



Re-Accredited 'B++' 2.86 CGPA by NAAC

VEER NARMAD SOUTH GUJARAT UNIVERSITY

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વીર નર્મદ દક્ષિણ ગુજરાત યુનિવર્સિટી

યુનિવર્સિટી કેમ્પસ, ઉદ્ધના-મગદલા રોડ, સુરત - ૩૯૫ ૦૦૭, ગુજરાત, ભારત.

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ક્રમાંક : એસ./પરિપત્ર/૨૫૪૪૬/૨૨

તા.૦૩/૧૧/૨૦૨૨

પ્રતિ,
વડાશ્રી,
શ્રી જી.સી.પટેલ ઈન્સ્ટીટ્યૂટ ઓફ આર્કિટેકચર,
ઈન્ડીરીયર ડિઝાઈન એન્ડ ફાઈન આર્ટ્સ
વીર નર્મદ દક્ષિણ ગુજરાત યુનિવર્સિટી,
સુરત.

વિષય:- Bachelor of Design, Master of Design (5 Year Integrated) નાં અભ્યાસક્રમ અંગે.

મહાશય,

સવિનય જણાવવાનું કે, NEP-2020 ના અનુસંધાને આર્કિટેકચર એન્ડ ડિઝાઈન ફેકલ્ટી અંતર્ગત માસ્ટર ઓફ ડિઝાઈન પાંચ વર્ષીય ઈન્ટીગ્રેટેડ અભ્યાસક્રમ સંદર્ભે આર્કિટેકચર એન્ડ ડિઝાઈન વિદ્યાશાખા તથા આર્કિટેકચર વિષયની અભ્યાસ સમિતિની સંયુક્ત સભાની તા.૧૫/૧૦/૨૦૨૨ની સભાનાં ઠરાવ ક્રમાંક: ૫ થી કરેલ ભલામણ એકેડેમિક કાઉન્સિલની તા.૧૮/૧૦/૨૦૨૨ ની સભાનાં ઠરાવ ક્રમાંક: ૩૩ થી મંજૂર કરેલ છે. જેની આથી જાણ કરવામાં આવે છે, તેની જાણ સંબંધકર્તા શિક્ષકો અને વિદ્યાર્થીઓને કરવી, તદ્દુપરાંત તેનો અમલ કરવો.

વધુમાં, સદર બાબતે અન્ય કોઈ વૈદ્યાનિક સંસ્થાઓની મંજૂરી મેળવવાની જરૂરીયાત હોય તો તે અંગે જરૂરી વહિવટી મંજૂરી મેળવી લેવાની રહેશે.

આર્કિટેકચર એન્ડ ડિઝાઈન વિદ્યાશાખા તથા આર્કિટેકચર વિષયની અભ્યાસ સમિતિની સંયુક્ત સભાની તા.૧૫/૧૦/૨૦૨૨ ના ઠરાવક્રમાંક:૫

:: આથી ઠરાવવામાં આવે છે કે, યુનિવર્સિટીમાં આર્કિટેકચર એન્ડ ડિઝાઈન ફેકલ્ટીમાં પાંચ વર્ષનો માસ્ટર ઓફ ડિઝાઈન (ઈન્ટીગ્રેટેડ) કોર્સનાં પ્રથમ ત્રણ વર્ષનો સિલેબસ મંજૂર કરવા એકેડેમિક કાઉન્સિલને ભલામણ કરવામાં આવે છે.

વધુમાં ઠરાવવામાં આવે છે કે,

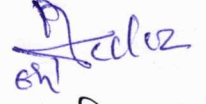
- (૧) સદર પ્રોગ્રામ UGC દ્વારા માન્ય હોય યુનિવર્સિટી કક્ષાએ સત્તામંડળની મંજૂરીથી ચલાવી શકાશે.
- (૨) યુનિવર્સિટી સ્ટેચ્યુટ ૩૧-૦૭-૨૦૨૨ નાં ચેપ્ટર નં - ૧૪ એડમિશન ટુ ધી યુનિવર્સિટી, સ્ટેચ્યુટ નં-૨૨૩ અને ૨૨૮ અંતર્ગત ક્રમાંક નં-૧૧ માં સૂચવેલ ફેકલ્ટી ઓફ આર્કિટેકચર એન્ડ ડિઝાઈન પ્રોગ્રામનાં લિસ્ટમાં અને તેના માસ્ટર ઓફ ડિઝાઈન (ઈન્ટીગ્રેટેડ) વિષયમાં લાયકાતનાં ધોરણો દર્શાવવા ઘટતી કાર્યવાહી કરવી. તેમજ જે વિદ્યાર્થીઓ ચાર વર્ષ પૂર્ણ કરી અને Exit વિકલ્પ સ્વીકારે તેને બેચલર ઓફ ડિઝાઈન (B.Des.) પદવી આપવી.

એકેડેમિક કાઉન્સિલની તા.૧૮/૧૦/૨૦૨૨ની સભાનાં ઠરાવ ક્રમાંક:૩૩

:: આથી ઠરાવવામાં આવે છે કે, આર્કિટેકચર એન્ડ ડિઝાઇન વિદ્યાશાખા તથા આર્કિટેકચર વિષયની અભ્યાસ સમિતિની સંયુક્ત સભાની તા.૧૫/૧૦/૨૦૨૨ ના ઠરાવક્રમાંક:૫ અન્વયે કરેલ ભલામણ સ્વીકારી મંજૂર કરવામાં આવે છે.

વધુમાં ઠરાવવામાં આવે છે કે, Statute-223 અને Statute-229 માં ઉપરોક્ત મુજબ આમેજ કરવા સિન્ડિકેટને ભલામણ કરવામાં આવે છે.

બિડાણ : ઉપર મુજબ


કુલસચિવ

પ્રતિ,

- ૧) અધ્યક્ષશ્રી, આર્કિટેકચર વિદ્યાશાખા,
 - ૨) પરીક્ષા નિયામકશ્રી, પરીક્ષા વિભાગ, વીર નર્મદ દ. ગુ. યુનિવર્સિટી, સુરત.
 - ૩) પી.જી. વિભાગ, વીર નર્મદ દક્ષિણ ગુજરાત યુનિવર્સિટી, સુરત.
 - ૪) એકેડેમિક વિભાગ, વીર નર્મદ દક્ષિણ ગુજરાત યુનિવર્સિટી, સુરત.
- ...તરફ જાણ તેમજ અમલ સારૂ.

Masters of Design (Integrated)

The department provides quality education and enhances skills of students with respect to their area of interest within the domain of B Design by providing opportunity through flexible pedagogy. The department is well-furnished, well-equipped and housed in Shri Gijubhai Chhaganbhai Patel Institute with modern technology. The students actively participate in the various co-curricular activities. Department provides the teaching through problems based learning and also vigorously involve to sensitize the students about tasks, environmental issues, graphic skills and socio-economic and cultural scenario.

Vision

The aim of this course is to teach the next generation how to solve any design challenge using their indigenous skills and knowledge, which will further translate into productivity, which will eventually lead to entrepreneurship.

Mission

The mission is to enhance individuals who can contribute to the highly competitive and dynamic design industry. The B Design program, which consists of core topics with specialization, teaching methods, and projects with industrial exposure, offers the best combination of indigenous and local skills, creativity, and instilling ethical values through a holistic approach in order to confront global concerns.

