.3		Sheet 1- Climatology Sheer 2- remaining topics Scale 1:50/1:25
00.00.21	DESIGN DEVELOPMENT	-Discussion & Finalization (Double Line) of Floor Plans, Also tell Terrace Plan, Staircase design	Lecture Studio	+	CO 1201.1 CO 1201.2 CO 1201.3		
00.00.21		Discussion and marking on mock sheets (Double Line) -Introduction to Furniture Layout & Implementation on Final Plans	Lecture Studio	+	CO 1201.1 CO 1201.2 CO 1201.3		
00.00.21		Review -2: - User Profile Analysis -Site Analysis - User Circulation & Space Requirements - Zoning & Circulation /Connectivity sequence diagram - Area Programming & Space Planning (Scaled Drawings)	Lecture Studio	+	CO 1201.1 CO 1201.2 CO 1201.3		Scale 1:50/1:25
00.00.21		Discussion on: Inputs of Review 2	Lecture Studio	+	CO 1201.1 CO 1201.2 CO 1201.3		
00.00.21		-Introduction to Sectional Drawings and Elevations Exercise: Drafting of Sections and Elevations with the help of Final Floor Plans	Lecture Studio	+	CO 1201.1 CO 1201.2 CO 1201.3		
00.00.21		SESSIONAL – 1					
00.00.21		- Discussion of Mock Sheets of Sections & Elevations -Introduction to Toilet Details (Flooring layout/Furniture Layout) -Sections (Including Anthro Figures) & Internal elevations of Toilets Exercise: Drafting Toilet details	Lecture Studio	+	CO 1201.1 CO 1201.2 CO 1201.3		
00.00.21		Discussion on Mock Sheets (Toilet Details)			CO 1201.1 CO 1201.2 CO 1201.3		
00.00.21		Review -3: -Double Line Sections (2) and Elevations (4) (Building) -Toilet Details			CO 1201.1 CO 1201.2 CO 1201.3		
00.00.21		Discussion on: Inputs of Review 3			CO 1201.1		

				CO 1201.2 CO 1201.3		
00.00.21	DETAILED DRAWINGS	Introduction to Reflected ceiling plan Exercise: Development of RCPs		CO 1201.1 CO 1201.2 CO 1201.3		
00.00.21		Discussion & Marking on: Reflected ceiling plan		CO 1201.1 CO 1201.2 CO 1201.3		
00.00.21		Introduction to Material Exploration & Mood Board (Color Schemes, Schedule of finishes) Exercise: Selection of Building Materials (Sustainable Design), Selection of Finishes (as per User Profile) from Library Assignment: Develop Mood Board		CO 1201.1 CO 1201.2 CO 1201.3		Tracing A2 size
00.00.21		Discussion & Finalization: Reflected ceiling plan, Building Material, Mood Board		CO 1201.1 CO 1201.2 CO 1201.3		
00.00.21	RENDERING AND MODELLING STAGE	Lecture on: Presentation Drawings (page layout and composition) and Model Making Assignment: Surface Developments as per the floor plans		CO 1201.1 CO 1201.2 CO 1201.3		Buff Sheets A1
00.00.21		Discussion and Development of Block model		CO 1201.1 CO 1201.2 CO 1201.3		
00.00.21		Review 4: PRE FINAL Compiled detailed design sheets): -Floor Plans with furniture layout -Building Sections (2) -Building Elevations (4) -Toilet Layout with Section (1) & Elevation (3) - Reflected Ceiling Plan - Material Exploration & Mood Board - Views & Block Model.		CO 1201.1 CO 1201.2 CO 1201.3		A2 Cartridge Sheet NOT INKED
00.00.21		Discussion on: Inputs of Review 3		CO 1201.1 CO 1201.2 CO 1201.3		
00.00.21		SESSIONAL - 2				
00.00.21		Developments of Detailed model		CO 1201.1 CO 1201.2 CO 1201.3		
00.00.21		Developments/Rendering of Final Drafted Drawing in Class		CO 1201.1 CO 1201.2 CO 1201.3		
00.00.21		Mock Review: Detailed Model & Final Sheets		CO 1201.1 CO 1201.2 CO 1201.3		
00.00.21		Review 5: INTERNAL FINAL Compiled detailed design sheets: -Case Study + Standards: Analysis & Inferences - User Profile Analysis -Site Analysis -User Circulation & Space Requirements -Floor Plans with furniture layout -Building Sections (2) -Building Elevations (4) -Toilet Layout with Section (1) & Elevation (3) - Reflected Ceiling Plan - Material Exploration & Mood Board - Views & Detailed Model.		CO 1201.1 CO 1201.2 CO 1201.3		
00.00.21		LAST TEACHING DAY				
00.00.21		FINAL EXTERNAL JURY		CO 1201.1 CO 1201.2 CO 1201.3		

H. Course Articulation Matrix: (Mapping of COs with POs)

CO	STATEMENT	CORRELATION WITH PROGRAM OUTCOMES												CORRELATION WITH PROGRAM SPECIFIC OUTCOMES		
		P O 1	P O 2	P O 3	P O 4	P O 5	P O 6	P O 7	P O 8	P O 9	P O 10	P O 11	P O 12	PSO 1	PSO 2	PSO 3
ID1201.1	Impart an understanding of perception of interior space through interior elements, study of user	3											3	3	3	

	circulation, time-space relationship, designing simple building typologies in a presentable form.															
ID1201.2	Develop creative conceptual visualization skill and the process of design, helping in employability in practical aspects.	3	2	2		2	2				1		3	3	3	2
ID1201.3	Perform the basic structural integration and working towards technical innovation & constructability.	1	3	3	1	2							3	3	2	

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



MANIPAL UNIVERSITY JAIPUR

School of Planning and Design

Department of Interior Design

Course Hand-out

Construction & Materials II | ID 1202 | 4 Credits

Session: Jan 21 – May 21 | Faculty: Ar. Akshita Joshi (CC) | Class: Lecture (3) + Practical (2)

A. Introduction: This course is offered in the second semester of B.Des. Interior Design in order to familiarise them with variety of materials, tools and technology available in the market, used for construction and the execution, to be able to comprehend with the standard graphical detailing techniques in Interior Design practice. Students are expected to be able to appreciate the innovation in building technology and materials in the process.

B. Course Outcomes: At the end of the course, students will be able to:

- [ID1202.1] Analyse various materials while highlighting the current trends and innovations
- [ID1202.2] Develop the knowledge about various interior material properties & their applications.
- [ID1202.3] Produce favourable space for users by using material according to environment.
- [ID1202.4] Define energy responsive materials and their application.

C. Program Outcomes and Program Specific Outcomes:

- [PO.1]. **Design knowledge:** Apply the knowledge of mathematics, science and design fundamentals to the solution of complex problems.
- [PO.2]. **Problem analysis:** Identify, formulate, research literature, and analyse complex problems reaching substantiated conclusions using principles of design and sciences.
- [PO.3]. **Design/development of solutions:** Design solutions for complex problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
- [PO.4]. **Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
- [PO.5]. **Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex design activities with an understanding of the limitations.
- [PO.6]. **The Designer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional practice.
- [PO.7]. **Environment and sustainability:** Understand the impact of the professional design solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
- [PO.8]. **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the design practice.
- [PO.9]. **Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
- [PO.10]. **Communication:** Communicate effectively on complex design activities with the related community and society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
- [PO.11]. **Project management and finance:** Demonstrate knowledge and understanding of the design and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
- [PO.12]. **Life-long learning:** Recognize the need for and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

[PSO.1]. **Academic and Industry:** Apply creative, innovative, intellectual learning to establish academic and professional excellence in the field of Interior Design.

[PSO.2]. **Critical Thinking:** To produce technical, communicative and conscious design of interior spaces and related products.

[PSO.3]. **Global Standards:** Meet global standards to underpin design, technological & business development.

D. Assessment Rubrics:

Criteria	Description	Maximum Marks
Internal Assessment (Summative)	Sessional Exam I	10
	Sessional Exam II	10
	In class Quizzes and Assignments, Activity feedbacks	40
End Term Exam (Summative)	End Term Exam	40
	Total	100
Attendance (Formative)	A minimum of 75% Attendance is required to be maintained by a student to be qualified for taking up the End Semester examination. The allowance of 25% includes all types of leaves including medical leaves.	
Make up Assignments (Formative)	Students who misses a class will have to report to the teacher about the absence. A makeup assignment on the topic taught on the day of absence will be given which has to be submitted within a week from the date of absence. No extensions will be given on this. The attendance for that particular day of absence will be marked blank, so that the student is not accounted for absence. These assignments are limited to a maximum of 5 throughout the entire semester.	
Homework/ Home Assignment/ Activity Assignment (Formative)	There are situations where a student may have to work in home, especially before a flipped classroom. Although these works are not graded with marks. However, a student is expected to participate and perform these assignments with full zeal since the activity/ flipped classroom participation by a student will be assessed and marks will be awarded.	

E. Syllabus:

Introduction to materials: properties, manufacture, types, fixing & joinery, finishes, protection methods & uses – Wood - Soft and hardwood, plywood, engineered woods; Bamboo & cane; Stone – Natural and composite; Tiles – Ceramic, mosaic, terrazzo etc.; Metals; POP & Gypsum board.

Flooring: Floor types properties, uses and laying; Different types of Floor coverings.

False ceiling: Construction of various kinds of false ceiling such as thermacol, plaster of Paris, gypsum board, metal sheets, glass and wood Construction of domes, vaults, & other special ceilings.

Wall panelling - Panelling using wallpaper, wooden planks, laminated plywood, tiles, cork sheets etc. for sound insulation and wall panelling for thermal insulation.

Finishes: Paints - enamels, distempers, plastic emulsions, cement-based paints- properties, uses and applications; Painting on different surfaces; defects in painting, clear coatings & strains; varnishes, lacquer, shellac, wax polish & strains- properties, uses and applications.

F. Reference Books:

1. Roy Chudley and Roger Greeno. Building Construction Handbook, 10 edition. Routledge.
2. Dr. B.C Punmia, 1993. Building construction. Laxmi publications Pvt. Ltd., New Delhi
3. S.C Rangwala, 1982. Engineering materials. Charotar publishing, Anand.
4. W.B Mckay, Longmans, UK-1981. Building Construction, VOL 1-4. Laxmi publications Pvt. Ltd., New Delhi, 1993.
5. M.S Shetty, 1986. Concrete technology. S. Chand & co . Ltd. New Delhi
6. Stephen Emmitt, 2010. Barry's Introduction to construction of buildings, 2nd edition. Wiley-Blackwell
7. Bert Bielefeld, 2015. *BASICS Building Construction, 1st edition. Birkhäuser*
8. Roland Ashcroft, 1992. *Construction for Interior Designers, 2nd edition. Routledge.*

G. Lecture Plan:

Lec No	Topics	Session Objective	Mode of Delivery	Corresponding CO	Mode of Assessing the Outcome
1	In detail study of POP & GYPSUM BOARD in interior design construction.	To acquaint the students about POP & Gypsum and their different applications in interior design construction.	Lecture	ID1202.1 ID1202.2 ID1202.3	Market Survey
2	Introduction to False ceiling: Construction of various kinds of false ceiling such as thermacol, plaster of Paris, gypsum board, metal sheets, glass and wood Construction of domes, vaults, & other special ceilings.	To introduce false ceiling to students. To make the students understand the construction and installations techniques.	Lecture + Market Survey	ID1202.1 ID1202.2 ID1202.3	Market Survey Report/ PowerPoint Presentation on designed False ceiling pattern for a respective room with its cost estimation.
3	In detail study of WOOD <ul style="list-style-type: none"> • Soft Wood • Hardwood • Plywood • Engineered woods. 	To acquaint the students about Wood and its different types and uses in interior design construction.	Lecture	ID1202.1 ID1202.2 ID1202.3	Report/ PowerPoint Presentation on Timber
4	In detail study of WOOD <ul style="list-style-type: none"> • Soft Wood • Hardwood • Plywood • Engineered woods. 	To acquaint the students about Wood and its different types and uses in interior design construction.	Lecture	ID1202.1 ID1202.2 ID1202.3	Report/ PowerPoint Presentation on Timber
5	In detail study of BAMBOO & CANE	To acquaint the students about Bamboo & Cane by describing its properties and uses in interior design construction.	Lecture	ID1202.1 ID1202.2 ID1202.3	Bamboo workshop
	First Sessional				
6	HOLIDAY				
7	Introduction to Wall panelling: Panelling using wallpaper, wooden planks, laminated plywood, tiles, cork sheets etc. for sound insulation and wall panelling for thermal insulation.	To introduce wall panelling to students and its uses & application.	Lecture	ID1202.1 ID1202.2 ID1202.3 ID1202.4	Market Survey PowerPoint Presentation on the wall panelling designed for the chosen room with its cost estimation.
8	Introduction to Finishes: Paints - enamels, distempers, plastic emulsions, cement-based paints- properties, uses and applications; Painting on different surfaces; defects in painting, clear coatings & strains; varnishes, lacquer, shellac, wax polish & strains- properties, uses and applications.	To introduce wall finishes to students and its application.	Lecture	ID1202.1 ID1202.2 ID1202.4	Market Survey Report/ PowerPoint Presentation on paints with its cost estimation
9	In detail study of Stone: <ul style="list-style-type: none"> • Natural Stones • Composite Stones 	To acquaint the students about stone and its different types and uses in interior design construction.	Lecture	ID1202.1 ID1202.2 ID1202.3	Report/ PowerPoint Presentation on stone
10	In detail study of Tiles: <ul style="list-style-type: none"> • Ceramic • Mosaic • Terrazzo etc 	To understand different flooring systems.	Lecture	ID1202.1 ID1202.2	Report/ PowerPoint Presentation on tiles

11	Introduction to Flooring: <ul style="list-style-type: none"> Floor types properties uses and laying Different types of Floor coverings. 	To understand different flooring systems.		ID1202.1 ID1202.2	Report/ PowerPoint Presentation on flooring with cost estimation of the chosen flooring pattern for a respective room.
Second Sessional					
12	Construction Site visit		Activity		
	In detail study of Metal in interior design construction.	To acquaint the students about metals and its different types and uses in interior design construction.	Lecture	ID1202.1 ID1202.2	Report/ PowerPoint Presentation on ideas where metals can be used in interiors/exterior.
	Final Submission Day				

H. Course Articulation Matrix: (Mapping of COs with POs)

CO	STATEMENT	CORRELATION WITH PROGRAM OUTCOMES												CORRELATION WITH PROGRAM SPECIFIC OUTCOMES		
		PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3
ID1202.1	Analyse various materials while highlighting the current trends and innovations	3											3	3	3	
ID1202.2	Develop the knowledge about various interior material properties & their applications.	3											3	3	3	2
ID1202.3	Produce favourable space for users by using material according to environment.		3	3	1								3	3	2	
ID1202.4	Define energy responsive materials and their application	3	1	2		1		3					3	3	3	2

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



MANIPAL UNIVERSITY JAIPUR

School of Planning and Design

Department of Interior Design

Course Hand-out

Graphics – II | ID 1203 | 3 Credits

Session: Jan 21 – May 21 | Faculty: Ar. Sonali Jain | Class: Studio + Practical

A. Introduction: This course is offered in the second semester of B.Des. Interior Design in order to visualise and understand perspective view through graphic exercises of increased complexity, whose foundation has been built in previous semesters. The idea for this semester is to learn representing simple and complex solid geometrical forms in one-point and two-point perspective form.

B. Course Objectives: At the end of the course, students will be able to:

[ID1203.1] Illustrate solid geometry through graphical exercises of increased complexity.

[ID1203.2] Incorporate the basics of perspective drawings in interiors.

[ID1203.3] Impart the techniques of rendering in different media and skills of three-dimensional visualization and presentation.

C. Program Outcomes and Program Specific Outcomes

[PO.1]. **Design knowledge:** Apply the knowledge of mathematics, science and design fundamentals to the solution of complex problems.

[PO.2]. **Problem analysis:** Identify, formulate, research literature, and analyse complex problems reaching substantiated conclusions using principles of design and sciences.

[PO.3]. **Design/development of solutions:** Design solutions for complex problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

[PO.4]. **Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

[PO.5]. **Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex design activities with an understanding of the limitations.

[PO.6]. **The Designer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional practice.

[PO.7]. **Environment and sustainability:** Understand the impact of the professional design solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

[PO.8]. **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the design practice.

[PO.9]. **Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

[PO.10]. **Communication:** Communicate effectively on complex design activities with the related community and society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

[PO.11]. **Project management and finance:** Demonstrate knowledge and understanding of the design and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

[PO.12]. **Life-long learning:** Recognize the need for and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

[PSO.1]. **Academic and Industry:** Apply creative, innovative, intellectual learning to establish academic and professional excellence in the field of Interior Design.

[PSO.2]. **Critical Thinking:** To produce technical, communicative and conscious design of interior spaces and related products.

[PSO.3]. **Global Standards:** Meet global standards to underpin design, technological & business development.

D. Assessment Rubrics:

Criteria	Description	Maximum Marks
Internal Assessment (Summative)	In class Assignments, Activity feedbacks, Internal evaluation by design reviews of drawings and models	60
	External evaluation by Jury	40
	Total	100
Attendance (Formative)	A minimum of 75% Attendance is required to be maintained by a student to be qualified for taking up the End Semester examination. The allowance of 25% includes all types of leaves including medical leaves.	
Make up Assignments (Formative)	Students who misses a class will have to report to the teacher about the absence. A makeup assignment on the topic taught on the day of absence will be given which has to be submitted within a week from the date of absence. No extensions will be given on this. The attendance for that particular day of absence will be marked blank, so that the student is not accounted for absence. These assignments are limited to a maximum of 5 throughout the entire semester.	
Homework/ Home Assignment/ Activity Assignment (Formative)	There are situations where a student may have to work in home, especially before a flipped classroom. Although these works are not graded with marks. However, a student is expected to participate and perform these assignments with full zeal since the activity/ flipped classroom participation by a student will be assessed and marks will be awarded.	

E. Syllabus

GEOMETRICAL DRAWING: Orthographic projections: Sections of solids and Intersections of solids.

Isometric projections. Isometric view of Tables, Chairs, Cylindrical & Spherical Elements. Oblique Projections. Axonometric Views of Interiors.

INTRODUCTION TO PERSPECTIVES: Basic understanding & importance of perspective drawings in Interiors, Methods: One-Point, Two-Point and Three-point, Making of Interior Views at different Eye levels.

INTRODUCTION TO SCIOGRAPHY: Study of shade and shadows of simple geometrical solids of various forms and groups of forms. Application of Sciography in perspective drawings of Interiors made in previous topic.

RENDERING TECHNIQUES: In 3D drawings. Rendering of Perspective drawing including shades and shadows, depicting tonal variations in drawings to represent material variations.

F. Reference Books

1. Bowen Bellings Lance, *Perspective space and Design*, Van Nostrand Reinhold Co, 1969.
2. Burden, Ernest, *Architectural Delineation: A photographic approach to presentation*, (2e), McGraw-Hill, 1982.
3. Ernest. R. Norling, *Perspective made easy*, Dover Publications Inc., 1999.
4. Ching Francis D.K., *Design Drawing*, Wiley, 2010.

