

Bachelor of Interior Design

Syllabus – First Semester

CALLIGRAPHY EXPLORATION

(Practical)

Course Code: IND2108

Credit Units: 01

Course Objective:

The objective of this course is to develop a basic proficiency in creating various graphic forms and objects using calligraphic lettering skills through analyze a calligraphic letterform, identifying its distinctive features. This course covers compose various letter form to demonstrate an understanding of calligraphic elements and the basic terminology of calligraphy and deployment of its various strokes.

Course Contents:

(NB: Submission of Practical work record / Portfolio / Sketch Book is compulsory for all Modules and will be part of the Final Course Evaluation)

Module I : Introduction to Calligraphy

Understanding calligraphy - Calligraphy definition – History of Calligraphy – Importance of calligraphy- Modern calligraphy - Tools required for calligraphy.

Module II : Practice Exercises

Description:

Reading and writing are not naturally learned skills. They have to be taught specifically. Learn different a Calligraphy style of writing requires regular practice. Hence, the students are required to practice in class as well as by given Assignments.

Topics Covered:

- English Calligraphy (Compulsory);
- Hindi Calligraphy (Optional, not mandatory)

Basic Strokes of Practice- Scribbles with Kalam, Nib, Brush and Calligraphy Pen; Alphabet, sentences and composition of different types; Basic calligraphic strokes for English; Foundational Hand - Majuscules, Miniscules and Numbers; Calligraphic Upper case Alphabets; Calligraphic Lower case Alphabets; Composing Alphabets; Composing a calligraphic paragraph; Square Designed Letters – Majuscules; Digital – Majuscules, Miniscules and Numbers; Bubble Designed Letters – Majuscules; Rose Designed Alphabets – Majuscules; Old English Script Designs – Majuscules, Miniscules and Numbers; Italic Script Designs – Majuscules, Miniscules and Numbers.

Course Evaluation:

Components	A	H	PR	EE
Weightage (%)	05	10	15	70

(A - Attendance; H - Home Assignment; PR - Practical work Record; EE - End Semester Examination)
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Text & References:

1. Wilson, Diana Hardy. The Encyclopedia of Calligraphy Techniques. Running Press, 1990.
2. Shepherd, Margaret. Calligraphy Made Easy: A Beginner's Workbook. Penguin, 1981.
3. Baron, Nancy. Getting Started in Calligraphy. Sterling Publishing Company, Inc., 1979.
4. Chazal, Julien; Calligraphy: A Complete Guide; Stackpole Books, 2013
5. Studley, Vance. Left-handed Calligraphy. The Rosen Publishing Group, 1991.
6. Apte, JagdeeshPandurang ;ChitraroopDevanagari; Pune, February 1960.
7. Dalvi, Girish. Anatomy of Devanagari Typefaces. Design Thoughts pp 30-36, 2009.
8. Kesavan, Bellary Shamanna, and P.N. Venkatachari, History of Printing and Publishing in India. New Delhi: NBT, 1984.
9. Schimmel, Annemarie, and Barbara Rivolta. Islamic Calligraphy. Vol. 50. No. 1. Brill Archive, 1992.
10. Denise Lach, Calligraphy: A Book of Contemporary Inspiration, Thames & Hudson, 2014.

Syllabus – Second Semester

TECHNICAL DRAWING & ILLUSTRATIONS (Practical)

Course Code: IND2202

Credit Units: 02

Course Objective:

Basic technical drawing is essential as drawing is the language of designer. This course aims to enhance knowledge and any skill related in engineering drawing. More importantly, this course develops the ability to read drawing increases the productivity of a person besides enhancing confidence to perform task competently.

Course Contents:

(NB: Submission of Practical work record / Portfolio / Sketch Book is compulsory for all Modules and will be part of the Final Course Evaluation)

Module I : Introduction to Technical Drawing & Illustrations

Importance of Engineering drawing; Method of folding of Engineering drawing sheets as per BIS SP: 46-2003; Drawing Instruments and their Standard uses. **Drawing of Lines:** Definition, types and applications in Drawing as per BIS SP: 46-2003; Classification of lines (Hidden, Centre, construction, Extension, Dimension, Section); Drawing lines of given length (Straight, curved); Drawing of parallel lines, perpendicular line; Methods of Division of line segment. **Lettering & Numbering as per BIS SP46-2003:** Single Stroke, Double Stroke, inclined, Upper case and Lower case. **Sizes and Layout of Drawing Sheets:** Basic principle of Sheet Size, Designation of sizes, Selection of sizes, Title Block, its position and content, Borders and Frames (Orientation marks and graduations), Grid Reference, Item Reference on Drawing Sheet (Item List);

Module II : Free hand drawing of Geometrical Figures & Perception

Free hand drawing of Lines, polygons, ellipse, etc.; **Geometrical figures** and blocks with dimension; Transferring measurement from the given object to the free hand sketches. **Depth Perception:** Binocular disparity, Monocular cues- Interposition - Atmospheric Perspective- Texture Gradient -Depth Perception through Linear or one point Perspective - Linear or one point Perspective - Two-point Perspective - Three-point Perspective -Three perspective angles for clear visual understanding-Eye level; **Free Hand sketch of products** :Automobiles, electronic gadgets, furniture etc.

Module III : Technical Drawing of Geometrical Figures & Dimensioning:

Definition, nomenclature and practice of Angle: Measurement and its types, method of bisecting; Triangle -different types; Rectangle, Square, Rhombus, Parallelogram; Circle and its elements. Drawing of Solid figures (Cube, Cuboids, Cone, Prism, Pyramid, Frustum of Cone and Pyramid.) with dimensions. Dimensioning: Definition, types and methods of dimensioning (functional, non-functional and auxiliary); Types of arrowhead; Leader Line with text.

Module IV : Method of presentation of Engineering Drawing

Pictorial View; Orthogonal View; Isometric view

Module V : Symbolic Representation (As per BIS SP:46-2003)

Fastener (Rivets, Bolts and Nuts); Bars and profile sections; Weld, brazed and soldered joints; Electrical and electronics element; Piping joints and fittings

Course Evaluation:

Components	A	H	CT	EE
Weightage (%)	05	10	15	70
(A-Attendance; H -Home Assignment; CT-Class Test; EE-End Semester Examination)				

Text & References:

1. Madsen, David A. Engineering drawing and design. Cengage Learning, 2001.
2. Goetsch, David L., William Chalk, and John A. Nelson. Technical drawing. Cengage Learning, 2000.
3. Agrawal, Basant, and C. M. Agrawal. Engineering Drawing. McGraw-Hill Education, 2014.
4. Knowlton, Kenneth W.,. Technical freehand drawing and sketching. Glencoe/McGraw-Hill School Pub Co, 1977.
5. Pipes, Alan. Drawing for designers. Laurence King Publishing, 2007.
6. Cooper, Douglas. Drawing and perceiving; John Wiley & Sons, 2007.

DESIGN STUDIO-II (PHOTOGRAPHY & VIDEOGRAPHY) (Studio)

Course Code: IND2204

Credit Units: 02

Course Objective:

The aim of this course is to develop knowledge, skills and understanding of Photography, Video and Digital imaging that enables students to gain an increasing accomplishment and independence in their representation of ideas in the fields of Design. This course enhances the students to visualize the concept of digital platform and various methods of image capture.

Course Contents:

(NB: Submission of Practical work record / Portfolio / Sketch Book is compulsory for all Modules and will be part of the Final Course Evaluation)

Frame work for skill development in Photography, Video and Digital imaging.

Photography, Video and Digital imaging is encourage creative and systematic investigation of formal and conceptual issues in the field of design and act as a tool of inspiration. Studies of Photography, Video and Digital imaging is required different philosophical views and frameworks of belief that affect interpretations of meaning and value. They are:

1. **The subjective frame** — *Personal experience*: This is about deeply felt and sensory experience, intuition and imagination in relation to the inter-subjective experiences afforded to artists and audiences.
2. **The cultural frame** — *Cultural and social meaning*: This is to represent the collective interests of, cultural groups, ideologies, classes, political groups, genders, and spiritual and secular beliefs, events and objects in relation to the social perspective of the community out of which it grows.
3. **The structural frame** — *Communication and the systems of signs*: This is the representation of the visual language as a symbolic system. A system of relationships between signs and symbols that are read and understood by artists and audiences who are able to decode the texts in terms of the relationships of symbols used to refer to the world. Through this system, ideas are circulated and exchanged.
4. **The postmodern frame** — *Ideas that challenge mainstream values of histories*: This is about texts' that reconfigure and question previous texts and current narratives. These are woven together through such things as irony, parody and quotation through critique, exposing the patterns of authority and the assumptions of mainstream values to reveal inconsistencies, uncertainties and ironies.

Module : Photography & Digital Imaging I

Different types of camera (DSLR) - Study of apertures, shutter speed and ISO. - Understanding white balance in DSLR their control - Understanding Focus: Depth of Field, Focal Length. - Types of Lens available: Zoom lens and Macro.-Use of tripod stand, study of panning tilt head. - Taking photographs: Outdoor and indoor subjects on films. - Photographing a subject with different lenses. - Types of lights: use of bounce and reflected lights. - Handling movie and video cameras.

Practice: Indoor & Outdoor shoot.

Module II : Videography

Types of cameras: HD. - Types of Framing: Framing, Angle of Framing, Aspect Ratio, Level of Framing, Canted Framing, and Following. - Use of White balance and their purpose. - Types of Shot, Reframing, and Point-Of-View shot, Scale, Extreme long shot, Long shot, Medium long shot, Medium Close-up, Close-up, and Extreme Close-up. - Working with Chroma-Green/Blue Screen. - Working with Audio, Capturing Audio while shooting, Recording Audio with HDSLR Video Camera, Importance of Audio while shooting.

Practice: Indoor & more on practical training like outdoor shoot with available lights

Course Evaluation:

Components	A	H	PR	EE
Weightage (%)	05	10	15	70
(A - Attendance; H - Home Assignment; PR - Practical work Record; EE - End Semester Examination)				

Text & References:

1. Busch, David D. David Busch's Mastering Digital SLR Photography. Cengage Learning, 2011.
2. Garrett, John, and Graeme Harris. Collins Complete Photography Course. HarperCollins UK, 2010.
3. Krause, Jim. Photo idea index. How Books, 2005.
4. Martin, Jerry; Active Video: A Teaching Tool for Every Classroom; Good Year Books, 1998
5. Goodman, Robert M., and Patrick J. McGrath. Editing digital video. McGraw-Hill, 2002.
6. Barrett, Colin. Digitalvideo for Beginners: A Step-by-step Guide to Making Great Home Movies. Lark Books, 2005.

TYPOGRAPHY EXPLORATION

(Practical)

Course Code: IND2207

Credit Units: 01

Course Objective:

The objectives of this course into equip students with aesthetic and conceptual problem solving skills in various areas of design that develops the skills in craftsmanship, professionalism, and composition as well as work habits. This course introduces the language of type, its practical use and historical grounding.

Course Contents:

(NB: Submission of Practical work record / Portfolio / Sketch Book is compulsory for all Modules and will be part of the Final Course Evaluation)

Description:

Typography is, quite simply, the art and technique of arranging type. It's central to the work and skills of a designer and is about much more than making the words legible. Every designer needs to understand typography. Designing a typeface can be a long journey so it's prudent to have a clear vision of its purpose. You might begin with something purely self-expressive. However, the usual practice is to create a typeface in response to a brief. The students have to be follow the weekly assignments that will be graded on completion basis.

Module I : Introduction to Lettering & Typography

Introduction to Typography. - Historical Perspective. - Anatomy of Letter Form – Typeface Classification: Usage and context. - Setting Text. - Digital Typography.-

Module II : Lettering & Typography Design

The Grid Document Design. - Design Alphabets. - Typography and Logo Design. - Typography at rice. - Kinetic Typography. - Ambigrams

Module III : Typographic Visualization (Self-study / Assignment)

Develop and submit a Typography Portfolio with previous selected class assignments and various creative ideas that include:

Visualize the meaning of a word, using only the graphic elements of the letters forming the word, without adding any outside parts; Typographic Poster Design - Create a poster for Print magazines based on any theme or requirement; Calligami - Refer various origami methods – Inspire from Specific form to create own typeface; Magazine layout with Typography; Book Cover layout with Typography.

The design should be own interpretation of the words, showing the origin of the text, the tone and whether agree with it or not. The methods of typography generation are entirely up to the student, they can be traditional, experimental, found, photographed made, but they must all be different from each other.

Course Evaluation:

Components	A	H	PR	EE
Weightage (%)	05	10	15	70

(A - Attendance; H - Home Assignment; PR - Practical work Record; EE - End Semester Examination)

Text & References:

1. Graham, Lisa. Basics of design: Layout & Typography for beginners. Cengage Learning, 2005.
2. Craig, James, and I.K Scala. Designing with Type: the essential guide to typography. Watson-Guptill, 2012.
3. Craig, James. Designing with type: A basic course in typography. Watson-Guptill, 1999.
4. Saltz, Ina. Typography essentials: 100 design principles for working with type. Rockport Pub, 2011.
5. Heller, Steven, and Louise Fili. Shadow Type: Classic Three-dimensional Lettering. Thames & Hudson, 2013.
6. Bringhurst, Robert. The elements of typographic style. Vol. 127. Point Roberts: Hartley & Marks, 1992.
7. Lewis, John. Typography: design and practice. Jeremy Mills Publishing, 2007.
8. Heller; Stop, Think, Go, Do: How Typography and Graphic Design Influence Behavior. RockportPublication; 2012

INTRODUCTION TO PROTOTYPING TECHNIQUES

(Practical)

Course Code: IND2208

Credit Units: 03

Course Objective:

This course is the continuation but further advanced from the last semester. The aim of this course is to introduce various design and prototyping techniques in action and spot various materials and processes. Audio-visual and workshop equipment has to be used to conduct this course.

Course Contents:

(NB: Submission of Practical work record / Portfolio / Sketch Book is compulsory for all Modules and will be part of the Final Course Evaluation)

Module I : Introduction to Prototyping (Theory)

Introduction to Product Prototyping; Prototypes in a product design process; Design parameters; Manufacturing materials & processes; Transforming ideas into product prototypes; Human Factors and Ergonomics consideration in prototyping; Advantages of Rapid prototyping; Prototyping Processes;

Module II : Prototype Techniques and Orientation (Practical)

Pre-Activity Description:

Begin brainstorming with words and quick sketches – Use of Sketch book and several sticky notes - Use specific STUs “Situation, Task, and User – Use Investigating Questions: How would it look? What size would it be? What would be its features? Would these vary, depending on the target audience? - Capture the Challenge - Ideas recorded in paragraphs to begin a first draft of a design description- Make brainstorming poster (The way of developed ideas) - From initial sketches or outlines to generate more detailed sketches of envisioned prototypes - Finalize the prototype sketches in scale - Review the sketches and critique - labeling them with dimensions and materials.

Activity Description - Topics covered:

- Prototyping Techniques in -Clay, Metal, Wood, Plastics, Ceramics, Composites etc.
- Finishing Techniques.

Post-Activity Description:

User Testing: Is the prototype functional? What works? What does not work? Is the prototype used to explore several design alternatives? What improvements could be made?

Discussion: the factors for final production - evaluating costs, time to build, material function and actual environmental impact.

