

DEPARTMENT OF DESIGN  
FACULTY OF ARCHITECTURE, PLANNING & DESIGN  
INTEGRAL UNIVERSITY, LUCKNOW

B.Des.  
(Product  
&  
Interior Design)

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Syllabus

*(Session 2020-21)*

**Scheme of Teaching**

L	Tu.	S/SS	Total
2	1	-	3

**B.Des. (Product & Interior Design) - I SEMESTER****DS121 Theory of Design-I****Scheme of Examination**

CA	T	P/V	Total
50	50	-	100

Abbreviations: L =Lectures; P = Practical; Tu. = Tutorial; S/SS = Studio  
T = Theory, V = Viva-voce, CA = Continuous Assessment

**OBJECTIVES**

- Basic Design provides the framework for understanding design as a new language by sensitizing students to the conceptual, visual and perceptual issues involved in the design process.
- To understand the basics elements, principles of design and composition
- To understand the theories of colour and its impact on our lives.

**CONTENTS****UNIT –I****INTRODUCTION TO DESIGN**

Definitions and meaning of design, importance of design, examples of design from nature. Fundamental elements of design in 2-D and their definitions; point, line, shape, form, space, texture, value, colour and material. Introduction to the principles of design in 2-D and 3D - unity, balance, symmetry, proportion, scale, hierarchy, rhythm, contrast, harmony, focus, etc. ; use of grids, creating repetitive patterns.

**UNIT – II****CONCEPTS OF GEOMETRY**

Introduction to different 3-D forms and primitive forms, shapes and understanding the behavior when combined. Transformation of 2-D to 3-D.

**UNIT – III****PRINCIPLES OF COMPOSITION**

Principles of composition using grids, symmetrical/ asymmetrical, Rule Of Thirds, Center Of Interest, Gestalts Theory of Visual Composition.

**UNIT- IV****THEORY OF COLOURS**

Introduction –visible spectrum, coloured light, colour temperature, colour interaction, colour blindness. Color wheel – primary, secondary, tertiary colors, color wheel, color schemes color value, intensity, and modification of color hues – tints, shades, neutralization. Color charts – types, making and using. Color harmony, use of color harmony.

**UNIT – V****USE OF COLOURS**

Psychological impact of color – warm, cool and neutral colors, impact of specific hues, meanings of color, color and form, color and light, color and surface qualities, color and distances and scales.

Problems with color. Use of colors in various functional contexts – e.g. Residential interiors, Non Residential interiors. Use of color in special situations – out door/indoor spaces, accessories, art works etc.

**SUGGESTED BOOKS**

- Linda Holtzschue, *Understanding color, an introduction for designers*, Van Nostrand Reinhold, Newyork,1995.
- Hanks, A.David. *Decorative Designs of Frank Lloyd Wright*, Dover Publications, Inc. New York, 2003.
- Ching, Francis D.K. *Architecture Form, space, and Order*, 3rd ed. Van Nostrand Reinhold, New York, 2007.
- Hanks, A.David. *Decorative Designs of Frank Lloyd Wright*, Dover Publications, Inc. New York, 2003.

**E BOOKS**

- <http://www.edb.utexas.edu/minliu/multimedia/PDFfolder/DESIGN~1.PDF>
- <http://v5.books.elsevier.com/bookscat/samples/9780750660754/9780750660754.PDF>

## **MOOC**

- <https://www.onlinestudies.com/Course-in-Fashion-Design/United-Kingdom/ICI/>

**Scheme of Teaching**

L	Tu.	S/SS	Total
1	1	-	2

**B.Des. (Product & Interior Design) - I SEMESTER****DS 122 Communication Skills****Scheme of Examination**

CA	T	P/V	Total
60	-	40	100

Abbreviations: L =Lectures; P = Practical; Tu. = Tutorial; S/SS = Studio  
T = Theory, V = Viva-voce, CA = Continuous Assessment

**OBJECTIVES**

- Enhance the communicative competence with focus on syntax and fluency
- Excel oral and written medium and prepare them for employability
- To prepare students to acquire understanding and fluency in English for professional work.

**CONTENTS****UNIT****IMPORTANCE OF COMMUNICATION**

Communication: Importance of Communication; Elements of good individual communication; organizing oneself; different types of communication; Barriers in the path of Communication

**UNIT II****LISTENING SKILLS**

Listening skills: Listening to conversation and speeches (Formal and Informal) Reading: Techniques of reading, skimming, Scanning, SQ3R technique

**UNIT III****CREATIVE WRITING SKILLS**

Creative Writing: Scope of creative writing; Report writing, Paragraph, Letter Writing (Formal and Informal), Memo, Circular, Preparation of Agenda, Minute of the meeting, Notice, Description of Projects and Features

Oral Report; Periodical Report; Progress Report; Field Report Preparation of minutes; Video conference; Tele conference / Virtual meeting

**UNIT IV****SPEAKING SKILLS**

Speaking: How to converse with people, How to communicate effectively; Language and grammar skills; Pronunciation drills, Phonetics, vowels, Diphthongs, consonants, Stress, Rhythm and intonation, Conversational skills Features of effective speech- practice in speaking fluently –role play – telephone skills– etiquette. Short Extempore speeches – facing audience – paper presentation – getting over nervousness –Interview techniques – preparing for interviews – Mock Interview – Body Language

**UNIT V****DIGITAL COMMUNICATION**

Impact of internet on communication; communication through computers; voice mail; broadcast messages; e-mail auto response; etc. Video Conference; Tele conference.

**METHODOLOGY**

- Suggested Reads: Daily Newspaper, E newspapers

**SUGGESTED BOOKS**

- *Professional speaking Skills* by Arun Koneru, Oxford University Press, 2017.
- Krishna Mohan & Meera Banerji: *Developing Communication Skills* Macmillan India
- ,2nd edition,2009
- K. Ashwathappa: *Organizational Behavior*, Himalaya Publishing House

- Daniel Colman: *Emotional Intelligence*, Bloomsburry publication India,2010

#### **E BOOKS**

- English Language – TN College Text Book -  
<http://www.textbooksonline.tn.nic.in/books/dted/dted1-english.pdf>

#### **MOOC**

<https://www.mooc-list.com/course/business-english-basics-coursera>

**Scheme of Teaching**

L	Tu.	S/SS	Total
2	-	6	8

**B.Des. (Product & Interior Design) - I SEMESTER****Scheme of Examination**

CA	T	P/V	Total
50	-	50	100

**DS 123 Basic Design-I**

Abbreviations: L =Lectures; P = Practical; Tu. = Tutorial; S/SS = Studio  
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**OBJECTIVES**

- Develop out of box thinking skill
- Understanding on various creative problem solving techniques

**CONTENTS****UNIT – I****INTRODUCTION TO BASIC DESIGN**

Definitions of creativity, understanding components of creativity, definitions of problem solving, theories of creativity, goals and objectives, value judgments, defining problems, information gathering, creative incubation, creative thinking and creative process.

**UNIT- II****THINKING TECHNIQUES**

Principles in generative, convergent, lateral, interactive, graphical thinking, check lists, analysis and synthesis simulation, action ability and implementations of intentions. Blocks in creative thinking.

**UNIT- III****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, sensitizing techniques, group or individual techniques.

**UNIT – IV****PROBLEM STATEMENTS**

Brain writing with unrelated stimuli, idea mapping, random input, story boarding exercises, problem solving techniques –brain storming, lateral thinking of De Bono

**UNIT – V****CREATIVE SOLUTIONS**

Applicable to designs – Design, Invention, opportunity, problems, improvement, planning, projects, conflicts. Simple Design exercises. Creative Design process – conceptual design, embodiment design, detail design, Iterations

Assignments : students are to design & produce at least 24 minor & 12 major basic products of day to day use and submit conceptual sketches along with a written report for internal and external assessment

**SUGGESTED BOOKS**

- Elements of Design: Rowena Reed Kostellow and the Structure of Visual Relationships , Gail Greet Hannah, 2002
- Basic Principles of Design, Manfred Maier, Vol. 1-4
- Comdex Fashion Design, Vol I, Fashion Concepts, Navneet Kaur, Vikas Pub, 2010

- Geoffrey Broadbent. Design in Architecture, London:D.Fulton
- Redefining Designing: Form to Experience
- Edward De Bono, Lateral Thinking
- Design Basics for Creative Results by Bryan L.Peterson, F&W Publications, Inc.

#### **E BOOKS**

- <https://www.pdfdrive.net/six-thinking-hats-e32030055.html>
- <https://books.google.co.in/books?id=I1o4DgAAQBAJ&lpg=PP1&dq=mooc%20courses%20on%20glass&pg=PT48#v=onepage&q&f=false>
- <http://asimetrica.org/wp-content/uploads/2014/06/design-thinking.pdf>

#### **MOOC**

- <https://iversity.org/en/courses/design-101-or-design-basics>

**Scheme of Teaching**

L	Tu.	S/SS	Total
2	1	-	3

**B.Des. (Product & Interior Design) - I SEMESTER****DS 124 Anthropometrics & Ergonomics****Scheme of Examination**

CA	T	P/V	Total
50	50	-	100

Abbreviations: L =Lectures; P = Practical; Tu. = Tutorial; S/SS = Studio  
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**OBJECTIVES**

- The course provides a framework to analyze and design furniture forms scientifically and sensitizes the student's visual perception of furniture as a single form and as a system in a given interior space.

**CONTENTS****UNIT –I****NEED FOR STUDY**

Introduction to Ergonomics, Need for study of anthropometric and ergonomics. , Design today- Human aid to lifestyle.

**UNIT – II****ERGONOMICS IN INDIA**

Environmental factors influencing human performance, Ergonomics in India. Ergonomics/ human Factors fundamentals, Physiology (work physiology) and stress

**UNIT – III****HUMAN PHYSICAL DIMENSION**

Human physical dimension concern: Human body- structure and function, anthropometrics, Anthropometry: body growth and somatotypes, Static and dynamic anthropometry, Stand Posture-erect, Anthropometry landmark: Sitting postures, Anthropometry: squatting and cross-legged postures, Anthropometric measuring techniques, Statistical treatment of data and percentile calculations.

**UNIT- IV****HUMAN BODY STRUCTURE AND FUNCTION**

Posture and job relation, Posture and body supportive devices, Chair characteristics, Vertical work surface, Horizontal work surface , movement , work Counter.

**UNIT – V****BEHAVIOUR AND PERCEPTION**

Communication and cognitive issues, Psychosocial behavior aspects, behavior and stereotype, Information processing and perception, Cognitive aspects and mental workload, Human error and risk perception.

**SUGGESTED BOOKS**

- Bridger, RS: Introduction to Ergonomics, 2nd Edition, Taylor &Francis, 2003.
- Dul, J. and Weerdmeester,B. Ergonomics for beginners, a quick reference guide, Taylor & Francis, 2008.
- G.Salvendy (4TH edition), Handbook of Human Factors and ergonomics, John Wiley & Sons, Inc., 2012
- Singh,S (Edt),Ergonomics Interventions for Health and Productivity, Himanshu Publications, Udaipur, New Delhi, 2007

**Scheme of Teaching**

L	Tu.	S/SS	Total
2	-	-	2

**B.Des. (Product & Interior Design) - I SEMESTER****Scheme of Examination**

CA	T	P/V	Total
50	50	-	100

**DS 125 History of Design-I**

Abbreviations: L =Lectures; P = Practical; Tu. = Tutorial; S/SS = Studio  
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**OBJECTIVES**

- The course emphasizes on developments of interior elements in response to social, religious, aesthetic and environmental factors. The course focuses on the three dimensional forms, plan forms and ornamentation.