5. Drpic Ivo.D., *Sketching and Rendering of Interior Space*, Watson-Guptill, 1988.
6. Pile John, *Perspective for Interior Designers*, Watson-Guptill, 1989.
7. Mitton Maureen, *Interior Design Visual Presentation: A Guide to graphics, models and presentation techniques*, (3e), Wiley, 2007.
8. Kliment Stephen, *Architectural Sketching and Rendering: Techniques for Designers and Artists.*, Watson-Guptill, 1984.

G. Lecture Plan:

Lec No	Topics	Session Objective	Mode of Delivery	Corresponding CO	Mode of Assessing the Outcome
1 (11/03/21)	MAHA SHIVRATRI				
2 (18/03/21)	Projections: ➤ Pont ➤ Line ➤ Plane	To revise the course of Graphics I.	Lecture+ Studio work	ID1203.1	Sheet 1 @A1
3 (25/03/21)	Orthographic Projections: - Types of Solids - Projections of Solids in simple positions. - Projections of solids with axes inclined to one of the reference planes ➤ - Projections of solids with axes inclined to both the HP and the VP.	To represent a solid on a flat surface having only length and breadth, at least two orthographic views are necessary.	Lecture+ Studio work	ID1203.1	Sheet 2 @A1
4 (01/04/21)	Sections of Solids ➤ Prism ➤ Pyramid	Understanding of Section Planes, Sections, True shape of Sections -Making Sections in different Section Plane condition	Lecture+ Studio work	ID1203.1	Sheet3 @A1
5 (08/04/21)	Sections of Solids ➤ Cylinder Cone	Understanding of Sections & True shape of Sections in different Section plane condition.	Lecture+ Studio work	ID1203.1 ID1203.2	Sheet 3 @A1
6 (15/04/21)	Intersection of Solids ➤ Intersections of 2 Prisms ➤ Cylinders & Prism ➤ 2 Cylinder	Understanding of the methods of interpretation making detail drawing showing intersection of two solid forms and it on paper.	Lecture+ Studio work	ID1203.1 ID1203.2	Sheet 4 @A1
7 (22/04/21)	Isometric Projections Prism Pyramid Cylinder Cone Real life object	Understanding of pictorial projection in which the 3-dimensions of solid are not only shown in one view, but their actual sizes can be measured directly from it.	Lecture+ Studio work	ID1203.1	Sheet 5 @A1
8 (29/04/21)	Oblique Projections Prism Pyramid Real life objects	Understanding another method of pictorial projection by representing 3D object on the projection plane by one view only.	Lecture+ Studio work	ID1203.1 ID1203.2	Sheet 6 @A1
9 (06/05/21)	Perspective Projections ➤ One Point	Understanding the method of making perspective view which are assumed as vision of the eye	Lecture+ Studio work	ID1203.1 ID1203.2	Sheet 7 @A1
10 (13/05/21)	EID UL FITR				
11 (20/05/21)	Perspective Projections ➤ Two Point	Understanding the method of making perspective view which are assumed as vision of the eye	Lecture+ Studio work	ID1203.1 ID1203.2	Sheet 8 @A2
12 (27/05/21)	Perspective Projections ➤ Three Point	Understanding the method of making perspective view which are assumed as vision of the eye	Lecture+ Studio work	ID1203.1 ID1203.2	Sheet 9 @A2
13 (03/06/21)	Sciography in Interior Space	Methods and techniques of drawing 1-point and 2-point perspectives of interiors of different building types.	Lecture+ Studio work	ID1203.1 ID1203.2	Sheet 10 @A3
14 (10/06/21)	Rendering Techniques	Perspective dealing with the projection of shadows, or delineation of an object in perspective with its gradation of light and shade.	Lecture+ Studio work	ID1203.1 ID1203.2	Sheet @A3

H. Course Articulation Matrix: (Mapping of COs with POs)

CO	STATEMENT	CORRELATION WITH PROGRAM OUTCOMES												CORRELATION WITH PROGRAM SPECIFIC OUTCOMES		
		PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3
ID1203.1	Illustrate solid geometry through graphical exercises of increased complexity.	3		1							3		3	2	2	3
ID1203.2	Incorporate the basics of perspective drawings in interiors.	3		1							3		3	2	2	3
ID1203.3	Impart the techniques of rendering in different media and skills of three-dimensional visualization and presentation.			1							3		3	3	1	3

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



MANIPAL UNIVERSITY JAIPUR

School of Planning and Design

Department of Interior Design

Course Hand-out

Visual Arts II | ID1204 | 3 Credits

Session: Jan 21 – May 21 | Faculty: Ar. Richa Jagatramka | Class: Studio and Practical

A. Introduction: This course is offered by Dept. of Interior Design, targeting students who wish to pursue Interior Design as a profession. Study the importance of Visual Arts, to enable the understanding of 3-D Composition, generation of form from planes. Students are expected to have background knowledge of principles and elements of visual compositions for a better learning.

B. Course Objectives: At the end of the course, students will be able to

[1204.1] Make the composition of 3-D objects.

[1204.2] Visualise and create the third dimension from a two-dimensional planes or abstract ideas.

[1204.3] Analyse the relationship between the grammar of Design and Interior spaces.

[1204.4] Create planar forms within interior spaces and improvise handling skill of materials for 3D representations.

C. Program Outcomes and Program Specific Outcomes

[PO.1]. **Design knowledge:** Apply the knowledge of mathematics, science and design fundamentals to the solution of complex problems.

[PO.2]. **Problem analysis:** Identify, formulate, research literature, and analyse complex problems reaching substantiated conclusions using principles of design and sciences.

[PO.3]. **Design/development of solutions:** Design solutions for complex problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

[PO.4]. **Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

[PO.5]. **Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex design activities with an understanding of the limitations.

[PO.6]. **The Designer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional practice.

[PO.7]. **Environment and sustainability:** Understand the impact of the professional design solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

[PO.8]. **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the design practice.

[PO.9]. **Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

[PO.10]. **Communication:** Communicate effectively on complex design activities with the related community and society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

[PO.11]. **Project management and finance:** Demonstrate knowledge and understanding of the design and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

[PO.12]. **Life-long learning:** Recognize the need for and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

[PSO.1]. **Academic and Industry:** Apply creative, innovative, intellectual learning to establish academic and professional excellence in the field of Interior Design.

[PSO.2]. **Critical Thinking:** To produce technical, communicative and conscious design of interior spaces and related products.

[PSO.3]. **Global Standards:** Meet global standards to underpin design, technological & business development.

D. Assessment Rubrics:

Criteria	Description	Maximum Marks
Internal Assessment (Summative)	In class Quizzes and Assignments , Activity feedbacks	60
External	Portfolio submission and final presentation	40
	Total	100
Attendance (Formative)	A minimum of 75% Attendance is required to be maintained by a student to be qualified for taking up the End Semester examination. The allowance of 25% includes all types of leaves including medical leaves.	
Make up Assignments (Formative)	Students who misses a class will have to report to the teacher about the absence. A makeup assignment on the topic taught on the day of absence will be given which has to be submitted within a week from the date of absence. No extensions will be given on this. The attendance for that particular day of absence will be marked blank, so that the student is not accounted for absence. These assignments are limited to a maximum of 5 throughout the entire semester.	

Homework/ Home Assignment/ Activity Assignment (Formative)	There are situations where a student may have to work in home, especially before a flipped classroom. Although these works are not graded with marks. However, a student is expected to participate and perform these assignments with full zeal since the activity/ flipped classroom participation by a student will be assessed and marks will be awarded.
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E. Syllabus

Building interiors appraisal. Analytical study of the Interiors of famous buildings and its critical appraisal of visual character, Study of the visual composition created by the furniture and other components in the Interiors. **Paper forms:** Explorations of various folded paper forms and its possible use in Interior Spaces. **Solids and voids:** Creation of abstract and semi abstract symbolic sculptural forms and spaces. **Linear forms:** Wire Sculptures, Mobile Sculptures, Atrium Sculptures, Space sculptures, Geodesic Domes etc. for outdoor and indoor spaces. **Fluid / plastic forms:** Use of clay, plaster or any other mouldable material and create plastic and free flowing sculptural forms.

F. Reference Book

- R1. Kurty Bruce D., *Visual Imagination – An Introduction of Art*, Prentice Hall, New Jersey, 1987
R2. Sinha Gayatri, Dutta Santo and Bhatia Gautam, *Satish Gujral: An Artography*, Lustre/Roli Books, 2006.
R3. Gill, Robert W., *Manual of Rendering in Pen and Ink*, Thames & Hudson, 1984
R4. Satish Gujral, Khushwant Singh, *A Brush with Life: An Autobiography*, Penguin Books India, 1997.
R5. Hanlon, Don, *Compositions in Architecture*, Wiley, 2009.
R6. Harh, Fredrick, *Art: A History Painting, Sculpture and Architecture*, H.N. Abrams, 1976.
R7. Hayashi Studio, *Water Colour Rendering*, Japan Graphic-sha, 1994.
R8. Schneebeli Deborah –Morrell, *Decorative Paper cutting*, Collins & Brown, 1998.

G. Lecture Plan:

Lec No	Topics	Session Objective	Mode of Delivery	Corresponding CO	Mode of Assessing the Outcome
1 07.01.20	Introduction to Visual Arts II	Explorations of various paper folding techniques.	Lecture Class Activity	I204.3	In Class Activity
2 14.01.20	Building Appraisal- Visit to any existing Restaurant in Jaipur and analyze its interiors. Study of the visual composition created by the furniture and other components in the Interiors Material Req.- Camera, A3 sketch book & stationery.	Analytical study of the sculptural building forms and its critical appraisal of visual character.	Lecture Class Activity	I204.3	Outdoor visit
3 21.01.20	Building Appraisal- Documentation of site visit. Study of the visual composition created by the furniture and other components in the Interiors Material Req.- A2 size sheet	Analytical study of the sculptural building forms and its critical appraisal of visual character.	Lecture Class Activity	I204.3	Studio work
4 28.01.20	Study of Paper Forms- Types of Bases. Paper folded forms- Cube, Tetrahedron box, Diamond, Convertible Cube into flower. Material Req.- Origami sheets, basic stationery	Explorations of various paper folding techniques and making interesting solid forms.	Lecture Class Activity	I204.1 I204.4	Studio work and Home Assignment
5 04.02.20	Study of Paper Forms- Making different paper folded forms which can be used as light fixtures/furniture/decorative article in interior spaces. Material Req.- Origami sheets, other textured sheets, basic stationery	Creation of abstract and semi abstract symbolic sculptural forms and spaces. Understanding of possible use of Paper folded forms in Interior Spaces.	Lecture Class Activity	I204.1 I204.4	Studio work and Home Assignment
6 11.02.20	Study of Paper Forms		Lecture Class Activity	I204.1 I204.4	Studio work
7 18.02.20	First Sessional				
8 25.02.20	Study of Solids and Voids	Understanding the importance and balance of negative and positive spaces of interiors	Lecture Class Activity	I204.2 I204.3	Studio work - workshop
9 03.03.20	Study of Solids and Voids	Understanding the importance and balance of negative and positive spaces of interiors	Lecture Class Activity	I204.2 I204.3	Studio work

10 10.03.20	HOLI HOLIDAY				
11 17.03.20	Study of Linear Forms- Wire Sculptures Material Req.- Wire Roll 1mm dia. Plier	Understanding the language, system and compositions of linear forms in design by using wire & 2-D forms and representation in Interior space.	Lecture Class Activity	I204.2 I204.4	Studio work
12 24.03.20	Study of Linear Forms- Mobile Sculptures & Atrium Sculpture.	Understanding the language, system and compositions of linear forms in design by using wire.	Lecture Class Activity	I204.2 I204.4	Studio work
13 31.03.20	Study of Fluid / Plastic Forms Use of clay, plaster or any other mouldable material and create plastic and free flowing sculptural forms	Use of clay & plaster or any other mouldable material and create plastic and free flowing sculptural forms.	Lecture Class Activity	I204.1 I204.4	Studio work - workshop
14 07.04.20	Second Sessional				
15 14.04.20	Study of Fluid / Plastic Forms Use of clay, plaster or any other mouldable material and create plastic and free flowing sculptural forms	Use of clay & plaster or any other mouldable material and create plastic and free flowing sculptural forms.	Lecture Class Activity	I204.1 I204.4	Studio work
16 21.04.20	Final Submission				

H. Course Articulation Matrix: (Mapping of COs with POs)

CO	STATEMENT	CORRELATION WITH PROGRAM OUTCOMES												CORRELATION WITH PROGRAM SPECIFIC OUTCOMES		
		PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3
ID 1204.1	Make the composition of 3-D objects.	3	2	2		2				3		2	3	2	2	1
ID 1204.2	Visualise and create the third dimension from a two-dimensional planes or abstract ideas.	2	2	2	3	2		1	1	2	2		3	2	2	2
ID 1204.3	Analyse the relationship between the grammar of Design and Interior spaces.	2	3	3	2		3	2	2		2	1	3	3	3	2
ID 1204.4	Create planar forms within interior spaces and improvise handling skill of materials for 3D representations.	3	1	2		1	3			2		2	3	2	2	2

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

MANIPAL UNIVERSITY JAIPUR

Department of Interior Design
Course Hand-out

History of Interior Design I | ID 1205 | 3 Credits

Session: Jan 21 – May 21 | Faculty: Kush Jee Kamal | Class: 2nd Sem | Theory

- A. Introduction:** This course is offered in second semester B.Des. Interior design to equip students with knowledge of history, evolution and change in the building materials with time.
- B. Course Outcome:** At the end of the course, students will be able to
- [1205.1]. To develop the knowledge of the social, political, and physical influences affecting historical changes in design of the built environment.
 - [1205.2]. Apply themes and concepts for contemporary interior designs.
 - [1205.3]. Categorize the work styles and techniques of various Interior Designers via analysis of their portfolio.

C. PROGRAM OUTCOMES AND PROGRAM SPECIFIC OUTCOMES:

- [PO.1]. **Design knowledge:** Apply the knowledge of mathematics, science and design fundamentals to the solution of complex problems.
- [PO.2]. **Problem analysis:** Identify, formulate, research literature, and analyse complex problems reaching substantiated conclusions using principles of design and sciences.
- [PO.3]. **Design/development of solutions:** Design solutions for complex problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
- [PO.4]. **Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
- [PO.5]. **Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex design activities with an understanding of the limitations.
- [PO.6]. **The Designer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional practice.
- [PO.7]. **Environment and sustainability:** Understand the impact of the professional design solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
- [PO.8]. **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the design practice.
- [PO.9]. **Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
- [PO.10]. **Communication:** Communicate effectively on complex design activities with the related community and society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
- [PO.11]. **Project management and finance:** Demonstrate knowledge and understanding of the design and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
- [PO.12]. **Life-long learning:** Recognize the need for and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

PROGRAM SPECIFIC OUTCOMES

- [PSO.1]. **Academic and Industry:** Apply creative, innovative, intellectual learning to establish academic and professional excellence in the field of Interior Design.
- [PSO.2]. **Critical Thinking:** To produce technical, communicative and conscious design of interior spaces and related products.
- [PSO.3]. **Global Standards:** Meet global standards to underpin design, technological & business development.

D. Assessment Rubrics:

Criteria	Description	Maximum Marks
Internal Assessment (Summative)	Sessional I	10
	Sessional II	10
	Assignments	40
End Term Exam (Summative)	End Term Exam	40
	Total	100
Attendance (Formative)	A minimum of 75% Attendance is required to be maintained by a student to be qualified for taking up the End Semester examination. The allowance of 25% includes all types of leaves including medical leaves.	
Make up Assignments (Formative)	Students who misses a class will have to report to the teacher about the absence. A makeup assignment on the topic taught on the day of absence will be given which has to be submitted within a week from the date of absence. No extensions will be given on this. The attendance for that particular day of absence will be marked blank, so that the student is not accounted for absence. These assignments are limited to a maximum of 5 throughout the entire semester.	
Homework/ Home Assignment/ Activity Assignment (Formative)	There are situations where a student may have to work in home, especially before a flipped classroom. Although these works are not graded with marks. However, a student is expected to participate and perform these assignments with full zeal since the activity/ flipped classroom participation by a student will be assessed and marks will be awarded.	

E. Syllabus:

Early elements of style and determinants of interior environments: Prehistoric; Egyptian; Mesopotamian; Greek; Roman and Europe in early Christian; Romanesque; Gothic; Byzantine; Renaissance; Colonial America; Eclecticism; Art Deco; Baroque and Rococo periods. European styles: Victorian; Elizabethan; art Nouveau arts and crafts; Cubism; surrealism; Romanticism etc.; Forces of industrialization in Europe; changes in social structure; production systems; changes in technology and its impact on the life styles, arts and crafts and interior environments.

Modern movement in interior design and architecture: Developments of modern movements; various fields of design affecting interior ambiances directly; international modernism; post modernism regionalism and concerns with vernacular etc.

F. Reference Books:

1. Banister Fletcher, 1996. A History of Architecture, 20th edition. Architectural Press
2. John F. Pile, 2009. A history of interior design, 3rd edition. Wiley publication
3. Ralf Toman, 2011. Gothic: Architecture, Sculpture, Painting. HF ULLMANN Publication
4. Ralf Toman, 2004. Baroque: Architecture, Sculpture, Painting. Konemann Publication
5. Emily Cole, 2017. Architectural Details: A Visual Guide to 2000 Years of Building Styles. Ivy Press.

G. Lecture Plan:

Lec No	Topics	Session Objective	Mode of Delivery	Corresponding CO	Mode of Assessing the Outcome
1,2 &3	Elements of style and determinants of Interior environments during the Prehistoric, Egyptian, Mesopotamian, Greek.	Describe the social, political, and physical influences affecting historical changes in design of the built environment.	Lecture Assignment +	[1205.1] [1205.2]	Group assignment and Model making of prehistoric and Egyptian architectural marvels.
4,5 &6	Elements of style and determinants of Interior environments during the Roman and Europe in early Christian, Romanesque, Gothic, Byzantine, Renaissance.	To identify the movements and periods in interior design and furniture.	Lecture Assignment Discussion +	[1205.1] [1205.2]	Exploration of different style and Interior environments and it's representation via sketches.
7	Elements of style and determinants of Interior environments during the Colonial America, Eclecticism, Art Deco, Baroque and Rococo periods.	To use historical precedent to update the design solutions in modern context.	Lecture Assignment +	[1205.1] [1205.2]	Exploration of different style and Interior environments and it's representation via sketches.
8&9	An overview of Victorian, Elizabethan, art Nouveau arts and crafts, Cubism, surrealism, Romanticism etc. Forces of industrialization in Europe, changes in social structure, production systems, changes in technology and its impact on the life styles, arts and crafts and interior environments.	Acquire graphic skills to present and analyse the elements and explain its composition.	Heritage Walk Assignment +	[1205.1] [1205.2]	Visit to places like City Palace and Albert Hall and assignment on It's interior design elements. Representation via sketches.
10&11	An overview of Cubism, surrealism, Romanticism etc.	To use historical precedent to update the design solutions in modern context.	Lecture Assignment+ Discussion +	[1205.1] [1205.2]	Assignment based on different styles of painting and replication of it.
12	Forces of industrialization in Europe, changes in social structure, production systems, changes in technology and its impact on the life styles, arts and crafts and interior environments.	Describe the social, political, and physical influences affecting historical changes in design of the built environment.	Lecture Assignment + Discussion +	[1205.1] [1205.3]	Exploration of different style and Interior environments and it's representation via sketches.
13	History of modern movement in interior design and architecture	To identify the movements and periods in interior design and furniture.	Lecture Assignment +	[1205.2] [1205.3]	Assignment based on origin on different styles in Modern time.
14	Developments of modern movements – various fields of design affecting interior ambiances directly	Acquire graphic skills to present and analyse the elements and explain its composition.	Lecture Assignment+ Discussion +	[1205.1] [1205.3]	Assignment based on different designers.