Intake

40 Students (20 Students in Product Design and 20 Students in Textile and Fashion Design)

Eligibility

10+2 from an affiliated Central or State Board (min 35% aggregated marks or pass class required)

Fee Structure (Proposed)

Rs.56,800/- per annum



CURRICULUM

YEAR 1: SEMESTER 1

Sr. No.		Course Name	L	P	C
1	Design Based Subjects	Design Studio I	2	8	6
2		Basic Design I	2	4	4
3	Skilled Based Subjects	Design Drawing I	2	4	4
4		Communication Skills I	2	2	3
5	Theory Based Subject	Humanities	2	0	2
6	Technical Based Subject	Physical Ergonomics	1	4	3
TOTAL CREDITS FOR SEMESTER 1					22

YEAR 1: SEMESTER 2

S. No.		Course Name	L	P	C
1	Design Based Subjects	Design Studio II	2	8	6
2		Basic Design II	2	4	4
3	Skilled Based Subjects	Design Drawing II	2	4	4
4		Communication Skills II	2	2	3
5	Theory Based Subject	History of Arts	2	0	2
6	Technical Based Subject	Installation	1	4	3
TOTAL CREDITS FOR SEMESTER 2					22
Note: 6 weeks Practical training at the end of first Academic year where one can work with Fine Artist, Interior Designers, Graphic Designer, Fashion Designer, Jewellery Designer, any other industry where designers are required.					4
TOTAL CREDITS FOR YEAR 1					48



YEAR 2: SEMESTER 3					
S. No.		Course Name	L	P	C
1	Design Based Subjects	Design Studio III	2	8	6
2	Skilled Based Subjects	Digital Communication I	2	4	4
3	Theory Based Subject	Design Appreciation I	2	2	3
4		Psychology	2	0	2
5	Technical Based Subject	Technology in Design	2	4	4
6		Workshop I	1	4	3
TOTAL CREDITS FOR SEMESTER 3					22
YEAR 2: SEMESTER 4					
S. No.		Course Name	L	P	C
1	Design Based Subjects	Design Studio IV	2	8	6
2	Skilled Based Subjects	Digital Communication II	2	4	4
3	Theory Based Subject	Design Appreciation II	2	2	3
4		Theory of Design	2	0	2
5	Technical Based Subject	Documentation	2	4	4
6		Workshop II	1	4	3
TOTAL CREDITS FOR SEMESTER 4					22
Note: 6 weeks Practical training at the end of Second Academic year where one can work with Fine Artist, Interior Designers, Graphic Designer, Fashion Designer, Jewellery Designer, any other industry where designers are required.					4
TOTAL CREDITS FOR YEAR 2					48



YEAR 3: SEMESTER 5						
S. No.		Course Name		L	P	C
		Product Design	Textile and Fashion Design			
1	Design Based Subjects	Design Studio V	Design Studio V	2	8	6
2	Skilled Based Subjects	Product Packaging Design	Fiber and Yarn Science	2	4	4
3	Theory Based Subject	Design Research Methodology		2	2	3
4		Universal Design	Fashion Illustration	2	0	2
5	Technical Based Subject	Design Economics		2	4	4
6		Material and Process in Design	Surface Enrichment	1	4	3
TOTAL CREDITS FOR SEMESTER 5						22
YEAR 3: SEMESTER 6						
S. No.		Course Name		L	P	C
		Product Design	Textile and Fashion Design			
1	Design Based Subjects	Design Studio VI	Design Studio VI	2	8	6
2	Skilled Based Subjects	Brand identity and Intellectual Property		2	4	4
3		Product Photography	Sewing techniques and accessories	2	4	4
4	Technical Based Subject	Retail Environment		2	4	4
5		Entrepreneurship Development and Professional Practice in Design		2	4	4
TOTAL CREDITS FOR SEMESTER 6						22
Note: 6 weeks Practical training at the end of Third Academic year						4
TOTAL CREDITS FOR YEAR 3						48



DETAIL SYLLABUS

YEAR 1: SEMESTER 1

01. Design Studio I

Unit 1: Thinking in three dimensions

Concepts of space and Volume, Evolution of a flat shape into a volume;
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; Radian Manipulation; creating volumes through imaginary movements;

Unit 5: Identities and relationships

Ambiguity of "Form follows function"; examples from nature; Forms of Machine elements;
Skeletons of life forms; Exoskeletons; Plant Structures.

References

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 Greet Hannah, 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



YEAR 1: SEMESTER 1

02. Basic Design I

Unit 1: Principles of visual design

Principles of design, unity/harmony, balance, alignment, hierarchy, emphasis, similarity and contrast;

Unit 2: Morphology

Scale, proportions, movement, repetition, pattern, rhythm, variety, chaos;

Unit 3: Emotions and Colors

Perception of colors, emotion and colors;

Unit 4: Grays

Understanding the Grayscale, gradation methods; Composition with grays, black and white;

Unit 5: Theory of Color mixing

The Science of Color Theories (Light & Pigment Theories); Primary colors and pure hues, Color Wheel; Tints, Tones and Shades, color charts; Color mixing models, color palettes; Science of Color mixing, Subtractive & Additive color mixing principles.

References

Itten J., The art of colour: the subjective experience and objective rationale of colour, John Wiley and Sons., 1974
Sherin, A., Design Elements, Color Fundamentals: A Graphic Style Manual for Understanding How Color Impacts Design, Beverly, Mass: Rockport Publishers, 2011
L. Hotzschue, Understanding Colour, VNR, 1995
R.M. Proctor, The principles of pattern, Dover Publications, 1990
Elam, Kimberly; Geometry of Design: Studies in Proportion and Composition, Princeton Architectural Press, 2001
Lauer



YEAR 1: SEMESTER 1

03. Design Drawing I

Unit 1: Warm Up Exercises and Rapid Sketching

Representing the observed, representing concepts - Sketching for ideation; Lines; Geometric Shapes;

Unit 2: Drawing Techniques

One point, two point, and three-point Perspective;
Grid based drawing, analytical representation; Inside-out sketching; Construction Drawing;
Studies in light and shadow of 3-dimensional form representations;

Unit 3: Representing reality

Mimetic Imagery and Abstraction;

Unit 4: Representing Imagination

Memory and Imagination; Object representation;

Unit 5: Nature and life

Representing nature; Figure drawing;

References

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

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

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

Wily Pogany, The Art of Drawing, Madison Books, 1996

R. Kasprin, Design Media – Techniques for water colour, pen and ink, pastel and coloured markers, John Wiley & Sons, 1999



YEAR 1: SEMESTER 1

04. Communication Skills I

Unit 1: Perception

Reality, Experience, Subjective Constancy, Contrast Effect, Grouping;

Unit 2: Communication Theories

Concepts of Information and Data, Defining and investigating communication; Contextual Design; Models of communication;

Unit 3: Objectivist Theory & Application

Introduction to quantitative research, Uncertainty reduction theory, Expectancy violations theory, Social judgment theory, Elaboration likelihood model, Communication accommodation theory, Face negotiation theory;

Objectivist research/ practice: Creating hypotheses & testing relationships, Surveys/questionnaires;

Unit 4: Interpretive Theory & Application

Introduction to qualitative research, Symbolic convergence theory, Symbolic interactionism, Speech codes theory, Relational dialectics theory, and communication privacy management theory, Knowledge Gap Theory; Ethics;

Interpretive research/practice: Interviews and focus groups; Ethnography;

References

Griffin, E. (2012). A first look at communication theory (8 th ed.). New York: McGraw-Hill.

Lewis, J. (2002). Cultural studies: The basics. London: SAGE Publications.

Watson, J. (1985). What is communication studies?. London: Edward Arnold.