Course Evaluation:

Components	A	H	PR	EE
Weightage (%)	05	10	15	70

(A - Attendance; H - Home Assignment; PR - Practical work Record; EE - End Semester Examination)

Text & References:

1. Hallgrimsson, Bjarki. Prototyping and Model making for Product design. Laurence King Publ., 2012.
2. Fishwick, Paul A. Simulation model design and execution: building digital worlds. Prentice Hall PTR, 1995.
3. Ashby, Michael F., and Kara Johnson. Materials and design. Butterworth-Heinemann, 2013.
4. Eppinger, Steven D., and Karl T. Ulrich. "Product design and development. 1995
5. Norman, Donald A. The design of everyday things: Revised and expanded edition. Basic books, 2013.
6. Bryden, Douglas. CAD and rapid prototyping for product design. Laurence King Publ., 2014.
7. Trudeau, Norman. Professional model making, Watson-Guptill Publications, 1995.
8. Simonds, Ben. Blender master class: a hands-on guide to modeling. No Starch Press, 2013.
9. Carson, I. I., and S. John. "Introduction to modeling and simulation. Winter Simulation Conference, 2004.
10. Hutchings, Pat, ed. From idea to prototype. AAHE Teaching Initiative, American Association for Higher Education, 1995.

SEMINAR / WORKSHOP / GUEST LECTURE FOR SKILL DEVELOPMENT

Course Code: IND2233

Credit Units: 01

Course Objective:

This course aims to judge the understanding as well as application of the knowledge gained by the students. The students have to be participated either Seminar (1) or Workshop (2) to earn the credit. Gust lecture (3) is addition to this for enhancing their knowledge by examining and analysing various aspects of design.

1. SEMINAR

The seminars intended to equip the students with some knowledge in areas which are not covered otherwise in the curriculum, but topics which are of interest or currently significant. The students need to find few topics with the help of faculties. They have to review various literatures, books, journals, internets, etc.

Points to be covered:

- Effective methods of literature review & Methods of bibliography writing.
- Enable open discussion between students and the subject experts.
- Students are encouraged to test their knowledge and to listen to other's points of view.
- Develop effective communication and presentation techniques for seminar presentation.
- Effective presentation techniques & Develop efficiency in group discussions.

Major Themes for Seminar:

Role of a designer in a project. - Relation of a designer with other consultants. - Design as a response to social and technological forces.- User participation in design. - Design and sustainability. - Various environmental and social issues and design.

Evaluation Scheme:

Components	Organisation and Relevance of content	Literature Review	Bibliography	Presentation	Total
Weightage (%)	30	30	20	20	100

2. WORKSHOP

Objectives:

A workshop is primarily an activity based academic event that is organized to provide the students a one to one and hands on experience on any aspect of their learning. Workshop is undertaking a significant practical unit of examining and analyzing various aspects of design at a level commensurate with the learning outcomes of the various courses taken up them in the ongoing semester. The communication in a workshop has to be necessarily two ways. The trainer has to make sure that the aspects covered are practically practiced by the participants. The student will choose the option of workshop from amongst their concentration electives. The evaluation will be done by jury of examiners comprising of the faculties.

Major Themes for Workshop are: -

Brainstorming./Design problem solving techniques./ Design Process. / Visual thinking./ Design

thinking./ Design Research techniques. / Effective prototyping./ Craft making. / Story telling. / Print making./ Textile Block Printing.

Guidelines for Workshop :

The procedure for earning credits from workshop consists of the following steps:

- Relevant study material and references will be provided by the trainer in advance.
- The participants are expected to explore the topic in advance and take active part in the discussions held
- Attending and Participating in all activities of the workshop
- Group Activities have to be undertaken by students as guided by the trainer.
- Evaluation of workshop activities would be done through test and quiz at the end of the workshop.
- Submitting a write up of at least 500 words about the learning outcome from the workshop.

Methodology

The methodology followed at the workshop could be based on any one or more of the following methods:

Case Study /Group Activity. /Role Play. / Business Planning./Quiz.

Evaluation Scheme:

Components	A	AP	MCQ	Solving the case/ Assignment / Write up	Total
Weightage (%)	10	30	30	30	100

(A - Attendance; AP - Active Participation; MCQ - Multiple Choice Questions)

3. GUEST LECTURE

Eminent subject experts from the field may be invited to deliver the lectures on different topics of their choice and share their experience with the students

Syllabus - Third Semester

INTERIOR DESIGN MATERIALS & APPLICATIONS

(Theory)

Course Code: IND2302

Credit Units: 02

Course Objective:

The objective of this course is to explore the diversity of interior building and finish materials, expanding the opportunities for creative design solutions. This course familiarizes the students to learn the technical vocabulary and scientific concepts associated with procedures used for their fabrication, testing and evaluation.

Course Contents:

Module I : Masonry

Mud, bricks; building tiles: roof, floor and wall tiles, stones, clay, lime, sand, mortars, cement and aggregates, concrete, gypsum based plaster etc.

Module II : Wood & Timbers

Wood as a building material: Identification, selection, application, types of wood, Commercial Classification, Nomenclature, Structure, Anatomy and Ultra structure, Conversion figure and natural defects, Availability of wood products, Wood based panels such as Plywood, MDF, HDF, Particle board, pre laminated boards etc. – their properties, process of manufacture, tools and technology of its application and quality assessment; Finishes to reconstituted wood: Lamination, Polishing etc. Various insulating materials, their properties and applications; Surface finishes for wood products and derivatives etc., Coatings: clear and pigmented finishes technical or protective coatings etc. Timber, cane, bamboo – characteristics of good timber, defects, applications of timber like joints, floors, openings, staircases, roof forms, etc. Finishes in timber like flooring, paneling, etc. Finishes to timber.

Module III : Paints, Varnishes & Adhesives

Paints: Protective coating paints, types of paints – water paints, distempers, cement based paints, emulsion paints, anti-corrosive paints etc. - Composition, functions, preparation and application method, painting on different surfaces, defects in painting; **Varnishes :** Oil and spirit; various types – French polish, damp proofing finishes etc. and methods of application. **Adhesives:** Natural and Synthetic, their varieties, thermoplastic and thermosetting adhesives, epoxy resin. Method of application, bond strength etc.

Module IV : Glass and Glass Products

Composition and fabrication of glass, classification, types of glass- wired glass, fiber glass, rock wool, laminated glass, glass concrete blocks - their properties and uses in buildings. Commercial forms available – their physical and behavioral properties, tools and technology of its application in built forms. Materials and workmanship specifications

Module V : Traditional & Rural Materials

Roof: Details of pitched roof and hipped roof with pan tiles and Mangalore tiles. Details of madras terrace roof for small and medium span. **Foundation and walls:** foundation and wall in stone masonry (Random rubble, SR & Ashlar) foundation and walls in stabilized mud and

Compact earth blocks, various types of details for walls with bamboo and casuarinas Roofs in rural materials: Details of thatched roof with casuarinas/ bamboo / CEB frame work; Details of palm and hay roof with casuarinas / bamboo/ CEB.

Course Evaluation:

Components	A	H	CT	EE
Weightage (%)	05	10	15	70
(A-Attendance; H -Home Assignment; CT-Class Test; EE-End Semester Examination)				

Text & References:

1. Mehta, Madan, Building construction: Principles, materials, and systems. Pearson Prentice Hall, 2008.
2. Herzog, Thomas, et al. Timber construction manual. Walter de Gruyter, 2004.
3. Seethalakshmi, K. K., et al. Bamboos of India: A compendium. Vol. 17. Brill, 1998.
4. PratapRao, M; Interior Design Principles & Practice; Standard Publishers, 2009.
5. Godsey, Lisa. Interior design materials and specifications. A&C Black, 2012.
6. Stanley; Complete Painting; 2007
7. Mark Dixon, House Painting: Inside and Out; Taunton Press; 1997
8. Binggeli, Corky. Materials for interior environments. John Wiley & Sons, 2008.
9. Godsey, Lisa. Interior design materials and specifications. A&C Black, 2012.

ELEMENTS OF INTERIOR SPACE PLANNING & SCALING

(Practical)

Course Code: IND2303

Credit Units: 02

Course Objective:

This course provides a specific design methodology for understanding the nature of spaces, scales and space within a space along with elements and organization. The aim of the course is to impart an understanding of perception of interior space through architectural elements.

Course Contents:

(NB: Submission of Practical work record / Portfolio / Sketch Book is compulsory for all Modules and will be part of the Final Course Evaluation)

Module I : Interior Ergonomics

Average measurements of human body in different postures – its proportion and graphic representation, application in the design of simple household and furniture. Role of mannequins in defining spatial parameter of design. Basic human functions and their implications for spatial planning. Minimum and optimum areas for various functions. Preparing user profile, bubble and circulation diagrams.

Module II Introduction to Interior design Methodology

Detailed study of spaces such as living, dining, bedrooms, kitchen, toilet etc. including the furniture layout, circulation, clearances, lighting and ventilation, etc. Case study of existing house and analysis of the spaces.

Module III : Visual analysis of Designed Spaces

Spaces noted for comfort and spatial quality; analysis of solid and void relations, positive and negative spaces. Integration of spaces and function in the design of Bus shelter, Milk booth, Watchman's cabin, traffic police kiosk, flower stall, ATM center, etc.

Module IV : Interior Design: Symbols & Representation

Representation of building elements, openings, materials, accessories etc., terminology and abbreviations used in architectural presentation; representation of landscape elements such as trees, indoor plants, planters, hedges, foliage, human figures in different postures, vehicles, street furniture etc.; by using different media and techniques and their integration to presentation drawings.

Module V : Measuring and Drawing to Scale

scales and construction of scales, simple objects, furniture, rooms, doors and windows etc. in plan, elevation and section etc. reduction and enlargement of drawings.

Module VI : Interior Geometry

Study of points, lines and planes leading to simple and complex solid geometrical forms. Orthographic projections of points, lines, first angle projections of planes and solids, sections of solids, development of surfaces of solids and intersections of solids. Use of geometry in buildings - isometric, axonometric, and oblique views. Working with models to facilitate visualization.

Course Evaluation:

Components	A	H	CT	EE
Weightage (%)	05	10	15	70

(**A**-Attendance; **H** -Home Assignment; **CT**-Class Test; **EE**-End Semester Examination)

Text & References:

1. Karlen Mark; Space planning Basics, Van Nostrand Reinhold, New York, 1992.
2. Joseph D Chiara; Time Saver standards for Interior Design & space planning, McGraw Hill professional, 2001.
3. Francis.D. Ching & Corky Bingelli, Interior Design Illustrated, 2nd edition, Wiley publishers, 2004.
4. Julius Panero, Human Dimension & Interior Space, Watson – Guptill, 1979.
5. Stephen Kliment, Architectural Sketching and Rendering, Watson Guptill, 1984.
6. Ivo.D. Drpic, Sketching and Rendering of Interior Space, Watson- Guptill, 1988.
7. Maureen Mitton, Interior Design Visual Presentation, Wiley publishers, 2007
8. Shah, M.G., Building Drawing, Tata McGraw Hill Pub., Delhi, 2000.
9. Gill, P.S.T.B. of Geometrical Drawing, 3rd ed. Dewan Suhil Kumar Kataria, Ludhiana, 1986.

LIGHTING & COLOUR IN INTERIORS

(Theory)

Course Code: IND2307

Credit Units: 02

Course Objective:

This course provides knowledge of the various types of lightings to effectively communicate their designs and understand the effect of various lights on colours and textures. The aim of this course is to equip the students to understand and successfully apply lighting techniques with colour effects.

Course Contents:

Module I : Introduction To Day Lighting

Lighting and vision; Nature of light – Wavelength, Photometric quantities – intensity, Flux, illumination and luminance, visual efficiency, sources of light, day light factor concept, design sky concept, day lighting requirements.

Module II Artificial Lighting

Electric lamps – incandescent, fluorescent, sodium vapour, mercury, halogen and neon. Different types of lights in interior and exterior - task lighting, special purpose lighting. Calculation of artificial lighting, guidelines for lighting design, Glare in artificial lighting; Color characteristics of artificial lighting, integration of day lighting with artificial lighting, lighting controls, intelligent building systems for lighting, switches, dimmers.

Module III : Effect of Colour In Lighting

Colour and light, colour and surface qualities, color and distances and scales. Problems with colour. Use of colour in various functional contexts – Residential interiors, Non Residential interiors. Use of color in special situations – out door/indoor spaces, accessories, art works etc.

Module IV : Luminaires & Fixtures

Definition, different luminaries for lighting, lighting control system- benefits & application, Impact of lighting, fixture types - free standing or portable, fixed, light fixture control; Floor, table and desk, wall mounted, ceiling units, built in lighting, miscellaneous types, decorative lighting, spot lighting, task lighting, underwater lighting, etc.; Lighting accessories- switches, sockets, fused connection units, lamp holders, ceiling roses etc.

Module V : Study of Lighting Concepts (Self-study / Assignment)

Study of projects based on different lighting concepts used in interiors and exteriors and survey of lamps available in the market with cost and technical specifications.

Course Evaluation:

Components	A	H	CT	EE
Weightage (%)	05	10	15	70

(A-Attendance; H -Home Assignment; CT-Class Test; EE-End Semester Examination)

Text & References:

1. Moore Fuller, Concepts and practice of Architectural Day lighting, Van Nostrand Reinhold co., New York, 1985.
2. David Egan. M. Concepts in Architectural lighting McGraw Hill Book company, New York, 1983.
3. John.F. Pile, Interior Design, 2nd edition, illustrated, H.N.Abrams, 1995.
4. Randall whitehead; Lighting design, source book.
5. Torquil Barker; Concepts of lighting, Lighting design in Architecture.

INTERIOR DESIGN STUDIO-I

(Studio - Graphics)

Course Code: IND2309

Credit Units: 02

Course Objective:

The objective of this course is to develop understanding of the scale, function and options existing when designing small-scale spaces in residences. This studio course provides the interaction of two- and three-dimensional design of residential interiors.

Course Description

In the studio, the learning process is learning by doing. The core part of this course incorporates exercises to develop manual and digital presentation skills in order to present design ideas and solutions. Every module is blended with hand on sketches as well as application of basic computer graphics. Each student has to maintain a sketchbook compulsorily. Process sketches are scanned and integrated into the final presentation by PPT. A hard copy of Design Studio Portfolio submission is compulsory.

Course Contents:

(NB: Submission of Practical work record / Portfolio / Sketch Book is compulsory for all Modules and will be part of the Final Course Evaluation)

Module I : Interior Design Studio Process

1. Design Objectives:

Function; Cost Effectiveness; Durability, Maintainability; Compatibility; Design; Creativity; Flexibility; Timelessness.

2. Design Approach:

Programming: Functional Requirements, Understanding the User's Needs; Concept Development: Physical and Behavioral Requirements, Space Planning, Architectural Design, Color Concept, Material Selection;

3. Design Development & Presentation:

Design Narrative; Design Illustration; Color and Material Selection; Furnishings Selection; Concept Presentation- use of visual presentation materials, including renderings, floor plans, perspectives, finish and furniture boards, for the user / Client to gain a clear understanding of the design.

4. Design Execution:

Statement of Work, Architectural Floor Plan, Finish Schedule and Color Legend, Finish Floor Plan, Elevations, Sections, and Details, Miscellaneous Drawings, Furniture Floor Plan, Installation Plans, Furnishings Specifications, Furnishings Cost Estimates, Furnishings Order Form

Module II : Studio Project -1: Basic Residential Interior.