**CONTENTS****UNIT –I****PURPOSE AND RELEVANCE OF ART DEVELOPMENT**

A survey of history of art forms: pre historic times to present times: changing nature of art through time in terms of content: form and material.

**UNIT – II****EXPLORATION OF ART FORMS**

Study of traditional and contemporary art forms – painting, sculpture, architecture, decorative arts, design arts, digital art. Relationship between art and design from the earliest time.

**UNIT – III****STUDY OF ORNAMENTS & ACCESSORIES**

Ornaments & Accessories in Interior Design. Different types of Ornamentation & Accessories in the interiors. Study and evaluation of artefacts, historic examples and their applicability.

**UNIT – IV****INTRODUCTION TO HERITAGE INTERIORS**

Heritage Interiors Buddhist, Islamic and Hindu: Evolution of Interiors in different regions of India with examples. Heritage and identity at different spatial scales.

**UNIT – V****NEW DIRECTIONS IN ART**

Context for new directions in art in the late 19th and early 20th century - Impressionism - post Impressionism – Fauvism- Expressionism- Cubism –Dadaism – Surrealism - abstract art – Futurism - Constructivism – Suprematism – De-Stijl -Abstract Expressionism - Pop art - Op art- new forms and media of art. Study of famous and influential Artists, Craftsmen and people who pioneered innovations in their own fields and their influence on design and other fields.

Works of Van Gogh, Dali, William Morris, Picasso, Da Vinci

**SUGGESTED BOOKS**

- Alan Barnard & Jonathan Spencer, Encyclopaedia of social and cultural anthropology, Routledge; 1 edition, 2002
- Niggel Rapport, Social and Cultural Anthropology: The Key Concepts, Routledge, 2000
- Elizabeth. D. Hutchinson, Sage publications, Dimensions of Human Behavior, person and Environment, 2007.
- Kumar Raj (Ed) Essays on Indian Art and Architecture. Discovery pub., New Delhi, 2003
- Ghosh. A (Ed). Jain Art and Architecture Vol 1-3. Bharatiya Jnanpith. New Delhi.

- Christine M. Piotrowski, *Becoming an Interior Designer*, John Wiley and Sons, 2003.
- Henry Wilson, *India: Decoration, Interiors, Design*, Watson Guptill, First American edition, 2001
- Michael Freeman, *India Modern*, Periplus editions, 2005
- Sunil Sethi, Angelika Taschen, *Indian Interiors*, TASCHEN America Ltd; 25th ed. edition, 2009

**Scheme of Teaching**

L	Tu.	S/SS	Total
1	-	2	3

**B.Des. (Product & Interior Design) - I SEMESTER****DS 126 Graphic Design****Scheme of Examination**

CA	T	P/V	Total
50	50	-	100

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**OBJECTIVES**

- The course introduces the fundamental techniques of concept sketches, design development sketches, presentation sketches, presentation renderings and architectural drawing and develops the appropriate skills for visualization and representation.

**CONTENTS****UNIT I****INTRODUCTION TO PENCIL EXERCISES**

Knowledge about usage of different points of pencils, handling of pencils, practicing lines and tone building exercises.

**UNIT II****EXERCISES OF OBJECT DRAWINGS, FUNDAMENTALS OF DRAWING**

Natural geometric forms with emphasis on depth and dimension, detail & texture, sunlight & shadow.

Introduction – Fundamentals of drawing and its practice, introduction to drawing equipment, familiarization, use and handling of various media

**UNIT III****GEOMETRICAL DRAWING**

Drawing– Drawing sheet sizes, composition, fixing. Simple exercises in drafting, point and line, line types, line weights, straight and curvilinear lines, dimensioning, lettering, borders, title panels, tracing in pencil, ink, use of tracing cloth. Portfolio preparation.

**UNIT IV****MEASURED DRAWING**

Measuring and drawing to scale – scales, simple object, reduction and enlargement of drawings Architectural 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.

**UNIT V****SKETCHING INDOOR OBJECTS**

Still Life – Furniture, Equipment – Understanding Depth, light, shade, Shadow Etc. Outdoor Sketching: Natural Forms/Built Forms. Understanding variety in Forms. Sketching Human Form: Anatomy and Expressions – Graphical Representations

**SUGGESTED BOOKS**

- *Maureen Mitton, Interior Design Visual Presentation: A Guide to graphics, models and presentation techniques, 3rd edition, wiley publishers, 2007*
- *Mogali Delgade Yanes and Ernest Redondo Dominquez, Freehand drawing for Architects and Interior Designers, ww.Norton & co., 2005*
- *Francis D.Ching, Design Drawing, Wiley publishers*
- *Moris, I.H.Geometrical Drawing for Art Students.*
- *Thoms, E.French. Graphics Science and Design, New York: MC Graw Hill.*

- *Shah, M.G., Kale, C.M. and Patki, S.Y. Building Drawing: with an integrated approach to built environment, 7th ed. Tata Mc Graw Hill Pub., Delhi, 2000.*
- *Bies, D.John. Architectural Drafting: Structure and Environment Bobbs – Merril Educational Pub., Indianapolis.*

**Scheme of Teaching**

L	Tu.	S/SS	Total
1	-	4	5

**B.Des. (Product & Interior Design) - I SEMESTER****DS 127 Drawing & Rendering-I****Scheme of Examination**

CA	T	P/V	Total
60	-	40	100

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**OBJECTIVES**

- The focus of this course is to impart skills related to the preparation of detailed drawings for Design execution.
- Hand and eye coordination while drawing
- Capacity to draw any object in 2D and 3D form

**CONTENTS****UNIT I****GEOMETRICAL CONSTRUCTIONS**

SCALES : Construction of plain scale and diagonal scale

CONIC SECTIONS : Construction of conic sections given the distance of focus from the directrix and eccentricity. Construction of ellipse – concentric circle method, rectangular method and intersecting arc method. Construction of parabola by rectangular method and by tangent method. Construction of hyperbola– given the asymptotes and a point on the curve

SPIRALS : Construction of Archimedean spiral and Logarithmic spiral

HELIX : Construction of cylindrical helix ,conical helix and square helical spring

**UNIT II****PROJECTIONS**

First angle projection Points and Lines : Orthographic projection of lines for any given condition, determination of true length ,traces and inclinations to the planes of projection of any given line Planes : Traces of planes , plane figure inclined to one or both the reference planes

**UNIT III****SOLIDS**

Solids : Simple solids in simple position , prisms, regular pyramids, tetrahedron, octahedron, cone, spheres and their combinations placed in different positions. Auxiliary projections of simple solids and their combinations. Change of position and auxiliary plane method.

**UNIT IV****SECTIONS & DEVELOPMENTS OF SOLIDS**

Intersection of surfaces : Line of intersection of two prisms , two cylinders and cone Section of solids : Section of simple solids by planes inclined. True shape of sections. Development of surfaces: Development of surfaces of simple solids, prisms, cylinders, pyramids, cones , spheres and truncated solids.

**UNIT V****MATERIAL PROJECTIONS**

Isometric Projection : Isometric scale, isometric view of planes , simple solids, truncated solids , combination of objects Perspective projection : Perspective projection of simple solids and their combinations by visual ray method and vanishing point method.

**SUGGESTED BOOKS**

- *N.D.Bhatt, 'Elementary Engineering Drawing', 53rd edition, Charotar, 2014*
- *Cari LaraSvensan and William Ezara Street, 'Engineering Graphics',*
- *K. Venugopal, 'Engineering Drawing and Graphics', New Age Publishers, 2004.*
- *S. Rajaraman, 'Practical Solid Geometry'*

**Scheme of Teaching**

L	Tu.	S/SS	Total
1	-	3	4

**B.Des. (Product & Interior Design) - I SEMESTER****DS 128 Workshop & Model Making****Scheme of Examination**

CA	T	P/V	Total
60	-	40	100

Abbreviations: L =Lectures; P = Practical; Tu. = Tutorial; S/SS = Studio  
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**OBJECTIVES**

- Understanding the properties of soft materials
- Ability to manipulate soft and pliable material to create new forms

**CONTENTS****UNIT I****INTRODUCTION TO MODEL MAKING**

Need; role of scale models in design: general practices: Essentials of model making: understanding of various tools and machines employed, best practices involved in operating the tools and the techniques.

Introduction to the Mount Board/Paper/Boards for model making – types, properties etc. Hand building techniques on different planes - making rigid forms like, cubic, spherical, pyramidal shaped forms, depiction of steps, free forms, sculptures, etc.

**UNIT -II****MATERIALS AND TECHNIQUES (CLAY)**

Ceramics – clay/ plaster of Paris : Introduction to model making, Need; role of scale models in design: general practices - The potter's wheel – kneading the clay, function of hands in throwing. Learning basic techniques in making different objects like bowl, plate, cylinder, vase, etc. Essentials of model making: understanding of various tools and machines employed, best practices involved in operating the tools and the techniques. Introduction to the Ceramic materials used for model making – clay, types and mixtures, properties etc. Hand building techniques- coiling, hand building with clay strips- making a small sculpture in Relief work – addition - making a mural, scooping – tile work. .

**UNIT - III****MATERIALS AND TECHNIQUES (WOOD)**

Wood : Working with wood and wood derivatives to understand material parameters. Wooden joinery and its strength, Wood polishes and other finishes – colour and surface quality. Making of elements of various scales in the built form, such as, interior space making elements, furniture forms, various products, Art & Artifacts by using wood. Understanding the material and tools by making objects which allow students to explore the forms, surfaces, textures and patterns. Explore different joinery, support conditions, and woven surfaces.

**UNIT - IV****MATERIALS AND TECHNIQUES (METAL)**

Metal : 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, grilles, railing, stair etc. Metals and other materials – form and joinery.

**UNIT -V****MATERIALS AND TECHNIQUES (TEXTILES)**

Textiles – Weaving & printing : Introduction to fibers and yarns, table loom and floor loom, preparing warp, setting up loom for weaving. Basic weaves and their variations. Variation weaves and design quality, weaves as light controlling device, weaves and its quality for upholstery, curtains and floor coverings, Rugs and durries – motifs

design, patterns and color variations. Development of textile design in different cultures from primitive art to contemporary designs. Criteria of design of the elements and principles of textile design. Analysis of a motif, developing repeat as a basic unit of design in textile printing. Printing – developing block, understanding the material used, colors, types and their mixing process, various color printing. Screen printing – design evolution for wall hangings, preparing screen and understanding the technique, printing on paper and printing on fabric.

## **SUGGESTED BOOKS**

- *Carol Stangler, The crafts and art of Bamboo, Rev. updated edition, Lark books, 2009.*
- *Dr Angelika Taschen, Bamboo style: Exteriors, Interiors, Details, illustrated edition, 2006.*
- *Lonnie Bird, Jeff Jewitt, Thomas lie- Nielsen, Taunton's Complete Illustrated Guide to Woodworking, Taunton, 2005.*
- *Peter Korn, Wood working Basics : Mastering the essentials of craftsmanship, Taunton , 2003*
- *Liz Gibson, Weaving Made Easy: 17 Projects Using a Simple Loom (Paperback), Interweave press, 2008*
- *Deborah Chandler, Learning to weave, Revised edition, Interweave press, 2009.*
- *textiles, Crowood press, 2005*
- *Fabrics: A guide for architects and Interior Designers, Marypaul Yates, Norton publishers, 2002.*
- *Materials for Interior Environments, Corky Bingelli, John wiley and sons, 2007*

**Scheme of Teaching**

L	Tu.	S/SS	Total
2	1	-	3

**B.Des. (Product & Interior Design) - II SEMESTER****DS 129 Theory of Design-II****Scheme of Examination**

CA	T	P/V	Total
50	50	-	100

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**OBJECTIVES**

- Understanding the use of Principles and Forms in Product Designing
- Understanding on Typography and Basic Geometric Shapes

**CONTENTS****UNIT – I****INTRODUCTION**

Primary elements of design – Point, Line, Plane, Volume. Primary forms, properties of form, transformation of forms - dimensional transformation, subtractive, additive forms, organization of additive forms - Articulation of forms. Space defining elements - horizontal, vertical, openings in space defining elements, Spatial relationship, Spatial organization.