H. Course Articulation Matrix: (Mapping of COs with POs)

CO	STATEMENT	CORRELATION WITH PROGRAM OUTCOMES												CORRELATION WITH PROGRAM SPECIFIC OUTCOMES		
		PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3
ID 1205.1	To develop the knowledge of the social, political, and physical influences affecting historical changes in design of the built environment.	3	3	3	2	1	3	2	1	2	1	2	3	1	2	3
ID 1205.2	To identify the movements and periods in interior design and furniture.	1	2	2	2	3	1	1	1	1	1	1	1	3	3	1
ID 1205.3	To use historical precedent to update the design solutions in modern context.	2	3	2	3	1	2	1	2	1	1	2	1	2	1	2

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



MANIPAL UNIVERSITY JAIPUR

School of Planning and Design

Department of Interior Design

Course Hand-out

Computer Application I | ID 1206 | 2 Credits

Session: Jan 21 – May 21 | Faculty: Ar. Apoorva Agarwal | Class: Studio

A. Introduction: This course is offered by Dept. of Interior Design, catering the students to pursue B.Des Interior Design. Brief overview of computer components, relevant software for interior design. Students are expected to have background knowledge of using computer for a better learning.

B. Course Objectives: At the end of the course, students will be able to

[ID 1206.1] Describe the technology of computer and the importance of audio-visual presentations, word processing, and other basic computing.

[ID 1206.2] Draft their own designs using computer as a tool.

[ID 1206.3] Describe various applications of the software and graphic systems, which will enhance their presentation skills.

[ID 1206.4] Experience the use of interior modelling software.

C. Program Outcomes and Program Specific Outcomes

[PO.1]. **Design knowledge:** Apply the knowledge of mathematics, science and design fundamentals to the solution of complex problems.

[PO.2]. **Problem analysis:** Identify, formulate, research literature, and analyse complex problems reaching substantiated conclusions using principles of design and sciences.

[PO.3]. **Design/development of solutions:** Design solutions for complex problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

[PO.4]. **Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

[PO.5]. **Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex design activities with an understanding of the limitations.

[PO.6]. **The Designer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional practice.

[PO.7]. **Environment and sustainability:** Understand the impact of the professional design solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

[PO.8]. **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the design practice.

[PO.9]. **Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

[PO.10]. **Communication:** Communicate effectively on complex design activities with the related community and society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

[PO.11]. **Project management and finance:** Demonstrate knowledge and understanding of the design and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

[PO.12]. **Life-long learning:** Recognize the need for and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

[PSO.1]. **Academic and Industry:** Apply creative, innovative, intellectual learning to establish academic and professional excellence in the field of Interior Design.

[PSO.2]. **Critical Thinking:** To produce technical, communicative and conscious design of interior spaces and related products.

[PSO.3]. **Global Standards:** Meet global standards to underpin design, technological & business development.

D. Assessment Rubrics:

Criteria	Description	Maximum Marks
Internal Assessment (Summative)	Internal assignment assessment & progress marking	60
End Term Exam (Summative)	Portfolio submission and Final Project	40
	Total	100
Attendance (Formative)	A minimum of 75% Attendance is required to be maintained by a student to be qualified for taking up the End Semester examination. The allowance of 25% includes all types of leaves including medical leaves.	
Make up Assignments (Formative)	Students who misses a class will have to report to the teacher about the absence. A makeup assignment on the topic taught on the day of absence will be given which has to be submitted within a week from the date of absence. No extensions will be given on this. The attendance for that particular day of absence will be marked blank, so that the student is not accounted for absence. These assignments are limited to a maximum of 5 throughout the entire semester.	
Homework/ Home Assignment/ Activity Assignment (Formative)	There are situations where a student may have to work in home, especially before a flipped classroom. Although these works are not graded with marks. However, a student is expected to participate and perform these assignments with full zeal since the activity/ flipped classroom participation by a student will be assessed and marks will be awarded.	

E. Syllabus

Introduction to MS office: Understanding the applications for creating and then utilizing visuals like 2D & 3D graphics, text, tables etc.; Understanding the use of data analysis tools and spreadsheet templates; Setting up of schedule of various building materials and finishes. Introduction to computer aided 2d drafting: Understanding

the use of drawing tools; object editing; drawing objects; filing and setting drawing units, scales; limits that size and dimensioning; lettering; Setting up of drawing of various simple objects with complete text and dimensioning; Using paper space, and model space to edit and plot drawings; Creating blocks and insertion; raster images; create, edit and use of attributes & blocks. Introduction to BIM (building information modelling) softwares: Understanding the use of BIM software like REVIT, ArchiCAD etc. Introduction to workspace; toolbars; properties and navigation; basics of creating walls, floors, roofs and placing doors and windows.

F. Reference Book

- R1 Woody Leon Hard, (1999), *Microsoft Office 2000*, Que.
- R2 Teyapoovan, T., (2000), *Engineering Drawing with Auto CAD*. Delhi: Vikas Publications House Pvt. Ltd.
- R3 Omura, G., (2014), *Mastering AutoCAD 2015 and AutoCAD LT 2015*. s.l.:Wiley India Private Ltd..
- R4 Yarwood, A. & Palm, B. S., (2015), *Introduction to AutoCAD 2016: 2D and 3D Design*. s.l.:Routledge..
- R5 Aubin, P. F., (2012), *The Aubin Academy Master Series: Revit Architecture 2013*. s.l.:Autodesk Press.
- R6 Duell, R. & Hathorn, T., (2014), *Autodesk Revit Architecture 2015 Essentials*. s.l.:Sybex.
- R7 Krygiel, E. & Vandezande, J., (2014), *Mastering Autodesk Revit Architecture 2015*. s.l.:Sybex.

G. Lecture Plan:

Lec No	Topics	Session Objective	Mode of Delivery	Corresponding CO	Mode of Assessing the Outcome
1	Introduction to MS-word : Understanding the applications for creating visuals like 2D contents, text, tables etc	Students should be able to operate the Microsoft word software, using all techniques.	Lecture activity and	ID 1206.1	Studio Assignment
2	Presentations techniques and formats in MS PowerPoint.	Students should be able to develop skills of MS PowerPoint.	Lecture activity and	ID 1206.1	Studio Assignment & presentation.
3	Introduction to MS-Excel: Understanding the use of data analysis tools and spreadsheet templates. (Guest Lecture by Software Experts)	Students should be able to develop skills of MS Excel.	Lecture activity and	ID 1206.2	Studio Assignment & presentation
4	Introduction to Autodesk AutoCAD: Familiarising with the basic tools of 2D basic cad (Drafting & Annotations)	Students will learn the basics commands of autocad like units, trim, line, polyline, various shapes etc.	Lecture activity and	ID 1206.3	Studio Assignment
5	Understanding the use and process of rastering an image in AutoCAD	Students learn the importance of rasteing the image and also the technicalities in the process	Lecture activity and	ID 1206.3	Studio Assignment
6	Understanding the usage of layers and blocks in AutoCAD	Students should be able to form and work in layers, also be able to apply various formatting within these layers	Lecture activity and	ID 1206.3	Studio Assignment
7	Knowing the importance and usage of scale setting and units for printouts.	Students should be able to develop skills of MS Word.	Lecture activity and	ID 1206.3	Studio Assignment
8,9	Introduction to BIM software	Students will be aware of the Building Information Modelling software	Lecture activity and	ID 1206.4	Studio Assignment
10,11	Introduction to Google Sketchup	Students should be able to develop basic 3D interior structures on google SketchUp	Lecture activity and	ID 1206.4	Studio Assignment
12, 13	Introduction to workspace; toolbars; properties and navigation; basics of creating walls, floors, roofs and placing doors and windows in google sketch up	Students should be able to use the various tool and making complex structures and also apply rendering tools	Lecture activity and	ID 1206.4	Studio Assignment

H. Course Articulation Matrix: (Mapping of COs with POs)

CO	STATEMENT	CORRELATION WITH PROGRAM OUTCOMES												CORRELATION WITH PROGRAM SPECIFIC OUTCOMES		
		PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3
ID 1206.1	To know the importance of audio visual presentations, word processing, and other basic computing.				1	3				1	2		1		1	
ID 1206.2	To know the tools and techniques associated with dealing and formulating data.				2	3				2	2		2	1		
ID 1206.3	Practice the skill of drafting the technical drawings for design and execution					3	1			1	3		3		1	
ID 1206.4	Experience the use of interior modelling software.				2	3	1			2	2		3		1	

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

MANIPAL UNIVERSITY JAIPUR

School of Planning and Design

Department of Interior Design

Course Hand-out

Interior Design III | ID 2101 | 8 Credits

Session: Jul 20 – Nov 20 | Faculty: Ar. Richa Jagatramka | Ar Kush Jee Kamal | Class: Studio + Practical



A. Introduction: This course is offered in the first semester of B. Sc. Interior Design in order to develop an understanding of basic fundamentals of Space Planning and Interior Designing in context with the Site, Climatology, Anthropometry and materials.

B. Course Outcome: At the end of the course, students will be able to

[2101.1] To develop creative conceptual visualization skill.

[2101.2] To understand the process of design emphasizing/ through graphic layouts and elevations as a design process.

C. Program Outcomes and Program Specific Outcomes

[PO.1]. **Design knowledge:** Apply the knowledge of mathematics, science and design fundamentals to the solution of complex problems.

[PO.2]. **Problem analysis:** Identify, formulate, research literature, and analyse complex problems reaching substantiated conclusions using principles of design and sciences.

[PO.3]. **Design/development of solutions:** Design solutions for complex problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

[PO.4]. **Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

[PO.5]. **Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex design activities with an understanding of the limitations.

[PO.6]. **The Designer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional practice.

[PO.7]. **Environment and sustainability:** Understand the impact of the professional design solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

[PO.8]. **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the design practice.

[PO.9]. **Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

[PO.10]. **Communication:** Communicate effectively on complex design activities with the related community and society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

[PO.11]. **Project management and finance:** Demonstrate knowledge and understanding of the design and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

[PO.12]. **Life-long learning:** Recognize the need for and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

[PSO.1]. **Academic and Industry:** Apply creative, innovative, intellectual learning to establish academic and professional excellence in the field of Interior Design.

[PSO.2]. **Critical Thinking:** To produce technical, communicative and conscious design of interior spaces and related products.

[PSO.3]. **Global Standards:** Meet global standards to underpin design, technological & business development.

D. Assessment Rubrics:

Criteria	Description	Maximum Marks
Internal Assessment (Summative)	Studios + Practical	100
	Total	100
	A minimum of 75% Attendance is required to be maintained by a student to be qualified for taking up the End Semester examination. The allowance of 25% includes all types of leaves including medical leaves.	
Attendance (Formative)	Students who misses a class will have to report to the teacher about the absence. A makeup assignment on the topic taught on the day of absence will be given which has to be submitted within a week from the date of absence. No extensions will be given on this. The attendance for that particular day of absence will be marked blank, so that the student is not accounted for absence. These assignments are limited to a maximum of 5 throughout the entire semester.	
Make up Assignments (Formative)	There are situations where a student may have to work in home, especially before a flipped classroom. Although these works are not graded with marks. However, a student is expected to participate and perform these assignments with full zeal since the activity/ flipped classroom participation by a student will be assessed and marks will be awarded.	
External Assessment (Summative)	Practical	50

E. Syllabus

Space planning process (block diagram, concept statement), Furniture, Structural integration, Material selection, Color, Rendering, Design Process/methodology, Creativity /originality, Documenting space (sketch and photo documentation), Anthropometry and ergonomics, Graphic design (page layout and composition), Concepts sketching, Application of design principles and elements, Portfolio development.

F. Reference Book

1. Karlen Mark, (1992), *Space planning Basics*, Van Nostrand Reinhold, New York.
2. Joseph D Chiara, Julius Panero, & Martin Zelnick, (2001), *Time Saver standards for Interior Design & space planning, 2nd edition*, Mc-Graw Hill professional.
3. Francis.D. Ching & Corky Bingelli, (2004), *Interior Design Illustrated, 2nd edition*, Wiley publishers.
4. Julius Panero & Martin Zelnick, (1979), *Human Dimension & Interior Space: A source book of Design Reference standards*, Watson – Guptill.

5. Maureen Mitton, (2003), *Interior Design Visual Presentation: A Guide to Graphics, Models, and Presentation Techniques*, John Wiley and Sons.
6. Mark.W. Lin, (1993), *Drawing and Designing with Confidence: A step-bystep guide*, Wiley and Sons.
7. Robert Rengel, (2002), *Shaping Interior Space*, Fairchild Books & Visuals.

G. Lecture Plan:

Studio Dates	Stage	Programme	Mode of Delivery	of	Corresponding CO	MARKS (100)	Mode of Assessing the Outcome
	PRE- DESIGN STAGE	Introduction to the Design project- Kindergarten & Primary School, Jaipur Exercise: 1. Collect data for child psychology and activities from library. 2. Select 1 KG & 1 Primary school design from books in library (for case study). Get Photostat and justify your selection in context with Space management/ Anthropometry/Interiors/Indoor Activities	Lecture Discussion	+	CO 2101.1 CO 2101.2		A4 size : Photostats Collected data in brief
		<u>Lecture 1:</u> Introduction to Design brief & Program (HEA) <u>Lecture 2:</u> Introduction to Case Studies (how to do it) (HEA) Assignment: Make Analysis report of Users in the project			CO 2101.1 CO 2101.2		
		-Discussion on Case Studies data <u>Lecture 3:</u> Ideal design methodology (HEA) <u>Lecture 4:</u> User Profile Analysis- Child Psychology and Approach (APA) <u>Lecture 5:</u> Site Analysis (Climatology), Circulation (Bubble Diagram), Zoning, Area Programming (APA) <u>Lecture 6:</u> Introduction to Standards(NBC/JDA/NEUFERT/TSS) (HEA) Exercise: Making of Final Case Studies Sheets in Class	Lecture Studio	+	CO 2101.1 CO 2101.2		Progress marking: Analysis report on users Data Collection Work on Final Sheets
		<u>Lecture 7:</u> Introduction to comparison table for Inferences (how to present case studies) (APA) Exercise: Making of Final Case Studies & Standard Sheets in Class	Lecture Studio	+	CO 2101.1 CO 2101.2		Progress marking: Work on Final Sheets
		<u>Lecture 8:</u> Introduction to User's Anthropometry and ergonomics (APA) Exercise: Make A1 size sheet with the data collected for child psychology and activities	Lecture Studio	+	CO 2101.1 CO 2101.2		
		Discussion on Mock Sheets before Review-1			CO 2101.1 CO 2101.2		
		Review 1: -Case Study + Standards: Analysis & Inferences - User Profile Analysis (On Report and Sheets) - Site Analysis & Area Programming Assignment: Bring Floor Plans (Single Line) print on A1 Sheet	Lecture Studio	+	CO 2101.1 CO 2101.2		MM: 50 marks
		CONCEPT DEVELOPMENT STAGE	-Discussion on Mock Sheets of Jury Sheets: Feedback from faculties and students Exercise: Work on Site (Brain Storming) and Discussion Development of concept for the Interiors Assignment: Bring sheets for Concepts (flooring, furniture, walls, ceiling etc.) to be adopted in different types of spaces in the School.	Lecture Studio	+	CO 2101.1 CO 2101.2	
	<u>Lecture 9:</u> Furniture and Ergonomics (Plans/ Sections) (HEA) <u>Lecture 10:</u> Role of Colors & Materials in conceptualizing the Interiors of different spaces. (APA) Discussion & Finalization of the Concepts along with the activities in each space Exercise: Work on floor plans by putting grids over it and placing the conceptual interiors.		Lecture Studio	+	CO 2101.1 CO 2101.2		
	Discussion and marking on mock sheets (Double Line)		Lecture Studio	+	CO 2101.1 CO 2101.2		
	-Discussion on final sheets for Review-2				CO 2101.1 CO 2101.2		
	Review -2: - User Circulation & Space Requirements - Zoning & Circulation /Connectivity sequence diagram - Space Planning (Scaled Drawings- Hand Drafted) - Concept Development (Finalized) - Basic layout of Interiors (Furniture/Flooring/Wall)- On Plan & Part-Sections		Lecture Studio	+	CO 2101.1 CO 2101.2		Scale 1:50/1:25 MM: 30 Marks
	DESIGN DEVELOPMENT STAGE		-Discussion on Mock Sheets of Jury Sheets: Feedback from faculties and students <u>Lecture 11:</u> Introduction to Detailed representation of Scaled Drawings of all Spaces (Plans/Sectional Elevations) (HEA) Exercise: Drafting of Sections and Elevations with the help of Final Layouts as per Review-2			CO 2101.1 CO 2101.2	