Use Module –I parameters and design Residential facilities, i.e. family housing and unaccompanied personnel housing (dormitories). Holistic concepts in residential interiors – ability to integrate various individual spaces into one theme – treatment of patios, courtyards, verandahs & other semi sheltered spaces – integration of built form and open spaces.

While the overall wear of finishes is reduced in family housing units, they still contain areas fitting all three categories of use:

- **Heavy-use areas:** Entrance foyers, kitchens, bathrooms, stairwells, and laundry areas.

- **Medium-use areas:** Corridors, hallways, dayrooms, family living, dining rooms and kids room, Home Theater.
- **Light-use areas:** Bedrooms.

Module II : Studio Project -2: Different Types of House Designs (Self-study / Assignment)

Study, Identify the difference and Design of:

Affordable House, Small house, Simplex Houses, Duplex House, Luxury Home, Double and Triple Story House, Multi Family House, Bungalow house, Farm house, Traditional houses, House Designs with garage, various Flats and Apartments, Villa, etc.

Course Evaluation:

Components	A	H	CT	EE
Weightage (%)	05	10	15	70
(A-Attendance; H -Home Assignment; CT-Class Test; EE-End Semester Examination)				

Text & References:

1. Linda O'Shea, ; The Interior Design Reference & Specification Book; Rockport Publishers; 2013
2. Interior Design; The New Freedom, BarbaralecDiamonstein, Rizzoli International Publications, New York, 1982.
3. Interior Colour by Design, Jonathan Poore, Rockport Publishers, 1994.
4. Worldwide Interiors – International Federation of Interior Architects & Designers, Rikuyo-Sha, Japan, 1987.
5. Simon Dodsworth Cardoso; The Fundamentals of Interior Design
6. Karlen Mark, Space planning Basics,
7. Maureen Mitton, Interior Design Visual Presentation
8. Carol Simpson, Estimating for Interior Designers

INTERIOR WORKSHOP PRACTICE-I

(Practical)

Course Code: IND2310

Credit Units: 02

Course Objective:

The course is intended to provide information on working with Wood and Bamboo which are among the major materials used in the interiors. This course aims to understanding the material and tools by making objects which allow students to explore the forms, surfaces, textures and patterns. Explore different joinery and support conditions.

Course Contents:

(NB: Submission of Practical work record / Sketch Book is compulsory for all Modules and will be part of the Final Course Evaluation)

Module I : Introduction to Safe Workshop Practice

General safety precaution inside the workshop: Suitable clothing - Eye Protection - Hearing Protection – Footwear - Dust Masks – Safe handling of Tools – Electric safety - Responsibility of individual.

Module II : Study of Hand Tools and Measuring Instruments.

Fitting Shop: Holding tools; Marking and measuring tools; Cutting tools; Finishing tools; Miscellaneous tools; Safe practice; Models for preparation.

Module III : Working with Wood and Wood Products

Understanding of wood as building material, finishing material for surfaces and as furniture material. The wood material parameters; Wooden joinery and its strength. Wood polishes and other finishes; color and surface quality; The safe and efficient use of the tools of the trade, Hand tools, portable power tools, Stationary power tools, Materials, Hardware. Safe working practices in a workshop. Joineries in wood – lap, butt, dowel, tenon& mortise, dovetail, etc. Exercises in plywood joinery; Wooden Paneling & Cladding; Wooden Flooring.

Module IV : Working with Bamboo & Cane

Bamboo / Cane and their products to understand material parameters. Bamboo and cane joinery and its strength. Polishes and other finishes

Module V : Carpentry

Introducing the techniques of planning, chiseling & jointing in timber to learn the use of hand tools.

Introduction to Timber; Marking and measuring tools; Holding tools; Planning tools; Cutting tools; Drilling and boring tools; Miscellaneous tools; Wood joints; Safe practice; Exercise involving the design of simple furniture and making a model of the same.

Module VI : Industrial Visit.

Visit various timber industries, furniture manufactures and wood craft centers. Learn, absorb and recognize different stages of timber processing, manufacturing different types of natural wood, interior decoration elements, several models of doors and windows, pieces of furniture and wood works.

Course Evaluation:

Components	A	H	CT	EE
Weightage (%)	05	10	15	70
(A-Attendance; H -Home Assignment; CT-Class Test; EE-End Semester Examination)				

Text & References:

1. BENN, The book of the House, Ernest Benn Limited, London
2. Janssen, Constructional Drawings & Architectural models, Karl Kramer Verlag Stuttgart, 1973.
3. Harry W.Smith, The art of making furniture in miniature, E.P.Dutton Inc., New York, 1982.
4. Carol Stangler, The crafts and art of Bamboo, Rev. updated edition, Lark books, 2009.
5. Dr. Angelika Taschen, Bamboo style: Exteriors, Interiors, Details, illustrated edition, 2006.
6. Lonnie Bird, Jeff Jewitt, Taunton's Complete Illustrated Guide to Woodworking, Taunton, 2005.
7. Peter Korn, Wood working Basics : Mastering the essentials of craftsmanship, Taunton , 2003.
8. Albert Jackson & David Day, The complete manual of wood working, knopf publishers, 1996.

Syllabus - Fourth Semester

ADVANCED INTERIOR DESIGN MATERIALS & APPLICATIONS

(Theory)

Course Code: IND2402

Credit Units: 03

Course Objective:

This course expose the students to different materials of construction, progressively and to enable them to represent the different interior components through relevant drawings. The objective of this course is to familiarize the students of Interior Design on material and construction methodology.

Course Contents:

Module I : Rubber & Plastics

Natural rubber, latex, coagulation, vulcanizing and synthetic rubber- properties and application. Adhesives – Natural and Synthetic, their varieties, thermoplastic and thermosetting adhesives, epoxy resin. Method of application, bond strength etc. Types, thermosetting and thermo plastics, resins, common types of moldings, fabrication of plastics, polymerization and condensation. Plastic coatings, reinforced plastic, plastic laminates – properties, uses and applications

Module II Metals

Steel, Iron, Aluminium, Bronze, Brass, Copper – Alloys, Characteristics, Form and uses, Properties, Definition of terms, Methods of working with metals, Fixing and joinery in metals, Finishing and treatment to metals. Application of metals to build form and interiors - Special doors and windows, Ventilators – Sliding, Sliding and folding, Revolving, Pivoted, Rolling, Collapsible, Dormer, Skylights, Clerestory etc.

Module III : Fabrics and other Furnishing Materials

Fibers, Textiles, Fabric treatments, Carpets, Durries, Tapestries, Drapery, Upholstery, Wall coverings, etc. – Properties, Uses and application in the interiors. Other materials such as Cork, Leather, Paper, Rexene etc. – Their properties, uses and applications in the interiors. A brief overview of Green materials.

Module IV : Thermal Insulation And Acoustics Insulation Materials

Thermal insulation: Heat transfer heat gain/ loss by materials - vapour barriers and rigid insulations, blanket, poured and reflective insulation – Properties and uses of Spun glass, Foamed glass, Cork, Vegetable fibers, Gypsum, Plaster of Paris, Hydride Gypsum. **Acoustics:** Definition of sound and noise, Reverberation time echo, Sound, Foci. **Acoustics insulation:** Porous, Baffle and Perforated materials such as Acoustic plastic, Acoustic tiles, wood, partition board, fiber board, cork, quilts and mats – their properties and uses – current developments. **Applications:** Applications of insulations in seminar hall, theater and cold storage.

Module V : Interior Components

Doors: Braced, panel flush doors, carved entrance doors and partially glazed doors. **Windows:** casement window (without mullion), bay window, & French window. **Ventilator:** louvered & top hung ventilator. **Showcase & shelf:** TV shelf, showcase & room divided, dressing ward robe. **Cupboard & Cabinets:** kitchen cupboard & wall

cabinets. **Partitions: simple** paneled and glazed partitions – fixed sliding, folding, sliding & folding. **Shelves:** Show room shelves, Counters, cabinets, and storage. **Falls Ceiling:** Falls ceiling of interior spaces using Wood panels, Glass, Thermacol, Gyp-board, Plaster of Paris, Aluminum strips & Perforated metal sheets.

Course Evaluation:

Components	A	H	CT	EE
Weightage (%)	05	10	15	70
(A-Attendance; H -Home Assignment; CT-Class Test; EE-End Semester Examination)				

Text & References:

1. Mehta, Madan, Building construction: Principles, materials, and systems. Pearson Prentice Hall, 2008.
2. Godsey, Lisa. Interior design materials and specifications. A&C Black, 2012.
3. Bindra, S.P. and Arora, Building Construction: Planning Techniques and methods of Construction
4. J. Rosemary Riggs; Materials and Components of Interior Architecture
5. R.Chudley – Building Construction Handbook – BLPD, London 1990.
6. S.C.Rangwals – Engineering materials – Charotar Publishing, Anand.

ESTIMATION, COSTING & PROJECT MANAGEMENT

(Theory)

Course Code: IND2404

Credit Units: 02

Course Objective:

This course aims to equip the students to prepare the Estimate in order to foresee the cost of the work or to implement an interior design project & also to monitor / control project cost. Also, this course exposes the students to the currently prevalent techniques in the planning, programming and management of a project.

Course Contents:

Module I : Introduction To Estimation

Estimation – definition, purpose, types of estimate, and procedure for Estimating the cost of work in order to implement an interior design project or to make products related to interior design like furniture, artifacts etc.

Module II : Rate Analysis & Estimation Format

Rate Analysis – definition, method of preparation, quantity & labor estimate for woodwork, steelwork, Aluminum work, glass & its rate for different, thickness & sections, finishing (enamel paint, duco paints, melamine, DU coats, Hand polishing, veneering and laminating) for walls & ceilings. Electrical & plumbing products, wiring, ducting etc., and laying of tiles & wall paneling in the estimate format of the project.

Module III : Detailed Estimate

Detailed Estimate – data required, factors to be considered, methodology of preparation, abstract of Estimate, contingencies, labor charges, bill of quantities, different methods of estimate for interior design works, methods of measurement of works.

Module IV : Costing of Fixtures & Fittings

Cost of the following items: Luminaries, Fan, Cables, Switches etc.; Tiles in skirting & dado, Cement plaster, Wood, Steel & Aluminum, Painting to walls : Cement paint, Oil paints , Distemper, Acrylic emulsion, Enamel paint; painting to joinery, Varnishing, French polishing, Plumbing equipments: Piping, Shower panels ,Cubicles, Tubs, Jacuzzis, Taps, Motors, Fountains, False ceiling of Aluminum panels, Steel & Wooden frame work, Thermosol etc. Wall paneling of tiles, Partitions made of materials like Aluminum, Wood, Steel etc.

Module V : Introduction To Specification

Specification: Definition, Purpose, Procedure for writing specification for the purpose of calling tenders, Types of specification. Specification for different item related to interior design project – woodwork for furniture window frames & pelmets, Partitions etc. Materials like steel aluminum glass of various kind. Wall paneling & false ceiling of materials like Aluminum, Steel, Wood, Electrical, Plumbing, Air-conditioning & Firefighting equipments.

Module VI : Project Management

Introduction: Project planning and project scheduling and project controlling, Role of Decision in project management, Method of planning and programming, Human aspects of

project management, work breakdown structure, Life cycle of a project, disadvantages of traditional management system; Event, activity, dummy, network rules, graphical guidelines for network, numbering of events; **Critical Path Method And Pert Analysis:** CPM network analysis & PERT time estimates, time computation & network analysis; **project time reduction and optimization:** Project cost, Indirect project cost, direct project cost, slope of the direct cost curve, total project cost and optimum duration, contracting the network for cost optimization, steps in cost-time optimization; **project updating and allocation:** When to update? Data required for updating, steps in the process of updating; Resource usage profile: Histogram, Resource smoothing and Resource leveling, Computer applications in project management

Course Evaluation:

Components	A	H	CT	EE
Weightage (%)	05	10	15	70
(A-Attendance; H -Home Assignment; CT-Class Test; EE-End Semester Examination)				

Text & References:

1. M. Chakraborti, .Estimation, Costing, Specification and Valuation in Civil engineering.
2. Dr. B.C.Punmia et al. Project planning and control with PERT and CPM, Laxmi Publications,
3. S. C. Rangwala, Elements of Estimating and costing, Charoter publishing House, Anand, India, 1984
4. R.A. Burgess and G.White, Building production and project Management, The construction press, London, 1975
5. Jerome D.Wiest, A Management Guide to PERT, CPM, prentice Hall of India Pub, Ltd., New Delhi, 1982

INTERIOR DESIGN STUDIO-II

(Studio-Graphics)

Course Code: IND2406

Credit Units: 03

Course Objective:

This course focuses on planning a designing of a working space. Each module is designed as a studio project and students will learn the fundamentals of the various types of working environment and how to design a functional and aesthetically appealing working space.

Course Description

In the studio, the learning process is learning by doing. The core part of this course incorporates exercises to develop manual and digital presentation skills in order to present design ideas and solutions. Every module is blended with hand on sketches as well as application of basic computer graphics. Each student has to maintain a sketchbook compulsorily. Process sketches are scanned and integrated into the final presentation by PPT. A hard copy of Design Studio Portfolio submission is compulsory

Course Contents:

(NB: Submission of Practical work record / Portfolio / Sketch Book is compulsory for all Modules and will be part of the Final Course Evaluation)

Module I : Studio Project -1:OfficeInterior.

Office facilities generally have the highest concentration of occupants. These areas vary from home offices, to open-bay work spaces filled with conventional and modular furniture, to large systems furniture (pre-wired) installations. The interior plans are either closed plan office or Open plan. office

Most administrative facilities will contain some combination of the three types depending on the functions performed by the occupants, as well as physical constraints of the facilities.

- **Heavy-use areas** - Entrances, foyers, lobbies, main circulation corridors, stairwells, elevators, rest rooms, large conference or meeting rooms, snack bars, and media production areas.
- **Medium-use areas** - Internal circulation, staff office areas, and small conference rooms.
- **Light-use areas** - Commanders' suites and private conference areas.

Type of offices:

- Professional offices: Law, Accounting, stockbrokers, Real estate brokers etc.
- Corporate and Executive offices: Any size of office for any kind of business other than professional office that involved a corporate identity.

Module II Studio Project -2: Institutional Interiors

Institutional interior design involves in depth programming, planning, design, and management of space used by public and private organizations. The student needs to recognize the emotional content and public response and familiar with the very specific needs and requirements associated with Institutional interiors

Educational Institutions:

Educational facilities include grade and high schools for dependent children, specialized training facilities (such as simulators), professional and technical classrooms, and centers for college extension program.

- **Heavy-use areas:** Entrances foyers, Cafeteria, Rest rooms, Fitness areas, Technical classrooms.
- **Medium-use category:** Administrative offices, conference rooms, most other classrooms, Labs and corridors.
- **Light-use:** Principals' offices and commanders' suites.

Module III Studio Project -2: Other Institutions(Self-study / Assignment)

Government offices; Banks, Daycare centers, Religious centers, Fire and Police stations, Courts, Public Libraries etc.