**UNIT- II****PRINCIPLES OF DESIGN**

Exploration of the basic principles of composition such as Proportion, Scale, Balance, Rhythm, Unity, Contrast, Character with garment examples. Ordering Principles such as Axis, Symmetry, Hierarchy, Datum, Rhythm & Repetition..

**UNIT- III****ORGANISATION OF FORMS**

Spatial Relationships: i) Space within space, ii) Interlocking spaces, iii) Adjacent spaces, iv) Space linked by a common space b) Spatial Organization: influencing factors and their types i) Centralized, ii) Linear, iii) Radial, iv) Clustered, v) Grid c) Articulation of forms and spaces types: i) Edges and corners, ii) Surface. A Project on Creation of forms & spaces using the principles learnt.

**UNIT – IV****PRINCIPLES OF COMPOSITION; TYPOGRAPHY & GEOMETRY**

Unity, harmony and specific qualities of design to include dominance, punctuating effect, dramatic effect, fluidity, climax, accentuation and contrast with garment examples.

Basics of Calligraphy and typography, Understanding structure and proportion of types of (Roman Serif and San Serif). Basic solid Geometry

**UNIT – V****CIRCULATION**

Function of building circulation components of building circulation - The building approach, The building entrance, configuration of the path, path space relationship, form of circulation space with examples. Simple circulation diagram for buildings

**SUGGESTED BOOKS**

- Francis D. K. Ching, 'Architecture - Form, Space and Order', Van Nostrand Reinhold Company, 2007
- V.S.Pramar, 'Design Fundamentals in Architecture', Somaiya Publications, New Delhi, 2007
- Leland M.Roth, 'Understanding Architecture', Routledge; 3 edition, 2013

**E BOOKS**

- <http://www.edb.utexas.edu/minliu/multimedia/PDFfolder/DESIGN~1.PDF>
- <http://v5.books.elsevier.com/bookscat/samples/9780750660754/9780750660754.PDF>

**Scheme of Teaching**

L	Tu.	S/SS	Total
1	-	-	1

**B.Des. (Product & Interior Design) - II SEMESTER****DS 130 Values & Ethics****Scheme of Examination**

CA	T	P/V	Total
50	50	-	100

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**OBJECTIVES**

- Understanding values and its importance in current scenario
- Understanding human rights and identifying the social evils
- Spreading awareness amongst others to help curb injustice and spread human values
- To provide guiding principles and tools for the development of the whole person, recognizing that the individual is comprised of Physical, Intellectual, Emotional and Spiritual dimensions.

**CONTENTS****UNIT I****NEED FOR STUDY**

Value Education—Introduction – Definition of values – Why values? – Need for Inculcation of values – Object of Value Education – Sources of Values – Types of Values: i) Personal values ii) Social values iii) Professional values iv) Moral and spiritual values) Behavioral (common) values

**UNIT II****PERSONAL VALUES**

Personal values – Definition of person – Self-confidence – Relative and absolute confidence, being self-determined, swatantrata (loosely equivalent to freedom). Self-discipline – Self Assessment – Self-restraint –Self motivation – Determination – Ambition – Contentment Self- respect and respect to others; expression of respect

**UNIT III****SOCIAL VALUES**

Social values – Units of Society - Individual, family, different groups – Community – Social consciousness – Equality and Brotherhood – Dialogue – Tolerance – Sharing – Honesty Responsibility – Cooperation; Freedom – Repentance and Magnanimity. Peer Pressure – Ragging - examples - making one's own choices

**UNIT IV****PROFESSIONAL VALUES**

Professional values – Definition – Competence – Confidence – Devotion to duty –Efficiency – Accountability – Respect for learning /learned – Willingness to Learn-Open and balanced mind – Team spirit – Professional Ethics – Willingness for Discussion; Difference between understanding and assuming Time Management: Issues of planning, as well as concentration (and aligning with self-goals) Expectations from yourself. Excellence and competition, coping with stress, Identifying one's interests as well as strengths.

**UNIT V****BEHAVIOURAL VALUES**

Behavioral values – Individual values and group values. Anger: Investigation of reasons, watching one's own anger; Understanding anger as: a sign of power or helplessness, distinction between response and reaction. Right utilization of physical facilities. Determining one's needs, needs of the self and of the body, cycle of nature. Relationship with teachers. Inside the class, and outside the class, interacting with teachers. Complimentary nature of skills and values. Distinction between information & knowledge Goals: Short term goals and long term goals; How to set goals; How to handle responsibilities which have to be fulfilled while working for goals

**SUGGESTED BOOKS**

- Values (Collection of Essays)., Published by : Sri Ramakrishna Math., Chennai — (2008)
- Prof. R.P.Dhokalia., Eternal Human Values NCRT – Campus Sri Aurobindo Marg., New Delhi
- M.G.Chitakra: Education and Human Values, A.P.H.Publishing Corporation, New Delhi, 2003
- Holy Books of all religions

**Scheme of Teaching**

L	Tu.	S/SS	Total
1	-	3	4

**B.Des. (Product & Interior Design) - II SEMESTER****DS 131 Creative Thinking****Scheme of Examination**

CA	T	P/V	Total
60	-	40	100

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**OBJECTIVES**

- Developing Problem solving skill
- Understand the various techniques of out of box thinking and selecting appropriate one based on the circumstance and situation

**CONTENTS****UNIT I****CREATIVITY**

Explanation on creativity, Icebreaker: Thinking Outside the Box, Combining Ideas: How to combine ideas for creative thinking breakthroughs, Combining ideas is one of the fundamental exercises in creative thinking.

**UNIT II****CREATIVE THINKING TOOLS**

Thinking tool no. 1: Kick Cards, 2: The Inverse, 3: Double Six Good Bad Interesting: Get creative thinking with the G.B.I. exercise – Dr Edward de Bono. Brainstorming,

**UNIT III****PRINCIPLES OF CREATIVITY**

Creative Problems: Defining creative problems and solutions. Diffusion: Spreading ideas through social networks. Divergence and convergence: Staying open and staying focused. Exploration: Going where no one has gone before. Forced association: Banging things together to create new things. Ground Rules: Shared rules that enable safe creativity. Jumping: Jumping to new idea domains. Practice: Build your 'creative muscle' with regular practice. Questioning: Asking things to get the mind going.

**UNIT IV****TOOLS FOR DEFINING THE PROBLEM**

CATWOE, Challenge, Chunking, Context Map, A Day in the Life of., Is – Is not, how to: The Kipling method (5W1H), Positives, Negatives, Problem Statement: achieve. Purposing: Reversal: Storyboarding: Visioning: Assumption Busting: Brainstorming: Brain mapping. Essence: Forced Conflict: Lotus Blossom: PSI: Problem + Stimulus = Idea, Random Words: Modeling: Morphological Analysis, Post - Up: Provocation: Role - play: Reverse Brainstorming: , SCAMPER: , Storyboarding: , Visioning: , Wishing

**UNIT V****TOOLS FOR SELECTING IDEAS**

Concept Screening: , The Hundred Dollar Test: , Negative Selection: , NUF Test: Check idea is New, Useful and Feasible., PINC Filter: , Swap sort:

**SUGGESTED BOOKS**

- Rod Judkins, The Art of creative thinking, Sceptre Pub, 2015

**Scheme of Teaching**

L	Tu.	S/SS	Total
2	-	-	2

**B.Des. (Product & Interior Design) - II SEMESTER****DS 132 History of Design-II****Scheme of Examination**

CA	T	P/V	Total
50	50	-	100

Abbreviations: L =Lectures; P = Practical; Tu. = Tutorial; S/SS = Studio  
T = Theory, V = Viva-voce, CA = Continuous Assessment

**OBJECTIVES**

- The course emphasizes on developments of interior elements in response to social, religious, aesthetic and environmental factors. The course focuses on the three dimensional forms, plan forms and ornamentation.

**CONTENTS****UNIT I****ELEMENTS OF STYLE**

Elements of style and determinants of Interior environments in Ancient Civilization, Classical world & the Middle ages : emphasis shall be on Architectural elements, furniture, decorative arts, colours & materials. Egyptian - Indus Valley Civilization - The ancient Near East - Samaritans, Babylonians, Assyrians, Persians

**UNIT II****CLASSICAL WORLD**

Greek, Roman architecture and Eastern influences - China and Japan.

**UNIT III****THE MIDDLE AGES**

Early Christian and Byzantine, Romanesque and Gothic, Renaissance in Italy, Spain, France and England, Baroque, Rococo, Neoclassicism-Boullée, Ledoux.

**UNIT IV****INDIAN ARCHITECTURE AND INTERIORS**

Hindu, Islamic and Buddhist architecture, Secular architecture of the princely states like Rajasthan, etc.

**UNIT V****STUDY OF VERNACULAR ARCHITECTURE AND INTERIORS**

Jammu and Kashmir, Southern India, Gujarat, Himachal Pradesh, states of North & eastern India, Maharashtra, Uttar Pradesh, Orissa etc.

**CONDUCT OF EXAMINATION****SUGGESTED BOOKS**

- John F. Pile, A history of interior design, 2nd edition, Laurence King Publishing, 2005. Jeannie Ireland, History of Interior Design, air child publications, illustrated ed., 2009.
- Giedion Sigfried, Space, Time and Architecture: The growth of a new tradition, 5th ed. Harvard University Press, Cambridge, 2008

**Scheme of Teaching**

L	Tu.	S/SS	Total
2	-	1	3

**B.Des. (Product & Interior Design) - II SEMESTER**  
**DS 133 Construction Techniques & Representation-I**

**Scheme of Examination**

CA	T	P/V	Total
50	50	-	100

Abbreviations: L =Lectures; P = Practical; Tu. = Tutorial; S/SS = Studio  
 T = Theory, V = Viva-voce, CA = Continuous Assessment

**OBJECTIVES**

- The course provides information on the properties, management, specifications, use, application and rates of the materials used in the interiors.
- Materials to be studied based on –
- Physical and behavioral properties, tools and technology of its application in the construction of floors, walls, ceilings, walls, doors, windows, staircase, built in furniture, partitions and other interior design components.
- Visual quality of materials in terms of finishes through color, texture, modulations and pattern evolution. Material and workmanship, specification etc.

**CONTENTS****UNIT I****HARDWARE**

Hardware & Accessories : all hardware required for residences, offices, other public & private spaces, etc., including all types of hinges, drawer slides, handles, locks, wire managers, etc., accessories for toilet, kitchen, office, glass patch fittings, profiles, etc.,

**UNIT II****STONES**

Stones : Igneous, metamorphic & sedimentary – classifications, types, properties, availability, applications

**UNIT III****RUBBER**

Rubber – Natural rubber, latex, coagulation, vulcanizing and synthetic rubber- properties and application

**UNIT IV****PLASTIC**

Plastics – 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.