		Exercise: Drafting of Sections and Elevations with the help of Final Layouts as per Review-2		CO 2101.1 CO 2101.2		
		<u>Lecture 12</u> : Introduction to Toilet Details (Flooring layout/Furniture Layout) 1:25 & Sections (Including Human Figures) & Internal elevations of Toilets (APA) Assignment: Light Drafting Toilet details		CO 2101.1 CO 2101.2		
		Exercise: Light Drafting Toilet details		CO 2101.1 CO 2101.2		
		Discussion on Final Sheets for the external review-3		CO 2101.1 CO2101.2		
		Review -3: (External) -Detailed Plans, Building Sections, Part-Plans/Parts Sections & Elevations of different spaces (Flooring layout/Furniture Layouts) -Toilet Detailed Drawings Note: Flooring and furniture layouts included No rendering No Dimensioning required (only basic dimensions-light pencil drafted)		CO 2101.1 CO 2101.2		Scale 1:50/ 1:25 MM:30
	DETAILED DRAWINGS	-Discussion on Mock Sheets of Jury Sheets: Feedback from faculties and students <u>Lecture 13</u> : Introduction to Reflected ceiling plan (HEA) Assignment: Development of RCPs on Tracing A1 size		CO 2101.1 CO 2101.2		
		<u>Lecture 14</u> : Introduction to Material Exploration & Mood Board (Color Schemes, Schedule of finishes) (APA) <u>Lecture 15</u> : Detailed representation of Furniture Drawings (1:25/1:10) (HEA) Discussion & Finalization: Reflected ceiling plan, Building Material, Mood Board Exercise: After discussion of RCPs, Selection of Building Materials (Sustainable Design), Selection of Finishes (as per User Profile) from Library Drafted final RCPs Assignment: Develop Mood Board- collection of materials		CO 2101.1 CO 2101.2		Progress marking: 20 marks
		Finalization of RCPs and Mood Board Assignment: Develop Mood Board- collection of materials		CO 2101.1 CO 2101.2		
		Exercise: Drafting of Furniture details sheets and making of mood boards <u>Lecture 16</u> : Model making & Presentation Drawings (page layout and composition) (HEA) Assignment: Surface Developments as per the floor plans to develop Block model for the jury		CO 2101.1 CO 2101.2		
		Discussion on Final Sheets for the Review-4 Exercise: Develop Block model for the jury		CO 2101.1 CO 2101.2		
		DIWALI HOLIDAY				
		Submission on Final Sheets for the Review-4 with marking on model		CO 2101.1 CO 2101.2		
		SESSIONAL-II				
		Final Model Submission for the Review-4		CO 2101.1 CO 2101.2		

		Review 4: PRE FINAL Compiled detailed design sheets of All works on previous reviews - Reflected Ceiling Plan - Material Exploration & Mood Board - Furniture Details Sheets - Model		CO 2101.1 CO 2101.2		MM: 50 marks
	RENDERING AND MODELLING STAGE	Developments/Rendering of Final Drafted Drawing in Class		CO 2101.1 CO 2101.2		
		Developments/Rendering of Final Drafted Drawing in Class		CO 2101.1 CO 2101.2		
		Mock Review: Detailed Model & Final Sheets		CO 2101.1 CO 2101.2		
	LAST TEACHING DAY	Review 5: INTERNAL FINAL		CO 2101.1 CO 2101.2		MM: 100 marks

H. Course Articulation Matrix: (Mapping of COs with POs)

CO	STATEMENT	CORRELATION WITH PROGRAM OUTCOMES												CORRELATION WITH PROGRAM SPECIFIC OUTCOMES		
		PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3
ID 1206.1	To develop creative conceptual visualization skill.	3			1	3				1	2		1		1	
ID 1206.2	To understand the process of design emphasizing/ through graphic layouts and elevations as a design process.		3	2	2	3				2	2		2	1		

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



MANIPAL UNIVERSITY JAIPUR

School of Planning and Design

Department of Interior Design

Course Hand-out

Construction & Materials III | ID 2102 | 4 Credits

Session: Jul 20 – Nov 20 | Faculty: Ar. Akshita Joshi (CC) | Class: Lecture (3) + Practical (2)

A. Introduction: This course is offered in the third semester of B. Des. Interior Design in order to familiarise them with variety of materials, tools and technology available in the market, used for construction and the execution, to be able to comprehend with the standard graphical detailing techniques in Interior Design practice. Students are expected to be able to appreciate the innovation in building technology and materials in the process.

B. Course Outcomes: At the end of the course, students will be able to:

[ID 2102.1] Analyze various materials while highlighting the current trends and innovations

[ID 2102.2] Develop the knowledge about various interior material properties & their applications.

[ID 2102.3] Analyze the commercial forms and implemented standards of materials.

[ID 2102.4] Acquire knowledge about the construction of basic elements of an interior space.

C. Program Outcomes and Program Specific Outcomes:

[PO.1]. **Design knowledge:** Apply the knowledge of mathematics, science and design fundamentals to the solution of complex problems.

[PO.2]. **Problem analysis:** Identify, formulate, research literature, and analyse complex problems reaching substantiated conclusions using principles of design and sciences.

[PO.3]. **Design/development of solutions:** Design solutions for complex problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

[PO.4]. **Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

[PO.5]. **Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex design activities with an understanding of the limitations.

[PO.6]. **The Designer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional practice.

[PO.7]. **Environment and sustainability:** Understand the impact of the professional design solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

[PO.8]. **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the design practice.

[PO.9]. **Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

[PO.10]. **Communication:** Communicate effectively on complex design activities with the related community and society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

[PO.11]. **Project management and finance:** Demonstrate knowledge and understanding of the design and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

[PO.12]. **Life-long learning:** Recognize the need for and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

[PSO.1]. **Academic and Industry:** Apply creative, innovative, intellectual learning to establish academic and professional excellence in the field of Interior Design.

[PSO.2]. **Critical Thinking:** To produce technical, communicative and conscious design of interior spaces and related products.

[PSO.3]. **Global Standards:** Meet global standards to underpin design, technological & business development.

D. Assessment Rubrics:

Criteria	Description	Maximum Marks
Internal Assessment (Summative)	Sessional Exam I	10
	Sessional Exam II	10
	In class Quizzes and Assignments, Activity feedbacks	40
End Term Exam (Summative)	End Term Exam	40
	Total	100
Attendance (Formative)	A minimum of 75% Attendance is required to be maintained by a student to be qualified for taking up the End Semester examination. The allowance of 25% includes all types of leaves including medical leaves.	
Make up Assignments (Formative)	Students who misses a class will have to report to the teacher about the absence. A makeup assignment on the topic taught on the day of absence will be given which has to be submitted within a week from the date of absence. No extensions will be given on this. The attendance for that particular day of absence will be marked blank, so that the student is not accounted for absence. These assignments are limited to a maximum of 5 throughout the entire semester.	
Homework/ Home Assignment/ Activity Assignment (Formative)	There are situations where a student may have to work in home, especially before a flipped classroom. Although these works are not graded with marks. However, a student is expected to participate and perform these assignments with full zeal since the activity/ flipped classroom participation by a student will be assessed and marks will be awarded.	

E. Syllabus:

Introduction of synthetic materials:

Glass: Types, properties, composition, manufacturing processes and uses.

Plastics: Injection moulding & other manufacturing methods, etc.

Rubber: Natural rubber, latex, coagulation, vulcanizing and synthetic rubber, properties and application.

Adhesives: Natural and Synthetic, their varieties, Method of application etc.

Composite materials: Types, properties & applications.

Fabrics: textile, Jute, leather etc., different types and their uses.

Partitions: Details of fixed, sliding and folding partitions, Jali works.

Doors: Types including – openable, sliding, folding pivoted Lodged and braced, panelled doors, glazed doors, Joinery details for doors.

Windows: Types, Ventilators and its types, Joinery details for windows, ventilators.

Staircase: Types according to profile – straight flight, doglegged, quarter turn, half turn, bifurcated, spiral & helical; Types based on materials (timber, wood, steel, synthetic materials)

Details of handrails & balusters; Universal design and detailing.

Water and fire proofing materials: Types, properties, uses & applications in Interiors

Special purpose paints: bituminous, luminous, fire retardant and resisting paints – properties, uses and applications.

F. Reference Books:

9. W.B Mckay, building construction, VOL 1-4.
10. Rangwala, S.C.,1963. Building Construction: Materials and types of Construction, 3rd ed.
11. Francis D. Ching, 2008. Building Construction Illustrated.
12. Stephen Emmitt, 2010. Barry's advanced construction of buildings, 2nd edition. Wiley-Blackwell
13. Arthur Lyons, 2014. Materials for architects and Builders, 5th edition. Routledge
14. Bert Bielefeld, 2017. BASICS Building technology (Bielefeld), 1st edition. Birkhäuser
15. Blaine Brownell, 2006. Transmaterials, 1 edition. Princeton Architectural Press
16. Roland Ashcroft, 1992. Construction for Interior Designers, 2nd edition. Routledg

G. Lecture Plan:

Lec No	Topics	Session Objective	Mode of Delivery	Corresponding CO	Mode of Assessing the Outcome
1 (00/00/2021)	Glass <ul style="list-style-type: none"> • Introduction – History • Composition - Properties • Fabrication • Sheet Products 	To learn the importance of glass as a building material and its properties.	Lecture + Assignment	ID 2102.1 ID 2102.2 ID 2102.3	1. Market survey & Report Writing.
2 (00/00/2021)	Glass <ul style="list-style-type: none"> • Non – sheet products • Application in buildings • Tools and technologies. • Workmanship and specification. 	Acquiring knowledge about application of glass in interior designing.	Lecture + Assignment	ID 2102.1 ID 2102.2 ID 2102.3	1. Sample collection & model making on exhibit design using glass as a medium
3 (00/00/2021)	Introduction to Plastics <ul style="list-style-type: none"> ▪ Types & Properties ▪ Polymerization and condensation ▪ Difference between thermosetting and thermoplastics 	To learn about plastic as a building material.	Lecture + Assignment	ID 2102.1 ID 2102.2 ID 2102.3	1. Submit a presentation listing the places in which plastic can substitute the conventional building materials in interiors.
4 (00/00/2021)	Plastics <ul style="list-style-type: none"> • Types of mouldings in plastic manufacturing • Fabrication • Uses and application • Degradation 	To learn the importance of plastic as a building material and its detailing. To learn the importance of glass as a building material and its properties.	Lecture + Assignment	ID 2102.1 ID 2102.2 ID 2102.3	1. Report on manufacturing process and fabrication of plastic.
5 (00/00/2021)	Natural Rubber <ul style="list-style-type: none"> • Introduction • Coagulation and vulcanization of rubber material • Properties and uses 	To learn the importance of rubber as a building material, its detailing and its application.	Lecture + Assignment	ID 2102.1 ID 2102.2 ID 2102.3	1. Submit a report on the usage and manufacturing of natural rubber. 2. Make a report on the buildings where natural rubber is used extensively for interior construction.
(00/00/2021)	Synthetic Rubber <ul style="list-style-type: none"> • Introduction • Chemical processing • Properties and uses 	To learn the importance of rubber as a building material, its detailing and its application.	Lecture + Assignment	ID 2102.1 ID 2102.2 ID 2102.3	1. Submit a report on the usage and manufacturing of Synthetic rubber. 2. Make a report on the buildings where synthetic rubber is used extensively for interior construction.
6 (00/00/2021)	Natural Adhesives <ul style="list-style-type: none"> • Varieties and properties • Method of application 	To learn the importance of adhesive as a building material and its application.	Lecture + Assignment	ID 2102.1 ID 2102.2 ID 2102.3	1. Identify broken objects near or around you. Use the suitable adhesive to join the broken surfaces.
7 (00/00/2021)	Synthetic Adhesives <ul style="list-style-type: none"> • Varieties and properties • Method of application 	To learn the importance of adhesive as a building material and its application.	Lecture + Assignment	ID 2102.1 ID 2102.2 ID 2102.3	1. Identify broken objects near or around you. Use the suitable adhesive to join the broken surfaces.
8 (00/00/2021)	Composite Materials <ul style="list-style-type: none"> • Types • Properties • Applications 	To acquire knowledge about composite materials.	Guest Lecture + Assignment	ID 2102.1 ID 2102.2 ID 2102.3	1. Submit exit-meeting report of the guest lecture.
9 (00/00/2021)	Fabrics <ul style="list-style-type: none"> • Types • Properties • Uses 	To acquire knowledge about fabrics and its application in interiors.	Lecture + Assignment	ID 2102.1 ID 2102.2 ID 2102.3	1. Surface Embellishment – Create blocks for printing on fabrics, that are to be used in different functional spaces.

10 (00/00/2021)	Partitions: <ul style="list-style-type: none"> • Details of fixed • Sliding and folding partitions • Jali works 	To acquire knowledge, importance and applications of partitions in interiors.	Lecture + Assignment	ID 2102.1 ID 2102.2 ID 2102.3 ID 2102.4	1. Submit report on construction details of different types of partitions in building interiors.
11 (00/00/2021)	Doors: Types including: <ul style="list-style-type: none"> • Openable • Sliding • Folding pivoted Lodged and braced • Panelled doors • Glazed doors • Joinery details for doors. 	To acquire knowledge about types of doors and its joinery details. To acquire knowledge about which type of door to use in a designed space.	Lecture + Assignment	ID 2102.1 ID 2102.2 ID 2102.3 ID 2102.4	1. Submit a model of any one type of door, with sketches construction detail on graph sheet.
11 (00/00/2021)	Windows: <ul style="list-style-type: none"> • Types • Ventilators and its types • Joinery details for windows, ventilators. 	To acquire knowledge about types of windows & ventilator and its joinery details. To acquire knowledge about which type of window to use in a designed space.	Lecture + Assignment	ID 2102.1 ID 2102.2 ID 2102.3 ID 2102.4	1. Submit a model of any one type of window/ventilator, with sketches construction detail on graph sheet.
11 (00/00/2021)	Staircase: Types according to profile: <ul style="list-style-type: none"> • Straight flight, Doglegged, quarter turn, half turn, bifurcated, spiral & helical. • Types based on materials (timber, wood, steel, synthetic materials) • Details of handrails & balusters; Universal design and detailing. 	To acquire knowledge about types of staircase and its construction details. To acquire knowledge about which type of staircase to design in a space.	Lecture + Assignment	ID 2102.1 ID 2102.2 ID 2102.3 ID 2102.4	1. Submit a model of any one type of staircase, with sketches construction detail on graph sheet.
(00/00/2021)	Water and fire proofing materials: <ul style="list-style-type: none"> • Types • Properties • Uses & applications in Interiors 	To learn the importance of Water and fire proofing materials as an interior finish.	Lecture + Assignment	ID 2102.1 ID 2102.2 ID 2102.3	1. Submit a report on application of water and fire proofing materials in interiors. 2. Submit a report on standards given in National Building Code, on Water and fire proofing materials.
12 (00/00/2021)	Special purpose paints: Types: <ul style="list-style-type: none"> • bituminous, luminous, fire retardant and resisting paints • Properties • Uses and applications. 	To learn the importance of Special purpose paints as an interior finish.	Lecture + Assignment	ID 2102.1 ID 2102.2 ID 2102.3	1. Submit a report on application of special purpose paints.

H. Course Articulation Matrix: (Mapping of COs with POs)

CO	STATEMENT	CORRELATION WITH PROGRAM OUTCOMES												CORRELATION WITH PROGRAM SPECIFIC OUTCOMES		
		P O 1	P O 2	P O 3	P O 4	P O 5	P O 6	P O 7	P O 8	P O 9	P O 10	P O 11	P O 12	PSO 1	PSO 2	PSO 3
ID 2102.1	Analyze various materials while highlighting the current trends and innovations	3											3	3	3	
ID 2102.2	Develop the knowledge about various interior material properties & their applications.	3											3	3	3	2
ID 2102.3	Analyze the commercial forms and implemented standards of materials.	3	1	3	3								3	3		3
ID 2102.4	Acquire knowledge about the construction of basic elements of an interior space.	3	1	2		1					3		3	3	2	2

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



MANIPAL UNIVERSITY JAIPUR

School of Planning and Design

Department of Interior Design

Course Hand-out

Interior Services II | ID 2103 | 3 Credits

Session: Jul 20 – Nov 20 | Faculty: Ar. Sonali Jain | Class: Theory

A. Introduction: This course is offered in the second year of B Des (Interior Design) in order to train students to study and understand the basic services of water supply, sanitation systems, rain water disposal in buildings. Students are trained to learn the layout, functioning and application of water supply and public work services in building design. Broad overview about selection process according to MEP drawings.

B. Course Outcome: At the end of the course, students will be able to:

[ID1305.1] To understand the basic services of water supply, sanitation systems, rainwater disposal in buildings.

[ID1305.2] To study and develop the layout, functioning and application of water supply and public work services in building design.

C. Program Outcomes and Program Specific Outcomes:

[PO.1]. **Design knowledge:** Apply the knowledge of mathematics, science and design fundamentals to the solution of complex problems.

[PO.2]. **Problem analysis:** Identify, formulate, research literature, and analyse complex problems reaching substantiated conclusions using principles of design and sciences.

[PO.3]. **Design/development of solutions:** Design solutions for complex problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

[PO.4]. **Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

[PO.5]. **Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex design activities with an understanding of the limitations.

[PO.6]. **The Designer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional practice.

[PO.7]. **Environment and sustainability:** Understand the impact of the professional design solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

[PO.8]. **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the design practice.

[PO.9]. **Individual and teamwork:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

[PO.10]. **Communication:** Communicate effectively on complex design activities with the related community and society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

[PO.11]. **Project management and finance:** Demonstrate knowledge and understanding of the design and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

[PO.12]. **Life-long learning:** Recognize the need for and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

[PSO.1]. **Academic and Industry:** Apply creative, innovative, intellectual learning to establish academic and professional excellence in the field of Interior Design.

[PSO.2]. **Critical Thinking:** To produce technical, communicative and conscious design of interior spaces and related products.

[PSO.3]. **Global Standards:** Meet global standards to underpin design, technological & business development.

D. Assessment Rubrics:

Criteria	Description	Maximum Marks
Internal Assessment (Summative)	Sessional Exam I	20
	Sessional Exam II	
	Assignments	40
End Term Exam (Summative)	End Term Exam	40
	Total	100
Attendance (Formative)	A minimum of 75% Attendance is required to be maintained by a student to be qualified for taking up the End Semester examination. The allowance of 25% includes all types of leaves including medical leaves.	
Make up Assignments (Formative)	Students who misses a class will have to report to the teacher about the absence. A makeup assignment on the topic taught on the day of absence will be given which has to be submitted within a week from the date of absence. No extensions will be given on this. The attendance for that particular day of absence will be marked blank, so that the student is not accounted for absence. These assignments are limited to a maximum of 5 throughout the entire semester.	
Homework/ Home Assignment/ Activity Assignment (Formative)	There are situations where a student may have to work in home, especially before a flipped classroom. Although these works are not graded with marks. However, a student is expected to participate and perform these assignments with full zeal since the activity/ flipped classroom participation by a student will be assessed and marks will be awarded.	

E. Syllabus

WATER SUPPLY:

- General ideas of sources of water supply and distribution systems.
- Domestic water supply systems, sump, overhead tank.
- Cold water and hot water supply for multi-storeyed buildings.
- Pipe sizes, pipe fittings — their technical names, viz coupling, tee, elbow, bend, types of valves and latest fittings in the market.
- Solar water heating system.
- Types of Sanitary fittings, fixtures and accessories.

SANITATION:

- Refuse, types, collection and disposal
- Basic principles of sanitation and disposal of waste water from buildings
- Urban and rural drainage and sanitation; Different collection and disposal systems
- A brief on sewage treatment, septic tanks, oxidation ponds, soak pits, aqua privy, manholes, inspection chambers, intercepting chambers, cast iron manholes.

- Sewers and testing of sewers.
- Recycling of black water and grey water
- Storm water drainage systems for Buildings-Rain water harvesting
- Preparation of plumbing layout, planning of bathrooms, lavatory blocks, shafts and kitchen in domestic and multi-storeyed buildings.