Course Evaluation:

Components	A	H	CT	EE
Weightage (%)	05	10	15	70
(A-Attendance; H -Home Assignment; CT-Class Test; EE-End Semester Examination)				

Text & References:

1. Designs for 20th century Interiors – Fiona Leolie, VH Publications, London, 2000.
2. Interior Design; The New Freedom, BarbaralecDiamonstein, Rizzoli International Publications, New York, 1982.
3. Interior Colour by Design, Jonathan Poore, Rockport Publishers, 1994.
4. Worldwide Interiors – International Federation of Interior Architects & Designers, Rikuyo-Sha, Japan, 1987.
5. Simon Dodsworth Cardoso; The Fundamentals of Interior Design
6. Karlen Mark, Space planning Basics,
7. Maureen Mitton, Interior Design Visual Presentation
8. Carol Simpson, Estimating for Interior Designers

INTERIOR WORKSHOP PRACTICE-II

(Practical)

Course Code: IND2407

Credit Units: 03

Course Objective:

The course provides an understanding of comparative analysis of various metals and their design parameters facilitating usage in the interiors. The aim of this course is to introduce various methods of working with metals with an exposure to fixing, joinery and treatment.

Course Contents:

(NB: Submission of Practical work record / Sketch Book is compulsory for all Modules and will be part of the Final Course Evaluation)

Module I : Machine Shop

Lathe; Work holding devices; Measuring tools; Cutting parameters; Tool materials; Tool geometry; Lathe operations; Safety precautions.

Module II : Working with various Metals

Types of metals, Properties of metals, Definitions of terms with reference to properties and uses of metals, Various methods of working with metals, Fixing and joinery in metals, Finishing and treatment of metals., Finishes on metals; Standard specifications; Metals in built form activity: Horizontal, vertical and inclined surfaces - in interior environment elements- Products and furniture forms- Doors, windows, Jalties, Railing, stair etc. Metals and other materials – Form and joinery.

Module III : Metals: Fabrication

Cutting, Planning, Drilling and lathing of steel sections used in furniture. Aluminium sections and their use in doors, windows and partitions.

Module IV : Welding

Introduction; Arc welding; Welding tools; Techniques of welding; Types of joints; Welding positions; Advantages& disadvantages of arc welding; Safe practice.

Module V : Industrial Visit.

Visit various Forging and Stamping Industries, Architectural and Structural Metals Manufacturing, Fabricated Metal Product Manufacturing like Aluminium fabrication, steel fabrication, etc. Learn, absorb and recognize different stages of metal processing, manufacturing different types of metals, interior decoration elements, several models of doors and windows, pieces of furniture and welding works. Visit Glass industries and understand the manufacturing process and glass fabrication.

Course Evaluation:

Components	A	H	CT	EE
Weightage (%)	05	10	15	70

(A-Attendance; H -Home Assignment; CT-Class Test; EE-End Semester Examination)

Text & References:

1. Pete Silver et al – Fabrication, the designers guide – Architectural press, London 2006.
2. Albert C Smith - Architectural model as machine – Architectural press, oxford 2004.
3. John .F. Pile, Interior Design, Harry. N Abrams, Inc. New York; 1995.
4. Ron Fournier, Metal Fabricators Handbook, Rev. Illustrated edition, HP Books, 1990.
5. Stanford Hohausser, Architectural and Interior models, Van Nostrand Reinhold, 1970.

SEMINAR / GUEST LECTURE / WORKSHOP FOR SKILL DEVELOPMENT

Course Code: IND2433

Credit Units: 04

Course Objective:

The aim of this course is to develop various research skills to the student. They also expose to write a paper and present in a seminar. The workshops and guest lecturers aim to develop practical solutions in the field of interior design with more idea generations and innovations. The students have to be participated either Seminar (1) or Workshop (2) to earn the credit. Gust lecture (3) is addition to this for enhancing their knowledge by examining and analysing various aspects of design.

SEMINAR

Each student would be required to select one of the below subjects and present a written paper (essay) and present in the seminar. This should be based on extensive literature reviews, case studies, interviews (wherever possible), etc. The student may choose any area of interest in consultation with the concerned faculty for research. The study would be presented as a term paper with supporting illustrations. It will be periodically reviewed and presented as a seminar for final assessment.

Suggested areas for research:

1. Studies of Indian art & craft. Influence of location, tradition, culture and socio-economic development on art & craft in rural & urban India. Suggest suitable changes in technology to improve the products so as to make it acceptable in today's context.
2. Studies of the work of different interior designers through observation, interview and research. Understanding of the concepts of space, structure, organization, symbolism, form, colour, modes of presentation etc.

Evaluation Scheme:

Components	Organisation and Relevance of content	Literature Review	Bibliography	Presentation	Total
Weightage (%)	30	30	20	20	100

WORKSHOP

Objectives:

A workshop is primarily an activity based academic event that is organized to provide the students a one to one and hands on experience on any aspect of their learning. Workshop is undertaking a significant practical unit of examining and analyzing various aspects of design at a level commensurate with the learning outcomes of the various courses taken up them in the ongoing semester. The communication in a workshop has to be necessarily two ways. The trainer has to make sure that the aspects covered are practically practiced by the participants. The student will choose the option of workshop from amongst their concentration electives. The evaluation will be done by jury of examiners comprising of the faculties.

Major Themes for Workshop are: -

Decorative accessories in interiors / Occupant health & safety in interiors / Signage & Graphics - Optical

Illusions - Modular Co-ordinations. / Kitchen & Bath design - Storage design. / New materials and application in Interior Design.

Guidelines for Workshop :

The procedure for earning credits from workshop consists of the following steps:

- Relevant study material and references will be provided by the trainer in advance.
- The participants are expected to explore the topic in advance and take active part in the discussions held
- Attending and Participating in all activities of the workshop
- Group Activities have to be undertaken by students as guided by the trainer.
- Evaluation of workshop activities would be done through test and quiz at the end of the workshop.
- Submitting a write up of at least 500 words about the learning outcome from the workshop.

Methodology

The methodology followed at the workshop could be based on any one or more of the following methods:

Case Study /Group Activity. /Role Play. / Business Planning. /Quiz.

Evaluation Scheme:

Components	A	AP	MCQ	Solving the case/ Assignment / Write up	Total
Weightage (%)	10	30	30	30	100

(A - Attendance; AP - Active Participation; MCQ - Multiple Choice Questions)

GUEST LECTURE

Eminent subject experts from the field may be invited to deliver the lectures on different topics of their choice and share their experience with the students

Syllabus - Fifth Semester

DESIGN THINKING & CREATIVE PROBLEM SOLVING (Theory & Activities)

Course Code: IND2501

Credit Units: 03

Course Objective:

The objective of this course is to develop deep insights about design thinking. This course provides the ability to gain about users to define and re-frame problems, and to generate solutions or alternative approaches towards design and innovation.

Course Contents:

Module I : Design Thinking Process

Stages of thinking: The design process; Stage 1- Define ; Stage 2- Research ; Stage 3- Ideate ; Stage 4- Prototype ; Stage 5- Select ; Stage 6- Implement ; Stage 7- Learn.
Research: Identifying drivers; Information gathering; Target groups; Samples and feedback. *Idea generation:* Basic design directions; Themes of thinking; Inspiration and references; Brainstorming ; Value ; Inclusion; Sketching; Presenting ideas.
Refinement: Thinking in images; Thinking in signs; Appropriation; Humour ; Personification; Visual metaphors ; Modification; Thinking in words; Words and language; Type ‘faces’; Thinking in shapes; Thinking in proportions ; Thinking in colour. *Prototyping:* Developing designs; ‘Types’ of prototype; Vocabulary.
Implementation: Format; Materials; Finishing; Media; Scale; Series/Continuity.

Module II : Exploring Creativity

Definitions of creativity, Understanding components of creativity, Theories of creativity, Goals and objectives, Value judgments, Defining problems, Information gathering, Creative incubation, Creative thinking and creative process. Tools and techniques of creativity : Mind mapping, Brain storming with related stimuli and unrelated stimuli, Positive techniques for creativity, Creative pause, Focus, Challenge, Alternatives, Concepts, Provocation, Movement, Setting up provocations, Sensitizing techniques, Group or individual techniques. Simple design exercises.

Module III : Design Problems and Solutions

Definitions of problem solving; Formulation of problems, Nature of creative design problems, Design goals. Problem statements; Brain writing with unrelated stimuli, Idea mapping, Random input, Story boarding exercises, Problem solving techniques: Divide and conquer, Hill climbing strategy, Means - Ends analysis, Trial and error, Brain storming, Morphological analysis, Method of focal objects, Steps developed by Polya, Dekker, De Bono, Research, Analogy, Reduction (Complexity), TRIZ, Halpern’s techniques etc; Creative solutions applicable to designs; Conceptual design, Embodiment design, Detail design, Iterations; Simple Design exercises;

Course Evaluation:

Components	A	H	CT	EE
Weightage (%)	05	10	15	70

(A-Attendance; H -Home Assignment; CT-Class Test; EE-End Semester Examination)

Text & References:

1. Liedtka, Jeanne, and Tim Ogilvie. Designing for growth; Columbia University Press, 2011.
2. Liedtka, Jeanne, Solving problems with design thinking; Columbia University Press, 2013.
3. John Heskett, Design: A Very Short Introduction, Oxford University Press, 2005.
4. Jon Kolko, Exposing The Magic of Design; Oxford University Press, 2011.
5. Nigel Cross; Developments in Design Methodology, John Wiley & Sons, 1984
6. Mitchell, C. Thomas. Redefining designing: From form to experience. New York: Van Nostrand Reinhold, 1993.
7. Noone, Donald.J, Creative Problem solving, Hauppauge, 1993.
8. De Bono, Edward, Serious Creativity; Harper Collins publishers, 1992.
9. Peterson, Bryan. Design basics for creative results. Adams Media, 2003.
10. Casper, Steven, Eds. Innovation and Institutions; Edward Elgar Publishing, 2005.

REVITALIZATION OF ARTS & CRAFTS

(Documentation Project)

Course Code: IND2502

Credit Units: 01

Course Objective:

This course aims a detailed study of the characteristics of Indian arts and crafts and its application in the interiors that provides an understanding of the role of revitalization of Art/craft form in interior spaces through a project assignment.

Course Contents:

(NB: Submission of Project Report is compulsory for this course and will be part of the Final Course Evaluation)

Module I : Introduction to Creative Arts and Crafts in India

Creative arts and crafts in India and its application in interior design; Materials; Art movements through history; Traditional arts and crafts of India; Folk arts of India; Traditional arts and crafts of various states of India.

Module II : Project Assignment

Description:

The project will consist of a general to the crafts traditions of India, details about the crafts, their classifications, regional distribution etc. that will applicable to art in interior spaces such as –Residence, Reception, Lobby spaces, Theme Boutiques, Hotel, Restaurants, etc. This project will necessarily be a scientific, methodical documentation of a particular craft tradition prevalent in the region, which will have the following core issues in the background:

Philosophy and Aesthetics - Materials, Processes and Techniques - Environment and Resource management – Social structures - Economy & Marketing – International examples.

Project Objective:

Document people, life, culture and craft and understand the materials, tools, technology, processes and forms. Suggest suitable changes in technology to improve the products so as to make it acceptable in today's context.

Procedure:

Select one of the art / craft form with the consultation of the faculty. Discuss about the crafts traditions practiced in the region, their history, distribution etc. along with faculty. Collect all information available through various sources including library, internet and resource persons. To avail comprehensive data on various aspects of the crafts, students may develop an interview schedule and decide on number of crafts persons to be interviewed, which all places they will be visiting etc. Faculty must equip the students on interaction with craftsperson and other people from the community, type of language they should use, how to be polite with them and while handling their materials etc. Students can buy some of the objects from craftsperson, take photographs after seeking their permission, make drawings, etc. which later on they can use in PPT presentation along with submission of final project report. The students can also make a short documentary film basis on their research for their final presentation.

Requirements:

- The work will be periodically reviewed.
- The study has to be presented in the form of a 'Documentation Report' with illustrations /images as a seminar for final Course Evaluation.
- The students are asked to give a brief oral presentation with 'Power Point' to the class about their

research.

- They have to explain, what kind of interests they want to develop in the research and a debate will follow as well.
- The submission of project assignment file and presentation will be part of student's Examination Scheme.
- The students will have to visit various craft places and museums for the part of their research.
- There will be an evaluation by a jury comprising of external experts and internal faculty guide from the department.
- Failure to submit the Project Report or failure to appear at the Viva-voce Examination will be treated as "Absent" in the Examination.

Course Evaluation:

Components	Conceptual Framework	Viva-Voce	Presentation	EE
Weightage (%)	40	40	20	100
(EE-End Semester Examination)				

Resources :

1. Publication on Traditional Arts and Crafts on India, Ministry of Handicrafts Development, Govt.of India.
2. Edith Thomory, A History of fine arts in India and the west, Orient Longmann publishers Pvt. Ltd, New Delhi.
3. AditiRanjan, M. P. Ranjan; Handmade in India; Abbeville Press, 2009.

INTERIOR SAFETY SYSTEMS AND BUILDING MANAGEMENT (Theory)

Course Code: IND2503

Credit Units: 02

Course Objective:

The objective of this course is a detailed study of, designs that eliminate or reduce hazards in the workplace to prevent mishaps and provide good indoor quality. This course also covers to make understanding of disaster management, seismic design principles and various building management systems.

Course Contents:

Module I : Safety Management.

Scope of Environmental safety; Need for public awareness; Elements of a safety and health management system applicable to interiors in the terms of design, components and selection of material; Interior structure and responsibilities; Interior designer responsibilities, Individual responsibilities, Safety Consultation; Minimum safety requirements for building interiors.

Module II : Health and Safety Aspects

Define the term 'accident'; Reasons accidents inside the buildings; The factors of slips, trips and falls in the workplace and methods to prevent them; Dealing with electric shock; Methods for electrical safety; Types of health hazards; Common hazardous substances and the routes of entry; Health and safety aspects of the interiors structure; Design layout and services; Types of injuries; Define 'first aid' and practical training on 'first aid'

Module III : Dealing of Fire Fighting Services

Mechanism of fire spread in building and prevention; Fire safety standards; Concepts in fire protection; Firefighting installation and requirements; Heat sensitive detectors; Smoke detectors; Automatic water sprinkler system; Foam systems; Fire proof materials for Interiors: Fabricated fire proof boards; Calcium silicate, Gypsum, Vermiculite, and Perlite boards; Fire protection of structural elements: Wooden, Steel, RCC, and Plastic structures; Fire and life safety requirements in different groups of buildings; Define LPG; Characteristics of LPG; LPG Installation; LPG - rules of usage; Dealing LPG in case of leakage; Dealing in the event of accident.

Module IV : Disaster Management & Seismic Design Principles

Emergency planning: on-site and off-site; Need of a plan, possible approach, and objectives of emergency plan. On-site emergency planning, formulation of the plan and emergency services; Identification of resources, actions and duties, emergency procedure; Mock drills. Concept of seismic design; Stiffness; Strength; Period; Ductility; Damping; Hysteric energy dissipation; Center of mass and rigidity; Torsion; Design eccentricities; Ductility based design: Design of energy absorbing devices, Seismic base isolation and seismic active control.