Berko Roy (1989) Basically Communicating .Wm. C. Brown Publishers

Roloff, M. E., & Miller, G. R. (1987). Interpersonal processes: New directions in communication research. Newbury Park, Calif: Sage Publications

Carey, J. W. (1989). Communication as culture: Essays on media and society. Boston: Unwin Hyman



YEAR 1: SEMESTER 1

05. Humanities

Unit 1: Artistic Creation

Complete understanding of Perception, Communication, Imagination, Expression, and Creativity for artistic creation.

Unit 2: Art & Design Movements

To understand the thoughts and techniques involved in important art movements - Impressionism, Cubism, Constructivism, Optical Art, Kinetic Art etc. Students are expected to express their ideas through Posters, Murals, Building Art, Collage, Graffiti, 3D-Installations.

Unit 3: Ethnography and Anthropology

Observations/Analysis; Community---Based Ethnographic Research; Activity Theory; Empathy in Design; Value Sensitive Design; Historical development of fieldwork; relations between field methods and dominant theoretical orientations; varieties of fieldwork at present; the implications; Ethnographic research design as a continuous process; the formulation of research problems.

References

- Geraldine Gay and Helene Hembrooke, 2004, Activity-Centered Design, An Ecological Approach to Designing Smart Tools and Usable Systems.
Amy. E. Aniston, Graphic Design Basics (IInd Edition)
Lydia Darbyshire, Practical Graphic Design Technique
Batya Friedman and Alan Borning, Value Sensitive Design and Information Systems
Julian Murchison, Ethnography Essentials: Designing, Conducting, and Presenting Your Research



YEAR 1: SEMESTER 1

06. Physical Ergonomics

Unit 1: Man-Machine Interaction

Definition of Ergonomics and its application and overview, Concept of Man Machine Environment System;

Unit 2: Biomechanics of human Body

Overview of Human body and it's sub systems, Understanding musculoskeletal system and its function in terms of manual activities, Understanding nervous system, human sensory organs and their limitations; Basic Bio mechanics and its application in design; Concept of Usability, Usability by Form, usability by feature, usability by function, usability by material;

Unit 3: Anthropometrics

Anthropometrics. Understanding and applications of anthropometry; Posture, reach, grip and movement. Quantification of comfort levels; Access, Reach, Posture and movement; Product Ergonomics: Object handling, Macro and Micro Reach, Object handling effort and posture;

References

- R. S. Bridger, Introduction to Ergonomics, 2nd Edition, Taylor & Francis, 2003
J. Dul, and B. Weerdmeester, Ergonomics for beginners, a quick reference guide, Taylor & Francis, 1993
C. D. Wicknes, S. E. Gordon, and Y. Liu, An Introduction to Human Factors Engineering, Longman, New York, 1997
E. Grandjean, Fitting the task to the man, Taylor & Francis Ltd. 1980
P.W. Jordan and W.S.Green, Human Factors in Product Design: current practice and future trends, Taylor & Francis, London, 1999
Dr. Debkumar Chakraborty, Indian Anthropometric Dimensions For Ergonomic Design Practice, National Institute of Design, 1997



YEAR 1: SEMESTER 2

01. Design Studio II

Unit 1: Orientation

Definition and understanding of the design process. A brief history of design and its evolution; Exploring Creativity; Lateral thinking; visual explorations;

Unit 2: Visual Perception

Principles of visual perception. Discussion and demonstration of the way humans make a greater sense out of combination of simple or complex curves and shapes.

Navarasa and associated Bhavas according to the Natyashastra by Bharat Muni and their modern interpretations

Unit 3: Material Exploration in Design

Definitions of material, process and product. Fundamentals of product development cycle. Concept of end user. Defining user groups. Concept of market. Defining the market gap.

Unit 4: Problem Identification

Problem identification and definition. Mind Maps and Metaphors. Definition of a solution. Ideation, conceptualization and representation of solutions.

Unit 5: System thinking in Design

Introduction to system Thinking; Definition of a system; Concepts of component, connection, transaction and transformation; Boundary and boundary conditions; Concepts of input, activity, response and output; Metaphors; Introduction to Static and dynamic maps;

References

- T. Hauffe, Design: A Concise History, Laurence King Publishing, 1998
- P.B. Meggs, A History of Graphic Design, Library of Congress Cataloging, 1998
- Alan Pipes, Foundation of Art and Design, Lawrence King Publishing, 2008
- Bryan Peterson, Design Basics for Creative Results, How Design Books, 2003
- Don Norman, Emotional Design, Why We love (or Hate) Everyday Things, Basic Books, 2003
- Don Norman, Design of Everyday Things, Basic Books, 2014



YEAR 1: SEMESTER 2

02. Basic Design II

Unit 1: Pattern recognition and creation

Basic elements of visual design and its grammar. Pattern recognition, abstraction and construction.

Unit 2: Dot, Line and Curve

Characteristics of point/dot. Connotations, examples of use in arts, visual communication and industrial design. Characteristics of a line. Line quality. Curves, qualities and characteristics of curves. Visual and emotional interpretations.

Unit 3: 2 Dimensional Elements

Characteristics of a shape, concepts of positive and negative space, types of shapes. Developing patterns by repetition of points, dots, rectilinear elements, curvilinear elements, shapes. Regular and Irregular patterns. Fractals.

Unit 4: Gradation and texturing

Understanding of flat surface. Material and process based textures, construction based textures, pigmented textures.

Gradation on flat Surface, Introduction of highlights and shadows. Primer for elements of form course

References

- Samara Timothy, Design Elements, 2nd Edition: Understanding the rules and knowing when to break them, Rockport Publishers, 2014
- Evans Poppy and Thomas Mark A., Exploring the Elements of Design, Delmar Cengage Learning, 2012
- Beech R., Origami – The Complete Guide to the Art of Paper Folding, Lorenz Books, 2001
- Wong W., Principles of Two Dimensional Design, John Wiley & Sons, 1972
- White Alex W., The Elements of Graphic Design, Allworth Press, 2011
- Gail Greet Hannah, Elements of Design, Princeton Architectural Press, 2002



YEAR 1: SEMESTER 2

03. Design Drawing II

Unit 1: Introduction

Importance of engineering drawing; Conventions and standards: ISO; Scales;

Unit 2: Lines

Line types; Line Weights; Hatching Types; Curves; Splines;

Unit 3: Orthography

Orthographic projections: points, lines, planes and solids; Sections of solids; Intersection of solids.

Unit 4: Advanced Engineering Drawing

Isometric view;
Development of surfaces;
Trajectories and Loci of machine elements;
Assembly drawing;

Unit 5: Computer Aided Drafting

AutoCAD

References

- A.J. Dhananjay, Engineering Drawing, TMH, 2008
N D Bhatt and V M Panchal, Engineering Drawing, 43rd Ed., Charator Publishing House, 2001
M B Shah and B C Rana, Engineering Drawing, 2nd Ed., Pearson Education, 2009
T E French, C J Vierck and R J Foster, Graphic Science and Design, 4th Ed., McGraw Hill, 1984.
W J Luzadder and J M Duff, Fundamentals of Engineering Drawing, 11th Ed., PHI, 1995
K Venugopal, Engineering Drawing and Graphics, 3rd Ed., New Age International, 1998



YEAR 1: SEMESTER 2

05. History of Arts

Unit 1: Purpose and Relevance of Art Development

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

Unit 2: Exploration of Art Forms

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

Unit 3: Study of Ornaments & Accessories

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

Unit 4: 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

References

- Alan Barnard & Jonathan Spencer, Encyclopaedia of social and cultural anthropology, Routledge; 1 edition, 2002
Nigel 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



YEAR 1: SEMESTER 2

06. Installation

Unit 1: 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 2: 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 3: Materials and Techniques (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.