F. Reference Book

- R1. Birdie, J. S. & Birdie, G. S., 1998. Water Supply and Sanitary Engineering.
 R2. Burke, K., 1982. Basic Plumbing Techniques
 R3. Garg, S., 2001. Water Supply and Sanitary Engineering.
 R4. Hall, F. & Greeno, R., 2001. Building Services Handbook.
 R5. Rangwala, S. C., 1969. Fundamentals of Water Supply and Sanitary Engineering.
 R6. Singh, G., n.d. Water Supply and Sanitary Engineering.
 R7. Wise, A. F. & Swaffield, J. A., 2002. Water, Sanitary & Waste Services for Building.
 R8. Uniform Illustrated Plumbing Code-India (UIPC-I) IAPMO.

G. Lecture Plan:

Lec. No.	Topics	Session Objective	Mode of Delivery	Corresponding CO	Mode of Assessing the Outcome
1	Introduction to Water supply: Sources of water supply. Cold water and hot water supply for multi-storeyed buildings.	To understand the significance of designing water and sewerage systems in interior design.	Lecture	ID1305.1	For Review – A case study on Managing Water Distribution in Rajasthan, India
2	Domestic water supply systems: Pipe sizes, pipe fittings, coupling, tee, elbow etc.	To learn about different water supply equipment's.	Lecture	ID1305.1	Representation of the topics on A2 sheet.
3	Types of valves	To learn about different water supply equipment's.	Lecture	ID1305.1	Presentation of Market Study.
4	Sanitation: Principles and concepts of sanitation and disposal, size requirements calculations.	To understand the significance of sanitation.	Lecture	ID1305.1	For Review - IIHS RF Paper on Water Supply and Sanitation.
5	Systems of disposal methods	To study about different disposal systems on a house as well as city level.	Lecture	ID1305.1	For Review - IIHS RF Paper on Water Supply and Sanitation.
6	Trap: type, materials and functions Sewers and testing of sewers.	To learn about various traps and sewers, and their application.	Lecture	ID1305.1	Representation of the topics on A2 sheet.
8	Guest Lecture by a Sanitary fitting company. Rico/ nitco/ hindware lecture	To enable students to see things practically.	Guest Lecture	ID1305.2	Nil
9	Sanitary fittings: fixing methods, materials, types and standards.	To learn about various sanitary fittings.	Lecture + Market Study	ID1305.1	Market Study
10	Selection of sanitary accessories.	To learn how to select the accessories	Market Study	ID1305.1	Presentation of Market Study.
11	Refuse, forms of refuse garbage, house refuse – its collection, storage and transport, refuse chutes etc.	To understand refuse collection, storage and transport, refuse chutes etc.	Lecture	ID1305.1	Report Submission on the Topics learned.
12	Rainwater harvesting Recycling of black water and grey water	To learn concept and application of rainwater harvesting and recycling within buildings.	Lecture	ID1305.1	Report Submission on the Topics learned.
13	Introduction of Design Project - Toilet standards	To design a commercial toilet.	Discussion	ID1305.2	Progress marking.
14	Detailed design – plumbing layout	To prepare detailed drawings related to services for Multi storey buildings.	Discussion	ID1305.2	Progress marking.
15	Review	To prepare detailed drawings related to services for Multi storey buildings.	Discussion	ID1305.2	Representation of Design sheets on A2

H. Course Articulation Matrix: (Mapping of COs with POs)

CO	STATEMENT	CORRELATION WITH PROGRAM OUTCOMES												CORRELATION WITH PROGRAM SPECIFIC OUTCOMES		
		PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3
ID1305.1	To understand the basic services of water supply, sanitation systems, rainwater disposal in buildings.			3			3	1					3	2	3	1
ID1305.2	To study the layout, functioning and application of water supply and public work services in building design.	3		3			3				1		3	2	3	1

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



MANIPAL UNIVERSITY JAIPUR

School of Planning and Design

Department of Interior Design

Course Hand-out

History of Interior design II | ID 2104 | 3 Credits

Session: Jul 20 – Nov 20 | Faculty: Kush Jee Kamal | Class: Theory

A. Introduction: This course is offered in first semester B.Des Interior design to equip students with knowledge of various materials that are employed in the process of model making. The course also enables them to basic of interior and product photography.

B. Course Objectives: At the end of the course, students will be able to

[2104.1] To understand the historical progression of art and interior architecture in India and its application to formulate themes and concepts for contemporary interior designs.

[1204.2] Apply themes and concepts for contemporary interior designs.

[1204.3] To understand the various schools of thought on interior environment.

C. Program Outcomes and Program Specific Outcomes

[PO.1]. **Design knowledge:** Apply the knowledge of mathematics, science and design fundamentals to the solution of complex problems.

[PO.2]. **Problem analysis:** Identify, formulate, research literature, and analyse complex problems reaching substantiated conclusions using principles of design and sciences.

[PO.3]. **Design/development of solutions:** Design solutions for complex problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

[PO.4]. **Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

[PO.5]. **Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex design activities with an understanding of the limitations.

[PO.6]. **The Designer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional practice.

[PO.7]. **Environment and sustainability:** Understand the impact of the professional design solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

[PO.8]. **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the design practice.

[PO.9]. **Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

[PO.10]. **Communication:** Communicate effectively on complex design activities with the related community and society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

[PO.11]. **Project management and finance:** Demonstrate knowledge and understanding of the design and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

[PO.12]. **Life-long learning:** Recognize the need for and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

[PSO.1]. **Academic and Industry:** Apply creative, innovative, intellectual learning to establish academic and professional excellence in the field of Interior Design.

[PSO.2]. **Critical Thinking:** To produce technical, communicative and conscious design of interior spaces and related products.

[PSO.3]. **Global Standards:** Meet global standards to underpin design, technological & business development.

D. Assessment Rubrics:

Criteria	Description	Maximum Marks
Internal Assessment (Summative)	Sessional I	05
	Sessional II	05
	Assignments	40
End Term Exam (Summative)	End Term Exam	50
	Total	100
Attendance (Formative)	A minimum of 75% Attendance is required to be maintained by a student to be qualified for taking up the End Semester examination. The allowance of 25% includes all types of leaves including medical leaves.	

Make up Assignments (Formative)	Students who miss a class will have to report to the teacher about the absence. A makeup assignment on the topic taught on the day of absence will be given which has to be submitted within a week from the date of absence. No extensions will be given on this. The attendance for that particular day of absence will be marked blank, so that the student is not accounted for absence. These assignments are limited to a maximum of 5 throughout the entire semester.
Homework/ Home Assignment/ Activity Assignment (Formative)	There are situations where a student may have to work in home, especially before a flipped classroom. Although these works are not graded with marks. However, a student is expected to participate and perform these assignments with full zeal since the activity/ flipped classroom participation by a student will be assessed and marks will be awarded.

E. Syllabus

- Region based study (with respect to elements of style, interior environment & furniture) – Jammu and Kashmir, Southern India, Gujarat, Rajasthan, Himachal Pradesh, states of North eastern India, Maharashtra, Uttar Pradesh, Orissa etc.
- Elements of style and determinants of interior environments: China, Japan, Turkey, Middle East, Latin America, Scandinavia.
- Designers and their works with respect to interior architecture and elements of design: Contemporary expressions of styles and art forms; Purpose and relevance of art; development of various art forms; study of traditional & contemporary art forms.

F. Reference Book

R1. Tadgell Christopher, (1990), The History of Architecture in India: From the dawn of civilization to the End of the Raj, Om Book Service, New Delhi.

R2. Rowl Benjamin, (1971), Art and Architecture of India, Puffin.

R3. J.C. Harle, (1994), the art and Architecture of the Indian Subcontinent, Yale University Press.

R4. R.J. Mehta, (1974), Masterpieces of Indian Temples, D.B. Taraporewals, India.

G. Lecture Plan:

Lec No	Topics	Session Objective	Mode of Delivery	Corresponding CO	Mode of Assessing the Outcome
1	History of WEST INDIA: Rajasthan: Its climate, elements of design, culture, patterns, paintings and materials used in interiors.	Elements of style, interior environment, furniture etc. in RAJASTHAN. Purpose and relevance of art, development of various art forms, study of traditional & contemporary art forms.	Lecture + Discussion	[ID 2104.1]	Studio work and Home Assignment A4 Sheet: Sketches of Elements of Design of the Indian Zone which has been covered in the class.
2	History of Gujarat: Its climate, elements of design, culture, patterns, paintings and materials used in interiors.	Elements of style, interior environment, furniture etc. in GUJARAT. Purpose and relevance of art, development of various art forms, study of traditional & contemporary art forms.	Lecture + Discussion	[ID 2104.1]	Studio work and Home Assignment A4 Sheet: Sketches of Elements of Design of the Indian Zone which has been covered in the class.
3	History of Madhya Pradesh: Its climate, elements of design, culture, patterns, paintings and materials used in interiors.	Elements of style, interior environment, furniture etc. in Madhya Pradesh. Purpose and relevance of art, development of various art forms, study of traditional & contemporary art forms.	Lecture + Discussion	[ID 2104.1]	Studio work and Home Assignment A4 Sheet: Sketches of Elements of Design of the Indian Zone which has been covered in the class.
4	History of North India: Jammu & Kashmir Its climate, elements of design, culture, patterns, paintings and materials used in interiors.	Elements of style, interior environment, furniture etc. in Jammu & Kashmir. Purpose and relevance of art, development of various art forms, study of traditional & contemporary art forms.	Lecture + Discussion	[ID 2104.1]	Studio work and Home Assignment A4 Sheet: Sketches of Elements of Design of the Indian Zone which has been covered in the class.
5	History of Himachal Pradesh: Its climate, elements of design, culture, patterns, paintings and materials used in interiors.	Elements of style, interior environment, furniture etc. in Himachal Pradesh. Purpose and relevance of art, development of various art forms, study of traditional & contemporary art forms.	Lecture + Discussion	[ID 2104.1]	Studio work and Home Assignment A4 Sheet: Sketches of Elements of Design of the Indian Zone which has been covered in the class.
6	History of Other Northern state: Its climate, elements of design, culture, patterns, paintings and materials used in interiors.	Elements of style, interior environment, furniture etc. in Northern state. Purpose and relevance of art, development of various art forms, study of traditional & contemporary art forms.	Lecture + Discussion	[ID 2104.1]	Studio work and Home Assignment A4 Sheet: Sketches of Elements of Design of the Indian Zone which has been covered in the class.

7	History of Maharashtra: Its climate, elements of design, culture, patterns, paintings and materials used in interiors.	Elements of style, interior environment, furniture etc. in Maharashtra. Purpose and relevance of art, development of various art forms, study of traditional & contemporary art forms.	Lecture + Discussion	[ID 2104.1]	Studio work and Home Assignment A4 Sheet: Sketches of Elements of Design of the Indian Zone which has been covered in the class.
8	History of Southern State: Its climate, elements of design, culture, patterns, paintings and materials used in interiors.	Elements of style, interior environment, furniture etc. in Southern state. Purpose and relevance of art, development of various art forms, study of traditional & contemporary art forms.	Lecture + Discussion	[ID 2104.1]	Studio work and Home Assignment A4 Sheet: Sketches of Elements of Design of the Indian Zone which has been covered in the class.
9	History of Eastern State: Its climate, elements of design, culture, patterns, paintings and materials used in interiors.	Elements of style, interior environment, furniture etc. in Eastern States. Purpose and relevance of art, development of various art forms, study of traditional & contemporary art forms.	Lecture + Discussion	[ID 2104.1]	Studio work and Home Assignment A4 Sheet: Sketches of Elements of Design of the Indian Zone which has been covered in the class.
10	Designers and their works Their portfolio with respect to interior architecture and interior elements of design	Understanding of the works done by prominent designers, their aspects and Design	Lecture + Discussion	[ID 2104.2] [ID 2104.3]	Studio work and Home Assignment A4 Sheet: Sketches of Elements of Design of the Indian Zone which has been covered in the class.
11	Designers and their works Their portfolio with respect to interior architecture and interior elements of design	Understanding of the works done by prominent designers, their aspects and Design	Lecture + Discussion	[ID 2104.2] [ID 2104.3]	Submission of all Presentations Presentation by Students. Will be assessed on the basis of presentation
12	Designers and their works Their portfolio with respect to interior architecture and interior elements of design	Understanding of the works done by prominent designers, their aspects and Design	Lecture + Discussion	[ID 2104.2] [ID 2104.3]	Submission of all Presentations Presentation by Students. Will be assessed on the basis of presentation

H. Course Articulation Matrix: (Mapping of COs with POs)

CO	STATEMENT	CORRELATION WITH PROGRAM OUTCOMES												CORRELATION WITH PROGRAM SPECIFIC OUTCOMES		
		PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3
ID 2104.1	To understand the historical progression of art and interior architecture in India and its application to formulate themes and concepts for contemporary interior designs.	1	1	1	2	1	1	3	1	1	0		1	0	2	1
ID 2104.2	Apply themes and concepts for contemporary interior designs.	2	0	1	3	2	1	0	1	0	0	1	1	1	1	2
ID 2104.3	To understand the various schools of thought on interior environment.	3	0	0	0	0	2	2	2	2	1	2	2	2	2	3

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



MANIPAL UNIVERSITY JAIPUR

School of Planning and Design

Department of Interior Design

Course Hand-out

Computer Application II | ID 2105 | 2 Credits

Session: July 20 – Nov 20 | Faculty: Sneh Singh & Heena Ajmera | Class: Practical

A. Introduction: This course is offered by Dept. of Interior Design, targeting students who wish to pursue B.Des. (Interior Design). Brief overview of computer components, relevant software for interior design. Students are expected to have background knowledge of using computer for a better learning.

B. Course Objectives: At the end of the course, students will be able to

[ID 2105.1] Create and depict two- and three-dimensional objects in space with special emphasis on presentation skills using SketchUp, CAD & 3Ds Max. presentations, word processing, and other basic computing.

[ID 2105.2] Visualize interiors and its representation using rendering techniques using Sketchup & CAD to increase employability.

[ID 2105.3] Use Adobe software for producing and editing graphical design presentations.

[ID 2105.4] Render 2-D Interior drawings using various Presentation software.

[ID 2105.5] Depict interior space idea or theme through 3D modelling.

C. Program Outcomes and Program Specific Outcomes

[PO.1]. Design knowledge: Apply the knowledge of mathematics, science and design fundamentals to the solution of complex problems.

[PO.2]. Problem analysis: Identify, formulate, research literature, and analyse complex problems reaching substantiated conclusions using principles of design and sciences.

[PO.3]. Design/development of solutions: Design solutions for complex problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

[PO.4]. Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

[PO.5]. Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex design activities with an understanding of the limitations.

[PO.6]. The Designer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional practice.

[PO.7]. Environment and sustainability: Understand the impact of the professional design solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

[PO.8]. Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the design practice.

[PO.9]. Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

[PO.10]. Communication: Communicate effectively on complex design activities with the related community and society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

[PO.11]. Project management and finance: Demonstrate knowledge and understanding of the design and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

[PO.12]. Life-long learning: Recognize the need for and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change

[PSO.1]. Academic and Industry: Apply creative, innovative, intellectual learning to establish academic and professional excellence in the field of Interior Design.

[PSO.2]. Critical Thinking: To produce technical, communicative and conscious design of interior spaces and related products.

[PSO.3]. Global Standards: Meet global standards to underpin design, technological & business development.

D. Assessment Rubrics:

Criteria	Description	Maximum Marks
Internal Assessment (Summative)	Internal assignment assessment & progress marking	60
End Term Exam (Summative)	Portfolio submission and Final Project	40
	Total	100

Attendance (Formative)	A minimum of 75% Attendance is required to be maintained by a student to be qualified for taking up the End Semester examination. The allowance of 25% includes all types of leaves including medical leaves.
Make up Assignments (Formative)	Students who misses a class will have to report to the teacher about the absence. A makeup assignment on the topic taught on the day of absence will be given which has to be submitted within a week from the date of absence. No extensions will be given on this. The attendance for that particular day of absence will be marked blank, so that the student is not accounted for absence. These assignments are limited to a maximum of 5 throughout the entire semester.
Homework/ Home Assignment/ Activity Assignment (Formative)	There are situations where a student may have to work in home, especially before a flipped classroom. Although these works are not graded with marks. However, a student is expected to participate and perform these assignments with full zeal since the activity/ flipped classroom participation by a student will be assessed and marks will be awarded.

E. Syllabus

Introduction to sketch-up & its tools: Starting a drawing – Drawing walls, windows, doors, staircases etc.; modifying the properties of doors, windows etc.; applying materials, colours. Introduction to graphic creation and image editing software – like Adobe Photoshop/ Adobe illustrator/ In Design/COREL package. Basic concepts of Interior presentation drawings. 2D drawing rendering – plans, sectional elevations etc.

F. Reference Book

- R1:** Oscar Riera Ojed, Lucast Guerre, Hyper realistic Computer Generated Architectural Renderings. McGraw-Hill.
R2: Lydia Cline, SketchUp for Interior Design: 3D Visualizing, Designing, and Space Planning. John Wiley & Sons
R3: Dwayne Brown, Photoshop: The Photoshop Handbook.
R4: Wiley (2012), *Adobe Photoshop CS6 Bible*.