**UNIT V****PARTITIONS AND FALSE CEILING**

Partition walls : all types of partitions – full height, half & dwarf, double skinned, single skinned, frameless glass, etc., Wall paneling : plywood, leather, acoustic boards, etc., False Ceiling : all types, with full system, insulation, acoustical, etc.,

**SUGGESTED BOOKS**

- Bindra, S.P. and Arora, S.P. Building Construction: Planning Technique and Methods of Construction, 19<sup>th</sup> ed. Dhanpat Rai Pub., New-Delhi, 2000
- Moxley, R. Mitchell's Elementary Building Construction, Technical Press Ltd.
- Rangwala, S.C. Building Construction 22nd ed. Charota Pub. House Anand, 2004.
- Sushil Kumar. T.B. of Building Construction 19th ed. Standard Pub. Delhi, 2003.
- Francis D. Ching, Building Construction Illustrated, Wiley publishers, 2008.

**Scheme of Teaching**

L	Tu.	S/SS	Total
1	-	3	4

**B.Des. (Product & Interior Design) - II SEMESTER**  
**DS 134 Computer Design & Digital Fabrication-I**

**Scheme of Examination**

CA	T	P/V	Total
60	-	40	100

Abbreviations: L =Lectures; P = Practical; Tu. = Tutorial; S/SS = Studio  
T = Theory, V = Viva-voce, CA = Continuous Assessment

**OBJECTIVES**

- To orient the student to create two and three-dimensional objects in space with special emphasis on presentation and visualization of interiors using rendering techniques using CAD. Objectives of the course: To explore computer modelling techniques using CAD.

**CONTENTS****UNIT I****MS OFFICE**

Computer Orientation, Microsoft word, Microsoft excel, Microsoft presentation software, scanning and MS Paint

**UNIT II****BASIC OUTLINE , AXIS POINTS**

Introduction to the menu, starting drawings from scratch. Creating and using templates- starting drawings with setup wizards. Saving and closing a file.

Introduction to the menu, starting drawings from scratch. Creating and using templates- starting drawings with setup wizards. Saving and closing a file.

**UNIT III****UNITS, LIMITS AND LAYERS**

Setting up the drawing environment – setting the paper size, setting units, grid limits, drawing limits, snap controls. Use of paper space and model space. Basic commands dealing with drawing properties: Layer control, change properties, line weight control, etc.

**UNIT IV****DIMENSIONS, CALCULATIONS AND GROUPING**

Inquiry methods: Using data base information for objects, calculating distance, angle, areas etc. Dimensioning commands and blocks: Dimensioning the objects in linear, angular fashions along with quick time dimensioning etc. Creating and working with blocks, creating symbols, use of blocks in creating a layout, of a residential area- one exercise to be done as lab assignment.

**UNIT V****BASICS OF ADOBE PHOTOSHOP**

Tool box ( Moving , marquee tool), Magic wand selection, Crop tool, Paint Brush, Opacity, Text Styles, Blue tool, Sharpening Tool, Colour correction, Layers, moving Tool, Masking Tool.

**SUGGESTED BOOKS**

- Auto Desk, Revit 2017 for Architecture, Sybex, 2016 .
- Auto Desk, 3DS MAX comprehensive tutorial resources Wiley 2014.
- Sketch up for interior Design . 3D visualising designing & space planning by Lidya Sloan, Wiley Publisher – 2014.
- Computer Design & Digital Fab
- Auto Desk Auto cad 2017 for Architecture, Sybex , 2016

**Scheme of Teaching**

L	Tu.	S/SS	Total
2	-	2	4

**B.Des. (Product & Interior Design) - II SEMESTER**  
**DS 135 Drawing & Rendering-II**

**Scheme of Examination**

CA	T	P/V	Total
60	-	40	100

Abbreviations: L =Lectures; P = Practical; Tu. = Tutorial; S/SS = Studio  
T = Theory, V = Viva-voce, CA = Continuous Assessment

**OBJECTIVES**

- The focus of this course is to impart skills related to the preparation of detailed drawings for Interior Design execution.

**CONTENTS****UNIT I****FINISHES & STAIRCASE**

Wall finishes, wall plastering, chamfered corners, dado, wall cladding, fixing of doors & windows, etc Details of floor finishes : tiling/ stone flooring, wooden flooring, access flooring Plans, sections & elevations of staircases : Types of staircase, different materials – RCC, wood, steel staircase, etc

**UNIT II****WOODWORK REPRESENTATION**

All woodworks : joinery, types of doors, windows, etc Detailed drawing of Partition walls : all types of partitions – full height, half & dwarf, double skinned, single skinned, frameless glass, etc

Wall paneling : plywood, leather, acoustic boards, etc

False Ceiling : all types, with full system, insulation, acoustical, etc

**UNIT III****RESIDENTIAL FURNITURE**

Detailed plan, sections, elevations and isometrics of the standard residential furniture like:

Sofas – double, single seat Tables – peg, nested, dining, etc Chairs –study, dining, sofa chairs, etc Beds with side tables – TW frame, box frame, with storage, etc.

**UNIT IV****STORAGE REPRESENTATION**

Storage & display units : dressing table units, showcase, china cabinets, home bar, entertainment units, book case, tall boy units, chest of drawers, etc Bar counter with bar stool. Detailed plan, sections, elevations with one point perspectives of kitchen with details of each units, etc .

**UNIT V****OFFICE FURNITURE**

Detailed plan, sections, elevations and isometric views of office furniture – hierarchy of work stations, tables, return units, filing units, Reception table, etc.

**SUGGESTED BOOKS**

- Shah, M G & others, Building Drawing : An Integrated approach to build Environment, 5<sup>TH</sup> edition, Tata McGraw Hill Publications Company Ltd, New Delhi, 2012
- Kilmer, Working Drawings & Details for Interiors, John Wiley & Sons., 2009

**Scheme of Teaching**

L	Tu.	S/SS	Total
2	-	6	8

**B.Des. (Product & Interior Design) - II SEMESTER****DS 136 Basic Design-II****Scheme of Examination**

CA	T	P/V	Total
50	50	-	100

Abbreviations: L =Lectures; P = Practical; Tu. = Tutorial; S/SS = Studio  
T = Theory, V = Viva-voce, CA = Continuous Assessment

**OBJECTIVES**

- Space Planning provides a specific design methodology for understanding the nature of spaces, scales and space within a space along with elements and organization.

**CONTENTS****UNIT I****BASIC ANTHROPOMETRICS**

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.

**UNIT II****INTRODUCTION TO DESIGN METHODOLOGY**

Detailed study of residential spaces: such as, living, dining, bedrooms, kitchen, toilet etc. including the furniture layout, circulation, clearances, etc. Case study of existing residential spaces and the analysis of the spaces therein, to be taken up. Preparing user profile, bubble and circulation diagrams.

**UNIT III****VISUAL ANALYSIS DESIGNED SPACES**

Visual analysis designed spaces of 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 kiosk for - traffic police, ATM center, etc; stalls inside a shopping mall, - jewellery stall, flower stall, ice cream stall, etc; booths - bus ticketing booth, smokers' booths, etc.

**SUGGESTED BOOKS**

- Karlen Mark, Space planning Basics, Van Nostrand Reinhold, New York, 3<sup>rd</sup> edition 2009.
- Joseph D Chiara, Julius Panero, & Martin Zelnick, Time Saver standards for Interior Design & space planning, 2nd edition, Mc-Graw Hill professional, 2001.
- Francis.D. Ching & Corky Bingelli, Interior Design Illustrated, 2nd edition, Wiley publishers, 2004
- Karlen Mark, Kate Ruggeri & Peter Hahn, Space Planning Basics, Wiley publishers, 2003.

**Scheme of Teaching**

L	Tu.	S/SS	Total
1	-	-	1

**B.Des. (Product & Interior Design) - II SEMESTER****DS 137 Environmental Science****Scheme of Examination**

CA	T	P/V	Total
50	50	-	100

Abbreviations: L =Lectures; P = Practical; Tu. = Tutorial; S/SS = Studio  
T = Theory, V = Viva-voce, CA = Continuous Assessment

**OBJECTIVES**

- To understand our natural resources, ecosystem and the biodiversity of the planet
- Obtain basic knowledge on environment pollutions, its types and pollutants
- Understanding the Social Issues and the impact of Population on the Environment

**CONTENTS****UNIT I****INTRODUCTION TO WORLD ART & CULTURES**

Definition, scope and importance, of environmental studies, Need for public awareness. Renewable and non-renewable resources: Natural resources and associated problems. Forest resources: Water resources: Mineral resources : Food resources : Energy resources: Land resources :

**UNIT II****ECO SYSTEMS**

Structure and function of an ecosystem, Concept of an ecosystem , Producers, consumers and decomposers, Energy flow in the ecosystem, Ecological succession, Food chains, food webs and ecological pyramids, Types of Ecosystem

**UNIT III****BIODIVERSITY AND ITS CONSERVATION**

Bio-geographical classification of India, Value of biodiversity: consumptive use, productive use, social, ethical, aesthetic and option values, Hot-spots of biodiversity. Threats to biodiversity. Endangered and endemic species of India. Conservation of biodiversity

**UNIT IV****ENVIRONMENTAL POLLUTION**

Air pollution, Water pollution, Soil pollution, Marine pollution, Noise pollution, Thermal pollution, nuclear hazards, Solid waste Management, Disaster management: floods, earthquake, cyclone and landslides.

**UNIT V****SOCIAL ISSUES AND THE ENVIRONMENT**

Climate change, global warming, acid rain, ozone layer depletion, nuclear accidents and holocaust. Case Studies. Wasteland reclamation. Consumerism and waste products. Environment Protection Act. Air (Prevention and Control of Pollution) Act. Water (Prevention and control of Pollution) Act, Wildlife Protection Act, Forest Conservation Act, Issues involved in enforcement of environmental legislation. Public awareness

**SUGGESTED BOOKS**

- Cunningham, W.P. Cooper T.H. Gorhani, E & Hepworth, M.T. 2001,Environmental Encyclopedia, Jaico Publ. House, Mumbai, 1196p
- Text Book for environmental Studies For UGC, Erach Bharucha, 2004

**Scheme of Teaching**

L	Tu.	S/SS	Total
2	-	1	3

**B.Des. (Product & Interior Design) - III SEMESTER****Scheme of Examination**

CA	T	P/V	Total
50	50	-	100

**DS 221 Furniture Design-I**

Abbreviations: L = Lectures; P = Practical; Tu. = Tutorial; S/SS = Studio  
T = Theory, V = Viva-voce, CA = Continuous Assessment

**OBJECTIVES**

- Developing Problem solving skill
- Understand the various techniques of out of box thinking

**CONTENTS****UNIT I****FUNCTIONAL AND FORMAL ISSUES IN DESIGN**

Study and evaluation of popular dictums such as “Form follows function”, “Form and function are one”, “God is in Details”, “Less is more” or “Less is bore” etc.

Evaluation of visual design: study of Gestalt theory of design – law of closure, law of proximity, law of continuity etc.  
Typology of furniture with respect to the different states in India.

**UNIT II****ERGONOMICS AND HUMAN FACTORS**

Human factors, engineering and ergonomic considerations: Principles of Universal Design and their application in furniture design,

**UNIT III****EVOLUTION OF FURNITURES**

Evolution of furniture from Ancient to present: Various stylistic transformations. Furniture designers and movements for various types of furniture.