References:

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



YEAR 2: SEMESTER 3

01. Design Studio III

Unit 1 Need for Recycling of Materials

The logic behind recycling – recycling of steel, wood, glass etc - estimation of the quality of recycled timber – criteria for recycling of steel, glass etc.

Unit 2 Concept of Sustainability

Earth summit declaration – definition of sustainability – economic, social and environmental issues – green rating of buildings – criteria for LEED rating.

References

Waste management and recycling – Compiled by C.T. Lakshmanan, SRM University



YEAR 2: SEMESTER 3

02. Digital Communication I

Unit 1 Ms Office

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

Unit 2 Basic Outline , Axis Points

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

Unit 3 Units, Limits and Layers

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

Unit 4 Dimensions, Calculations and Grouping

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

Unit 5 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.

References

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



YEAR 2: SEMESTER 3

03. Design Appreciation I

Unit 1 Selective Perception

Investigate the process of looking itself – to notice details and visual relationships. Explain the subjective nature of perception. Analyze visual relationships in art as a way to understand meaning and expression.

Unit 2 Visual Elements--Line and Value

Identify line and value as symbols of perception and expression in 2D art forms. Analyze the formal and expressive aspects of the visual elements to further enjoy and understand works of art.

Unit 3 Space and Time Represented on the Picture Plane

Demonstrate an understanding of methods to create illusions of 3D space on a 2D surface. Analyze the relationship of space and time to the artist's intention and meaning.

Unit 4 Form, Function, and Expression

Demonstrate and explain the image transferring property of light. Explain the relationship of photography to other art forms.

Reference

Gilbert's Living with Art, 9th edition, McGraw Hill.



YEAR 2: SEMESTER 3

04. Psychology

Unit 1 Sociology & Psychology

Introductory Sociology & Psychology Sociology as a Science of Human Society: Introduction: - Basic concepts (Roles, Norms, Values, Groups and Institutions), Social Structure, Culture, Perspectives (Functionalist, Conflict & Interactionist), Psychological Perspectives and Approaches;

References

Geraldine Gay and Helene Hembrooke, 2004, Activity-Centered Design, An Ecological Approach to Designing Smart Tools and Usable Systems.

Amy. E. Aniston, Graphic Design Basics (IInd Edition)

Lydia Darbyshire, Practical Graphic Design Technique

Batya Friedman and Alan Borning, Value Sensitive Design and Information Systems

Julian Murchison, Ethnography Essentials: Designing, Conducting, and Presenting Your Research



YEAR 2: SEMESTER 3

05. Technology in Design

Unit 1

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

Unit 2

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 3

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 4

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

References

Review of CAD Modelling Techniques and Introduction to RP

Generating STL files from the CAD Models & Working on STL files

Processing the CAD data in Catalyst software (Selection of Orientation, Supports generation, Slicing, Tool path generation)

Learning techniques for fabricating an assembly

Prepare a CAD model with complex geometry and study effect of slicing parameters on final product manufactured through RP.



YEAR 2: SEMESTER 3

06. Workshop

Unit 1 Graphics and Animation - Basic Digital Techniques

Basics of Digital Technologies, Operating Systems and computer Architecture, Graphics Basics - Vector graphics, Raster, etc. Compression Techniques, Conversion Techniques

Unit 2 Computer Graphics

Computer Graphics: Aesthetics and Design: CG Application areas and equipment, CG Standards and Formats

Unit 3 2d And 3d Modelling 2d

Images and Graphics, Principles of raster graphics, Resolution, color, graphics accelerators, digital image representation and formats, 3-D Modeling, Rendering color and rendering models

Unit 4 Animation

Animation—Objects, dynamics, Frame animation, Composing, making and keying

Unit 5 Multimedia

Multimedia Systems, Products, Platforms, Application Domain and Features—audio and video standards — integrating multiple formats (sound, video, text, etc.), Recent Developments in software and hardware systems

References

User manual & tutorials of Google Sketch Up software.

Heath, Steve. Multimedia and Communication Technology. Focal Press

Multimedia and communications, Application Networks, Protocols and standards, Addison Wesley,2000



YEAR 2: SEMESTER 4

01. Design Studio IV

Unit 1

Information Processing Coding & Decoding; Sender, Channel and Receiver; Drawing as method of interaction, observation and documentation

Unit 2

Indirect communication Study of relationships between Signifier, Signified and context; Denotation and Connotation; Communicating through gestures, voice, type and visuals

Unit 3

Introduction to Semiotic Perspective Visual perception & semiotics; Sign: Concept and Types; Codes: Concepts, Types and Sharing; Usage of visual semiotics

Unit 4

Semiotic Interpretations and Cultural Metaphors Myths- Concepts and Debates; Communication as Text Discourse; Ideology: Link to Meaning Making; Calendrical events: understanding of festivals and rituals; Signs and their meanings in Indian cultures

Unit 5

Introduction to Rhetoric Perspective Origin and Evolution Functions of Rhetoric; Key Elements of Rhetoric; Elements and analyzation of Rhetorical Presentation

References

- Ronald H. Fergus, Perception, The basic process in cognitive development, USA, McGraw-Hill 1996
Arthaya, Seminar on Visual semantics, IDC, IIT Bombay 1992 Carey, J. W. (1989).
Communication as culture: Essays on media and society. Boston Ghanekar, A (1998)
Communication skill for effective management. Everest Publishing House. Gilligan, Pune Fiske, J. (1982).
Introduction to communication studies. London, Angletterre: Methuen Schlenker, B. R. (1980).
Impression management: The self-concept, social identity, and interpersonal relations. Monterey, Calif: Brooks/Cole Pub. Co



YEAR 2: SEMESTER 4

02. Digital Communication II

Unit 1 Sketch Up

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

Unit 2 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 3 Solid Modeling (Transforming Spaces)

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

Unit 4 Rendering & Presentation Techniques

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

References

Auto Desk, Revit 2017 for Architecture, Sybex, 2016 .

Auto Desk, 3D MAX comprehensive tutorial resources Wiley 2014.

Sketch up for interior Design. 3D visualizing designing & space planning by Lidya Sloan, Wiley Publisher – 2014



YEAR 2: SEMESTER 4

03. Design Appreciation II

Unit 1

Works of Foreign Designers and Artisans in India and their influence



YEAR 2: SEMESTER 4

04. Theory of Design

Unit 1 Industrial Revolution

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

Unit 2 Ancient History

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

Unit 3 Modernism

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

Unit 4 After Modernism

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

References

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



YEAR 2: SEMESTER 4

05. Documentation

Unit 1 Location and Industry/Craft

Understanding of the history and present state of one cottage and craft industry. To understand the conventional processes, materials and prepare a product catalog, Design Insights and proposals for survival and advancement of the subject industry/craft



YEAR 2: SEMESTER 4

06. Workshop III

Unit 1: Materials and Techniques (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 2: Materials and Techniques (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.

References

- 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.
Fabrics: A guide for architects and Interior Designers, Marypaul Yates, Norton publishers, 2002.
Materials for Interior Environments, Corky Bingelli, John wiley and sons, 2007



YEAR 3: SEMESTER 5

01. Design Studio V (Product Design)

Unit 1: Overview of Design Process and its ecosystem Design Relevance

Exposure and analysis, Case studies

Unit 2: Ideation

Brainstorming; Differential Discussion; group methods to generate ideas; solitary methods to generate ideas; Lateral Thinking

Unit 3: Concept

Detailing User Journey maps, User stories, activity mapping

Unit 4: Design Project

Design and Development of Product as per the brief

References

D.Norman;The Design of Everyday things, London, The MIT Press, 1998 A.Forty; Objects of Desire, Thames & Hudson, 1995

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

Julier, G.;20th Century, Design,Thames & Hudson, 1993

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



YEAR 3: SEMESTER 5

01. Design Studio V (Textile and Fashion Design)

Unit 1: Fabric Construction

Introduction, basics of different methods of fabric formation (weaving, knitting and non woven). Loom- Parts and functions of a loom (primary and secondary motions), Types of looms – Handloom / Power loom, Shuttle 100ml Shuttle less looms (Projectile. Rapier, Water jet and Air et looms. warping . and pirn winding, Sizing.