G. Lecture Plan:

Lec No	Topics	Session Objective	Mode of Delivery	Corresponding CO	Mode of Assessing the Outcome
1	Introduction to the course.	Discussion on course curriculum and exercises	Lecture and activity	2105.01, 2105.03	Collection images/ examples of level of skills students are looking for.
2	Revision of MS Office intro to publisher	Students should be able to operate the Microsoft office software, using all techniques to make them understand it's use in making manuals.	Lecture and activity	-	Studio Assignment Make a finishing manual/ Certificate / anything related.
3	Understanding the use and process of rastering an image, usage of layers and blocks in AutoCAD	Students should be able to form and work in advance level of Auto cad. As	Lecture and activity	2105.01, 2105.02	Studio Assignment Well drafted house plan
6,7	Understanding the usage of attributes & Xref. in AutoCAD	Students should be able to understand how to work on Xref. while handling large projects.	Lecture and activity	2105.01, 2105.02	Studio Assignment Working on Xref. & attributes
8 & 9	Introduction to Photoshop and its editing techniques.	Students should be able to develop skills of photo editing software.	Lecture and activity	1206.2, 1206.5	Studio Assignment Making of individual portfolio page / Rendering of plan and elevation
10	Creating a composition of images in the Photoshop.	Students should be able to develop skills of Photoshop.	Lecture and activity	2105.01, 2105.03, 2105.04	Studio Assignment
11 & 12	Introduction to Idesign Making of portfolio & book design		Lecture and activity	2105.01, 2105.04	Studio Assignment Making of portfolio
13	Introduction to Google Sketchup. What is BIM software (Workshop/ Expert studio)	Students should be able to develop basic 3D interior structures on google SketchUp & get aware of the Building Information Modelling software	Lecture and activity	2105.01, 2105.02	Studio Assignment 3D sketch of the previously drafted house.
14 & 15	Introduction to workspace; toolbars; properties and navigation; basics of creating walls, floors, roofs and placing doors and windows in google sketch up	Students should be able to use the various tool and making complex structures and also apply rendering tools	Lecture and activity	2105.01, 2105.02	Studio Assignment 3D sketch of the previously drafted house.
16	Portfolio submission		Lecture and activity		Soft copy Portfolio submission

H. Course Articulation Matrix: (Mapping of COs with POs)

CO	STATEMENT	CORRELATION WITH PROGRAM OUTCOMES							CORRELATION WITH PROGRAM SPECIFIC OUTCOMES		
		PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PSO 1	PSO 2	PSO 3
ID 2105.1	Create and depict two- and three-dimensional objects in space with special emphasis on presentation skills using SketchUp, CAD & 3Ds Max.	0	1	0	0	0	0	1	0	0	0
ID 2105.2	Use Adobe software for producing and editing graphical design presentations.	0	1	0	0	0	0	1	2	0	0
ID 2105.3	Render 2-D Interior drawings using various Presentation software.	0	3	0	0	0	0	3	1	0	2
ID 2105.4	Depict interior space idea or theme through 3D modelling.	0	3	0	0	0	0	3	0	1	1

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



MANIPAL UNIVERSITY JAIPUR

School of Planning and Design

Department of Interior Design

Course Hand-out

Fundamentals of Architecture | ID 1605 | 2 Credits

Session: Jan 21 – May 21 | Faculty: Ar. Richa Jagatramka | Class: Practical

- A. **Introduction:** This course is offered by Dept. of Interior Design, targeting students who wish to pursue Interior Design as a profession.
- B. **Course Objectives:** At the end of the course, students will be able to
 [ID 1605.1] To introduce architectural design as a process and as a final product.
 [ID 1605.2] Understand fundamentals of space, form and order as basic architectural skills.
 [ID 1605.3] To involve students in a design project that will involve simple space planning and the understanding of the functional aspects of good design.
- C. **Program Outcomes and Program Specific Outcomes:**
- [PO.1]. **Design knowledge:** Apply the knowledge of mathematics, science and design fundamentals to the solution of complex problems.
 - [PO.2]. **Problem analysis:** Identify, formulate, research literature, and analyse complex problems reaching substantiated conclusions using principles of design and sciences.
 - [PO.3]. **Design/development of solutions:** Design solutions for complex problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
 - [PO.4]. **Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.\
 - [PO.5]. **Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex design activities with an understanding of the limitations.
 - [PO.6]. **The Designer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional practice.
 - [PO.7]. **Environment and sustainability:** Understand the impact of the professional design solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
 - [PO.8]. **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the design practice.
 - [PO.9]. **Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
 - [PO.10]. **Communication:** Communicate effectively on complex design activities with the related community and society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instruction.
 - [PO.11]. **Project management and finance:** Demonstrate knowledge and understanding of the design and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
 - [PO.12]. **Life-long learning:** Recognize the need for and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.
 - [PSO.1]. **Academic and Industry:** Apply creative, innovative, intellectual learning to establish academic and professional excellence in the field of Interior Design.
 - [PSO.2]. **Critical Thinking:** To produce technical, communicative and conscious design of interior spaces and related products.
 - [PSO.3]. **Global Standards:** Meet global standards to underpin design, technological & business development.

D. **Assessment Rubrics:**

Criteria	Description	Maximum Marks
Internal Assessment (Summative)	Studio + Practical	60
End Term Exam (Summative)	Practical	40
	Total	100
Attendance (Formative)	A minimum of 75% Attendance is required to be maintained by a student to be qualified for taking up the End Semester examination. The allowance of 25% includes all types of leaves including medical leaves.	
Make up Assignments (Formative)	Students who misses a class will have to report to the teacher about the absence. A makeup assignment on the topic taught on the day of absence will be given which has to be submitted within a week from the date of absence. No extensions will be given on this. The attendance for that particular day of absence will be marked blank, so that the student is not accounted for absence. These assignments are limited to a maximum of 5 throughout the entire semester.	
Homework/ Home Assignment/ Activity Assignment (Formative)	There are situations where a student may have to work in home, especially before a flipped classroom. Although these works are not graded with marks. However, a student is expected to participate and perform these assignments with full zeal since the activity/ flipped classroom participation by a student will be assessed and marks will be awarded.	

E. **Syllabus**

- Introduction: Application of form, space, proportion, scale, order, including golden sections and modular concepts through examples from architectural theory and history;
- Elementary principles of Architectural Design on the basis of structure, function and aesthetics; Bubble diagram-adjacent matrix; Circulation & Services.
- Introduction to site planning – building orientation, setbacks, building bye-laws, parking and landscaping. Man & space: The relationship between man and space;
- Defining spaces and the degree of enclosure; Organization of spaces, fenestration, and character of façade; Importance of physical factors in Architectural design e.g. orientation, ventilation, adequate protection from rain, dust, insects etc., and human dimensions in various postures (applied form), their relation to everyday utilities. Structure: mechanics of load distribution, tension, compression, stress, strain, nature of materials for architectural uses. Suggested design projects: Art Gallery / Exhibition space / cultural centre etc.

F. **Reference Book**

- Francis. D. K. Ching, 2012. Architecture: Form, Space and Order, 3rd Edition. Van Nostrand Reinhold Company, New York.
- Neufert, Ernst, 1970. Architect's Data, Crosby. Lockwood and Sons, London.
- Peter, V. M. 1998. Elements of architecture – from form to place. Routledge.
- Salvadori, M. & Heller, R., 1963. Structure in Architecture – The Building of Building. New Jersey: Prentice Hall.
- Ramamrutham, S. & Narayana, R., 2003. Strength of Materials. Delhi: Dhanpat Rai and Sons.
- C.S.Reddy, 2011. Basic Structural Analysis. Tata McGraw-Hill Education.
- Naker, Szokolay, Yannas, Cook, A.Krishan, 2001. Climate Responsive Architecture. Tata McGraw-Hill Education.
- Rob Krier, 2010. Architectural Composition. Academy Editions, London.

G. Lecture Plan:

Lec No	Topics	Session Objective	Mode of Delivery	Corresponding CO	Mode of Assessing the Outcome
17.02.21 Week 1	Introduction to Architecture and need to understand architecture for interior design	Understanding of the course	Studio exercises	ID 1605.1	Studio assignment
24.02.21 Week 2	Application of form, space, proportion, scale, order in architecture	Basics of design and its application in architecture	Studio exercises	ID 1605.1 ID 1605.2	Case study-based Studio assignment
03.03.21 Week 3	Golden sections and modular concept in architecture	Basics of design and its application in architecture	Studio exercises	ID 1605.1 ID 1605.2	Case study-based Studio assignment
10.03.21 Week 4	Application of basic design elements on architectural facade	Basics of design and its application in architecture	Studio exercises	ID 1605.1 ID 1605.2	Design based exercise
17.03.21 Week 5	Understanding concept in Architecture design - workshop	Understanding of concept building	Studio exercises	ID 1605.1 ID 1605.2	Workshop by Nidhip Mehta
24.03.21 Week 6	Understanding concept in Architecture design	Understanding of concept building	Studio exercises	ID 1605.1 ID 1605.2	Design based exercise
31.03.21 Week 7	Introduction to site planning – site orientation and site access	Understanding and developing site	Studio exercises	ID 1605.1 ID 1605.2	Design based exercise
07.04.21 Week 8	The relationship of spaces and interaction with man - workshop	Relationship between space and man	Studio exercise	ID 1605.1 ID 1605.2	Workshop by -----
14.04.21 Week 9	Site landscape and development	Landscape of site	Studio exercise	ID 1605.1 ID 1605.2	Workshop by Ar. Kriti Yadav
21.04.21 Week 10	Site planning of cultural centre – case studies and evaluation	Understanding architecture of site	Studio exercise	ID 1605.1 ID 1605.2 ID 1605.3	Group design project on site planning
28.04.21 Week 11	Fenestrations and climatic adaption in architecture	Understanding climatic influence on built environment	Studio exercise	ID 1605.1 ID 1605.2 ID 1605.3	Group design project on site planning and design
05.05.21 Week 12	Architectural design project – bubble diagram and circulation	Design of site and approach	Studio exercise	ID 1605.1 ID 1605.2 ID 1605.3	Group design project on site planning and design
12.05.21 Week 13	Architectural design project – site context and relationship with concept	Design of site and building	Studio exercise	ID 1605.1 ID 1605.2 ID 1605.3	Group design project on site planning and design
19.05.21 Week 14	Architectural design project – elevation and façade design	Design of site and building	Studio exercise	ID 1605.1 ID 1605.2 ID 1605.3	Group design project on site planning and design
26.05.21 Week 15	LAST TEACHING DAY : Evaluation		Studio exercise	ID 1605.1 ID 1605.2 ID 1605.3	Group design project on site planning and design

H. Course Articulation Matrix: (Mapping of COs with POs)

CO	STATEMENT	CORRELATION WITH PROGRAM OUTCOMES												CORRELATION WITH PROGRAM SPECIFIC OUTCOMES		
		PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3
[ID 2106.1]	To introduce architectural design as a process and as a final product.	3		1			2	1		3				1		
[ID 2106.2]	Understand fundamentals of space, form and order as basic architectural skills.	1		2	3			1	3		2			1	1	
[ID 2106.3]	To involve students in a design project that will involve simple space planning and the understanding of the functional aspects of good design.	2	2			3					1	3	2	1		1

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



MANIPAL UNIVERSITY JAIPUR

School of Planning and Design

Department of Interior Design

Course Hand-out

Interior Design IV | ID 2201 | 7 Credits

Session: Jan 21 – May 21 | Faculty: Ar. Apoorva Agarwal (CC), Ar Sonali Jain | Class: Studio

A. Introduction: This course is offered by Dept. of Interior Design, for the students of forth semester who wish to pursue Interior Design. To develop skills for a comprehensive design approach to integrate dimensions of functions to interior spaces by using interior elements.

B. Course Objectives: At the end of the course, students will be able to

[2201.1]. Develop conceptual visualization and interpret the process of design.

[2201.2]. Describe accessibility and universal design issues for better practicing skills and hence develop employability.

[2201.3]. Analyse and modify the space as per user requirements.

[2201.4]. To understand the need for adaptive reuse of old heritage buildings and their conservation.

C. Program Outcomes and Program Specific Outcomes

PO1 Design knowledge: Apply the knowledge of mathematics, science and design fundamentals to the solution of complex problems.

PO2 Problem analysis: Identify, formulate, research literature, and analyse complex problems reaching substantiated conclusions using principles of design and sciences.

PO3 Design/development of solutions: Design solutions for complex problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

PO4 Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

PO5 Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex design activities with an understanding of the limitations.

PO6 The Designer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional practice.

PO7 Environment and sustainability: Understand the impact of the professional design solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

PO8 Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the design practice.

PO9 Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

PO10 Communication: Communicate effectively on complex design activities with the related community and society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

PO11 Project management and finance: Demonstrate knowledge and understanding of the design and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

PO12 Life-long learning: Recognize the need for and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

[PSO.1]. **Academic and Industry:** Apply creative, innovative, intellectual learning to establish academic and professional excellence in the field of Interior Design.

[PSO.2]. **Critical Thinking:** To produce technical, communicative and conscious design of interior spaces and related products.

[PSO.3]. **Global Standards:** Meet global standards to underpin design, technological & business development.

D. Assessment Rubrics:

Criteria	Description	Maximum Marks
Internal Assessment (Summative)	In class Assignments, Activity feedbacks, Internal evaluation by design reviews of drawings and models	60
	External evaluation by Jury	40
	Total	100
Attendance (Formative)	A minimum of 75% Attendance is required to be maintained by a student to be qualified for taking up the End Semester examination. The allowance of 25% includes all types of leaves including medical leaves.	
Make up Assignments (Formative)	Students who misses a class will have to report to the teacher about the absence. A makeup assignment on the topic taught on the day of absence will be given which has to be submitted within a week from the date of absence. No extensions will be given on this. The attendance for that particular day of absence will be marked blank, so that the student is not accounted for absence. These assignments are limited to a maximum of 5 throughout the entire semester.	
Homework/ Home Assignment/ Activity Assignment (Formative)	There are situations where a student may have to work in home, especially before a flipped classroom. Although these works are not graded with marks. However, a student is expected to participate and perform these assignments with full zeal since the activity/ flipped classroom participation by a student will be assessed and marks will be awarded.	

E. Syllabus

Spatial and service standards for hotels: their categories, codes, rating etc.; 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; integrate new concepts in lighting and materials. Architectural conservation: conservation of heritage buildings, levels of intervention, structural, construction related, finishes etc.; Revival of old building techniques and finishes. Suggested design projects: Heritage hotels / homestays / weekend gateways / youth hostel / Restaurant / boutique hotels etc.

F. Reference Book

- R1 Joseph D Chiara, Julius Panero, & Martin Zelnick, 2001. *Time Saver standards for Interior Design & space planning, 2nd edition*. Mc-Graw Hill professional.
- R2 Francis.D. Ching & Corky Bingelli, 2004. *Interior Design Illustrated, 2nd edition*. Wiley publishers.
- R3 Julius Panero & Martin Zelnick, 1979. *Human Dimension & Interior Space: A source book of Design Reference standards*. Watson – Guptill.
- R4 Robert Rengel, 2002. *Shaping Interior Space*. Fairchild Books & Visuals.
- R5 Neufert Ernest, 2000. *Architect's Data*. Granada pub. Ltd. London.
- R6 Pennes, Adams & Robson, 2013. *Hotel Design: Planning & Development*. W. W. Norton & Company.
- R7 Line Bregnhoi, Helen Hughes, 2006. *Paint Research in Building Construction*. Archetype Publications.
- R8 Maryrose McGowan & Kelsey Kruse, 2004. *Interior Graphic Standards*. Wiley Publishers.

G. Lecture Plan:

Lec No/ Dates	Topics	Session Objective	Mode of Delivery	Corresponding CO	Mode of Assessing the Outcome
1 (22.02.2021)	<ul style="list-style-type: none"> Introduction to the concept of Adaptive Reuse Conservation of Cultural Identity. History, Architecture, materials used, detailing, orientation, craftsmanship etc. 	To understand the concept of adaptive reuse in heritage conservation. Lecture (Ar. Apoorva)	Lecture and activity	2201.4 2201.2	Lecture & Live Case Study (Outdoor activity)
2,3 (22.02.2021) (01.03.2021)	<ul style="list-style-type: none"> Case studies For Heritage Hotels/ Hospitality – 1 live and 1 literature for both. (individually) Discussion, documentation and compilation of respective case study 	Case Study - To explore a market and document it w.r.t. its layout, design elements and concept.	Field work	2201.4 2201.2	Studio discussion Sheet Size @ A1
4 (08.03.2021)	<ul style="list-style-type: none"> Introduction to HERITAGE SITE 3 sites Design – spaces, activities, design approach and ideas. (L) Physical visit to site for recording measurements. How to measure a live site.(On site instruction) 	Site visit and analysis – to create measured drawing for the site. Students to work in groups. Lecture (Ar. Apoorva)	Lecture and site work	2201.1	Lecture & Site Visit (Outdoor activity)
5 (15.03.2021)	<ul style="list-style-type: none"> SITE ANALYSIS Discussion, documentation and compilation of site Analysis 	To learn the basics of measure drawing. To learn the factors effecting the design methodology on site	Studio Work	2201.1	Studio discussion Sheet Size @ A1
6 (22.03.2021)	<ul style="list-style-type: none"> REVIEW - 1 Presentation of case study Presentation of Site Analysis 	To present the case study in A1 format with drawings and all required details. Presentation of site context, drawings, material finishes on sheet Size A1	Jury	2201.1 2201.2 2201.4	Pinup Jury (Individually) @A1 format.
7 (05.04.2021)	<ul style="list-style-type: none"> CONCEPT Briefing out the functions by conducting a survey and their area requirements. Zoning and circulation. Concept Development 	To be able to formulate the area requirements and develop concept for design project. Lecture (Ar. Apoorva)		2201.1 2201.2	Lecture & Studio Discussion
8 (12.04.2021)	<ul style="list-style-type: none"> Approach to adaptive reuse, in-context with the site. Thumb rules and standards for designing hospitality. 	Students must be able to express their ideas through sketches, photographs and study models.	Lecture and Studio Work	2201.2	Studio discussion
9 (19.04.2021)	<ul style="list-style-type: none"> REVIEW - 2 Review – Development of concept– zoning. 	Development on design development process. Lecture (Ar. Sonali)	Jury	2201.2	Pinup Jury (Individually) @A1 format.
10 (26.04.2021)	<ul style="list-style-type: none"> Discussion on basic Plan (furniture layout) 	Development of design	Studio work	2201.3	Studio discussion
11 (03.05.2021)	<ul style="list-style-type: none"> Discussion on basic Sectional elevations and the materials 	To able to select materials for urban finishes.	Studio work	2201.3	Studio discussion.
12 (10.05.2021)	<ul style="list-style-type: none"> REVIEW - 3 Plans; Sectional elevations; Materials & their finishes 	To present the plan, elevation and sectional elevation on A1	Jury	2201.3	Pinup Jury (Individually) @A1 format.

		format with drawings on scale and all required details.			
13 (17.05.2021)	<ul style="list-style-type: none"> Furniture design and details– approach; materials & finishes. Detailed sectional elevation, flooring layout and RCP 	Students must visualize and draft their designs in plans, sections and elevations to a suitable scale with furniture. Details of the ceiling, door and window design, flooring material and pattern, the types of furniture and their design, lighting design, colour scheme. Lecture (Ar. Sonali)	Lecture and Studio work	2201.3 2201.4	Studio discussion
14, (24.05.2021)	<ul style="list-style-type: none"> graphical presentation of the design 3D views/ photoshop renders/ model (of 2 spaces compulsory) Colour schemes and mood and material board of the 2 spaces (same spaces as above) 		Lecture and Studio work	2201.3 2201.4	Studio discussion
15 (31.05.2021)	<ul style="list-style-type: none"> Colour schemes and mood and material board of the 2 spaces (same spaces as above) Presentation techniques 		Lecture and Studio work	2201.3	Internal Final Portfolio Submission

H. Course Articulation Matrix: (Mapping of COs with POs)

CO	STATEMENT	CORRELATION WITH PROGRAM OUTCOMES												CORRELATION WITH PROGRAM SPECIFIC OUTCOMES		
		P O 1	P O 2	P O 3	P O 4	P O 5	P O 6	P O 7	P O 8	P O 9	P O 10	P O 11	P O 12	PSO 1	PSO 2	PSO 3
2201.1	Develop conceptual visualization and interpret the process of design.		1	2			2			3			2		2	
2201.2	Describe accessibility and universal design issues for better practicing skills and hence develop employability.			2	1		3				1		2	1		2
2201.3	Analyse and modify the space as per user requirements.	1		2		1		2						1	2	
2201.4	To understand the need for adaptive reuse of old heritage buildings and their conservation.		2		1		3	2				2			2	

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

A. Introduction: This course is offered in the fourth semester of B. Des. Interior Design, targeting students who wish to pursue Interior Design or Furniture design as a profession. Detailed study of Furniture categories, exploration of the idea of furniture, role of furniture in interior design, Design approaches in furniture design; Brief overview of the evolution of furniture from Ancient to present. Furniture designers and movements. Analysis of furniture in terms of human values, social conditions, technology, and design criteria. Functional and formal issues in design. Students are expected to have background knowledge of sketching for a better learning.