Module V : Building Management

Fundamentals for interior and exterior treatments: Termite proofing, Waterproofing, Acoustics, Thermal comfort, Fire protection. Walls- plastering, Putty, Curing – Before plastering, Painting and applying other finishes, Methods of curing; Roof- Plastering and curing; Factors influencing choice of treatments: Climate, Cost,

and Age. **Vertical transportation systems:** Lifts & Escalators- Definition, Location, Arrangement, Structure; **Security and safety systems:** Designing a security system; Burglar alarm; CCTV; Central alarm systems; Intrusion sensors and Space sensors; Cable TV, PABX, Computer labs: Access flooring, Server rooms. **Intelligent buildings:** Definition, Building environment, Architecture, IT, Artificial intelligence in intelligent buildings

Course Evaluation:

Components	A	H	CT	EE
Weightage (%)	05	10	15	70
(A-Attendance; H -Home Assignment; CT-Class Test; EE-End Semester Examination)				

Text & References:

1. Hughes, Phil, and Ed Ferrett. Introduction to health and safety at work. Routledge, 2011.
2. Binggeli, Corky. Building systems for interior designers. John Wiley & Sons, 2003.
3. Vinod Kr. Sharma; Disaster Management, IIPA, New Delhi.
4. Jain, Virander K. Fire safety in buildings. Taylor & Francis, 2007.
5. Derek Clements-Croome, Derek J. Croome, Intelligent buildings, Thomas Telford Books, London, 2004.
6. C.V.R Murthy, Andrew Charlson. “Earthquake design concepts”, NICEE, IIT Kanpur, 2006.

TEXTILE IN INTERIORS

(Theory)

Course Code: IND2504

Credit Units: 02

Course Objective:

The objective of this course is to familiarize the students of Interior Design on textile materials used in interior. This course helps to gain knowledge and understanding of the functional and aesthetic requirements of textiles for a range of applications.

Course Contents:

Module I : Introduction To Fabrics

Fabric, yarn and fiber structure, Fabric structure- woven- warp, weft, selvedge, knitted- course, non-woven, Fabric types and classification- woven, including plain, twill, satin, Jacquard, crepe and pile weaves, Knitted- including single knit, double knit, tricot knit, pile knit, lace and net, Non-woven-including felts webs and films, identification and properties of fabrics, yarns and fibers.

Module II : Textile Design Applicable to Interiors

Development of textile design in different cultures from primitive art to contemporary designs. Criteria of design of the elements and principles of textile design. Application of elements and principles of design across a range of textiles. Describe and analyze elements and principles of design -furnishings, textile arts. Functional and aesthetic requirements and features of textile range. Analysis of a motif, developing repeat as a basic unit of design.

Module III : Colour on Fabrics

Fabric coloration and decoration- Dying and Printing; Principles of applying color to fabrics. Textile arts and crafts in interiors, traditional and modern materials and methods. Preparing samples on tie and die printing, batik printing, appliqué, macramé and braiding.

Module IV : Textile Materials for Interiors.

Miscellaneous materials such as cork, leather, paper, Rexene etc. – their properties, uses and applications in the interiors. A brief overview of Green materials. Jute or hessian – dyed jute fabric and its applications – various kinds of processed leather, its application in interior design.

Module V : Home Furnishings

Furnishings-Classification; Types of curtain; Curtain construction; Selection criteria relation to backgrounds in walls; Floors and ceilings; Slip covers; Cushion covers; Bed linen and table linen; Floor coverings -rugs and carpets, types selection; Care and maintenance; Installation of floor coverings.

Course Evaluation:

Components	A	H	CT	EE
Weightage (%)	05	10	15	70
(A-Attendance; H -Home Assignment; CT-Class Test; EE-End Semester Examination)				

Text & References:

1. Inside today's home, Faulkner, R. and Faulkner 1987, Rinehart Winston, New York
2. Interior Design & Decoration, Sherril Whiton, Prentice Hall
3. Introduction to home furnishings, Stepat, D.D, 1991, The Macmillan Company, New York.
4. The themes and Hudson manual of textile printing, Storeyjoyce, 1992, London
5. Colour in interior Design Jhon, F.P, 1997, McGraw Hill Company
6. Materials for Interior Environments, Corky Bingelli, John Wiley and Sons, 2007
7. Fabrics: A guide for architects and Interior Designers, Marypaul Yates, Norton publishers, 2002.
8. June Fish, Designing and printing textiles, Crowood press, 2005

INTERIOR DESIGN STUDIO-III

(Studio-Graphics)

Course Code: IND2506

Credit Units: 02

Course Objective:

Retail design is a very specialized discipline due to the heavy demands placed on retail space. The objective of this course is to introduce the basics of designing for Retail interiors and to develop skills required for the same that can apply into various interior design projects.

Course Description

In the studio, the learning process is learning by doing. The core part of this course incorporates exercises to develop manual and digital presentation skills in order to present design ideas and solutions. Every module is blended with hand on sketches as well as application of basic computer graphics. Each student has to maintain a sketchbook compulsorily. Process sketches are scanned and integrated into the final presentation by PPT. A hard copy of Design Studio Portfolio submission is compulsory.

Course Contents:

(NB: Submission of Practical work record / Portfolio / Sketch Book is compulsory for all Modules and will be part of the Final Course Evaluation)

Module I : Studio Project -1 : Malls and Shopping Centers

The structure of retail space creates the constraints of the overall design. In retail one hundred percent of the space must be utilized and have a purpose. The floor plan creates the circulation which then directly controls the direction of the traffic flow based on the studied psychology of consumer movement pattern within a retail space. Circulation is important because it ensures that the consumer moves through the store from front to back, guiding them to important displays and in the end to the cashier. The basic store layouts and circulation plans that all provide a different experience:

- **Design Planning for Retail Activity:**

Straight plan - Pathway plan - Diagonal plan- Curved plan - Varied plan - Geometric plan

- **Design Elements:**

Ergonomics in Retail interiors; Types of Shop layouts; Modular units; Materials used in counters, shelves, worktops, their comparative study. Lighting & colour scheme – Natural & Artificial light. Design of commercial ambiance.

- **Visual Merchandising Display Techniques:**

The art of selling-displays/products/marketing, design of display units, design of boutiques, showrooms; Product display: Windows displays / Internal displays / Hierarchy of product display / Power of visual communication / Graphics; Theme displays. Exhibition spaces: Display for exhibition, Lighting design for commercial spaces: Task; Display, Atmospheric, Focal lighting; Coloring commercial spaces: Coding & Decoding. Visual branding of the store.

Module II : Studio Project -2 : Other Retail formats (Self-study / Assignment)

Study, Identify the difference and Design of:

Traditional mom and pop stores, kiosks, Convenience store, Department stores, Super markets and hyper markets, Speciality stores, Off-price retailers, Catalogue showroom, Gift shops, Tradeshowrooms, etc.

Course Evaluation:

Components	A	H	CT	EE
Weightage (%)	05	10	15	70
(A-Attendance; H -Home Assignment; CT-Class Test; EE-End Semester Examination)				

Text & References:

1. Mesher, Lynne. Basics Interior Design 01: Retail Design. Vol. 1. Ava Publishing, 2010.
2. Spencer, Dale. Interior Design: Interior Design ideas for Retail Design. Venus Content Providers, 2015.
3. Interior Colour by Design, Jonathan Poore, Rockport Publishers, 1994.
4. Piotrowski, Christine M. Becoming an interior designer: a guide to careers in design. John Wiley & Sons, 2008..
5. Morgan, Tony. Visual merchandising: Window and in-store displays for retail. Laurence King Publishers, 2008.
6. Simon Dodsworth Cardoso; The Fundamentals of Interior Design
7. Karlen, Mark. Space planning basics. John Wiley & Sons, 2009.
8. Mitton, Maureen. Interior design visual presentation, John Wiley & Sons, 2012.
9. Carol Simpson, Estimating for Interior Designers.

COMPUTER AIDED INTERIOR DESIGN & DRAFTING

(Studio based Practical)

Course Code: IND2507

Credit Units: 03

Course Objective:

The main objective of this course is to construct drawings and design objects of interior spaces with special emphasis on presentation, visualization of interiors, rendering techniques using AutoCAD and Revit Architecture. This course enhances the students to use CAD that automates design & drafting task so that creating and revising drawing becomes easy.

Course Contents:

(NB: Submission of Practical work record / Graphic Portfolio is compulsory for all Modules and will be part of the Final Course Evaluation)

Module I : Starting AutoCAD

Introduction to AutoCAD, AutoCAD : System requirements, AutoCAD screen, Command entry, Setting up of page size, Starting drawings from scratch, Creating and using templates, Opening a drawing, Saving the drawing & Exit from AutoCAD.

Module II : Using Co-ordinate systems.

The UCS, Working with Cartesian and Polar coordinate systems, Using displays with shortcuts, Setting up the drawing environment, Setting the paper size, Setting units, Grid limits, Drawing limits, Snap controls, Use of paper space and Model space, Drawing tools.

Module III : Setting up the Drawing Environment

Basic commands dealing with drawing properties: Layer control, Change properties, Line weight control, etc. Inquiry methods: Using data base information for objects, Calculating distance, Angle, Areas etc.

Module IV : Dimensioning commands and blocks

Dimensioning the objects in linear, Angular fashions along with quick time dimensioning etc. Creating and working with blocks, Creating symbols, Use of blocks in creating a layout, of an area.

Module V : Orientation towards 3D

2D to 3D conversion, Perspective view, Walk through the layout, Solid modeling : Concepts behind solid modeling, Composite solids creation and Modification, Solids display and Inquiry. Rendering and Presentation. Printing and plotting.

Module VI : Introduction to Revit Architecture.

- Basics of BIM
- Revit Architecture Interface
- Basic Revit Concepts
- Modeling/Construction Techniques
- Annotations & Dimensions
- Page Layout & Printing

Course Evaluation:

Components	A	H	CT	EE
Weightage (%)	05	10	15	70
(A-Attendance; H -Home Assignment; CT-Class Test; EE-End Semester Examination)				

Text & References:

1. Douglas Seidler, Digital drawing for designers: A visual guide to AutoCAD 2011. Fairchild Publications, 2010.
2. Byrnes, David, and Bill Fane. AutoCAD 2013 for dummies. John Wiley & Sons, 2012.
3. Feng, Jin, and Jiang Lu. Basic AutoCAD for Interior Designers Using 2007. Prentice-Hall, Inc., 2007.
4. Beverly,L.K ; James,M.K, Auto CAD for Interior Design and Space Planning (3rd Ed.) Prentice Hall; 1998.
5. Demchak, Introducing Revit architecture 2009: BIM for beginners; John Wiley and Sons, 2009.
6. Davis, Patrick. Introducing Autodesk Revit Architecture 2012. John Wiley & Sons, 2011.
7. Krygiel, Eddy, Mastering Autodesk Revit Architecture 2011. John Wiley & Sons, 2010.
8. Dean Muccio, AutoCAD 2015 for the Interior Designer: AutoCAD for Mac and PC, SDC Publications, 2014.

INTERIOR SPACE MODELING WORKSHOP-I

(Practical)

Course Code: IND2508

Credit Units: 02

Course Objective:

The Model-making is also part of the act of designing as assisting the designer's ability to pre-visualize. The objective of this course is to enhance the students to basics of model making with various materials and acquisition of hands on experience in model - building.

Course Description

Model-making is a very practical subject, in that it involves the handling of materials to produce a physical outcome. It could be taught purely from that practical standpoint. Focusing on the materials and tools needed, and the methods or techniques employed to make specific things. Generating the idea through freehand sketching is important in model making. The initial sketches are compulsory for students to pre-visualization before starting the model making. The number of freehand sketches should use and select one for further technical sketching. All models are built to a predetermined scale. As with measured drawings, the level of realism depends on the scale. For example, a model at scale 1:5, should display a lot more details that a model at scale 1:50. It is also best practice to include a support for the model, either in the form of a single piece of board to will keep it sturdy, makes it easier to carry and view at different angle.

Course Contents:

(NB: Submission of Practical work record / Sketch Book is compulsory for all Modules and will be part of the Final Course Evaluation)

Module I : Introduction to Model Making

Introduction to model making; Concepts; Need; Role of scale models in design; Various materials used for model making; General practices; Understanding of various tools and machines, Best practices and skills involved in operating the tools.

Module II : Model Making Exercises

- **Hand Building Techniques:**

Making a box with a lid- hollowing out, pinch pots – making a bowl, coiling – making a cylindrical pot, slab- building – making a cube shaped box, hand building with clay strips- making a vase. Introduction to block models of buildings involving the usage of various materials like Thermocol, Soap/Wax, Boards, Clay etc.;

- **Working in Scale:**

Design and make the models of:Interior building components: Steps or stairs; Rakes or ramps; Doors; Windows; Floorboards etc. *Furniture:* Dining / Table chair; Sofa; Barstool; Armchair; Table; Beds; Shelves; Cabinets; Kitchen Appliances; Mattresses.

Tools and Materials:

- **Measurements/Rulers:** Architectural Scale; Rulers; Triangular Rule;
- **Pens:** Sharp Pencil; Double-side Marker: Fine and Ultra-fine; Micron Pens 01, 03, and 08; Thick Marker;
- **Cutting Tool:** Snap-off Blade; Utility Knife; Scissors, Cutting Mat
- **Glues:** Rubber Cement Glue; Quick Dry Glue; Glue Gun; Transparent Cello Tape;

- **Board materials:** Thin Black and White Foam Board; Thick Black and White Foam Board; Chip Board; Thin Plywood; Clear Sheet Print.

Procedure:

Get an idea – Make number of initial freehand sketches - Select one for the finalization- Prepare base for models using wood or boards- Prepare tools and materials - Select a scale of model - Floor Plan and Section Cut Drawing - Add dimensions to drawing - Make sure safety as first concern while cutting - Cut - Labeling cut pieces - Keeping track of what is being glued to where - Getting and keeping right angles - Glue each pieces - Build interiors and structural model separately - Add colors and textures to finishing the model.

Course Evaluation:

Components	A	H	CT	EE
Weightage (%)	05	10	15	70
(A-Attendance; H -Home Assignment; CT-Class Test; EE-End Semester Examination)				

Text & References:

1. Mitton, Maureen. Interior design visual presentation. John Wiley & Sons, 2012.
2. Janssen, Constructional Drawings & Architectural models, Karl Kramer Verlag Stuttgart, 1973.
3. Harry W.Smith, The art of making furniture in miniature, E.P.Dutton Inc., New York, 1982.
4. Magret Jacque. The Aesthetic Experiences: An anthropologist looks at the Visual Art.
5. Tapert, Annette, Swid Powell: Objects by Architects, Rizzoli, New York, 1990.

INTEGRATED PROJECT WORK

(Project)

Course Code: IND2532

Credit Units: 04

Course Objective:

The student will be required to produce a project feasibility report for the specific design undertaken in the design studio. This course aims to sensitize the student to the technical and socio-economic feasibility of the design project.

Course description:

This course for analyzing a design project for technical and socio-economic feasibility. The student has to submit a project feasibility report on the project done in the design studio including previous semesters by integrating the knowledge and skills acquired from all the subjects studied till date.

- Environmental impact assessment of the project following the standards and specifications.
- Socio-economic appraisal of the project and the design considering factors such as behavioral aspects, security considerations, costs for different user groups, aesthetic preferences etc.
- Technical feasibility – through execution and detailing of different spaces and elements of design, checking the feasibility of layout for service systems and specifications.
- Costing of the project – bill of quantities, schedule of rates, specifications etc. economic viability and financial viability.
- Space planning aspects/ issues – user activity spaces, access to physically challenged, fire safety, other services, green rating etc.

The Steps of the Project Report

- Step I:**
- Suitability of the topic.
 - Relevance of the topic
 - Time available at the disposal.
 - Feasibility of data collection within the given time limit.
 - Challenges involved in the data collection

Step II: Finalisation of the Topic and preparation of Project Proposal in consultation with the Supervisor.