Unit 2: General characteristics of woven fabrics

Yam, count of yarn and 'fabric, grain, balance, selvedge and its types. Basic weaves, figured weaves. Plain weave – variation (rib and basket variations) Twill weave – variation (RHT, LHT, Pointed / Chevron and Herring bone)Satin weave – variation (sateen)Graphical representation of the above weaves: Figured weaves- Dobby – mechanism, types – honeycomb huck a – back bird' s. eye and uses. Jacquard – mechanism, types – damask, brocade, tapestry and uses. Crepe weave – mechanism, types – Warp pile, weft pile, corduroy and uses. Leno – lappet (extra set of warp), swivel (extra set of weft). Elements of woven Design. Fabric design – Design, draft, peg plan and denting plan.

Unit 3: Knitting

Definition, mechanism, characteristics, types and uses. Differences between methods and uses. Circular and flat knitting. Structure of knitting- Warp and weft knitting – Knit, Pearland Interlock. Tricot, melanease and Russell.

Unit 4: Non woven's

Method of manufacture – web formation- parallel laid, cross laid, random laid, high velocity sprayed, Air laid, wet laid. Bonding- resin, latex foam, gelatin, thermo plastic, Spun, spun laced, melding, autogenic, radiation, composite, stitch through, printed adhesive, Needle punching. Finishing and uses.

Unit 5: Decorative fabric construction

Braiding, netting, lace, knotting, crocheting, embroidery.

References:

- Ormerod A, "Modern Preparation and Weaving machiner", Woodhead Publication, 2004
Chitra, chowdhary "Textile design and structure" 978-81-8342-298-7
Charu samy "Textile design theory"978-81-224-3053-0
Tanya jain "Textile designing theory and concept"
Frank Ames "Woven master recipes of Sikh heritage"
W.S. Murphy, "Textile Weaving & Design", Abhishek Publication, 2003
J. Gordon Cook, Hand Book of textiles Fibers Vol I & II", Woodhead Publication
Amjden C.A "Navaho Weaving Its techniques and History", Abhishek Publication.
Z.J. Grosicki, "Watson's Textile Design & Colour, 7th Edition Woodhead Publication.
W.S. Murphy, "Handbook of weaving" Abhishek Publication.



Deborah Chnadler, "Learning to weave", Interweave Press, 1995.

J.J. Pizzuto, "Fabric Science" 6th Edition, Fairchild Publications.



YEAR 3: SEMESTER 5

02. Product Packaging Design (Product Design)

Unit 1: Components and functionalities of a Package

Types of Packages.

Unit 2: Package impact in the ecology

Unit 3: Packaging Technologies and Trends

Development of a package prototype

Unit 3: Project Selection

Selection of product for packaging development; Researching about the current packaging available; constraints and positive aspects; understanding, target audience, budget, branding

Unit 4: Project Development

Developing a packaging for the selected product; Incorporating improvements that can be worked upon after the research work.

Unit 5: Final Packaging and Its Branding

Working on the branding aspect of the packaging that has been developed.

References:

- Chunawalla, S.A. (2009). Chap. 21. Packaging. In Product Management. (pp. 259-265). Mumbai: Himalaya publication.
- Marianne R. Klimchuk, Sandra A. Krasovec, Packaging Essentials: 100 Design Principles for Creating Packages (Design Essentials), Rockport Publishers; 1 edition, June 1, 2010
- Marianne R. Klimchuk, Sandra A. Krasovec, Packaging Design: Successful Product Branding from Concept to Shelf, John Wiley & Sons, 2006
- Paul Jackson, Structural Packaging: Design your own Boxes and 3D Forms (Paper engineering for designers and students), Laurence King Publishing, 2012
- Giles Calver, What Is Packaging Design? (Essential Design Handbooks), Rotovision, 2007
- Peng Chong (Editor), Interactive Packaging Design, Design Media Publishing Ltd, 2018
- Pentawards (Editor), The Package Design Book 2 (VARIA), TASCHEN; Mul edition, 2013
- Tony Ibbotson, Peng Chong, Eco Packaging Now , Images Publishing Dist Ac, 2016



YEAR 3: SEMESTER 5

02. Fiber and Yarn Science (Textile and Fashion Design)

Unit 1 Textile fibers

Definition, Sources, Classification and properties to textile fibres. Cellulose fibers-Cotton, flax origin, manufacture, properties and uses. Protein fibers – Silk, Wool – Properties and end uses.

Unit 2 Minor cellulosic fibers

Jute, Hemp, coir, Kapok - Properties and uses. Regenerated cellulose fibers – Viscose Rayon. Acetate Rayon, manufacture, properties and end Uses.

Unit 3 Polymers

Polymerization, degree of Polymerization, different types of polymers – addition and condensation, orientation and crystallinity, characteristics of fiber forming polymers, general physical and chemical properties of fibers. B Synthetic fibers-Nylon, polyester, acrylic and modacrylic – properties and end uses. Polyethylene, polypropylene. olefin. Elastomeric fibers (spandex and lycra) – End uses.

Unit 4 Spinning

Dry, wet and melt spinning, chemical and mechanical spinning. Yarn definition, meaning, types, process for staple fibers (cotton and wool), Ring spinning and rotor spinning, carded and combed yarns, woolen and worsted yarns and fancy yarns.

Unit 5 Texturization

Methods of Texturization, types (simplex and complex yarns) and uses. Blends and Mixture - Types, uses of blended fabrics. Sewing threads – Types, properties and uses.

Unit 6 Yarn Testing

Yarn count, Yarn twist, twist direction, amount of twist, and effects of twist on fabric properties, measurement of twist. Yarn evenness- causes of irregularity, effects of irregularity, measurement of irregularity.

Unit 7 Fabric Testing

Woven, knitted fabric, nonwoven– dimensions- length, width, thickness, determination of fabric weight, cover factor, air permeability, stiffness, crease resistance, abrasion resistance, pilling, strength.

Unit 8 Colour Science

Determination of colour fastness to laundering, rubbing, light and perspiration. colour matching cabinet.

References

E.P.G. Gohl, L.D. Velensky, "Textile Science" CBS Publishers and Distributors, 2003



YEAR 3: SEMESTER 5

03. Design Research Methodology

Unit 1: Elements of Research and Logic

Data; Variables and constants; Concepts and constructs; Theories and observations; Inductive; Deductive;

Unit 2: Sampling and Quantitative Methods and Statistics

Basic concept; Representativeness; Probability and non-probability sample- concepts; Types of probability and non-probability samples; Practical guidelines for sampling. Surveys: importance, types, uses, guidelines for framing questionnaire; Content Analysis- basic concepts, Characteristics and uses; Distribution;

Unit 3: Regression models

Linear regression, Simple regression, Ordinary least squares, Polynomial regression, General linear model; Generalized linear model, discrete choice, Logistic regression, Multinomial logit, mixed logit, Probit, Multinomial probit, Ordered logit, Ordered probit, Poisson; Multilevel model, fixed effects, Random effects, Mixed model;

Unit 4: Nonlinear Regression

Nonlinear regression, Nonparametric, Semi parametric, Robust, Quantile Isotonic, Principal components, Least angle, Local, Segmented, Errors-in-variables;