B. Course Objectives: At the end of the course, students will be able to:

[2202.1] To make the students understand the various styles, systems, and products available in the market.

[2202.2] To equip the students within depth understanding of ergonomics, materials, and new technologies to develop innovative furniture-designing skills.

[2202.3] To help the students understand about the various anthropometric aspects, human factors & other design criteria involved in the design of furniture.

C. Program Outcomes and Program Specific Outcomes

[PO.1]. **Design knowledge:** Apply the knowledge of mathematics, science and design fundamentals to the solution of complex problems.

[PO.2]. **Problem analysis:** Identify, formulate, research literature, and analyse complex problems reaching substantiated conclusions using principles of design and sciences.

[PO.3]. **Design/development of solutions:** Design solutions for complex problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

[PO.4]. **Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

[PO.5]. **Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex design activities with an understanding of the limitations.

[PO.6]. **The Designer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional practice.

[PO.7]. **Environment and sustainability:** Understand the impact of the professional design solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

[PO.8]. **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the design practice.

[PO.9]. **Individual and teamwork:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

[PO.10]. **Communication:** Communicate effectively on complex design activities with the related community and society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

[PO.11]. **Project management and finance:** Demonstrate knowledge and understanding of the design and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

[PO.12]. **Life-long learning:** Recognize the need for and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

[PSO.1]. **Academic and Industry:** Apply creative, innovative, intellectual learning to establish academic and professional excellence in the field of Interior Design.

[PSO.2]. **Critical Thinking:** To produce technical, communicative and conscious design of interior spaces and related products.

[PSO.3]. **Global Standards:** Meet global standards to underpin design, technological & business development.

D. Assessment Rubrics:

Criteria	Description	Maximum Marks
Internal Assessment (Summative)	In class Assignments, Activity feedbacks	60
End Term Exam (Summative)	End Term Exam	40
	Total	100
Attendance (Formative)	A minimum of 75% Attendance is required to be maintained by a student to be qualified for taking up the End Semester examination. The allowance of 25% includes all types of leaves including medical leaves.	
Make up Assignments (Formative)	Students who misses a class will have to report to the teacher about the absence. A makeup assignment on the topic taught on the day of absence will be given which has to be submitted within a week from the date of absence. No extensions will be given on this. The attendance for that particular day of absence will be marked blank, so that the student is not accounted for absence. These assignments are limited to a maximum of 5 throughout the entire semester.	
Homework/ Home Assignment/ Activity Assignment (Formative)	There are situations where a student may have to work in home, especially before a flipped classroom. Although these works are not graded with marks. However, a student is expected to participate and perform these assignments with full zeal since the activity/ flipped classroom participation by a student will be assessed and marks will be awarded.	

E. Syllabus:

Detailed study of Furniture categories, exploration of the idea of furniture, role of furniture in interior design, Design approaches in furniture design; Brief overview of the evolution of furniture from Ancient to present. Furniture designers and movements. Analysis of furniture in terms of human values, social conditions, technology and design criteria. Functional and formal issues in design; Evaluation of visual design: study of Gestalt theory of design – law of enclosure, law of proximity, law of continuity etc. Human factors, engineering and ergonomic considerations: principles of universal design and their application 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, blow- molding, vacuum - forming etc. Seating Design: Different types of seating with a focus on the following – Functionality, Aesthetics, Style, Human factors and ergonomics.

F. Reference Books:

1. Joseph Aronson, (1961), *The Encyclopaedia of Furniture: Third Edition*.

2. Bradley Quinn, (2006), *Mid-Century Modern: Interiors, Furniture, Design Details*, Conran Octopus Interiors.

3. Jim Postell, (2007), *Furniture Design*, Wiley publishers.
4. Edward Lucie-Smith, (1985), *Furniture: A Concise History (World of Art)* Thames and Hudson.
5. Robbie. G. Blakemore, (2005), *History of Interior Design and Furniture: From Ancient Egypt to Nineteenth-Century Europe*, Wiley publishers.
6. John.F. Pile, (1995), *Interior Design, 2nd edition, illustrated*, H.N.Abrams.

G. Lecture Plan:

Lec No	Topics	Session Objective	Mode of Delivery	Corresponding CO	Mode of Assessing the Outcome
1	Introduction to Furniture Design. Lecture to introduce: <ul style="list-style-type: none"> • Furniture Categories • Role of furniture in interior design. • Design approaches in furniture design. 	Students should be able to identify the use and functionality of the furniture and sketch & point the furniture in the layout. Student will understand the scope of furniture designing, what is the use of furniture in various spaces.	Lecture and activity	2202.1	Assignments 1: Choose any 5 types of furniture, do the structure, material, and finish analysis on A5 sheets. All the 5 A5 sheets to be well composed on A2 sheet.
2	Brief overview of the evolution of furniture from Ancient to present. Introduction to History of Furniture Design. (Stone age, ancient Egypt, ancient Greece, ancient Rome)	Students should be able to do the analysis of furniture in terms of human values, social conditions, technology, and design criteria. Students should be able to recognise functional and formal issues in design.	Lecture and activity	2202.1 2202.2	Assignment 2: Choose any 2 furniture period styles, do the analysis and develop a furniture piece by combining both the styles. Assignment 3: Make a scaled model of a furniture piece.
3	Introduction to History of Furniture Design. (Medieval, renaissance, Baroque and rococo)	Students should be able to do the analysis of furniture in terms of human values, social conditions, technology, and design criteria. Students should be able to recognise functional and formal issues in design.	Lecture and activity	2202.1 2202.2	
4	Introduction to History of Furniture Design. (Neoclassic, Art Nouveau, Bauhaus, Art Deco, Modern Furniture)	Students should be able to do the analysis of furniture in terms of human values, social conditions, technology, and design criteria. Students should be able to recognise functional and formal issues in design.	Lecture and activity	2202.1 2202.2	
5	Evaluation of visual design: study of Gestalt theory of design – law of enclosure, law of proximity, law of continuity etc. Human factors, engineering and ergonomic considerations: principles of universal design and their application in furniture design	Students should be able to develop systematic design approach and space planning through furniture as element of design. Students should be able to design with the working parameters in designing furniture.	Lecture and activity	2202.1 2202.2	Assignment 4: Application of design principles in assignment 1.
6	Processes and methods of fabrication.	Student will acquire knowledge of <ul style="list-style-type: none"> - Working with wood (Bending, carving, cutting, drilling, milling, and planning, assembling, gluing, joinery, mechanical connections, fasteners, upholstery, sanding, finishing). - Injection Molding - Investment casting - Sheet metal work - Die casting - Blow- molding - Vacuum - forming etc. 	Lecture and activity	2202.1 2202.2	Carpentry workshop activity Assignment 5: Making Wooden Joints
7	Materials in Furniture Design	Student should understand the parameters, joinery, cost, colour & surface finishes of different materials like Cane, Bamboo etc.	Lecture and material demonstration	2202.1 2202.2	Assignment 6: Market Survey and report on the performed survey. Workshop
8	Introduction to the design project – Social Use Furniture . Developing Idea Rack, brainstorming, optimization through configuration exploration, Usability consideration, & Decision-making / Concept Development.	Student will understand the process of furniture designing.	Lecture and Individual Discussion	2202.2	Assignment 7: Studio Working
8	Design Development - Concept Development	Student will understand the process of furniture designing.	Individual Discussion	2202.2	Assignment 7: Studio Working

9	Design Development	Student will be able to design a furniture piece and will understand the process of furniture designing.	Individual Discussion	2202.2	Assignment 7: Studio Working
10	Design Development	Student will be able to design a furniture piece and will understand the process of making drawings/detailed drawings for furniture.	Individual Discussion	2202.2	Assignment 7: Studio Working
11	Design Development	Student will be able to design a furniture piece and will understand the process of furniture designing.	Individual Discussion	2202.2	Assignment 7: Studio Working
12,13	Prototyping & testing	Student will be able to make the on-scale model and will be able to rectify the errors in their product, if any.	Model making	2202.2	Assignment 7: Carpentry workshop activity
14	Final presentation				

H. Course Articulation Matrix: (Mapping of COs with POs)

CO	STATEMENT	CORRELATION WITH PROGRAM OUTCOMES												CORRELATION WITH PROGRAM SPECIFIC OUTCOMES			
		P O 1	P O 2	P O 3	P O 4	P O 5	P O 6	P O 7	P O 8	P O 9	P O 10	P O 11	P O 12	PSO 1	PSO 2	PSO 3	
ID2202.1	To make the students understand the various styles, systems and products available in the market.	2	2				2	3							2	2	1
ID2202.2	To equip the students within depth understanding of ergonomics, materials and new technologies to develop innovative furniture-designing skills.	3	1	3	2	1	2	3							3	2	2
ID2202.3	To help the students understand about the various anthropometric aspects, human factors & other design criteria involved in the design of furniture.																

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

MANIPAL UNIVERSITY JAIPUR

School of Planning and Design

Department of Interior Design

Course Hand-out

Interior Services II | ID 2203 | 3 Credits

Session: Jan 21 – May 21 | Faculty: Ar. Sneh Singh| Class: Theory



A. Introduction: This course is offered to B.Des. Interior design students as a course, train students to study and understand role of electrical, illumination, communication & IT services in buildings. Students are trained to learn the functioning, installation & application of the electrical & communication services in design, along with fire and life safety norms.

B. Course Outcome: At the end of the course, students will be able to

- Enhance skill in the working of electrical services in buildings and their integration in design.
- Develop basics of lighting & illumination designs in building interiors.
- Draw electrical and lighting layouts in buildings hence developing their employability skills.
- Plan working of communication & IT services in a building.
- Do the integration of fire safety and hazard management in building design.

C. Program Outcomes and Program Specific Outcomes

[PO.1]. Design knowledge: Apply the knowledge of mathematics, science and design fundamentals to the solution of complex problems.

[PO.2]. Problem analysis: Identify, formulate, research literature, and analyse complex problems reaching substantiated conclusions using principles of design and sciences.

[PO.3]. Design/development of solutions: Design solutions for complex problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

[PO.4]. Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

[PO.5]. Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex design activities with an understanding of the limitations.

[PO.6]. The Designer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional practice.

[PO.7]. Environment and sustainability: Understand the impact of the professional design solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

[PO.8]. Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the design practice.

[PO.9]. Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

[PO.10]. Communication: Communicate effectively on complex design activities with the related community and society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

[PO.11]. Project management and finance: Demonstrate knowledge and understanding of the design and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

[PO.12]. Life-long learning: Recognize the need for and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

[PSO.1]. Academic and Industry: Apply creative, innovative, intellectual learning to establish academic and professional excellence in the field of Interior Design.

[PSO.2]. Critical Thinking: To produce technical, communicative and conscious design of interior spaces and related products.

[PSO.3]. Global Standards: Meet global standards to underpin design, technological & business development.

D. Assessment Rubrics:

Criteria	Description	Maximum Marks
Internal Assessment (Summative)	Sessional Exam I	10
	Sessional Exam II	10
	Assignments	40
End Term Exam (Summative)	End Term Exam	40
	Total	100
Attendance (Formative)	A minimum of 75% Attendance is required to be maintained by a student to be qualified for taking up the End Semester examination. The allowance of 25% includes all types of leaves including medical leaves.	
Make up Assignments (Formative)	Students who misses a class will have to report to the teacher about the absence. A makeup assignment on the topic taught on the day of absence will be given which has to be submitted within a week from the date of absence. No extensions will be given on this. The attendance for that particular day of absence will be marked blank, so that the student is not accounted for absence. These assignments are limited to a maximum of 5 throughout the entire semester.	
Homework/ Home Assignment/ Activity Assignment (Formative)	There are situations where a student may have to work in home, especially before a flipped classroom. Although these works are not graded with marks. However, a student is expected to participate and perform these assignments with full zeal since the activity/ flipped classroom participation by a student will be assessed and marks will be awarded.	

E. Syllabus

Electrical services: Sources of electrical energy supplied to buildings; 2/3 phase supply, electricity supply layout at city and building level; Requirements of electrical materials; Rules and regulations for electrification of buildings with relevant standards; Types of electrical wiring system for normal and heavy loads; Electrical appliances and their consumption values. Earthing: Communication and IT services, installations and cabling; Electronic surveillance and security systems; Energy efficient systems and equipment's; Case studies of energy consumption and conservation in different building types. Communication and it services: Installations and cabling; Electronic surveillance and security system. Mechanical transportation systems: Calculations for design and installation of mechanical transportation systems; Concept of mechanized transportation systems. Types of lifts, escalators and travellers. Fire & life safety: Type of fire & Extinguishing systems; Concept & understanding of fire rating system for various materials and spaces, fire doors, fire resistant materials; Emergency evacuation method and fire exit plans, means of escape, staircase lifts etc..

F. Reference Book

- R1 *Electrical wiring and contracting (vol. 1 to vol.4)*, The New era Publishing Company, London.
- R2 William J. Guinness, *Mechanical and Electrical Systems for Buildings*, McGraw Hill, New York.
- R3 Charangith shah, (1998), *Water supply and sanitary engineering*, Galgotia Publishers.
- R4 A Kamala & DL Kanth Rao, (1989), *Environmental Engineering*, Tata McGraw – Hill publishing Company Limited.

R5 V. K. Jain, (2010), *Fire Safety in Buildings*, New Age International Pvt Ltd Publishers.
R6 R. G. Hopkinson and J. D. Kay, (1972), *the Lighting of Buildings*, Faber and Faber, London.

G. Lecture Plan:

Lec. No.	Topics	Session Objective	Mode of Delivery	Corresponding CO	Mode of Assessing the Outcome
1	Importance of electrical/ lighting/ power & communication in professional aspects. Sources, Energy efficient & Electricity supply systems	To understand the electrical services, utilities and facilities in interiors.	Lecture	2203.1	-
2	1/3 phase supply, electricity supply layout at city and building level. Rules and regulations / Terminologies Wiring type, size & identification.	To get familiar with electrical/ lighting/ power & communication use/requirement/ planning in professional aspects	Lecture	2203.1, 2203.3	Field survey on A4.
3 & 4	Types of electrical wiring system for normal and heavy loads, Electrical Symbols. Electrical layout plans Presentation of electrical layout plans	-	Studio	2203.1	Electrical layout plans on A2 sheet.
5 & 6	Electrical consumption & load calculation. Earthing.	-	Lecture	2203.1	Load calculation on A2 sheet.
7	Communication and IT services, installations, cabling and controlling. Electronic surveillance and security systems	To get familiar how navigation works (e.g. Airport information networking system) & Use of BMS room. Use of security systems in parking and other areas.	Lecture	2203.4	Representation of the topics on A2 sheet.
8	Light Source & lighting types Different types of indoor and outdoor lighting.	To expose various ways to provide information on the principles of lighting and its design.	Lecture	2203.3	Representation of the topics on A2 sheet.
9	Design process- planning light Prepare a lighting design scheme with layering system.	To expose various ways to provide information on the principles of lighting and its design.	Lecture	2203.2	Lighting design scheme on A2 sheet.
10	Mechanical Transportation system		Lecture	2203.4	-
11	Firefighting fighting, Cause of fire, mechanism of fire spread in building and prevention. Fire protection, fire regulation and design consideration for fire safety	To develop the understanding of layout, functioning and application of firefighting services in interiors	Lecture	2203.5	Representation of the topics on A2 sheet.
12	Devices of firefighting. Fire resistant material, means of escape, fire staircase lifts etc.	-	Lecture	2203.5	Representation of the topics on A2 sheet

H. Course Articulation Matrix: (Mapping of COs with POs)

CO	STATEMENT	CORRELATION WITH PROGRAM OUTCOMES												CORRELATION WITH PROGRAM SPECIFIC OUTCOMES				
		PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3		
ID 2203.1	Enhance skill in the working of electrical services in buildings and their integration in design.		1	1			1	1					3			3	2	2
ID 2203.2	Develop basics of lighting & illumination designs in building interiors.					2	2									3	1	1
ID 2203.3	Draw electrical and lighting layouts in buildings hence developing their employability skills.	2	3	2		3	3									3	3	3
ID 2203.4	Plan working of communication & IT services in a building.	3				1	1	2								2	3	3
ID 2203.5	Do the integration of fire safety and hazard management in building design.	1	1			2	2	3			3	1				3	3	3

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



MANIPAL UNIVERSITY JAIPUR

School of Planning and Design

Department of Interior Design

Course Hand-out

Working Drawing I | ID 2204 | 3 Credits

Session: Jan 21 – May 21 | Faculty: Kush Jee Kamal | 4th Sem | Class: Practical

A. Introduction: This course is offered in fourth semester B.Sc. Interior design to equip students with knowledge of construction drawing and its implementation.

B. Course Objectives: At the end of the course, students will be able to

[2204.1] To understand & develop the skills, process & techniques of preparation of working drawings.

[2204.2] To impart basic knowledge of construction work process on site.

[2204.3] To understand the application of material specification and estimation in field work.

C. Program Outcomes and Program Specific Outcomes:

[PO.1]. **Design knowledge:** Apply the knowledge of mathematics, science and design fundamentals to the solution of complex problems.

[PO.2]. **Problem analysis:** Identify, formulate, research literature, and analyse complex problems reaching substantiated conclusions using principles of design and sciences.

[PO.3]. **Design/development of solutions:** Design solutions for complex problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

[PO.4]. **Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

[PO.5]. **Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex design activities with an understanding of the limitations.

[PO.6]. **The Designer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional practice.

[PO.7]. **Environment and sustainability:** Understand the impact of the professional design solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

[PO.8]. **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the design practice.

[PO.9]. **Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

[PO.10]. **Communication:** Communicate effectively on complex design activities with the related community and society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

[PO.11]. **Project management and finance:** Demonstrate knowledge and understanding of the design and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

[PO.12]. **Life-long learning:** Recognize the need for and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

PROGRAM SPECIFIC OUTCOMES

[PSO.1]. **Academic and Industry:** Apply creative, innovative, intellectual learning to establish academic and professional excellence in the field of Interior Design.

[PSO.2]. **Critical Thinking:** To produce technical, communicative and conscious design of interior spaces and related products.

[PSO.3]. **Global Standards:** Meet global standards to underpin design, technological & business development.

D. Assessment Rubrics:

Criteria	Description	Maximum Marks
Internal Assessment (Summative)	Internal assignment assessment & progress marking	50
End Term Exam (Summative)	Portfolio submission and Final Project	0
	Total	50
Attendance (Formative)	A minimum of 75% Attendance is required to be maintained by a student to be qualified for taking up the End Semester examination. The allowance of 25% includes all types of leaves including medical leaves.	
Make up Assignments (Formative)	Students who misses a class will have to report to the teacher about the absence. A makeup assignment on the topic taught on the day of absence will be given which has to be submitted within a week from the date of absence. No extensions will be given on this. The attendance for that particular day of absence will be marked blank, so that the student is not accounted for absence. These assignments are limited to a maximum of 5 throughout the entire semester.	