Step III: Collection of information and data relating to the topic and analysis of the same.

- Step IV:**
- Writing the report dividing it into suitable chapters, viz.,
 - Chapter 1: Introduction,
 - Chapter 2: Conceptual Framework
 - Chapter 3: Analysis & Findings
 - Chapter 4: Conclusion and Recommendations.

- Step V:**
- The following documents are to be attached with the Final Project Report.
 - Bonafide Certificate cum Report Evaluation (From Faculty Guide & Internal and External Examiner)
 - Student's declaration.

Evaluation Method for Dissertation Report:

Chapter Scheme for the Training Report.

Marks Distribution.

Overall Report Format / Layout	:	05
Chapter 1. The Introduction	:	10
Chapter 2. Conceptual Framework,	:	20
Chapter 3. The Conceptual Framework	:	15
Chapter 4. Research Methodology, Data Analysis & Interpretations.	:	10
Chapter 5. Conclusion and Recommendations	:	10
Total	:	70

Procedure for evaluation:

- Submission of project feasibility report, Presentation of project feasibility report & Viva-voce
- The project feasibility report will be reviewed by a jury consisting of external and internal examiner to be appointed by the Department / University. Failure to submit the Seminar Report or failure to appear at the Viva-voce Examination will be treated as “Absent” in the Examination.

Course Evaluation:

Components	Project Report	Viva-Voce	Presentation	Total
Weightage (%)	70	20	10	100

References:

1. Earl Hall, Juliane Johnson; Integrated Project Management; Prentice Hall, 2002
2. American Institute of Architects; The Architecture Student's Handbook of Professional Practice, John Wiley & Sons, 2011
3. Project Management Institute; A Guide to the Project Management Body of Knowledge (PMBOK® Guide); Project Management Institute, Incorporated, 2013

Syllabus - Sixth Semester

MARKETING & ENTREPRENEURSHIP DEVELOPMENT

(Theory)

Course Code: IND2602

Credit Units: 01

Course Objective:

The objective of this course is to develop conceptual understanding of marketing and acquaint the students with various aspects of entrepreneurship business.

Course Contents:

Module I : Introduction to Marketing

Marketing: Nature & Scope of Marketing, Concepts – Production, Product, Selling, Marketing & Societal marketing, Marketing environment **Market segmentation:** need, concept, nature, basis & strategies, mass marketing vs. Segmentation. **Marketing mix:** 4ps of products & 7ps of services, components & factors affecting.

Module II : Understanding Customers

Consumer decision making process (Five step model), Factors affecting buying behaviour, Purchase behaviour, Buyer's role.

Module III Introduction to Services Marketing

Services: Introduction, Role, characteristics and classifications of services, Goods Vs. Services,; **Services marketing:** Role of marketing in services, Service marketing mix, Service marketing triangle **Service quality:** Quality and productivity, Quality gaps and their closing; **Service delivery:** Managing demand and capacity, Importance of employees, Intermediaries and customer participation in effective delivery, Channel selection **Marketing strategies for service marketing:** Segmentation, Targeting and Positioning, Differentiation, Life cycle, Pricing and Market communication

Module IV : Entrepreneurship Development

Meaning, Definition, Concept, Evolution of Entrepreneurship, Characteristics and Skills of Entrepreneurship, Concepts of Intrapreneurship, Entrepreneur Vs. Intrapreneur, Entrepreneur Vs. Entrepreneurship, Entrepreneur Vs. Manager, Role of Entrepreneurship in Economic Development, Women Entrepreneurship: Meaning, Characteristic features, Women Entrepreneurship in India.

Module V : Role of Government in promoting Entrepreneurship

MSME policy in India, District Industries Centers (DIC), Small Industries Service Institute (SISI), Entrepreneurship Development Institute of India (EDII), National Institute of Entrepreneurship & Small Business Development (NIESBUD), National Entrepreneurship Development Board (NEDB), Financial Support System: Forms of Financial support, Long term and Short term financial support, Sources of Financial support and Financial Institutions, Investment Institutions.

Module VI : Project Identification

Assessment of viability, formulation, evaluation, financing, field-study and collection of information, preparation of project report, demand analysis, material balance and output methods, benefit cost analysis, discounted cash flow, internal rate of return and

net present value methods.

Course Evaluation:

Components	A	H	CT	EE
Weightage (%)	05	10	15	70
(A-Attendance; H –Home Assignment; CT-Class Test; EE-End Semester Examination)				

Text & References:

1. Kotler, Philip, and Gary Armstrong. Principles of marketing. Pearson Education, 2010.
2. Gandhi, J. C. Marketing: A Managerial Introduction. Tata McGraw-Hill, 1991.
3. Peter, J. Paul, Consumer behavior and marketing strategy. London: McGraw-Hill, 1999.
4. Zeithaml, “Services marketing: Integrating customer focus across the firm.” 2006.
5. Sahai; Entrepreneurship; Excel Books India, 2008
6. Tiwari, Anshuja. Entrepreneurship Development in India. Sarup& Sons, 2007.
7. Das, Keshab, ed. Micro and Small enterprises in India: The Era of reforms. Routledge, 2011.
8. Nagarajan, K.; Project Management; New Age International, 2004

PROFESSIONAL PRACTICE & OFFICE MANAGEMENT

(Theory)

Course Code: IND2603

Credit Units: 01

Course Objective:

The course objective is to develop legal, technical and financial aspects of Interior Design practice and management skills for professional practice. This course provides an overview of rules and regulations in Interior Design practice and technicalities of code of conduct in professional practice.

Course Contents:

Module I : Role of Interior Designer in Society

Interior Design Profession as compared to other professions. Difference between profession and business; Organizations related to interior design profession. Interior Designers approach to works, ways of getting works: types of works, works partly executed by other Interior Designers. : various precautions to be taken before taking up the work, conditions of engagement between interior Designer and client: commencement of work.

Module II : Attributes of professional practice.

Professional behavior, Ethics, Types of clients, Contracts, Tenders, Arbitration etc. as defined in terms of Interior Design field and current day context. Career opportunities, styles of interior design practice, relationship between client and professional, type of fees, process of fees negotiations, billing methods, tax liabilities, contracts – types of contracts – item rate, labour, lumpsum, cost plus percentage etc.

Module III : Designer's Tasks

Preparation of drawings; Interior Designer's relation with other parties connected with works such as client, contractor, sub-contractors, consultants and authorities. IIDD Code of professional conduct: scale of charges: units and mode of measurements, clerk of work and his duties, inspection of work, certificate of payment to contractor, bill of quantities, schedule of rates, tenders, public, limited and negotiated tender documents and allied formalities. Preliminary knowledge of Consumer protection Act and other related acts on Interior Designers.

Module IV : Office Management

Planning and Scheduling Office Work: Office routine, work flow and office manual. Staff structure, Filing of records, Correspondence and Drawings, Maintenance of accounts, Studio Management, Meeting: Meetings with special reference to agenda, Quorum, Motions, Resolutions, Drafting and writing of minutes. Presentations in meetings,. Dealing with financial institutions; Role and functions; Types of financial institutions.

Module V : Visiting An Interior Designer's Office(Self-study / Assignment)

Gain practical knowledge of role of consultants and coordination between different consultants on a project. A report to be prepared by each student after visiting an interior designer's office.

Course Evaluation:

Components	A	H	CT	EE
Weightage (%)	05	10	15	70
(A-Attendance; H –Home Assignment; CT-Class Test; EE-End Semester Examination)				

Text & References:

1. Indian Institute of Architects. H.B. Professional Practice, The Architects pub. Bombay.
2. Namavati. H. Roshan. Professional Practice. 8th ed, Lakshani Book Depot, Bombay, 2001.
3. Christine .M. Piotrowski , Professional practice for Interior Designers, 3rd edition, Wiley and sons, 2001.
4. Cindy Coleman,Interior Design Handbook practice, McGraw Hill professional, isted, 2001
5. Ronald Veitch, Professional practice for Interior Designers, Peguis Publishers, Limited, 1987.
6. Balachandran, Sarojini. Customer-driven services management. SAGE Publications India, 2004.
7. Balachandran, V., and V. Chandrasekaran. Office management. Tata McGraw-Hill Education, 2009.
8. Knackstedt, Mary V. The Interior Design Business Handbook; John Wiley & Sons, 2002.

INTERIOR DESIGN STUDIO-IV (Studio-Graphics)

Course Code: IND2604

Credit Units: 02

Course Objective:

It involves the study of user types, user behavior concepts relevant to Health Care & Hospitality interiors. Students will learn the fundamentals of the various types of working environment and how to design a functional and aesthetically.

Course Description

In the studio, the learning process is learning by doing. The core part of this course incorporates exercises to develop manual and digital presentation skills in order to present design ideas and solutions. Every module is blended with hand on sketches as well as application of basic computer graphics. Each student has to maintain a sketchbook compulsorily. Process sketches are scanned and integrated into the final presentation by PPT. A hard copy of Design Studio Portfolio submission is compulsory.

Course Contents:

(NB: Submission of Practical work record / Portfolio / Sketch Book is compulsory for all Modules and will be part of the Final Course Evaluation)

Module I : Studio Project -1 : Health Care Interiors

Design Medical facilities include Medical centers, Hospitals, Clinics, and Pharmacies.

- **High volume traffic areas:** Patient waiting areas, administrative and doctors' offices, etc.
- **Medium-use areas:** Corridors, wet areas (kitchens, toilets, etc.) and chemicals.
- **Light-use areas:** Medical conference rooms. Wetareas and chemicals.
- Study, design and detailing of special acoustics and functional materials and furniture detailing.

Module II : Studio Project -2 : Hospitality –Lodging

Design Lodging includes transient lodging facilities of all types: Quarters for visiting personnel, as well as temporary living facilities for families arriving at or leaving a base.

- **Heavy-use areas:** Registration desks, Lobbies, Entrance foyers, Stairwells, Elevators, and corridors, Wet areas such as Laundry rooms, Snack rooms, and Rest rooms.
- **Medium-use areas:** Management and Administrative offices.
- **Light-use areas:** Bedrooms, Suites, etc.
- Study, design and detailing of various work spaces, interactions zones.

Module III : Studio Project -3 : Hospitality –Food Service

Design Food Service facilities: The most areas in food service facilities scan are considered heavy-use because they are subject to high traffic and frequent food and beverage spills.

- **Heavy-use areas:** Dining halls, Flight kitchens, Open mess facilities, Clubs, Snack bars, and Cafeterias.
- **Medium-use areas:** Management and administrative areas.
- **Light-use areas:** Special/private dining areas.

Course Evaluation:

Components	A	H	CT	EE
Weightage (%)	05	10	15	70
(A-Attendance; H –Home Assignment; CT-Class Test; EE-End Semester Examination)				

Text & References:

1. Linda O'Shea, ; The Interior Design Reference & Specification Book; Rockport Publishers; 2013
2. Interior Design; The New Freedom, BarbaralecDiamonstein, Rizzoli International Publications, New York, 1982.
3. Interior Colour by Design, Jonathan Poore, Rockport Publishers, 1994.
4. Worldwide Interiors – International Federation of Interior Architects & Designers, Rikuyo-Sha, Japan, 1987.
5. Simon Dodsworth Cardoso; The Fundamentals of Interior Design
6. Karlen Mark, Space planning Basics,
7. Maureen Mitton, Interior Design Visual Presentation
8. Carol Simpson, Estimating for Interior Designers

COMPUTER AIDED INTERIOR DESIGN & VISUALIZATION

(Studio based Practical)

Course Code: IND2605

Credit Units: 03

Course Objective:

The objective of this course is to provide the students an opportunity for understanding the technological implication of 3D design. This course provides the visual context of design concepts for a more effective design validation and visual communication using Autodesk 3D Max and Google Sketch up.

Course Contents:

(NB: Submission of Practical work record / Graphic Portfolio is compulsory for all Modules and will be part of the Final Course Evaluation)

- Module I : Introduction to 3D Max**
Defining 3D graphics, Understanding 3D space, 3D Objects Co-ordinate systems, Modeling concepts, Spline based modeling, Mesh modeling, Parametric modeling, Working with splines, Extrude, Lathe, Bevel, Loft, Basic editing methods, Boolean.
- Module II : 3D Modeling**
Polygon modeling, Furniture modeling using polygon etc.
- Module III : Introduction to Material Textures and Maps**
Introduction to texturing, Standard materials and shades, Creating uniform textures, Working on sofa, Floor, Glass and metal materials, Editing UV co-ordinates.
- Module IV : Digital Lighting**
Introduction to digital lighting, Light theory, Creating 3 point lighting system in 3D graphics, Exposure controls, Basic lights and photometric lights, Light effects. Cameras.
- Module V : Animation Fundamentals**
Key frame animation, Animating along trajectories, Modifying animation using function curves, Understanding the basic principles of animation like weight and squash & stretch etc., Animating cameras.
- Module VI : Introduction to Google Sketch up.**
- **The fundamental tools:** Lines, Rectangles, and Circles, Move, Rotate and Offset, Push, Pull and Follow Me;
 - **Understanding How Sketch Up Works:** Groups vs. Components, Creating and editing Groups, Creating and editing components;
 - **Textures and Materials:**Applying colors and materials, Creating materials, Exporting images;
 - **Sandbox Tools:** Creating landscaping, Importing trees;
 - **Importing CAD files and Real World Modeling:** Good layer management, Cleaning up CAD files, Turning 2-D into 3-D.

Course Evaluation:

Components	A	H	CT	EE
Weightage (%)	05	10	15	70
(A-Attendance; H –Home Assignment; CT-Class Test; EE-End Semester Examination)				

Text & References:

1. 3D Max Design Tutorials, Autodesk, www.autodesk.com
2. Gerhard, Mark, and Jeffrey Harper. Mastering Autodesk 3ds Max Design 2011. John Wiley & Sons, 2010.
3. Prof. Sham Tickoo, 3Ds Max 5 For Animators, Interior Decorators & Arch, Dreamtech Press, 2003
4. Murdock, Kelly L. 3ds Max 2009 bible. Vol. 560. John Wiley & Sons, 2008.
5. Joe Zeh, Sketchup 2013 for Beginners, F & W Media Incorporated, 2014.
6. Brixius, Laurent. Google Sketch Up Workshop. Taylor & Francis, 2010.
7. Stine, Daniel John, Interior Design Using Hand Sketching, SketchUp and Photoshop. SDC Publications, 2011.
8. Daniel John Stine, Google Sketch Up 8 for Interior Designers, SDC Publications, 2012

INTERIOR SPACE MODELING WORKSHOP-II

(Practical)

Course Code: IND2606

Credit Units: 02

Course Objective:

This course is continuation of the Interior Space Modeling Workshop – I. This course aims to enhance the student’s ability to represent their own ideas in three dimensional forms and communicate these with potential clients. During the course each student will build an archive of complete models using different materials and techniques which will lead to the realization of a project using the knowledge and skills acquired during the previous semesters.

Course Description

Model-making is a very practical subject, in that it involves the handling of materials to produce a physical outcome. It could be taught purely from that practical standpoint. Focusing on the materials and tools needed, and the methods or techniques employed to make specific things. Generating the idea through freehand sketching is important in model making. The initial sketches are compulsory for students to pre-visualization before starting the model making. The number of freehand sketches should use and select one for further technical sketching. All models are built to a predetermined scale. As with measured drawings, the level of realism depends on the scale. It is also best practice to include a support for the model, either in the form of a single piece of board to will keep it sturdy, makes it easier to carry and view at different angle.