**UNIT IV****ROLE OF FURNITURE**

Furniture categories – role of furniture in interior design, exploration of the idea of furniture as elements of living units, education institutes, health facilities, street elements office, educational institutes, banks, stores, street furniture, etc.

**UNIT V****SEATING**

Seating Design: Different types of seating with Functionality, Aesthetics, Style, Human factors and ergonomics

**ASSIGNMENT**

- Design with wood, metal and combination of materials. Drawings, details. Market survey of available products and economics of products.
- Design of furniture for upper middle, middle and lower middle income groups - elements of living units, educational institutes, health facilities, street elements etc.
- Exploration of wood, metal, glass, plastics, FRP, etc as materials for furniture design – traditional and modular. Cost criteria of furniture design.

**SUGGESTED BOOKS**

- Bradley Quinn, Mid-Century Modern: Interiors, Furniture, Design Details, Conran Octopus Interiors, 2006.
- Jim Postell, Furniture Design, Wiley publishers, 2007.
- Robbie. G. Blakemore, History of Interior Design and Furniture: From Ancient Egypt to
- Nineteenth-Century Europe, Wiley publishers, 2005.

**Scheme of Teaching**

L	Tu.	S/SS	Total
2	-	1	3

**B.Des. (Product & Interior Design) - III SEMESTER****DS 222 Construction Techniques & Representation-II****Scheme of Examination**

CA	T	P/V	Total
50	50	-	100

Abbreviations: L =Lectures; P = Practical; Tu. = Tutorial; S/SS = Studio  
T = Theory, V = Viva-voce, CA = Continuous Assessment

**OBJECTIVES**

- The course provides information on the properties, management, specifications, use, application and rates of the materials used in the interiors.
- Materials to be studied based on –
- Physical and behavioral properties, tools and technology of its application in the construction of floors, walls, ceilings, walls, doors, windows, staircase, built in furniture, partitions and other interior design components.
- Visual quality of materials in terms of finishes through color, texture, modulations and pattern evolution. Material and workmanship, specification etc.

**CONTENTS****UNIT I****TERRACOTTA AND TILES**

Roofing tiles : terracotta, sheets and fibre boards – properties and application.

Flooring tiles : Various natural as well as artificial flooring materials like, ceramic tiles, full body vitrified tiles, terracotta tiles, glass mosaic tiles, stone tiles, Mosaic, Rubber, Linoleum, PVC and PVA flooring, their Properties, other uses and applications in the interiors..

**UNIT II****GLASS AND GLASS PRODUCTS**

Glass and glass products – Composition and fabrication of glass, classification, all types of glass annealed, float, mirrored, tinted, etc. – including wired glass, fiber glass, laminated glass, glass blocks, etc - their properties and uses in buildings. Commercial forms available – their physical and behavioral properties.

Application of glass : tools and technology of its application in built forms – glass doors, partitions, etc. Material and workmanship, specifications.,

**UNIT III****FABRICS AND OTHER FURNISHING MATERIALS**

Fabrics and other furnishing materials – fibers – natural – silk, cotton, linen, damask, furs, etc: artificial - polyester, nylon, rayon, etc , textiles, fabric treatments, carpets, durries, tapestries, Drapery, upholstery, wall coverings, etc. – properties, uses and application in the interiors.

**UNIT IV****SOFT FURNISHING**

Details of soft furnishings : types of Draperies, curtains, blinds, types of stitches, valences, linings, tiebacks, hanging details, etc.

**UNIT V****ADHESIVES**

Adhesives – Natural and Synthetic, their varieties, thermoplastic and thermosetting adhesives, epoxy resin. Method of application, bond strength etc.

**SUGGESTED BOOKS**

- Shah, M G & others, Building Drawing: An Integrated approach to build Environment, 5th edition, Tata McGraw Hill Publications Company Ltd, New Delhi, 2017
- Kilmer, Working Drawings & Details for Interiors, John Wiley & Sons..

**Scheme of Teaching**

L	Tu.	S/SS	Total
2	-	-	2

**B.Des. (Product & Interior Design) - III SEMESTER****DS 223 History of Design-III****Scheme of Examination**

CA	T	P/V	Total
50	50	-	100

Abbreviations: L =Lectures; P = Practical; Tu. = Tutorial; S/SS = Studio  
T = Theory, V = Viva-voce, CA = Continuous Assessment

**OBJECTIVES**

- The course emphasizes on developments of interior elements in response to social, religious, aesthetic and environmental factors.

**CONTENTS****UNIT I****INDUSTRIAL REVOLUTION**

Reviewing Industrialisation :- Industrial revolution and its influence on social, economic conditions of that period, Scientific and technological progress, invention of new materials. –Joseph Paxton – Gustav Eiffel etc  
An overview of Art and Crafts movement in Europe and America.

**UNIT II****ANCIENT HISTORY**

Indian Colonial Architecture-Portuguese, French and British : The styles and trends of architecture and design brought to India and their evolution – Their impact on architecture and design in India – The characteristics of Colonial Architecture with examples from Goa-Bom Jesus Cathedral Complex-Old Goa- Fountainahs , Puducherry, Mahe and Edwin Lutyen etc.,

**UNIT III****MODERNISM**

Impressionism –Expressionism – Cubism – Neoclassicism – Neoplasticism Suprematicism – Art Noveau Constructivism – Futurism – Post modernism- Post- Post Modernism– Deconstructivism Antonio Gaudi, Victor Horta, Charles Renee Mackintosh, Le Corbusier.

**UNIT IV****AFTER MODERNISM**

Critical regionalism, Bauhaus, International style, Post Modernism.-Walter Gropius.

**UNIT V****WORKS OF ARCHITECTS**

Works of Foreign Architects /Artisans in India and their influence – Edwin Lutyens, Le Corbusier, Louis Khan, Philip Johnson. Works of Indian Architects – Laurie Baker, Charles Correa, B.V. Doshi, A.P. Kanvinde, Raj Rewal, , Joseph Allen Stein

**SUGGESTED BOOKS**

- John F. Pile, A history of interior design, 2nd edition, Laurence King Publishing, 2005. Jeannie Ireland, History of Interior Design, air child publications, illustrated ed., 2009.
- Elaine, Michael Dywer, Christopher Mackinnon, Norman A. J. Berisford Denby , A History of Interior Design, Rhodex International, 2000.
- Giedion Sigfried, Space, Time and Architecture: The growth of a new tradition, 5th ed. Harvard University Press, Cambridge, 2008

**Scheme of Teaching**

L	Tu.	S/SS	Total
2	-	-	2

**B.Des. (Product & Interior Design) - III SEMESTER****DS 224 Elective-I : Interior Photography****Scheme of Examination**

CA	T	P/V	Total
50	50	-	100

Abbreviations: L =Lectures; P = Practical; Tu. = Tutorial; S/SS = Studio  
T = Theory, V = Viva-voce, CA = Continuous Assessment

**OBJECTIVES**

- To help the student understand the principles and technology of photography.
- To enable the student to understand the applications of photographs in interior

**CONTENTS****UNIT – I PRINCIPLES OF COMPOSITION**

Rule of thirds, perspective-worm's eye view, normal eye view, bird's eye view, one-point perspective, two-point perspective, three-point perspective, exercises in composition

**UNIT – II PRINCIPLES OF PHOTOGRAPHY**

Technical definitions, understanding a camera, anatomy of a SLR camera, technical setting in a SLR camera, different types of lenses

**UNIT – III PRINCIPLES OF INTERIOR LIGHTING**

Technical definitions, lighting sources, types of lighting fixtures, types of lamps, calculating lighting levels, flash photography, types of flashes, controlling lighting levels with flash photography Exercise in interior lighting photography with artificial light and black and white photos

**UNIT – IV PRINCIPLES OF COLOUR**

Color rendering in photographic medium, color rendering in photographs under different lighting condition, lighting colors and its effect on a photograph, color filters in a camera Exercise on color photography of interiors

**UNIT – IV INTEGRATION**

Project work/exercise in integrating all prior units

**SUGGESTED BOOKS**

1. Point view- The art of architectural photography , E.Manny A Ballan, VNR
2. Professional photography –photographing buildings, David Wilson, Rotovision

**Scheme of Teaching**

L	Tu.	S/SS	Total
2	-	-	2

**B.Des. (Product & Interior Design) - III SEMESTER****DS 225 Elective-I: Cultural Anthropology****Scheme of Examination**

CA	T	P/V	Total
50	50	-	100

Abbreviations: L =Lectures; P = Practical; Tu. = Tutorial; S/SS = Studio  
T = Theory, V = Viva-voce, CA = Continuous Assessment

**OBJECTIVES**

- Understanding of Art/craft forms as design elements and its relevant application in the modern society.
- Modernization of old craft technology for better forms for interior use.

**CONTENTS****UNIT- I ETHNOGRAPHY**

Introduction to Ethnography, relation to design & product, relation to the user, relation to culture, language, history.

**UNIT- II HUMAN BEHAVIOUS**

Understanding Human Behavior as a Mechanism for Change, Application of Ethnography and Use in Industry,

**UNIT –III RELEVANCE**

Relevance of Anthropology in Ethnology, Cultural anthropology, relevance of Ergonomics to Ethnography

**UNIT –IV ISSUES**

Problems of ethnocentrism, seeing things from someone else’s point of view, Linking Ethnography & day to day Design

**UNIT- V METHODOLOGY**

Methods in the study of Ethnography, People’s behavior to be studied in everyday context, the approach to data collection, the analysis of the data, Rapid ethnography Ethnographic Field Methods : case studies, analysis & inferences  
Every student shall take up one project and do a complete research and design a new product or re-design a day to day product. The report shall be assessed periodically & at the end of the semester.

**SUGGESTED BOOKS**

- Rothstein, P. (2010). Ethnographic research: teaching a young professional old tricks. *Innovation*. 19(4): 32.
- ROBERT M. EMERSON, RACHEL I. FRETZ, AND LINDA L. SHAW Writing Ethnographic Fieldnotes, 2nd Edition, © 2011 Chicago Guides to Writing, Editing, and Publishing
- M Hammersley, P Atkinson – 2007 Ethnography: Principles in practice, 3rd edition, Routledge
- Kurt A. Raaflaub (Editor), Richard J. A. Talbert (Editor) :Geography and Ethnography: Perceptions of the World in Pre-Modern Societies, January 2013, Paperback, Wiley

**Scheme of Teaching**

L	Tu.	S/SS	Total
2	-	-	2

**B.Des. (Product & Interior Design) - III SEMESTER****Scheme of Examination**

CA	T	P/V	Total
50	50	-	100

**DS 226 Elective-I: Story Telling and Narratives**

Abbreviations: L =Lectures; P = Practical; Tu. = Tutorial; S/SS = Studio  
T = Theory, V = Viva-voce, CA = Continuous Assessment

**OBJECTIVES****CONTENTS****UNIT 1: STORY**

Story, narrative and meaning making, metaphors

**UNIT 2: OBJECTIVE**

Premise and problem statement, Context

**UNIT 3: PROTAGONIST**

Characters and personas, examples of Don Quixote, Karna

**UNIT 4: CHAIN OF EVENTS**

Plot and Scenarios

**UNIT 5: DYNAMICS**

Relationship between problems, need and conflict, rationalization of need, rationalization of conflict, Action and Resolution

**SUGGESTED :**

- Mike Korolenko and Bruce Wolcott, Storytelling and Design: Media Literacy for the Digital Age, Pearson Learning Solutions, 2005
- Marie-Laure Ryan (editor), Narrative across Media: The Languages of Storytelling, University of Nebraska Press, 2004
- Kristin M. Langellier and Eric E. Peterson, Storytelling in Daily Life: Performing Narrative, Temple University Press, 2004

**Scheme of Teaching**

L	Tu.	S/SS	Total
2	-	-	2

**B.Des. (Product & Interior Design) - III SEMESTER****DS 227 Elective-I: Visual & Performing Arts****Scheme of Examination**

CA	T	P/V	Total
50	50	-	100

Abbreviations: L =Lectures; P = Practical; Tu. = Tutorial; S/SS = Studio  
T = Theory, V = Viva-voce, CA = Continuous Assessment

**OBJECTIVES****CONTENTS****UNIT –I NEED FOR STUDY**

Why study media? Understanding mass media. Characteristics of mass media. Effects of mass media on individual, society and culture – basic issues. Power of mass media. Media in Indian society. Definition, nature and scope. Function of mass media.