Homework/ Home Assignment/ Activity Assignment (Formative)	There are situations where a student may have to work in home, especially before a flipped classroom. Although these works are not graded with marks. However, a student is expected to participate and perform these assignments with full zeal since the activity/ flipped classroom participation by a student will be assessed and marks will be awarded.
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E. Syllabus

- Details of all services – layouts for flooring, ceiling, electrical, plumbing, lighting, firefighting etc., toilet details, kitchen details, staircase details, furniture details, Interior finishing details, material, color and texture details, fixture and fixing and joinery details;
- Specifications writing/ formatting & Manual making of: Door, Finishes & Material, Fixed hardware, FFE (Furniture & Equipment), mode of measurements, manufacturer's details and specifications etc.
- Database of manufacturers specifications with details for the following materials based on surveys – Glass, plywood and laminates, hardware, electrical, wiring, accessories, plumbing fitting and fixtures, flooring, cladding etc.

F. Reference Book

- R1. Liebing, Ralph W., (1999), Architectural Working Drawings, Wiley.
R2. Spence, William P. (1993), Architectural Working Drawings: Residential and Commercial Buildings, John Wiley and Sons.
R3. Liebing. W. Ralph, (1996), Architectural Working Drawings, 4th edition, John wiley and sons, New York.
R4. Macey. W. Frank, (1955), Specification in detail, 5th edition, Technical press ltd, London.
R5. Shah, M.G.; and others, (1996), Building Drawing: An integrated approach to build environment, 3rd ed, Tata McGraw Hill Pub. Co. Ltd, New Delhi.
R6. Fredd Stitt, (1998), Working Drawing Manual, McGraw-Hill Professional.
R7. Kilmer, Working Drawings and Details for Interiors, John Wiley and Sons.

G. Lecture Plan:

Lec No	Topics	Session Objective	Mode of Delivery	Corresponding CO	Mode of Assessing the Outcome
1	INTRODUCTION: Preparation of drawings with standard practiced notations, symbols to convey the interior design and details for the execution purpose;	The basics of working drawing.	Lecture + Discussion	[ID 2204.1] [ID 2204.3]	Basic standards representation of the topics on A1 sheet.
2	INTRODUCTION: Suitable scales of drawings, methods of giving dimensions, centre line, elevation marker and standards on plans, sections, elevations, details etc;	The basics of working drawing.	Lecture + Discussion	[ID 2204.1] [ID 2204.2]	Digitalization of given plans. Basic detailing of different services. Representation of the topics on A1 sheet.
3&4	PREPARATION OF PLANS: The preparation of checklists for drawing numbers, cross verification of drawing, extracting the quantities for estimates.	To understand the different section of services in Interior design.	Lecture + Discussion	[ID 2204.1] [ID 2204.2] [ID 2204.3]	Detailing description of plan. Representation of the topics on A1 sheet.
5,6 & 7	KITCHEN DETAILS- Working drawing plans (Above and Below Counter), flooring plans, reflected ceiling plans Elevations and Sections: Detailed sectional elevations of all the walls in the interior with all the required dimensions and specifications	To understand the different section of services in Interior design.	Lecture + Discussion	[ID 2204.1] [ID 2204.2] [ID 2204.3]	Details construction analysis of Kitchen. Representation of the topics on A1 sheet.
8 & 9	TOILET DETAILS- Working drawing plans, flooring plans, Elevations and Sections: Detailed sectional elevations of all the walls in the interior with all the required dimensions and specifications.	The essential upper surface details, finishes and supportive elements of Interior Design.	Lecture + Discussion	[ID2204.1] [ID 2204.2]	Details construction analysis of Toilet. Representation of the topics on A1 sheet.
10,11 & 12	STAIRCASE DETAILS- Detailed plan of 2 floor staircase well with steps numbering, tread & riser marking, Up & Down directional Symbols, flight dimensions, staircase width, staircase well dimensions etc., Two detailed sections showing tread, riser, nosing, steps number marking, material specification of construction and finishes	Explanation of standards and specifications of various elements of Interior Design.	Lecture + Discussion	[ID 2204.1] [ID 2204.3]	Details construction analysis of Staircase. Representation of the topics on A1 sheet.

H. Course Articulation Matrix: (Mapping of COs with POs)

CO	STATEMENT	CORRELATION WITH PROGRAM OUTCOMES												CORRELATION WITH PROGRAM SPECIFIC OUTCOMES		
		PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3
ID 2204.1	To understand & develop the skills, process & techniques of preparation of working drawings.	3	3	2	1	3	2	3	1	3	1	3	1	2	3	1
ID 2204.2	To impart basic knowledge of construction work process on site.	0	2	2	2	2	0	3	1	1	3	1	2	1	2	0
ID 2204.3	To understand the application of material specification and estimation in field work.	2	2	0	1	0	3	2	2	2	1	1	2	2	3	2

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



MANIPAL UNIVERSITY JAIPUR

School of Planning and Design

Department of Interior Design

Course Hand-out

Specification & Estimation | ID 2205 | 3 Credits

Session: Jan 21 – May 21 | Faculty: Ar. Apoorva Agarwal | Class: Theory

A. Introduction: This course is offered in the fourth semester of B. Des. Interior Design in order to familiarise them with quantification and estimation of cost of materials and process in the field & market, used for construction and the execution, to be able to produce technical documents entailing the same relevant to Interior Design practice. Students are expected to be able to write specifications of materials details and cost estimation of the process.

B. Course Outcomes: At the end of the course, students will be able to:

[ID2205.1] To understand the language and vocabulary of specification writing.

[ID2205.2] To develop skills of specification writing for various building materials and interior works.

[ID2205.3] To understand the methods of preparing estimates for interior works.

C. Program Outcomes and Program Specific Outcomes

[PO.1]. **Design knowledge:** Apply the knowledge of mathematics, science and design fundamentals to the solution of complex problems.

[PO.2]. **Problem analysis:** Identify, formulate, research literature, and analyse complex problems reaching substantiated conclusions using principles of design and sciences.

[PO.3]. **Design/development of solutions:** Design solutions for complex problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

[PO.4]. **Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

[PO.5]. **Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex design activities with an understanding of the limitations.

[PO.6]. **The Designer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional practice.

[PO.7]. **Environment and sustainability:** Understand the impact of the professional design solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

[PO.8]. **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the design practice.

[PO.9]. **Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

[PO.10]. **Communication:** Communicate effectively on complex design activities with the related community and society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

[PO.11]. **Project management and finance:** Demonstrate knowledge and understanding of the design and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

[PO.12]. **Life-long learning:** Recognize the need for and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

[PSO.1]. **Academic and Industry:** Apply creative, innovative, intellectual learning to establish academic and professional excellence in the field of Interior Design.

[PSO.2]. **Critical Thinking:** To produce technical, communicative and conscious design of interior spaces and related products.

[PSO.3]. **Global Standards:** Meet global standards to underpin design, technological & business development.

D. Assessment Rubrics:

Criteria	Description	Maximum Marks
Internal Assessment (Summative)	Internal assignment assessment & progress marking	60
End Term Exam (Summative)	Portfolio submission and Final Project	40
	Total	100
Attendance (Formative)	A minimum of 75% Attendance is required to be maintained by a student to be qualified for taking up the End Semester examination. The allowance of 25% includes all types of leaves including medical leaves.	
Make up Assignments (Formative)	Students who misses a class will have to report to the teacher about the absence. A makeup assignment on the topic taught on the day of absence will be given which has to be submitted within a week from the date of absence. No extensions will be given on this. The attendance for that particular day of absence will be marked blank, so that the student is not accounted for absence. These assignments are limited to a maximum of 5 throughout the entire semester.	
Homework/ Home Assignment/ Activity Assignment (Formative)	There are situations where a student may have to work in home, especially before a flipped classroom. Although these works are not graded with marks. However, a student is expected to participate and perform these assignments with full zeal since the activity/ flipped classroom participation by a student will be assessed and marks will be awarded.	

E. Syllabus

Specifications: Definition, types, importance of outline and detailed specification in construction practice; method of writing specifications; Construction practices like flooring, false ceiling, wall finishes etc. to be discussed as key examples. Estimation: Methods of Estimation, Estimate and estimating; necessity of approximate estimates; principle of the approximate methods of costing; approximate methods of costing for various structures; Types of estimates; Uses of an estimate; Calculation systems for detailed estimated and methods of preparation of BOQ (bill of quantities). Current schedule of rates (CSR) of local PWD; mode and units of measurement. Basic Introduction of Tender and Contracts.

F. Reference Book

R1 B.N.Dutta, 1995. Estimating & Costing in Civil Engineering Theory &Practice. McGraw Hill Education.

- R2 Rangwaala, 2009. Elements of Estimating & Costing. Charotar books
 R3 Birdie, G. S. , 2014. Text Book of Estimating and Costing, Sixth edition. Dhanpat Rai Publishing Company Private Limited-New Delhi
 R4 M Chakraborti, 2006. Estimating, Costing, Specification & Valuation In Civil Engineering. Chakraborty Publishers
 R5 Carol A. Sampson, 2001. Estimation for Interior designer, 2nd revised edition. Watson-Guptill Publications Inc. U.S.

G. Lecture Plan:

Lec No	Topics	Session Objective	Mode of Delivery	Corresponding CO	Mode of Assessing the Outcome
1	Introduction to the idea of specification & estimation – why is it important.	Students shall be able to understand the importance of specification.	Lecture	ID2205.1	Evaluation of classroom assignment on the topic covered
2 & 3	Methods of writing specification for material and work.	Students shall be able to understand the importance of specification.	Lecture	ID2205.1	Evaluation of classroom assignment on the topic covered
4	What is an estimate? What are the different types of estimates?	Students shall be able to understand the process of estimation.	Lecture	ID2205.3	Evaluation of classroom assignment on the topic covered
5	Steps of estimating material and work for execution of flooring.	Students shall be able to understand the process of estimation.	Lecture	ID2205.3	Evaluation of classroom assignment on the topic covered
6	Steps of estimating material and work for execution of false ceiling	Students shall be able to understand the process of estimation.	Lecture	ID2205.3	Evaluation of classroom assignment on the topic covered
7	Steps of estimating material and work for execution of drapery	Students shall be able to understand the process of estimation.	Lecture	ID2205.3	Evaluation of classroom assignment on the topic covered
8	Steps of estimating material and work for execution of furniture modules.	Students shall be able to understand the process of estimation.	Lecture	ID2205.3	Evaluation of classroom assignment on the topic covered
9	Steps of drafting a work agreement between designer and client	Students shall be able to understand the process of estimation.	Lecture	ID2205.2	Evaluation of classroom assignment on the topic covered
10	Calculation systems for detailed estimated and methods of preparation of BOQ (bill of quantities).	Students shall be able to calculate BOQ.	Lecture	ID2205.2	Evaluation of classroom assignment on the topic covered
11 & 12	Current schedule of rates (CSR) of local PWD, mode and units of measurement.	Students shall be able to understand the schedule of rates.	Lecture	ID2205.2	Evaluation of classroom assignment on the topic covered
13&14	Basic Introduction of Tender and Contracts.	Students shall be able to understand the concept of tender and contracts.	Lecture	ID2205.1 ID2205.2	Evaluation of classroom assignment on the topic covered

H. Course Articulation Matrix: (Mapping of COs with POs)

CO	STATEMENT	CORRELATION WITH PROGRAM OUTCOMES												CORRELATION WITH PROGRAM SPECIFIC OUTCOMES		
		PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3
ID 2205.1	Familiarize with the language and vocabulary of specification writing.			1	2		2		1			2	1	2		
ID 2205.2	Develop skills of specification writing for various building materials and interior works.			2	2		1		2			2		2		
ID 2205.3	Identify the methods of preparing estimates for interior works.		1			2				2	1	1	1	2		

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



MANIPAL UNIVERSITY JAIPUR

School of Planning and Design

Department of Interior Design

Course Hand-out

Computer Application III | ID2206 | 2 Credits

Session: Jan 21 – May 21 | Faculty: Ar. Akshita Joshi | Class: Theory + Practical

A. Introduction: This course is offered by Dept. of Interior Design in 4th semester. Students are briefed about the relevant softwares used in interior design profession for industry-oriented learning. It enables the students to convey their design to end user with realistic drawings.

B. Course Objectives: At the end of the course, students will be able:

- [ID2206.1] To understand concepts and tools for interior space modelling.
- [ID2206.2] To impart knowledge on the various rendering techniques and walkthroughs.
- [ID2206.3] To enhance the visual presentation skills for interior drawings and views.

C. Program Outcomes and Program Specific Outcomes

- [PO.1]. **Design knowledge:** Apply the knowledge of mathematics, science and design fundamentals to the solution of complex problems.
 - [PO.2]. **Problem analysis:** Identify, formulate, research literature, and analyse complex problems reaching substantiated conclusions using principles of design and sciences.
 - [PO.3]. **Design/development of solutions:** Design solutions for complex problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
 - [PO.4]. **Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
 - [PO.5]. **Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex design activities with an understanding of the limitations.
 - [PO.6]. **The Designer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional practice.
 - [PO.7]. **Environment and sustainability:** Understand the impact of the professional design solutions in societal and environmental contexts, and demonstrate the knowledge of and need for sustainable development.
 - [PO.8]. **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the design practice.
 - [PO.9]. **Individual and teamwork:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
 - [PO.10]. **Communication:** Communicate effectively on complex design activities with the related community and society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
 - [PO.11]. **Project management and finance:** Demonstrate knowledge and understanding of the design and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
 - [PO.12]. **Life-long learning:** Recognize the need for and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.
- [PSO.1]. **Academic and Industry:** Apply creative, innovative, intellectual learning to establish academic and professional excellence in the field of Interior Design.
 - [PSO.2]. **Critical Thinking:** To produce technical, communicative and conscious design of interior spaces and related products.
 - [PSO.3]. **Global Standards:** Meet global standards to underpin design, technological & business development.

D. Assessment Rubrics:

Criteria	Description	Maximum Marks
Internal Assessment (Summative)	Internal assignment assessment & progress marking	50
End Term Exam (Summative)	Portfolio submission and Final Project	-
	Total	50
Attendance (Formative)	A minimum of 75% Attendance is required to be maintained by a student to be qualified for next semester. The allowance of 25% includes all types of leaves including medical leaves.	
Make up Assignments (Formative)	Students who miss a class will have to report to the teacher about the absence. A makeup assignment on the topic taught on the day of absence will be given which has to be submitted within a week from the date of absence. No extensions will be given on this. The attendance for that day of absence will be marked blank, so that the student is not accounted for absence. These assignments are limited to a maximum of 5 throughout the entire semester.	
Homework/ Home Assignment/ Activity Assignment (Formative)	There are situations where a student may have to work in home, especially before a flipped classroom. Although these works are not graded with marks. However, a student is expected to participate and perform these assignments with full zeal since the activity/ flipped classroom participation by a student will be assessed and marks will be awarded.	

E. Syllabus

Rendering techniques and interior drawing presentation through 3D Max, Lumion or similar software according to market trends.
 Orientation towards 3D: 2D to 3D conversion, perspective view, walk through the layout. Advance Sketch-up.
 Revit or similar software- Introduction, drafting, modelling, printing & plotting.

F. Reference Book

R1 Oscar Riera Ojed, Lucast Guerre, Hyper realistic Computer Generated Architectural Renderings.
R2 Michele Bousquet, 3D Studio MAX 4: Quick Reference.
R3 Lydia Cline, SketchUp for Interior Design: 3D Visualizing, Designing, and Space Planning.
R4 Lance Kirby, Eddy Krygiel, Marcus Kim (2017) Mastering Autodesk Revit 2018
R5 Aaron R. Hansen ASID, CDT, Daniel John Stine (2019) Interior Design Using Autodesk Revit 2020.

G. Lecture Plan:

Lec No	Topics	Session Objective	Mode of Delivery	Corresponding CO	Mode of Assessing the Outcome
1 19.02.21	Introduction to 3Ds Max : Understanding the applications for creating block models.	Students should be able to operate the basic 3Ds max.	Lecture & Practice	ID 2206.1	Studio Assignment
2 26.02.21	MODELLING TECHNIQUES Lathing, displacement, lofting, Boolean operations using standard and compound primitives, modeling with lofts, low polygon modeling and nurbs modeling.	Students should be able to operate the basic 3Ds max.	Lecture & Practice	ID 2206.1	Studio Assignment
3 06.03.21	MODELLING TECHNIQUES Lathing, displacement, lofting, Boolean operations using standard and compound primitives, modeling with lofts, low polygon modeling and nurbs modeling.	Students should be able to operate the 3Ds max, using all techniques.	Lecture & Practice	ID 2206.1 ID 2206.3	Studio Assignment
4 12.03.21	TEXTURES AND TEXTURE MAPPING Using material editor, material browser, mapping textures	Students should be able to operate the 3Ds max, using all techniques.	Lecture & Practice	ID 2206.2	Studio Assignment
5 19.03.21	Introduction to VRay : Materials	To be able to apply different materials on 3D objects	Lecture & Practice	ID 2206.2	Studio Assignment
6 26.03.21	VRay : Lighting.	To be able to apply lighting in projects.	Lecture & Practice	ID 2206.2	Studio Assignment
7 02.04.21	VRay : Cameras & Walkthroughs	Students should be able to develop walkthrough videos.	Lecture & Practice	ID 2206.2 ID 2206.3	Studio Assignment
8,9 09.04.21 16.04.21	Design Project with 3Ds Max & VRay	Students will be able to implement the softwares in their design project	Assignment	ID 2206.1 ID 2206.2 ID 2206.3	Presentation
10 23.04.21	Introduction to BIM software: Revit	Students will be aware of the Building Information Modelling software	Lecture & Practice	ID 2206.1	Studio Assignment
11 30.04.21	AutoDesk Revit: Modelling and Model Documentation	Students will be aware of the Building Information Modelling software	Lecture & Practice	ID 2206.1 ID 2206.3	Studio Assignment
12 07.05.21	AutoDesk Revit: Families & Views	Students will be aware of the Building Information Modelling software	Lecture & Practice	ID 2206.1 ID 2206.3	Studio Assignment
13 14.05.21	AutoDesk Revit Project Management	Students will be aware of the Building Information Modelling software	Lecture & Practice	ID 2206.1 ID 2206.2 ID 2206.3	Studio Assignment
14 20.05.21	Final Submission Day				

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ID 2206.1	To understand concepts and tools for interior space modelling.	2				3					1		3	2	3	3
ID 2206.2	To impart knowledge on the various rendering techniques and walkthroughs.	2				3					3		3	2	3	3
ID 2206.3	To enhance the visual presentation skills for interior drawings and views.	2				3					3		3	2	3	

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