Course Contents:

(NB: Submission of Practical work record / Sketch Book is compulsory for all Modules and will be part of the Final Course Evaluation)

Module I : Detailed Modeling

Making detailed models which includes the representation of various building elements like:

Walls, Columns, Steps, Windows/glazing, Sunshades, Handrails using materials like Mountboard, Snowwhite board, acrylic sheets; Representing various surface finishes like brick/stone representation, stucco finish etc.; Various site elements – Contour representation, Roads/Pavements, Trees/Shrubs, Lawn, Water bodies, Street furniture, Fencing etc.

Module II : Models of Structural Design

Making models of the various structural systems used in Interior / buildings like:

Space frames: using Match sticks, wires; Different forms of shell roofs using POP, Clay, Soap; Tensile structures using fabric.

Module III : Buildings & Interior Space Modeling Project (Self-study / Assignment)

Making models of the various interior spaces such as:

- Residences
- Offices
- Retail Spaces
- Recreational Spaces
- Scaled models of furniture.

Course Evaluation:

Components	A	H	CT	EE
Weightage (%)	05	10	15	70
(A-Attendance; H –Home Assignment; CT-Class Test; EE-End Semester Examination)				

Text & References:

1. Mitton, Maureen. Interior design visual presentation. John Wiley & Sons, 2012.
2. Jannsen, Constructional Drawings & Architectural models, Karl Kramer Verlag Stuttgart, 1973.
3. Harry W.Smith, The art of making furniture in miniature, E.P.Dutton Inc., New York, 1982.
4. Magret Jacque. The Aesthetic Experiences: An anthropologist looks at the Visual Art.
5. Tapert, Annette, Swid Powell: Objects by Architects, Rizzoli, New York, 1990.

SEMINAR / GUEST LECTURE / WORKSHOP FOR SKILL DEVELOPMENT

Course Code: IND2633

Credit Units: 04

Course Objective:

This course provides a research orientation to the subjects related to interior design. The objective of this course is to develop the capacity of students to undertake research of subjects related to interior design. The students have to be participated either Seminar (1) or Workshop (2) to earn the credit. Gust lecture (3) is addition to this for enhancing their knowledge by examining and analysing various aspects of design.

1. SEMINAR

To present seminars supported by graphical presentation and documentation of research done.

Major Themes for Seminar:

Building Information Modeling (BIM). / Theory of Interior space. / Interior Design language of various cultures. / Influence of Fashion in Interior designing. / Use of rural technology in interiors.

Evaluation Scheme:

Components	Organisation and Relevance of content	Literature Review	Bibliography	Presentation	Total
Weightage (%)	30	30	20	20	100

2. WORKSHOP

Objectives:

A workshop is primarily an activity based academic event that is organized to provide the students a one to one and hands on experience on any aspect of their learning. Workshop is undertaking a significant practical unit of examining and analyzing various aspects of design at a level commensurate with the learning outcomes of the various courses taken up them in the ongoing semester. The communication in a workshop has to be necessarily two ways. The trainer has to make sure that the aspects covered are practically practiced by the participants. The student will choose the option of workshop from amongst their concentration electives. The evaluation will be done by jury of examiners comprising of the faculties.

Major Themes for Workshop are: -

Graphics and space transformation. / Color and light interaction to change space. / Eco-friendly furniture. / Effective visualization by using Computer graphics. / Study on textures and interior materials. / Effective model making of interior spaces.

Guidelines for Workshop :

The procedure for earning credits from workshop consists of the following steps:

- Relevant study material and references will be provided by the trainer in advance.
- The participants are expected to explore the topic in advance and take active part in the discussions held
- Attending and Participating in all activities of the workshop
- Group Activities have to be undertaken by students as guided by the trainer.

- Evaluation of workshop activities would be done through test and quiz at the end of the workshop.
- Submitting a write up of at least 500 words about the learning outcome from the workshop.

Methodology

The methodology followed at the workshop could be based on any one or more of the following methods:

Case Study / Group Activity. / Role Play. / Business Planning. / Quiz.

Evaluation Scheme:

Components	A	AP	MCQ	Solving the case/ Assignment / Write up	Total
Weightage (%)	10	30	30	30	100

(A - Attendance; AP - Active Participation; MCQ - Multiple Choice Questions)

3. GUEST LECTURE

Eminent subject experts from the field may be invited to deliver the lectures on different topics of their choice and share their experience with the students

FURNITURE ERGONOMICS & DESIGN

(Studio based Practical)

Course Code: IND2607

Credit Units: 03

Course Objective:

Ergonomics is an integral part of design, manufacturing, and use. This course aims a better understanding of ergonomics applied to furniture design that related end-user needs.

Course Contents:

(NB: Submission of Practical work record / Sketch Book is compulsory for all Modules and will be part of the Final Course Evaluation)

Module I : Anthropometric Measurements

Introduction; Percentile Humans; Anthropometric Databases; Anthropometric Resources.

Module II : Common Workplace Postures & Motions

Standing; Sitting; Reaching; Moving; Good and Bad Zones; Repetitive Motions

Module III : Ergonomics Applied To Furniture Design

Study of Anthropometry & Design criteria involved in the design of:

- Chairs, Tables.
- Sofa, Settee, Couch, etc.
- Cot, Bedside lockers, Wardrobes
- Cupboards, Shelves
- Bunk beds, Study table
- Display furniture

Module IV : Universal Design Considerations

Wheelchairs; Crutches, Canes, and Walkers; Knobs, Handles, and Controls; Access Ramps and Stairs; Resources on Universal Design.

Course Evaluation:

Components	A	H	CT	EE
Weightage (%)	05	10	15	70
<i>(A-Attendance; H-Home Assignment; CT-Class Test; EE-End Semester Examination)</i>				

Text & References:

1. Kroemer, Karl HE, Ergonomics: how to design for ease and efficiency. Pearson College Division, 2001.
2. Jerzy Smardzewski; Furniture Design; Springer, 2015
3. The Encyclopedia of Furniture, Joseph Aronson, Crwon Publishers, New York
4. Interior Design & Decoration, SherrilWhiton, Prentice Hall
5. Office Furniture, Susan S.Szenasy, Facts on file Inc, New York
6. Interior Design Course, Mary GilliatCoyran, Octopus Ltd., London
7. Time Saver Standards for Interior Design, Joseph De Chiara, McGraw Hill, New York.
8. Lueder, Rani, and Valerie J. Berg Rice, eds. Ergonomics for Children; CRC Press, 2007.

FURNITURE CONSTRUCTION AND DETAILING

(Theory & Practical)

Course Code: IND2609

Credit Units: 03

Course Objective:

The course provides a framework to analyze and design furniture forms scientifically and sensitizes the students visual perception of furniture as a single form and as a system in a given interior space.. This course aims to familiarize the students of Interior Design on materials used in furniture and its design, construction and detailing

Course Contents:

(NB: Submission of Practical work record / Portfolio / Sketch Book is compulsory for all Modules and will be part of the Final Course Evaluation)

Module I : Introduction to Furniture

Definition, Furniture categories, exploration of the idea of furniture, Role of furniture in interior design, Various stylistic transformations. Furniture designers and movements. Analysis of furniture in terms of human values, Social conditions, Technology and design criteria.

- **Design Practice: Measured** drawing of a piece of furniture: plan, elevation and drawings on full scale.

Module II : Functional and Formal issues in Furniture Design

Study and evaluation of popular dictums such as “Form follows function”, Form and function are one”, “God is in Details” etc. Human factors, engineering and ergonomic considerations: principles of universal design and their application in furniture design.

Module III : The Basics of Furniture Construction & Tools

Furniture Measurements and methods; Furniture material: Timber and Plywood, Detailed construction drawings & explaining construction and material finishes, Layout and machining plans; Fabrication: Stapling, Gluing; Furniture Joinery: screw joinery, nail joinery, Mortise & Tenon joints, Dovetail joints, Dowel joints, Edge joints. Furniture Construction: Drawers, Cadenza, Dining chairs, Sofa, Settee, Cots detail. Preparation for finishing, Other construction Techniques: Injection Molding, Investment casting, Sheet metal work, Die casting, Blow molding, Vacuum - forming etc.

- **Design Practice: Visit** various furniture manufacturers. Study and absorb different manufacturing methods. Take the photographs / Video; make sketches and notes for references.

Module IV : Seating Design & Storage Systems

Types of seating focus on: Functionality, Aesthetics, Style, Human factors and ergonomics, cost. *Storage Systems:* Functional analysis of storage systems, Deriving types of cabinets needed for interior spaces: Kitchen cabinets, Wardrobes Closets, Book cases, Show cases, Display systems etc. *Modular kitchens:* components, Construction, Layouts, Car case, Hardware selection, Fixing details, Finishes and Special types such as

Tall units, Grain trolleys, and Carousels fold outs, etc.

- **Design Practice:** A detailed project involving the design of a small kitchen using modular components.

Module V : Modular approach to furniture design (Self-study / Assignment)

Study and inspire modern furniture designers such as Ward Bennet, Alvar Aalto, Owen Jones, Florence Knoll, Mies van der Rohe, George Nelson, Henri van de Velde, Hans Wegner etc. Survey & study various styles, systems and products available in the market. Design furniture, based on ergonomics, materials, working parameters and visual perception. Draw details and models along with a measure drawing, including plan elevations, sections. Make details of the same cost criteria of design & mass production of furniture forms. Make a full size prototype of the same. Submit the study in a portfolio form and present in PPT as well. The portfolio should contain evidence of each stage of the process starting from Inspiration and survey to photograph of final prototypes, including sketches and technical drawings.

Course Evaluation:

Components	A	H	CT	EE
Weightage (%)	05	10	15	70
(A-Attendance; H -Home Assignment; CT-Class Test; EE-End Semester Examination)				

Text & References:

1. Aronson, Joseph. The encyclopedia of furniture. Clarkson Potter, 1965.
2. Joyce, Ernest, and Alan Peters. Encyclopedia of furniture making. Sterling Publishing Company, Inc., 2000.
3. Jim Postell, Furniture Design, Wiley publishers, 2007.
4. Habegger, Jerryll, and Joseph H. Osman. Sourcebook of modern Furniture. WW Norton & Company, 2005.
5. Lovell, Sophie. Limited Edition: Prototypes, One-Offs and Design Art Furniture. Walter de Gruyter, 2009.

SUSTAINABLE INTERIOR DESIGN & MATERIALS

(Theory)

Course Code: IND2610

Credit Units: 03

Course Objective:

Careful selection of environmentally sustainable building materials is the easiest way for architects to begin incorporating sustainable design principles in buildings. This course helps the students to understand the sustainable interior materials and methods.

Course Contents:

Module I : Bio Climatic Design Concepts

Environmental Impacts and Sustainable Design Strategies: Natural Resource Depletion, Energy Use, Pollution; The Designer's Role beyond Design and Construction. **The principles of Life Cycle Design;** Phases of Building Materials, Life-cycle Assessment (LCA); Life-cycle Inventory (LCI); **LCA in Practice:** EIE, BEES; **Assessments tools:** BREEAM, SBTool, LEED, Eco Profile, Promise, Green Mark of Buildings, Green Star, CASBEE. **Certification Systems:** First party, Second party and Third party; **Third-party Certification Organizations:** The Forest Stewardship Council (FSC), Green guard Environmental Institute (GEI), Green Seal, Inc., and Scientific Certification Systems (SCS); The Carpet and Rug Institute (CRI); Resilient Floor Covering Institute (RFCI).

Module II : Sustainable Interior Materials Selection

Criteria: Indoor Air Quality (IAQ); Reusable or Renewable Resources; Energy Efficiency; Water Conservation. **Features:** Pollution prevention; waste reduction; recycled content; embodied energy; Natural materials; Minimal construction waste; Locally produced materials; Non- or less-toxic materials; Durable materials; Rapidly Renewable Materials; Low Maintenance; Reusability; Recyclability; Biodegradability; **Harmful chemicals that can affect air quality in interior spaces:** Volatile Organic Compounds (VOCs); Brominated flame retardants, Halogenated plastics, Bisphenol A, Heavy metals, Toxic solvents in finishes and sealants, Formaldehyde.

Module III : Key Sustainable Interior Materials and Methods

Bricks & Blocks: Recycled concrete bricks, Adobe bricks, Stabilized earth blocks, Compressed sand bricks, Hydra form bricks, Fly Ash Bricks, Wool Bricks; Wood Materials: **Engineered wood:** Plywood, Oriented strand board, Glued laminated timber (glulam), Laminated veneer lumber, Cross-Laminated Timber, Parallel strand lumber, Finger-jointed lumber, I-joists and wood I-beams, Roof trusses and floor trusses, Certified Wood; **Site and Landscaping:** Landscape pavers made from recycled plastic, Recycled asphalt and bitumen, Expanded polystyrene (EPS) foam; **Foundations:** rigid plastic foam, Concrete blocks with foam inserts; **Flooring:** Bamboo flooring, Cork flooring, Eco-friendly linoleum flooring; **Structural Framing:** Wood and steel open-web joist; **Roofing:** Solar Tiles Roofing, Sustainable Concrete, Fiber-resin composition roofing tiles, integrated sheathing and insulation, pre-tapered for flat roofs, Weatherproof shingles manufactured from recycled aluminum alloys; **Structural Envelopes:** Super-insulated stress-skin panels; Earth bag construction; **Insulation:** Homasote fiberboard, Cotton insulation, Hemp based products, Blown insulation;

Interior Finishes: wallpapers, recycled gypsum board or wallboard, Natural Fiber Reinforced Plastics, Casein paint, Sisal wall coverings, recycled burlap or virgin jute fiber carpet, recycled wool carpet, recycled ground-up tire rubber; **Plumbing:** Low flow shower heads, Solar hot water, Vacuum-assisted toilets; **Ventilation:** Heat-recovery ventilator, Triple-Glazed [(low-emissivity (low-E) glass] Windows.

Course Evaluation:

Components	A	H	CT	EE
Weightage (%)	05	10	15	70
(A-Attendance; H -Home Assignment; CT-Class Test; EE-End Semester Examination)				

Text & References:

1. Kim, Jong-Jin; Qualities, Use, and Examples of Sustainable Building Materials, CSS, University of Michigan, 1998.
2. Binggeli, Corky. Materials for interior environments. John Wiley & Sons, 2008.
3. American Institute of Architects; Environmental Resource Guide Subscription. Washington: AIA; 1992.
4. Sassi, P Strategies for Sustainable Architecture; New York, Taylor and Francis, 2006
5. Spiegel, Ross; Green building materials: a guide to product selection and specification. John Wiley & Sons, 2010.
6. Yudelson, Jerry. The green building revolution. Island Press, 2010.
7. Martha Maeda, The Complete Guide to Green Building & Remodeling Your Home, Atlantic Publishing Co. 2011
8. Giudice, Fabio, Product design for the environment: a life cycle approach. CRC press, 2006.