Unit 5: Statistical Extrapolation

Probability Distribution; Linear extrapolation; Polynomial extrapolation; Conic Extrapolation; French Curves; Least squares, Ordinary least squares, Linear, Partial, Total, Generalized, Weighted, Non-linear, Non-negative, Iteratively reweighted, Ridge regression, Least absolute deviations, Bayesian, and Bayesian multivariate Linear Regression. Statistical Forecasting; Average, Naïve, and seasonal Naïve approaches, Drift method; Qualitative forecasting methods, informed opinion and judgment, Delphi method, market research, and historical life-cycle analogy; Quantitative Forecasting methods, Time Series methods, last period demand, simple and weighted N-Period moving averages, simple exponential smoothing, poisson process model based forecasting, and multiplicative seasonal indexes; Extreme Value Theory Interpretive approach: Cool hunting; Dead Reckoning;

Unit 6: Data Visualization

Data Point, Bar, Stack, Pie, Donut, and Dot charts; Histograms;

References

- Brenda Laurel, Design Research: Methods and Perspectives, The MIT Press, US, 2003
R. D. Wimmer & J. R. Dominick, Mass media research: An introduction. Belmont, California, Wadsworth Pub. Co., 2000
A. Hansen, Mass communication research methods. New Delhi: Log Angeles, 2009
E. R. Babbie, The practice of social research. Belmont, California, Wadsworth Pub. Co., 1992
C. R. Kothari, Research methodology: Methods & techniques. New Delhi: New Age International (P) Ltd., 2004



YEAR 3: SEMESTER 5

04. Universal Design (Product Design)

Unit 1: Orientation

What is Universal Design? Its Origin and emergence, Need and its relevance today, Examples of UD.

Unit 2: Principles and Goals

Principles of universal design, Goals of Universal Design, Understanding above from various design spectrums- Product, building, information, service

Unit 3: Deep Dive Universal

Inclusive - Accessible Design, Universal Design for Learning (UDL), Use of Assistive technologies, Research techniques like- AGNES (Age gain now empathy system simulation suit), Current ecosystem, Government Initiatives & policies.

Unit 4: Accessibility Standards and Guidelines

Physical accessibility standards for Barrier free environment, Web accessibility, WAI (Web Accessibility Initiative), World Wide Web Consortium (W3C)

Unit 5: Mini Project as Per Brief

References

Edward Steinfeld and Jordana L. Maisel, Universal Design – Creating Inclusive Environments, 2012
William Lidwell, Kritina Holden, Jill Butler; Universal Principles of Design, 2003
Bruce Hanington, Bella Martin; Universal Methods of Design, 2012
James Holmes-Seidle , Barrier-Free Design, 1996 CPWD,
Guidelines and space standards for Barrier free built environment for Disabled and Elderly Persons, 1998



YEAR 3: SEMESTER 5

04. Fashion Illustration (Textile and Fashion Design)

Unit 1: Basic human proportions

Anatomy and model drawing 8, 10, 12 head theory, Straight, • flesh, motion posture. Body figures and features – Hair styling, eye, face, arm, legs. (4, each) • Figure Drawing – body movements (kids, female and male), leg and hand movements, • face drawing and detailing.

Unit 2: Figure stylization

Reducing of figure from 8 head to 6 head and elongation of figure from 8 head to 10 head and 12 head. Figure foreshortening with 3 D – effect (2 each). Figure composition- theme based (2 each).

Unit 3: Garment details

Collars, cuffs, sleeves, yokes, necklines, pockets (3 each) Style manipulation Illustrations of skirt, trouser, gowns, frocks, shirt, jackets.

Unit 4: Sketching

Folds and curves of different fabric drapes. Different action poses and composition.

Unit 5: Rendering Techniques

Pencil, Steadler and Color Pencil, Charcoal. Fabric Rendering 10 Samples of Different Varieties of Fabric. Drawing a fully fledged fashion figure with all the parts of the body, front view, back view, side view and also different angles.

References

- Advanced Fashion Sketch Book, Bina Abling, OM Book Service, India (2007)
Basic fashion design Styling 978-2-940411-39-9
Sapna sarkas "Fashion and sketch book" 978-93-81031-39-1
Harold Carr "Fashion design and product development"
Fashion Design illustration Children Ireland
verekes "Fashion designers hand book for adobe illustration Centers" 978-1-4051-6055-1
Anmol Roy "Fashion designing and technologies" 978-81-8411-304-4
Fashion Illustration Flat drawing
Pratap Mulick "Sketching"
Eugeniakim "Saturday night ha" t0-307-33794-4
Tatham Seamas, "fashion design drawing course" 978-0-7641-2473-0
Fashion Drawing – The Basic Principles, Anne Allen and Julian Seaman, Anova Books.
Fashion illustration and Presentation, Manmeet Sodhia, Kalyani Publishers.
Fashion Source Book, Kathryn Mckelvey, Blackwell Science
Encyclopedia of fashion details, Patrick John Ireland, Batsford.
Fashion Illustration, Colin Barnes, Little Brown and Co. (UK) (April 1995).
Snap Fashion Sketch Book, Bill Glazer, Prentice Hall; 2 edition (2007).
Figure Drawing for Fashion, Isao Yajima, Graphic-Sha; First Edition (1987)
Fashion Art for the Fashion Industry, Rita Gersten, Fairchild Books (1989)



YEAR 3: SEMESTER 5

05. Design Economics

Unit 1: Consumer Buying Behavior for Innovations

Diffusion of Innovation and Adoption Curve, Blocks and risks to new product adoption, Launching Methods and Strategies for a New Product Introduction, Sales Promotions to accelerate introduction.

Unit 2: Market Attractiveness Analysis

Strategic Validation of the Opportunity and Attractiveness of the Market, Market Attractiveness Matrix versus Competitive Position or IE Matrix. Applications to a portfolio of projects.

Unit 3: Validation of Market Attractiveness

Market Size Studies, Estimations and Sales Forecast, Methods for New Products Demand Forecasting, Qualitative Break Down methodology for new products.

Unit 4: Introduction

Concepts of Textile Economics, Textile Economics of demand and supply, elasticity of demand, working of textile market mechanism, Theory of Production in textiles short run & long run. Textile environment of business: Introduction to concept of textile business environment and other factor.

Unit 5: Concepts

Different types of textile costs and Cost Functions, determination of price and output in perfect and imperfect market conditions, price discrimination. Demand forecasting with reference to different textiles and fashion industries.

Unit 6: Textile Industries Component of Environment

Economic, political, legal, social, technological & international Economic systems, economic planning in India, objectives, strategies and evaluation of year plan for domestic and international marketing.

Unit 7: Textile Industrial Policy and Industrial Licensing

New textile economic policies, textile Company regulatory legislations in India, MRTP, FEMA, EXIM in light of liberalization policies. Public sector in India: concepts, philosophy and objectives, performance, problems and constraints, Industrial Sickness, Privatization.

Unit 8: Textile Management

6Ms of textile industries planning, Organising, Staffing, Leading, Communicating, Controlling. Marketing Management, Trade practices, promotion, Theory of textile business cycles, Concept causes and Measures to control business cycles. Theories of inflation: causes and control of inflation, monetary and fiscal policy. Balance of Payments: concept, causes of disequilibrium and remedial methods

References

- Kahn, K. (2006). Chap. 1. In New Product Forecasting: An Applied Perspective. (pp. 10-18.). Sharpe Inc.
Baker, M. & Hart, S. (2007). Chaps. 9. Screening new products. In Product Strategy & Management. & Chaps. 11. Business Analysis. In Product Strategy & Management. (pp.308-327) (pp.256-273).
Baker, M. & Hart, S. (2007). Chaps. 13, Commercialization: test marketing and launching the new product. In Product Strategy & Management. (pp. 357-395.)
R.G. Lipsey : An Introduction to Positive Economics, ELBS, Oxford



JP Gould Jr. and E.P. Lazer : Micro-Economic Theory
S.Mukherjee, M. Mukherjee & A. Ghose : Microeconomics, Prentice-Hall
Sundaram & Black: The International Business Environment; Prentice Hall
P. Chidambaram: Business Environment; Vikas Publishing
Dutt R and Sundharam KPM: Indian Economy; S. Chand
Entrepreneurship and management of Small business study material.