**UNIT –II AUDIENCE ANALYSIS**

Media Audience analysis (mass, segmentation, product, social uses). Audience making. Active Vs Passive audience: Some theories of audience - Uses and Gratification, Uses and Effects, etc.

**UNIT- III MEDIA AS TEXT**

Media as text. Approaches to media analysis - Marxist, Semiotics, Sociology, Psychoanalysis. Media and realism (class, gender, race, age, minorities, children, etc.)

**UNIT- IV MEDIA AND SOCIETY**

Media as consciousness Industry. Social construction of reality by media. Rhetoric of the image, narrative, etc. Media myths (representation, stereotypes, etc.) -- Cultural Studies approach to media, audience as textual determinant, audience as readers, audience positioning, establishing critical autonomy

**UNIT –V MEDIA AND CULTURE**

Media and Popular culture — commodities, culture and sub-culture, popular texts, popular discrimination, politics and popular culture, popular culture Vs people’s culture, celebrity industry- personality as brand name, hero-worship, etc. Acquisition and transformation of popular culture

**SUGGESTED BOOKS**

- Media Literacy. Sage Publications Potter, James W (2016).
- Media-Making: Mass Media in a Popular Culture. Sage Publications Grossberg, Lawrence et al (2005).
- Media Analysis Techniques. Sage Publications Berger, Asa Authur (2017).

**Scheme of Teaching**

L	Tu.	S/SS	Total
1	-	3	4

**B.Des. (Product & Interior Design) - III SEMESTER****Scheme of Examination**

CA	T	P/V	Total
50	50	-	100

**DS 228 Computer Design & Digital Fabrication-II**

Abbreviations: L =Lectures; P = Practical; Tu. = Tutorial; S/SS = Studio  
T = Theory, V = Viva-voce, CA = Continuous Assessment

**OBJECTIVES**

- To orient the student to create two and three-dimensional objects in space with special emphasis on presentation and visualization of interiors using rendering techniques.

**CONTENTS****UNIT I****SKETCH UP**

Orientation towards 3D : 2D to 3D conversion, perspective view, walk through the layout

**UNIT II****3D MAX**

Understanding 3D, theory behind 3D modeling. Preparing for construction of 3D models. Construction of 3D surface models- extrusion, wire frame, creation of a shell, elaborate surfaces

**UNIT III****REVIT (2D + 3D IN SAME PLATFORM)**

Introduction to REVIT ,Learning to use basic tools such as wall,roof floor ,staircases,dimensioning, plotting etc.

**UNIT IV****SOLID MODELING (TRANSFORMING SPACES)**

Solid modeling : concepts behind solid modeling, composite solids creation and modification, solids display and inquiry. (Rhino and Grasshopper).

**UNIT V****RENDERING & PRESENTATION TECHNIQUES**

Rendering and presentation. Printing and plotting.(Vray,Indesign,Illustrator,Lumion)

**SUGGESTED BOOKS**

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

**Scheme of Teaching**

L	Tu.	S/SS	Total
1	-	5	6

**B.Des. (Product & Interior Design) - III SEMESTER****DS 229 Product Design Studio-I****Scheme of Examination**

CA	T	P/V	Total
60	-	40	100

Abbreviations: L =Lectures; P = Practical; Tu. = Tutorial; S/SS = Studio  
T = Theory, V = Viva-voce, CA = Continuous Assessment

**OBJECTIVES**

- Ability to develop new Concepts, Ideas successfully and efficiently.
- Build confidence in the ability to create new Products and Present.
- Understand the role of multiple process (environmental footprint, industrial design, production, strategy, project & product management) in creating a new product.
- Students be able to bring in different elements, interdisciplinary tasks to achieve a common objective.

**CONTENTS**

Lectures on simplicity; Complex nature of simple products; Single Function Products; Material Property as function; Form as function.

**UNIT I****FORMULATION OF DESIGN BRIEF**

Sub unit - a, b and c detailed in Instructional Plan

**UNIT II****CASE STUDIES & RESEARCH**

Sub unit - a, b and c detailed in Instructional Plan

**UNIT III****CONCEPT AND BRAINSTORMING**

Sub unit - a, b and c detailed in Instructional Plan

**UNIT IV****DEVELOPMENT OF CONCEPT**

Sub unit - a, b and c detailed in Instructional Plan

**UNIT V****PROTOTYPING**

Sub unit - a, b and c detailed in Instructional Plan

**CONDUCT OF EXAMINATION****SUGGESTED BOOKS**

- Prototyping and Modelmaking for Product Design (Portfolio Skills)by Bjarki Hallgrimsson

**Scheme of Teaching**

L	Tu.	S/SS	Total
1	-	8	9

**B.Des. (Product & Interior Design) - III SEMESTER****DS 230 Interior Design Studio-I****Scheme of Examination**

CA	T	P/V	Total
60	-	40	100

Abbreviations: L =Lectures; P = Practical; Tu. = Tutorial; S/SS = Studio  
T = Theory, V = Viva-voce, CA = Continuous Assessment

**OBJECTIVES**

- This course is intended to provide skills for designing single use interior spaces or products etc.
- Objectives of the course: To develop creative conceptual visualization, hand skill building, and the process of design.
- Expected skills/ knowledge Transferred: Use of anthropometry, ergonomics, handling of space and application of knowledge gained from other subjects, in design.

**CONTENTS**

The primary focus should be on

- Anthropometry
- Design methodology
- Conceptual exploration and representation.
- Creativity
- Scale/proportion
- Documenting space
- Graphic design (page layout and composition)
- Concepts sketching
- Application of design principles and elements
- Portfolio development

The list of suggested topics to be covered as design problems shall be a single space like: Single room residence, Doctor's clinic, kindergarten class room, Crèche, Architect's studio, Lawyer's office, small cafeteria, bank extension counter, florist shops, medical outlets, clothing store, shoe store, accessory store, book shop, waiting lounges for – hospitals, corporates, hotels, etc.

Note: At least three major exercises and four minor design/time problems should be given. Internal marking shall be done in stages project wise:

- Schematic layouts
- Final layout
- Sectional elevations
- Typical details
- Complete project with all details
- 3D drawings with colour rendering

**SUGGESTED BOOKS**

- Auto Desk, Revit 2017 for Architecture, Sybex, 2016 .
- Joseph D Chiara, Julius Panero, & Martin Zelnick, Time Saver standards for Interior Design & space planning, 2nd edition, Mc-Graw Hill professional, 2001.
- Francis.D. Ching & Corky Bingelli, Interior Design Illustrated, 2nd edition, Wiley publishers, 2004.
- Maureen Mitton, Interior Design Visual Presentation: A Guide to Graphics, Models, and Presentation Techniques. John Wiley and Sons, 2003
- Robert Rengel, Shaping Interior Space, Fairchild Books & Visuals ,2002

**Scheme of Teaching**

L	Tu.	S/SS	Total
-	-	3	3

**B.Des. (Product & Interior Design) - III SEMESTER****DS 231 Development of Product Form & Process****Scheme of Examination**

CA	T	P/V	Total
60	-	40	100

Abbreviations: L =Lectures; P = Practical; Tu. = Tutorial; S/SS = Studio  
T = Theory, V = Viva-voce, CA = Continuous Assessment

**OBJECTIVES**

- The main objective of the course is to visualize and develop the form step by step .

**CONTENTS****UNIT 1: THINKING IN THREE DIMENSIONS**

Concepts of space and Volume, Evolution of a flat shape into a volume; History of utilitarianism; Stone Age Tools; Evolution of farming equipment; native artisanal tools; Creating compositions using rectilinear and curvilinear surfaces; Regular and irregular Solids, geometric shapes and their compositions; Regular and irregular Organics shapes;

**UNIT 2: STRUCTURE AND ORDER FORM**

, Feature and Content, Dominant, subdominant and subordinate elements, transition elements; Creating a family of forms; Abstraction, Expression and Meaning in Product Form; Generative algorithms; Generated Forms;

**UNIT 3: TRANSFORMATION AND MOVEMENT**

Addition, subtraction, conformation, Transition, Morphing; Radii Manipulation; creating volumes through imaginary movements;

**UNIT 4: IDENTITIES AND RELATIONSHIPS**

Ambiguity of “Form follows function”; examples from nature; Forms of Machine elements; Skeletons of life forms; Exoskeletons; Plant Structures Components of Built Spaces; Visualization through surface modeling software; Material Explorations using Papier Mache, wood, Threads, Ropes, Plaster of Paris and Polystyrene; Introduction to 3D Printing;

**SUGGESTED BOOKS**

- Gyorgy Kepes, Language of Vision, Dover Publications, 1995
- Kimberly Elam, Geometry of Design: Studies in Proportion and Composition, Princeton Architectural Press, 2001
- Gaston Bachelard and Maria Jolas (Translator),The Poetics of Space, Beacon Press; Reprint edition, 1994 Gail GreetHannah, Elements of Design, Princeton Architectural Press, 2002
- H. G. Greet and R. R. Kostellow, Elements of Design and the Structure of Visual Relationships, Architectural Press, NY, 2002
- Mario Livio, the Golden Ratio: The Story of PHI, the World's Most Astonishing Number, Broadway, 2003

**Scheme of Teaching**

L	Tu.	S/SS	Total
-	-	-	-

**B.Des. (Product & Interior Design) - III SEMESTER****Scheme of Examination**

CA	T	P/V	Total
100	-	-	100

**DS 232 Mini Project -Craft Study 10 Days (Minimum)**

Abbreviations: L =Lectures; P = Practical; Tu. = Tutorial; S/SS = Studio  
T = Theory, V = Viva-voce, CA = Continuous Assessment

**OBJECTIVES.**

- **The major objective of this exercise is to make the best use of time in vacation period for the students to learn and getting involved in manufacturing of local craft and products .**

**COURSE OUTLINE**

Every student must work with, artisans, for 10 days after identification of the consultants and discussion with the concerned faculty. The student should involve in the work of these people and observe and document the materials, tools, techniques and process used by them in the projects. After the summer vacation, every student will have to submit a detailed report with drawings, photographs of the work in which the student was involved with the consultants

**Scheme of Teaching**

L	Tu.	S/SS	Total
2	1	-	3

**B.Des. (Product & Interior Design) - IV SEMESTER**  
**DS 233 Furniture Design-II**

**Scheme of Examination**

CA	T	P/V	Total
50	50	-	100

Abbreviations: L =Lectures; P = Practical; Tu. = Tutorial; S/SS = Studio  
T = Theory, V = Viva-voce, CA = Continuous Assessment

**OBJECTIVES****CONTENTS****UNIT – I****STORAGE SYSTEM -KITCHEN**

Storage systems: Functional analysis of storage systems and thereby deriving types of cabinets needed for interior spaces – kitchen cabinets, wardrobes closets & respective hardware for modular kitchen.