3. Carlson Broto- architecture on sports facilities – PG 1 publishing, Spain, 2005
4. Piotrowski, Christine M., and Elizabeth A. Rogers. Designing commercial interiors. John Wiley and Sons, 2010.
5. Transport spaces – vol. I- images publishing, Hong Kong, 1999
6. Edward D Mills; Planning Buildings for administration, entertainment and recreation; Krieger publishers, NY, 1976

Syllabus -Eight Semester

TRAINING & ONSITE LEARNING

(Practical Industrial Training)

Course Code: IND2837

Credit Units: 16

Training Objective:

This is an industrial training session, which provides the opportunity to learn and work within a professional environment with practicing interior designers. The basic objective of training is to provide first hand practical exposure of the professional functioning of Interior Design industry and to acquaint students with the culture of corporate. The training will also provide an opportunity to the students to apply their theoretical understanding while working on the concerned project in the industry. Thus, this training is an attempt to bridge the gap between theory and practice. This will also enhance the students' intellectual ability and attributes related to data handling, decision making, report writing, oral presentation and imbibing an interdisciplinary approach. Students can be undertaken their practical training in India or abroad.

Training Contents:

(NB: Submission of Training Report will be part of the Final Training Evaluation)

SESSIONS – : TRAINING.

I

General Guidelines:

Every student of under graduate courses will be required to undergo a practical training in a interior design organization approved by the Institute for Minimum of '90 calendar days'. The candidates shall be required to undergo training in the various areas of the organization concerned. The organization may assign a specific project to the candidate, which will be completed by him / her during the period of training. The work done by the candidate during the training period shall be submitted in the form of a report as per the guidelines provided by the Department.

Attitude:

- A member of the faculty will supervise the candidates during their Training along with a supervisor from Industry.
- Students need to aware of work environment and constantly look for opportunities to learn more about interior design.
- An internship is a privilege - the firm is not receiving payment for the hours they spend to train the student.
- It is student responsibility to provide value to them (not necessarily the other way around).
- Students need to take responsibility for making training as informative as can.
- Students need to document what they observed, ask lots of questions and show initiative.
- Training and work should be creative, exciting, noteworthy and detailed.

Progress Report:

- Students have to compulsorily submit a summary report of their progress once in every two week undersigned by the industrial supervisor.

Attendance:

- Minimum of ‘90 calendar days’ of training is compulsory for students as a ‘full-time trainee’. Daily attendance is compulsory and to be marked daily and duly checked and signed by the industrial and faculty supervisor.
- Those who are failure to complete the training with minimum of 90 days will not be considered for final examination.

The student will be required to repeat the training when:

- (i) The report from the employer is not satisfactory.
- (ii) The attendance in the employer office is less than 70% of the number of days required for training.

SESSIONS - : TRAINING REPORT EVALUATION AND PRESENTATION.

II

The candidates will prepare a comprehensive Report. The Report and the certificate from the organization should be attested by the organization where the candidate did the Internship and the same will be submitted to the faculty for evaluation.

Guidelines for Writing an Internship Report

The Industrial Training Report should contain the items as suggested below and is to be presented in the manner and order listed. Students are advised to download the Microsoft Word template of the Industrial Training Report from the Industrial Training website and use the template to prepare the report.

Contents of Training Report:

1. Front Cover (Title Page)
2. Industrial Training Certificate (From Organization)
3. Declaration
4. Acknowledgements
5. Bonafide Certificate cum Report Evaluation (From Faculty Guide & Internal and External Examinar)
6. Abstract
7. Table of Contents
 - List of Tables (optional)
 - List of Figures (optional)
8. Body of the Industrial Training Report
 - Introduction/Learning Outcome.
 - Detail of Working Experience: Description of Tasks & Application of Theory and Soft Skills
 - Conclusion and Recommendations.
9. References
 - Citation in the text (if applicable)
10. Appendices
 - Summary of Daily Records, etc.

Evaluation Method for Training Report:

Chapter Scheme for the Training Report.

Marks Distribution.

Overall Report Format / Layout	:	05Marks
Chapter I: Introduction // Learning Outcome.	:	20marks
Chapter II: Detail of Working Experience	:	30 marks
Chapter III: Conclusion and Recommendations	:	15 marks
Total	:	70 Marks

Report Format:

The report has to be written in font Times New Roman, 12 points, 1.5 lines spacing, Print / Type on both sides of the paper, Spiral Bound. The report should comprise of a maximum of 70 pages and has to be submitted in two copies.

Evaluation and Presentation:

- Submission of Training Report.
- Brief oral presentation with 'Power Point' about the training.
- Evaluation by a jury consisting of external and internal examiner to be appointed by the Department / University.
- Failure to submit the Training Report or failure to appear at the Presentation / Viva-voce Examination will be treated as "Absent" in the Final Examination.

Evaluation Scheme:

Components	Attendance	Training Report.	Presentation	Viva-Voce	Total
Weightage (%)	10	70	10	10	100

ANNEXURE-I.- EXAMINATION SCHEME

A. Exam Scheme of 30 % (Internal) + 70 % (External)

S. No.	Sem.	Course Code	Course Name	Mode	Components			
					Internal A	Internal H	Internal CT	External EE
1	1	IND 2101	Language of Design #	Theory	05	10	15	70
2	1	IND 2102	Design Fundamentals & Illustration Techniques -I	Practical	05	10	15	70
3	1	IND 2103	Design Elements& Principles	Practical	05	10	15	70
4	1	IND 2104	Design Studio – I (Basic Graphics)	Studio	05	10	15	70
5	1	IND 2105	Colour Concept & Applications	Practical	05	10	15	70
6	1	IND 2106	Introduction to Craft & Model Making	Practical	05	10	15	70
7	1	IND 2107	History of Design& Culture	Theory	05	10	15	70
8	1	IND 2108	Calligraphy Exploration	Practical	05	10	15	70
9	1	IND 2109	Fundamentals of Form Studies.	Practical	05	10	15	70
10	2	IND 2201	Introduction to Design Theory #	Theory	05	10	15	70
11	2	IND 2202	Technical Drawing & Illustrations	Practical	05	10	15	70
12	2	IND 2203	Design Fundamentals & Illustration Techniques - II	Practical	05	10	15	70
13	2	IND 2204	Design Studio – II (Photography & Videography)	Studio	05	10	15	70
14	2	IND 2205	Application of Color Theory	Practical	05	10	15	70
15	2	IND 2206	Fundamentals of Applied Ergonomics	Theory	05	10	15	70
16	2	IND 2207	Typography Exploration	Practical	05	10	15	70
17	2	IND 2208	Introduction to Prototyping Techniques	Practical	05	10	15	70
18	3	IND 2301	Introduction to Spatial Design #	Theory	05	10	15	70
19	3	IND 2302	Interior Design Materials & Applications	Theory	05	10	15	70
20	3	IND 2303	Elements of Interior Space Planning & Scaling	Practical	05	10	15	70
21	3	IND 2304	Psychology of Living Environments.	Theory	05	10	15	70
22	3	IND 2305	Application of Analytic Geometry	Theory	05	10	15	70

23	3	IND 2306	History of Interior Design & Study on Popular Styles	Theory	05	10	15	70
24	3	IND 2307	Lighting & Colour in Interiors	Theory	05	10	15	70
25	3	IND 2308	Perspective Drawing Techniques & Technical Specs - I	Practical	05	10	15	70
26	3	IND 2309	Interior Design Studio - I	Studio	05	10	15	70
27	3	IND 2310	Interior Workshop Practice - I	Practical	05	10	15	70
28	4	IND 2401	Sustainable Design #	Theory	05	10	15	70
29	4	IND 2402	Advanced Interior Design Materials & Applications	Theory	05	10	15	70
30	4	IND 2403	Interior Services	Theory	05	10	15	70
31	4	IND 2404	Estimation, Costing & Project Management	Theory	05	10	15	70
32	4	IND 2405	Perspective Drawing Techniques & Technical Specs-II	Practical	05	10	15	70
33	4	IND 2406	Interior Design Studio - II	Studio	05	10	15	70
34	4	IND 2407	Interior Workshop Practice - II	Practical	05	10	15	70
35	5	IND 2501	Design Thinking & Creative Problem Solving #	Theory	05	10	15	70
36	5	IND 2503	Interior Safety Systems and Building Management	Theory	05	10	15	70
37	5	IND 2504	Textile in Interiors	Theory	05	10	15	70
38	5	IND 2505	Interior Landscape Design	Practical	05	10	15	70
39	5	IND 2506	Interior Design Studio - III	Studio	05	10	15	70
40	5	IND 2507	Computer Aided Interior Design & Drafting	Practical	05	10	15	70
41	5	IND 2508	Interior Space Modeling Workshop – I.	Practical	05	10	15	70
42	6	IND 2601	Introduction to Design Management #	Theory	05	10	15	70
43	6	IND 2602	Marketing & Entrepreneurship Development	Theory	05	10	15	70
44	6	IND 2603	Professional Practice & Office Management	Theory	05	10	15	70
45	6	IND 2604	Interior Design Studio -IV	Studio	05	10	15	70
46	6	IND 2605	Computer Aided Interior Design & Visualization	Practical	05	10	15	70
47	6	IND 2606	Interior Space Modeling Workshop – II.	Practical	05	10	15	70
48	6	IND	Furniture Ergonomics & Design (CE)	Practical	05	10	15	70

49	6	2607 IND 2608	History of Furniture Decoration (CE)	Theory	05	10	15	70
50	6	IND 2609	Furniture Construction and Detailing (CE)	Theory	05	10	15	70
51	6	IND 2610	Sustainable Interior Design & Materials (CE)	Theory	05	10	15	70
52	6	IND 2611	Sustainable Interior Renovation (CE)	Theory	05	10	15	70
53	6	IND 2612	Adaptive Reuse And Retrofit (CE)	Theory	05	10	15	70
54	6	IND 2613	Performance Space Design (CE)	Theory	05	10	15	70
55	6	IND 2614	Public Art (CE)	Theory	05	10	15	70
56	6	IND 2615	Public Space Design - Contextual Studies (CE)	Studio	05	10	15	70
57	8	IND 2701	Advanced Interior Design Studio	Studio	05	10	15	70
58	8	IND 2702	Design Research Methods & Presentation Techniques.	Theory	05	10	15	70

B. Exam Scheme of 100% (Internal)

1. Seminar

(Common for Course code: IND2233 / IND2433 / IND2633 / IND2733)

Components	Organisation and Relevance of content	Literature Review	Bibliography	Presentation	Total
Weightage (%)	30	30	20	20	100

2. Workshop

(Common for Course code: IND2233 / IND2433 / IND2633)

Components	A	AP	MCQ	Solving the case/ Assignment / Write up	Total
Weightage (%)	10	30	30	30	100

(A - Attendance; AP - Active Participation; MCQ - Multiple Choice Questions)

3. Documentation Project

(Course code: IND2502// Semester: 05)

Components	Project Report	Viva-Voce	Presentation	Total
Weightage (%)	70	20	10	100

4. Integrated Project Work

(Course code: IND2432 / Semester: 05)

Components	Project Report	Viva-Voce	Presentation	Total
Weightage (%)	70	20	10	100

**5. Interior Design
Dissertation**

(Course code: IND2737 / Semester: 07)

Components	Project Report	Viva-Voce	Presentation	Total
Weightage (%)	70	20	10	100

**6. Interior Design Portfolio
Development.**

(Course code: IND2736 / Semester : 07)

Components	Creative skill	Design Research	Presentation	Total
Weightage (%)	40	40	20	100

**7. Training & Onsite
Learning**

(Course code: IND2837 / Semester : 08)

Components	Attendance	Training Report.	Presentation	Viva-Voce	Total
Weightage (%)	10	70	10	10	100

ANNEXURE-II.– LIST OF HAND TOOLS AND EQUIPMENTS

S. NO.	NAME OF THE ITEM	S. NO.	NAME OF THE ITEM
<i>I</i>	ART MATERIALS FOR DESIGNING.	<i>II</i>	MATERIALS FOR TECHNICAL DRAWING
1.	Pencil: H, HB, 2B, 3B, 4B, 5B, 6B	1.	Adjustable set square with beveled edge – 30 cm
2.	12" Plastic Transparent Scale.	2.	Compass with Long arm & pen holder
3.	12" Metal Steel Scale	3.	Protractor – 15 cm
4.	Staedtler colour pencil	4.	Graphic Pens / Ink / Stencil
5.	Fine Point Utility Marker, Black	5.	Triangular Scale 30 cm (feet / inch, metric)
6.	Drawing pens	6.	Clutch pencil – 0.5mm , 0.2 mm , 2mm.
7.	White Eraser- Large	7.	M.D / Parallel Bar / T scale – 1250 mm long
8.	Pocket-sized pencil sharpener	8.	Plastic French Curve with ink edge - set of 12
9.	1" & ½" Masking Tape	9.	Flexi curve- 80cm
10.	Tracing Paper	10.	Furniture template 1:50, 1:100,1:200
11.	Camlin Premium Poster Colours (12 colour)	11.	Circular and oval template
12.	Camlin Artist's Water Colour (12 Colour)	12.	Metric Tape-5M
13.	Crayons, Charcoal, Pastels, etc.	13.	Calculator Scientific
14.	Drawing Inks (06 Colours)	14.	Beam Compass with pen holder (Rotring / Staedtler made)
15.	Calligraphy Nibs and Pen set.	15.	Erasing shield small & Big sizes
16.	Letter template (Metal)		
17.	Set of Round and Flat Artist quality brushes	<i>IV</i>	COMPUTER & SOFTWARE
18.	Medium size Artist's Palette	1.	Laptop
19.	Sponge	2.	16 GB Pen drive

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|-----|--|-----|---------------------|
| 20. | Cartridge sheets (White / Off-white)
(A3 Size.) | 3. | Adobe Photoshop |
| 21. | Spiral-bound Designer's Sketch book
(A4 size - 85 gsm paper with grid
pattern) | 4. | Adobe Illustrator |
| 22. | Artist Sketch book (A4 size) | 5. | Corel Draw |
| 23. | A3 Size. Portfolio Case /folder | 6. | Autodesk 3D S Max |
| 24. | Notebook & Pen, A4 Size White Plain
Paper | 7. | Google Sketch up |
| 25. | Ring Binder/Box File. | 8. | AutoCAD |
| 26. | Acrylic Colors (06 Colors) | 9. | Revit Architecture |
| | | 10. | External Hard disk |
| | | 11. | SLR Digital Camera. |

III MODEL MAKING MATERIALS.

1. Transparent cello tape
2. Medium sized Scissors
3. Glue Stick
4. Synthetic Adhesive - (UHU POR or
POLY ZAP)
5. Bond Cyanoacrylate Adhesive
(Feviquick / Super glue)
6. Medium sizes xacto knife
7. Cutting Mat.
8. Medium Gauge Round Copper Wire
Medium Gauge Round Aluminium
9. Wire
10. Plasticine (Modeling Clay)
11. Balsa wood (Soft wood) blocks
12. Small measuring tapes / Inch tape
13. White Form board
14. Colour vinyl flexible sheets
15. Colour chart papers / Coloured cards
16. Old Magazines with variety of
images.
17. Broachers and Catalogs with images.
18. Old newspapers.
19. Hacksaw wire blade and frame
20. Thermocol, Paper Mache, Tin foil
21. Heavy Duty Stapler& Pins
22. Small chisel, Hammer, Cutting Pliers
23. Screwdriver and small size screws
24. Steel Pins, small size nails etc.
25. Needle punch, Needle File Set
26. Engineers Square
27. Nose Pliers
28. Hard Wire & Cable Cutter
29. Junior Hacksaw & Blades
30. Razor Saws