YEAR 3: SEMESTER 5

06. Material and Process in design (Product Design)

Unit 1: Material Behavior and selection

Elastic and Plastic deformation- Mechanism of Plastic deformation-yield stress and shear strength- Perfect and Real crystals- Effect of strain rate and temperature on plastic behavior- Super plasticity- Deformation of non-crystalline materials- Material selection- Cost and service requirement- Recycling- Selection of material for mechanical properties- Strength, toughness and fatigue- Material selection for durability and surface wear and Corrosion resistance- Functional relation between materials and processing- Manufacturing characteristics of metals- Material selection charts and other aids material selection for aero, auto and nuclear application-Structural Product analysis-End Use behavior – Tooling in product design- Case studies in material selection.

Unit 2: Process Modeling and product design

Methods of analysis- Slab, slip line and upper bound solutions- Numerical methods- Effect of Friction- Contact problem- Basic analysis of process Forging, Drawing and sheet metal forming machining- Turning- modern materials- micro alloyed and dual phase steel- High strength low alloy metals Smart materials- Shape memory metals- Metallic Glasses- Nano Materials Metal foams- Properties and Applications for product design.

Unit 3: Non-Metals and Manufacturing

General properties and its importance of polymers Thermal and electrical properties mechanical properties- Criteria for selection Composite materials- fibers- Boron, glass, carbon, organic- Ceramic and metallic fibres- - Matrix materials- Polymer, metal and ceramics- properties and applications- Manufacturing methods of plastic products- Injection and blow moulding –Rotational moulding- Compression moulding-Transfer moulding- layering of composites

Unit 4: Product Design and assembly requirement

Structural product analysis- End use behaviour- Effect of tooling in product design-Design for joining and assembling Design for live hinges- Snap fits, design of corners, bushes and ribs- Design considerations- New product design- Methods of decoration-Bonding and cementing techniques- Thermal bonding- Machining of plastics-Parameters and effect- Case studies in material selection with relevance to product design and development

Unit 5: Development in material processing

Micro fabrication technologies- Tool for micro fabrication- Diamond and high speed machining- LIGA micro fabrication process- Multilayer X-ray lithography

Unit 6: Introduction to Smart / Intelligent Materials

Overview of Smart / Intelligent Materials, Primitive Functions of Intelligent materials, Intelligence Inherent in Materials, Actuator Materials, Sensing Technologies, Microsensors, Intelligent Systems,



Hybrid Smart Materials, Passive Sensory Smart Structures, Reactive actuators based smart structures,
Active Sensing and Reactive Smart Structures, Smart Skins



YEAR 3: SEMESTER 5

06. Material Enrichment (Textile and Fashion Design)

Unit 1: Traditional Indian embroidery

History, types of embroidery of different state of India – Kutch, Kathiwar, Sindli, Pulkari, Kantha, kasuthi, Chambarumal, Gold & silver embroidery, Zardosi, Chikankari, Kashida- Material, motifs, colour, stitches, technique, relevance

Unit 2: Tribal Embroidery

Introduction, Types – Nagaland, Manipuri, Lambadi, Thoda with their traditional influence, symbolism, techniques, fabric, stitches & colour combination.

Unit 3: Patch work

Applique Quilting-Introduction, tools, material & techniques

Unit 4: Crochet

Introduction, tools, material, techniques and types. Knitting – Basic, Texture, Rib, Diagonal, lace pattern, cable pattern, Cross, Knotted. Unit5 Special techniques-Braiding, Hooking, Smocking, bead & sequins

References

- Shaylaja; D. Naik, Traditional Embroideries of India – APH corp, New Delhi 1996
Sheila paine: Embroidered Textile- Thames & Hudson Ltd. 1990
Usha Srikant: Ethnic Embroideries of India
Savithri Pandit: Indian Embroidery.
Aasha Kutch works Border Designers book, book no 142, Vol 2
Animal embroideries and patterns Serena
Basis crochet stitches Erika knight 978-1843404040
Crochet holiday collection 53 crochet designs Donna Scott
Embroiders pattern book
Embroidery and stitch tools Amrit bajaj 978-81-8411-352-5
Embroidery designs for children's garments Nirmals .C Mistr
Embroidery Vol 5, Exclusive designer sarees
100 First crochet Lesley stanfield 978-1-84340-612-9
101 Folk embroidery and traditional handloom weaving Shailaja D. Naik
Needle craft skills techniques 65 practical projects Lucinda Gandert
Surface designing of textile fabrics Shailaja 81-224-1860-0
Donna Koolars 555 cross stitch Donna kooler



YEAR 3: SEMESTER 6

01. Design Studio VI (Product Design)

Unit 1: Introduction

Introduction to the design intervention in the human realm which add value and quality to the life.
Identifying system comprehensible, tangible and accessible environments.
Research of the system, components and stakeholders.
Understanding the interrelationship and interdependency of various components of identified system.
Analyzing and mapping the strengths and weakness of the system
Synthesizing and prioritizing the research observations leading to design brief.
Formulating the design brief.
Introducing students to critical creative thinking tools.
Ideation -- concept generation and explorations with quick explanatory models.
Finalization of the concept with design development and detailing.

Unit 2: Prototyping

Prototyping of 3D models.
Evaluation of new concepts
Hand and computer Renderings and finished model of the final design solution

References:

M. Chakraborti, .Estimation, Costing, Specification and Valuation in Civil engineering.
Dutta, Estimating and Costing, S. Dutta and Co., Lucknow 1983
S. C. Rangwala, Elements of Estimating and costing, Charoter publishing House, Anand, India, 1984.



YEAR 3: SEMESTER 6

01. Design Studio VI (Textile and Fashion Design)

Unit 1: Rendering techniques

Water colour, poster colour, oil and acrylic (fabric rendering of different varieties of fabric). Stylized rendering - Different Rendering Style. Development of Costumes- on Croquis using elements of fashion.

Unit 2: Experimenting with collage as a method of illustration

Croquis and flat sketches, male, female and kids.

Unit 3: Fashion Figure

Composition and stylizing figure. Photo Analysis - Different garments of Kids, Male and Female.

Unit 4: Illustrations

Packaging, presentation, freelance, stills. Flats and Spec Sheets - Draw Flats and garment Spec Sheets.

Unit 5: Portfolio presentation

Product development through fashion illustration in apparels and accessories.