Assignment: Exercise to design kitchen cabinets for a given kitchen in details.

**UNIT – II****STORAGE SYSTEMS – BOOK CASES & SHOWCASE**

Storage systems: Functional analysis book cases, show cases, display systems, compactors, mechanical storage, etc. and respective hardware for these. Survey of several modular systems available for different functions in the market.

**UNIT – III****MODULAR APPROACH TO FURNITURE DESIGN**

Various materials, combination of materials, their hardware and applications. Cost criteria of furniture design.

Assignments : Survey of several modular systems available for different functions in the market..

**UNIT – IV****DESIGN APPROACHES IN FURNITURE DESIGN**

An introduction of various manufacturing processes most frequently adopted in furniture design such as Injection Molding, investment casting, sheet metal work, die casting, vacuum - forming etc.

Assignments : Survey of different types of moulded or casted furniture available for different functions in the market.

**UNIT – V****FAMOUS DESIGNERS**

Charles & Ray Eames, Eero Saarinen, Jean Prouve, Paul Mccobb, Ettore Sottass, Knoll, Jens Risom etc.

**SUGGESTED BOOKS**

- Bradley Quinn, Mid-Century Modern: Interiors, Furniture, Design Details, Conran Octopus Interiors, 2006.
- Jim Postell, Furniture Design, Wiley publishers, 2007.
- Robbie. G. Blakemore, History of Interior Design and Furniture: From Ancient Egypt to Nineteenth-Century Europe, Wiley publishers, 2005.

**Scheme of Teaching**

L	Tu.	S/SS	Total
2	-	-	2

**B.Des. (Product & Interior Design) - IV SEMESTER**  
**DS 234 History of Design-IV**

**Scheme of Examination**

CA	T	P/V	Total
50	50	-	100

Abbreviations: L =Lectures; P = Practical; Tu. = Tutorial; S/SS = Studio  
T = Theory, V = Viva-voce, CA = Continuous Assessment

**OBJECTIVES**

- To help the student understand the designs from prehistoric period to the middle ages.
- To know more on the modern movements in interior design from the beginnings of 20<sup>th</sup> century.

**CONTENTS****UNIT I MODERN MOVEMENT:**

Return to the fundamentals and origins in nature and geometry; new inventions of iron and glass; horizontal and vertical expansions; responses to the vernacular. Social intentions and the search for the ‘ideal’ world; simplicity, abstraction, non-objective, nonrepresentative and neglect of content and ornament; new notions of technology; importance and precedence of function; De Stijl, etc. – an overview of the works of Louis Sullivan, C. R. Mackintosh, Edwin Lutyens, Antoni Gaudi, Walter Gropius, Frank Lloyd Wright, Le Corbusier, Mies van der Rohe.

**UNIT II THE INTERNATIONAL STYLE:**

Simplification of the Modern architecture into steel and glass cubes – an overview of the works of Philip Johnson.

**UNIT III POST MODERNISM OF REACTION:**

Architecture entrenched in place and history; sarcastic approval of expression, ornament, symbolism and context – an overview of the works of James Stirling, Michael Graves, Charles Moore. Post modernism of Resistance: Disregard for historical imagery; revival of the ideals of the Modern Architecture of the 20’s; exaggerated and sophisticated revival of the grid and Corbusier’s geometry – an overview of the works of Richard Rogers, Norman Foster, Richard Meier.

**UNIT IV HI-TECH AND HISTORICISM:**

Synthesis of the Hi-Tech and Historicism – an overview of the works of Cesar Pelli, Aldo Rossi

**UNIT V DECONSTRUCTION:**

Deconstruction as a reaction to the Post Modern; non-perfection as important as perfection, narrative and representational; traditional purity of form, geometry and structure in question – an overview of the works of Frank O. Gehry, Peter Eisenman, Bernard Tschumi, Rem Koolhaas, Zaha Hadid.

**SUGGESTED BOOKS**

1. Interior Design Course, Mary Gilliat Coyran, Octopus Ltd., London
2. Interior Design & Decoration, Sherril Whiton, Prentice Hall
3. Interior Design, Francis D.K. Ching, John Wiley & Sons, New York
4. History of Architecture, Sir Banister Fletcher, CBS Publishers & distributors, New Delhi
5. Time Saver Standards for Interior Design, Joseph De Chiara, McGraw Hill, New York.

**Scheme of Teaching**

L	Tu.	S/SS	Total
2	-	-	2

**B.Des. (Product & Interior Design) - IV SEMESTER**  
**DS 235 Interior Services-I**

**Scheme of Examination**

CA	T	P/V	Total
50	50	-	100

Abbreviations: L =Lectures; P = Practical; Tu. = Tutorial; S/SS = Studio  
T = Theory, V = Viva-voce, CA = Continuous Assessment

**OBJECTIVES**

- **Gaining overall knowledge of general services in a building.**

**CONTENTS**

**UNIT - I WATER SUPPLY** General idea of sources of water supply. Standards for quality of water. Domestic water systems, suction and storage tanks and their capacity. Pipes and their sizes and jointing. Consumption of water. Down take supply to various fittings.

**UNIT - II SANITARY FITTINGS** Types of fittings like taps, ball valves, hot water supply systems, bathtubs, showers, jets, cocks, valves etc. Faucets for kitchens, bathrooms and toilets. Check valves, foot valves, sump pump check valves etc.

**UNIT – III SANITATION** Basic principles of sanitations and disposal of waste materials from buildings. Connection to outdoor drainage system, size requirements, types of pipes available in the market. Water carriage systems, standard sanitary fittings, traps, pipes and their jointing. Flushing systems. Bathroom interior layouts, extensive market survey of products available, economies of products available, fixing of the products with other finishing materials.

**UNIT – IV SOLID WASTE** Waste management : Refuse, different forms of refuse garbage, house refuse , refuse chutes , rain water harvesting etc.

**UNIT – V ELECTRICITY** Electrical Installations : Building wiring system. Service wires, metering distribution boards, circuits, MCB cutouts. Conductors, wiring methods, switch boards, electrical devices in the buildings, light and power circuits. Indian electricity rules, relevant provisions of NBC. Preparation of electrical layout scheme for a interior using standard electrical symbols

**SUGGESTED BOOKS**

- Rangwala, S.C. water supply and Sanitary Engineering : Environmental Engineering, 19th ed, Charotar pub house, Anand, 2004.
- Electrical wiring and contracting (vol. 1 to vol.4), London. The New era Publishing Company.
- Dr Frith Abnwos and others, Electrical Engineering hand book.
- William . J. Guinness, Mechanical and Electrical Systems for Buildings, New York : Mc Graw Hill.
- Derek Clements-Croome, Derek J. Croome, Intelligent buildings: Design, Management and Operation, Thomas Telford Books, London, 2004.
- Albert Ting-pat So, Wai Lok Chan, Intelligent Building Systems, Kluwer Academic Publishers, 2009.

**Scheme of Teaching**

L	Tu.	S/SS	Total
2	-	-	2

**B.Des. (Product & Interior Design) - IV SEMESTER****DS 236 Elective-II: Product Photography****Scheme of Examination**

CA	T	P/V	Total
50	50	-	100

Abbreviations: L =Lectures; P = Practical; Tu. = Tutorial; S/SS = Studio  
T = Theory, V = Viva-voce, CA = Continuous Assessment

- BD 246: Product Photography

**OBJECTIVES**

**The major objective of this course is know about the types of equipment required and expertise knowledge for product photography**

**CONTENTS****UNIT – I OVERVIEW OF PRODUCT PHOTOGRAPHY**

- Product Photography significance – role in promotion of products - categorization of products – The lighting Equipment – Types of lighting units – Accessories – Digital Lights - Study of Concepts – Accessories - Props – Backgrounds - Models – Locations – hiring of studios – equipment.

**UNIT – II ELECTRONICS PRODUCTS**

- Shooting Script – Lighting Schemes – Exercises.

**UNIT – III HOUSE HOLD PRODUCTS**

- Shooting Script – Lighting Schemes – Exercises Liquid Products – Shooting Script – Lighting Schemes – Exercises.

**UNIT – IV EXECUTIVE PRODUCTS**

- Shooting Script – Lighting Schemes – Exercises. - Concept Photography - Shooting Script – Lighting Schemes – Exercises

**UNIT – V . INDUSTRIAL PHOTOGRAPHER**

– Lighting in Natural & Artificial

**SUGGESTED BOOKS**

- New Product Shots by Alex Larg & Jane Wood.
- Lighting for Food & Drink by Steve Bavister.
- Practical Photography by Michael Freeman.
- Magazines vide WEB.
- Magazines on Advertising.

**ASSIGNMENTS:**

- Liquid Product (with model / without model)
- House hold Product
- Electronic Product
- Cosmetic Product

**Scheme of Teaching**

L	Tu.	S/SS	Total
2	-	-	2

**B.Des. (Product & Interior Design) - IV SEMESTER****DS 237 Elective-II: Representation of Spaces****Scheme of Examination**

CA	T	P/V	Total
50	50	-	100

Abbreviations: L =Lectures; P = Practical; Tu. = Tutorial; S/SS = Studio  
T = Theory, V = Viva-voce, CA = Continuous Assessment

**OBJECTIVES**

**Conceptualizing and utilizing space which can serve a desired purpose**

**CONTENTS****UNIT- I REPRESENTING SPACES**

Representing space as a pervasive phenomenon in literature. Philosophical cultural and social aspects of spaces in literature, cinema, theatre.

**UNIT -II SPACE DISCOURSE**

Space as discourse in literature and exercise - sketching spaces from literature eg: Windows as frames of reference describing use of spaces in literary texts such as “Alice in Wonderland “- Space in the middle of no where ,space and the mythical quality it holds conceptualising space from sound and smell.

**UNIT -III THRESHOLD**

Threshold and liminal space exercise: Find and collect picture and draw threshold spaces .Discussion on images of threshold spaces, threshold spaces in films and mythology.

**UNIT- IV SPACE IN DEMOCRACY**

Democracy and space public sphere, public realm and public space, rights of people over space.

**UNIT -V SPACE IN FICTION**

Spaces in children’s fiction comics and graphic novel.

**SUGGESTED BOOKS**

- Peter Zumthor, thinking architecture ,edition 3,brkhauser Architecture,2010
- Alice in Wonderland, Lewis Carroll, LVL Edition, 2016.
- Fountain Head ,Ayn Rand, signet,

**Scheme of Teaching**

L	Tu.	S/SS	Total
2	-	-	2

**B.Des. (Product & Interior Design) - IV SEMESTER****Scheme of Examination**

CA	T	P/V	Total
50	50	-	100

**DS 238 Elective-II: Vernacular Architecture & Interiors**

Abbreviations: L =Lectures; P = Practical; Tu. = Tutorial; S/SS = Studio  
T = Theory, V = Viva-voce, CA = Continuous Assessment

**OBJECTIVES**

**Knowledge about different types of locally available materials and techniques which are used in products and interior design .**

**CONTENTS****UNIT I ETYMOLOGY**

Etymology, Definitions, Vernacular and the architect, Regional influences on vernacular Architecture, Humanitarian response, Urban and rural vernacular architecture, role of sustainability in vernacular architecture, Environment & Resource Management

**UNIT II MATERIAL AND TECHNIQUES**

Building materials and traditions, Vernacular building materials- Recognize the different ways in which these materials were used at different times and in different parts of the country, Documenting vernacular traditions, and knowledge systems.