References

- Advanced Fashion Sketch Book, Bina Abling, OM Book Service, India (2007)
Basic fashion design Styling 978-2-940411-39-9
Sapna sarkas "Fashion and sketch book" 978-93-81031-39-1
Harold Carr "Fashion design and product development"
Fashion Design illustration Children Ireland
Verekes "Fashion designers hand book for adobe illustration Centers" 978-1-4051-6055-1
Anmol Roy "Fashion designing and technologies" 978-81-8411-304-4
Fashion Illustration Flat drawing
Pratap Mulick "Sketching"
Eugeniakim "Saturday night ha" t0-307-33794-4
Tatham Seamas, "fashion design drawing course" 978-0-7641-2473-0
Fashion Drawing – The Basic Principles, Anne Allen and Julian Seaman, Anova Books.
Fashion illustration and Presentation, Manmeet Sodhia, Kalyani Publishers.
Fashion Source Book, Kathryn Mckelvey, Blackwell Science
Encyclopedia of fashion details, Patrick John Ireland, Batsford.
Fashion Illustration, Colin Barnes, Little Brown and Co. (UK) (April 1995).
Snap Fashion Sketch Book, Bill Glazer, Prentice Hall; 2 edition (2007).
Figure Drawing for Fashion, Isao Yajima, Graphic-Sha; First Edition (1987)
Fashion Art for the Fashion Industry, Rita Gersten, Fairchild Books (1989)



YEAR 3: SEMESTER 6

02. Brand Identity and Intellectual Property

Unit 1: Intellectual Property Right and Brand Naming

Unit 2: Brand Management, Brand Identity vs. Brand Image

Unit 3: Brand Strategies for a portfolio of products and line extensions

Unit 4: Product quality and Sustainable Designing

Unit 5: Technical specifications Norms

Unit 6: Matrix of the Houses of Quality

Integrating customer requirements in the design

References

- Aaker, D. & Joachimsthaler, E. Chap. 2. Brand identity the cornerstone of the brand strategy. In Brand Leadership. (pp. 31- 64). New York: The Free Press.
- Ulrich, K. & Eppinger, S. (2012). Chap. 6. Product specifications. In Product Design & Development. (pp. 91-116).
- Cohen, L. (1995). Chap. 4, 5, 6 & 17. Quality Function Deployment. How to make QFD work for you. (pp. 68-122) & (pp. 296-306). Massachusetts: Addison-Wesley Publishing Co.
- Dyllick, T. & Rost, Z. (2017) Towards true product sustainability. Journal of Cleaner Production. 162, pp. 346-360.



YEAR 3: SEMESTER 6

03. Product Photography (Product Design)

Unit 1: Overview Of Product Photography

Product Photography Significance – Role In Promotion Of Products - Categorization Of Products – The Lighting Equipment – Types Of Lighting Units – Accessories – Digital Lights - Study Of Concepts – Accessories - Props – Backgrounds - Models – Locations – Hiring Of Studios – Equipment.

Unit 2: Electronics Products

Shooting Script – Lighting Schemes – Exercises.

Unit 3: House Hold Products

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

Unit 4: Executive Products

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

Unit 5: Industrial Photographer

Lighting in Natural & Artificial

References

- 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.



YEAR 3: SEMESTER 6

03. Sewing Techniques and Accessories (Textile and Fashion Design)

Unit 1: Sewing machine

Parts, functions, care and maintenance. Accessories of sewing- Bobbin, bobbin case, needle and its types.

Unit 2: Sewing Techniques

Basic hand stitches – Basting, running, tacking, hand overcast, buttonhole, Hemming stitches – plain and blind hemming and slip stitch.

Unit 3: Machine Stitching

Plain seam, edge, single top, double top, shirring and gathering. Seam & seam finishes – Flat fell, French seam, lapped, piped, slot, pinked, overcast, pinked & stitched. Sewing techniques- decorative Fullness – Darts, tucks, pleats, gathers and style line. Yokes – with and without Fullness. Sleeves – plain, puffed, Raglan and Kimono sleeves. Collars – Peterpan, shawl and shirt collar. Fastners – Press button, hook & eye, shirt button, button hole and zips. Finishes – Neckline finishes – Facing, shaped, piping / binding, placket finishing – continuous one piece, two piece bound placket.

Unit 4: Pattern Making

Body Ideals – Infant, children, Men & Women (Standard measurement). Preparing basic blocks – front, back, sleeve, skirt & trousers for kids, women and men.

References:

- Helen J Armstrong, Pattern Making for Fashion Design, Prentice Hall
Pattern + palette – 2Arrizabalaga
Pattern cutting and making up Martin .M,shoben 81-239-1373-7
Pattern cutting and making up Martin81-239-1373-7
Pattern Making of fashion Amstrong 978-81-317-2459-0, 978-317-2459-
Harold Carr & Barbara Lathem, The Tachnology of Clothing Manufacture, Oxford Pub, USA, 1994
Gerry Cooklin, Introduction to Clothing Manufacture, Blackwell Science, UK, 1991
Metric Pattern cutting & Grading by Winfred Aldrich.
Bane Allyne, Flat pattern design. M.C. Graw – Hill Pub. USA
Winfred Aldrich, “Metric Pattern Cutting”. Black Well Science. UK
Helen J. Armstrong, “Pattern Making for fashion design” Prentice Hall



YEAR 3: SEMESTER 6

04. Retail Environment

Unit 1: Retail

Meaning - Functions and special characteristics of Retailer- Reasons for studying. Retailing- Marketing- Retailer Equation- Marketing concepts applied to retailing.

Unit 2: Retail Model And Theories Of Retail Development

Life cycle and phase in growth of retail markets- Business models in retail- other retail models.

Unit 3: Strategic Planning In Retailing

Situation Analysis- Objectives- Need for identifying consumer needs- Overall strategy, feedback and control- consumer decision- making process.

Unit 4: Retail in India

Evolution and size of retail in India- Drivers of retail change in India Foreign Direct Investment in retail- Challenges in retail developments in India.

Unit 5: Global Retail Markets

Strategic planning process for global retailers- Challenges and Threats in global retailing- Factors affecting the success of a global retailing strategy.

References

Swapna Pradhan- Retailing Management- Text and Cases, Tata McGraw Hill- 2 nd edition, 2004.

Barry Berman and Joel R Evans- Retailing Management- A Strategic Approach, Prentice Hall of India, 8th Edition, 2002.

James R. Ogden, Denise Ogden- Integrated, Retail Management- Biztantra 2005.

Gibson G Vedamani- Retail Management- Functional Principles and Practice, Jaico Publishing House, Second edition, 2004.



YEAR 3: SEMESTER 6

05. Entrepreneurship Development and Professional Practice in Design

Unit 1: Entrepreneurship

Meaning – Importance, Types – Roles of Entrepreneurs in Economic Development – Qualities of an Entrepreneur – Entrepreneurship as a career.

Unit 2: How to start Business

Product selection – Form of ownership – plant location – Land, Building. Water and Power – Raw Materials – Machinery – Man Power – Other – Infrastructural facilities – Licensing Registration and local byelaws.

Unit 3: Institutional arrangement for Entrepreneurship Development

D.I.C., I.T.C.O.T., S.I.D.C.O., N.S.I.C., M.S.M.E., – Institutional Finance to Entrepreneurs. T.I.I.C., S.I.D.B.I., Commercial Banks – Incentives to small scale Industries.

Unit 4: Project Report

Meaning and Importance – Project Identification – Contents of Project Report – Formulation of a project report – Project appraisal – Market Feasibility – Technical Feasibility – Financial Feasibility and Economic Feasibility.

Unit 5: Entrepreneurship Development in India

Women Entrepreneurship in India – Sickness in Small scale industries and their remedial measures.

Unit 6: Professional Ethics

Ethics in Profession, Code of conduct

References:

- Riadh Habash, Green Engineering: Innovation, Entrepreneurship and Design, 2017
- Ted Crawford, AIGA Professional Practices in Graphic Design, Allworth Press, 2008
- Douglas Davis, Creative Strategy and the Business of Design, 2016
- Shan Preddy, How to Run a Successful Design Business
- The New Professional Practice, Gower Publishing, Ltd., 2011
- Min Basadur, Michael Goldsby, Design-Centered Entrepreneurship, 2016