**UNIT III DECORATIVE FEATURES**

Assess the likely sources of stylistic and decorative features of vernacular buildings and employ these to assist in dating analyzing their role and application in the present context.

**UNIT IV DOCUMENTATION**

Recording vernacular buildings- Why record buildings? Recording basics (measuring and recording historic buildings) Drawing up; conventions and equipment Documentary sources and what they can tell us Briefing for recording day(s) Recording the chosen building(s) Reviewing the results; and role of photography in documenting vernacular buildings.

**UNIT V VERNACULAR TOWNS**

Vernacular Towns – evolution process , character, morphology, growth and decay. Case studies of Vernacular towns within Tamil Nadu. Knowledge of vernacular architecture in contemporary regional designs. Traditionalism and Vernacular.

**SUGGESTED BOOKS**

- Heath, Kingston wm- 'Vernacular Architecture and Regional design'- Cultural process and environmental response- 'Elsevier science and technology'- 30 April 2007
- Vernacular Traditions : Contemporary Architecture, The energy resources and institute, Aishwarya Tipnis,2012
- Lindsay Asquith, Marcel Vellinga, Taylor and Francis- 'Vernacular architecture in the Twenty first century'- 2006 USA

**Scheme of Teaching**

L	Tu.	S/SS	Total
2	-	-	2

**B.Des. (Product & Interior Design) - IV SEMESTER****Scheme of Examination**

CA	T	P/V	Total
50	50	-	100

**DS 239 Elective-II: Works of Famous Designers**

Abbreviations: L =Lectures; P = Practical; Tu. = Tutorial; S/SS = Studio  
T = Theory, V = Viva-voce, CA = Continuous Assessment

**OBJECTIVES**

The subject aims to study the works of famous architects designers artisans and implementing their methods and theories in their own design

**CONTENTS**

Works of Foreign Architects /Artisans in India and their influence – Edwin Lutyens, Le Corbusier, Louis Khan, Philip Johnson. Works of Indian Architects – Laurie Baker, Charles Correa, B.V. Doshi, A.P. Kanvinde, Raj Rewal, , Joseph Allen Stein

**Scheme of Teaching**

L	Tu.	S/SS	Total
2	-	3	5

**B.Des. (Product & Interior Design) - IV SEMESTER**  
**DS 240 Rapid Prototyping**

**Scheme of Examination**

CA	T	P/V	Total
60	-	40	100

Abbreviations: L =Lectures; P = Practical; Tu. = Tutorial; S/SS = Studio  
T = Theory, V = Viva-voce, CA = Continuous Assessment

**OBJECTIVES**

- This course has been identified as an extension to primitive model making course in previous semester and objectified to capture student attention to various materials being used in the industry for model making and prototyping.
- The programme shall be able to introduce student latest prototyping technologies used in the industry like 3d printing, laser, etc for making prototypes close to the actual products.
- It shall make students learn advance hands on processes used in model making like thermoforming, FRP casting etc.

**CONTENTS****UNIT - I**

Introduction: Introduction to Prototyping, Traditional Prototyping Vs. Rapid Prototyping (RP), Classification of Rapid Manufacturing Processes: Additive, Subtractive, Formative, Generic RP process.

**UNIT- II**

CAD Modelling and Data Processing for RP: CAD model preparation, Data interfacing: formats ( STL, SLC, CLI, RPI, LEAF, IGES, HP/GL, CT, STEP), conversation, validity checks, repair procedures; Part orientation and support generation, Support structure design, Model Slicing algorithms and contour data organization, direct and adaptive slicing, Tool path generation.

**UNIT- III**

RP Processes: Process Physics, Tooling, Process Analysis, Material and technological aspects, Applications, limitations and comparison of various rapid manufacturing processes. Photopolymerization (Stereolithography (SL), Microstereolithography), Powder Bed Fusion (Selective laser Sintering (SLS), Electron Beam melting (EBM)), Extrusion-Based RP Systems (Fused Deposition Modelling (FDM)), 3D Printing, Sheet Lamination (Laminated Object Manufacturing (LOM), Ultrasonic Consolidation (UC)), Beam Deposition (Laser Engineered Net Shaping (LENS), Direct Metal Deposition (DMD)).

**UNIT – IV**

Errors in RP Processes: Pre-processing, processing, post-processing errors, Part building errors in SLA, SLS.

**LIST OF TUTORIALS:**

1. Review of CAD Modelling Techniques and Introduction to RP
2. Generating STL files from the CAD Models & Working on STL files
3. Processing the CAD data in Catalyst software (Selection of Orientation, Supports generation, Slicing, Tool path generation)
4. Learning techniques for fabricating an assembly
5. Prepare a CAD model with complex geometry and study effect of slicing parameters on final product manufactured through RP.

**MAJOR EQUIPMENT:**

- CAD Tools.
- 2. Rapid prototyping machine.
- 3. 3D Printer.

**LIST OF OPEN SOURCE SOFTWARE / LEARNING WEBSITE:**

1. <http://nptel.ac.in/syllabus/syllabus.php?subjectId=112104156>

**Scheme of Teaching**

L	Tu.	S/SS	Total
1	-	8	9

**B.Des. (Product & Interior Design) - IV SEMESTER**  
**DS 241 Interior Design Studio-II**

**Scheme of Examination**

CA	T	P/V	Total
60	-	40	100

Abbreviations: L =Lectures; P = Practical; Tu. = Tutorial; S/SS = Studio  
 T = Theory, V = Viva-voce, CA = Continuous Assessment

**OBJECTIVES**

This course is intended to provide skills for designing medium scale interior spaces or products etc.

Objectives of the course: To develop creative conceptual visualization, hand skill building, and the process of design and emphasis shall be on graphic layout and elevations as a design process.

Expected skills/ knowledge Transferred: Use of standards, functions of spaces and application of knowledge gained from other subjects, in design.

The primary focus should be on –

- i. Documenting space (sketch and photo documentation)
- ii. Space planning process (block diagram, concept statement)
- iii. Concept sketching
- iv. Application of design principles and elements
- v. Creativity /originality
- vi. Design Process/methodology
- vii. Structural integration
- viii. Style
- ix. Color Rendering
- x. Anthropometry and ergonomics
- xi. Furniture Design
- xii. Material selection
- xiii. Graphic design (page layout and composition)
- xiii. Portfolio development

Design portfolio to include designs in response to today’s situation of urban society, i.e., contemporary spaces required in modern society – needs, realities, value system etc.. The spaces to be considered shall be : home, office, bank, school, college, public level spaces - restaurant, lounge (hotel),

etc. The list of suggested topics to be covered as design problems:

- Thematic space making with Art and craft forms of our own culture in India – East, West, North, Central and so on.
- Design of built units of various geographical locations and culture by involving historical periods, styles and use of craft in its inherent quality and form - integrating craft and living environment.

Note: At least two major exercises and three minor time problems should be given. Internal marking shall be done in stages and project wise:

- Schematic layouts
- Final layout
- Sectional elevations
- Designs & details

**SUGGESTED BOOKS**

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

- Francis.D. Ching & Corky Bingelli, Interior Design Illustrated, 2nd edition, Wiley publishers, 2004.
- Maureen Mitton, Interior Design Visual Presentation: A Guide to Graphics, Models, and Presentation Techniques. John Wiley and Sons, 2003
- Robert Rengel, Shaping Interior Space, Fairchild Books & Visuals ,2002
- Neufert Ernest, Architect's Data, Granada pub. Ltd. London, 2000.
- John F. Pile, A history of interior design, Laurence King Publishing, 2005.
- Robin D. Jones, Interiors of Empire: Objects, Space and Identity within the Indian Subcontinent, Manchester University Press; illustrated edition, 2008

**Scheme of Teaching**

L	Tu.	S/SS	Total
1	-	2	3

**Scheme of Examination**

**B.Des. (Product & Interior Design) - IV SEMESTER**  
**DS 242 Layout Drawing & Display Techniques**

CA	T	P/V	Total
60	-	40	100

Abbreviations: L =Lectures; P = Practical; Tu. = Tutorial; S/SS = Studio  
T = Theory, V = Viva-voce, CA = Continuous Assessment

## **OBJECTIVES**

- To equip the students with various tools of sketching and rendering like pencils, pens, charcoal, ink brushes etc.
- To familiarize the students with some of the concepts of 3D modeling and the presentation techniques.

## **CONTENTS**

### **UNIT I COLORING STUDY**

Introduction of colors, Usage of water colors, poster colors, pen & ink, rendering techniques, etc.

### **UNIT II DRAWING AND SKETCHING INTERIOR ENVIRONMENTS**

Drawing and sketching interior environments, one point interior perspective, two point interior perspective, refined linear perspective methods, two point plan projection method, and perspective traced from photographs.

### **UNIT III RENDERING WITH PEN AND INK**

Introduction to pen and ink rendering, materials, media and tools, rendering orthographic projection drawings, rendering perspective drawings.

### **UNIT IV RENDERING WITH COLOUR PENCILS AND SKETCH PENS**

Rendering of interior perspectives with colour pencils and sketch pens – stroke effects, smudge effects – use of schoeller and kent sheets – leather cartridge etc.

### **UNIT V RENDERING WITH POSTER/WATER COLOURS**

Use of kent/ cartridge sheets for poster colours and waterman/cartridge sheets for water colours – transparency effects in water colours – block effects in poster colours.

## **SUGGESTED BOOKS**

- Interior Design Visual Presentation 2nd and 3rd Edition-Maureen Mittom
- Architects Sketching and Rendering techniques for designers and architects.-Stephen.A.Klimet
- Architectural Rendering Techniques-A Color Reference-Mike.W.Lin
- Color Drawing-Design drawing skills & techniques for architects-Michael.E.Doyle.
- Color Vision-Leo Marvullo 6. Water Color-Hon graham Scholes

**Scheme of Teaching**

L	Tu.	S/SS	Total
1	-	5	6

**B.Des. (Product & Interior Design) - IV SEMESTER****DS 243 Product Design Studio -II****Scheme of Examination**

CA	T	P/V	Total
60	-	40	100

Abbreviations: L =Lectures; P = Practical; Tu. = Tutorial; S/SS = Studio  
T = Theory, V = Viva-voce, CA = Continuous Assessment

**OBJECTIVES**

- Ability to develop new Concepts, Ideas successfully and efficiently.
- Build confidence in the ability to create new Products and Present.
- Understand the role of multiple process (environmental footprint, industrial design, production, strategy, project & product management) in creating a new product.
- Students be able to bring in different elements, interdisciplinary tasks to achieve a common objective.

**CONTENTS****UNIT I****FORMULATION OF DESIGN BRIEF**

Sub unit - a, b and c detailed in Instructional Plan

**UNIT II****CASE STUDIES & RESEARCH**

Sub unit - a, b and c detailed in Instructional Plan

**UNIT III****CONCEPT AND BRAINSTORMING**

Sub unit - a, b and c detailed in Instructional Plan

**UNIT IV****DEVELOPMENT OF CONCEPT**

Sub unit - a, b and c detailed in Instructional Plan

**UNIT V****PROTOTYPING**

Sub unit - a, b and c detailed in Instructional Plan

**CONDUCT OF EXAMINATION****SUGGESTED BOOKS**

- Prototyping and Modelmaking for Product Design (Portfolio Skills)by Bjarki Hallgrimsson

**Faculty of Architecture and Planning, Integral University, Lucknow**