

Indus Design School - Product Design								
B.Design			II Year	Semester III				
Code	Course	T/P/T&P	Hours/course	Hours/week	Lecture	Practical	Credits	Days
IDPD0301	Drawing & Sketching	P	30	2	0	2	1	20
IDPD0302	Representation Techniques-I	P	54	4	2	2	3	36
IDPD0303	Technical Drawing – I	T&P	45	3	1	2	2	30
IDPD0304	Colour Theory & Psychology	T&P	54	4	2	2	3	36
IDPD0305	Materials & Processes – I	T&P	30	2	0	2	1	20
IDPD0306	Model Making – I	P	54	4	0	4	2	36
IDPD0307	Basic Design – I	T&P	54	4	2	2	3	36
IDPD0308	Design Process & Methodology	T&P	30	2	0	2	1	20
IDPD0309	Simple Product Design (SPD)	P	84	6	2	4	4	56
IDPD0310	Electives (Photography)	P	45	3	1	2	2	30
	Jury Preparation		30					5
	Hours & Credits		510	35			22	

INDUS DESIGN SCHOOL – PRODUCT DESIGN – B.DES		
Subject: DRAWING & SKETCHING		
Subject Code: DF0111	Year: II	Semester: III
L: 0 T: 0 P: 2 C: 1	Hours: 30	Days: 20

Course Objectives:

- Learn the techniques of fine pencil drawing to explore different fine art subjects such as animals, birds, flowers, insects, still life, objects, scenery, etc.
- Explore the use of pencil and various tools to create textures for different subjects.

Course Content:

- Introduction to Drawing
- The tools artists use to draw
- Value & Shading
- Textures and How to Create Them
- Drawing a Still Life

Course Reference Material:

- Anatomy and Drawing by Victor Perard
- Successful Drawing by Andrew Loomis
- Drawing People by Barbara Bradley

INDUS DESIGN SCHOOL – PRODUCT DESIGN – B.DES		
Subject: REPRESENTATION TECHNIQUES - I		
Subject Code: IDPD0302	Year: II	Semester: III
L: 2 T: 0 P: 2 C: 3	Hours: 60	Days: 40

Course Objectives:

At the end of the course student will be able to:

1. Visualize and represent products and their components using various drawing methods
2. Be able to do Product renderings and will master presentation techniques

Course Content:

- Introduction to principles of light and shadow lines, planes and simple solids due to near and distant sources of light.
- Rendering techniques using pen & ink, colour, values, tones etc.

Course Reference Material:

1. *Design Drawing*, Francis D K Ching & Steven Juroszek
2. *Drawing for Product Designers*, Kevin Henry
3. *Drawing for Designers*, Alan Pipes
4. *Creative Metal Forming*, Betty Helen Longhi

INDUS DESIGN SCHOOL – PRODUCT DESIGN – B.DES		
Subject: TECHNICAL DRAWING - I		
Subject Code: IDPD0303	Year: II	Semester: III
L: 1 T: 0 P: 2 C: 2	Hours: 45	Days: 30

Course Objectives:

At the end of the course student will be able to:

1. Draw Perspective, Orthographic and Axonometric views of products and their assembly
2. Communicate product construction and details through production drawings

Course Content:

- Detail Drawings: Drawing technical mechanisms and details in projections

Course Reference Material:

1. *Engineering Drawing*, N. D. Bhatt

INDUS DESIGN SCHOOL – PRODUCT DESIGN – B.DES		
Subject: COLOUR THEORY & PSYCHOLOGY		
Subject Code: IDPD0304	Year: II	Semester: III
L: 2 T: 0 P: 2 C: 3	Hours: 54	Days: 36

Course Objectives:

- Color psychology is the study of colors in relation to human behavior.
- It aims to determine how color affects our day to day decisions such as the items we buy.
- Color meanings can have an impact on why we prefer certain colors over others.

Course Content:

- Additive & Subtracting
- Color Interaction of Color & Relativity
- Color in Art & Design Psychological
- Perception of Color
- Color Reacts (Psychological)

Course Reference Material:

- Color psychology and color therapy Book by Faber Birren
- Interaction of color Book by Josef Albers

INDUS DESIGN SCHOOL – PRODUCT DESIGN – B.DES		
Subject: MATERIALS & PROCESSES - I		
Subject Code: IDPD0305	Year: II	Semester: III
L: 0 T: 0 P: 2 C: 1	Hours: 30	Days: 20

Course Objectives:

At the end of the course the student will be able to:

1. Create objects using techniques of 'casting, shaping and turning' metal
2. Make objects using advanced techniques for shaping natural and synthesized wood
3. Make a 'master' form for casting and/or make a mold

Course Content:

The course would focus on advanced explorations in wood and metal:

- Visits to various fabrication & production workshops producing sections, components, furniture, objects
- Workshop based assignments to use various techniques observed, to make forms

Course Reference Material:

1. *Materials for Design*, Chris Lefteri
2. *Metal Techniques for Craftsmen: A Basic Manual on the Methods of Forming and Decorating Metals*, Oppi Untracht
3. *Complete Metalsmith*, Tim McCreight,
4. *Creative Metal Forming*, Betty Helen Longhi, Cynthia Eid
5. *Understanding Wood: A Craftsman's Guide to Wood Technology*, R. Bruce Hoadley
6. *What wood is that? : A manual of wood identification*, Herbert Leeson Edlin
7. *Identifying Wood: Accurate Results With Simple Tools*, R. Bruce Hoadley
8. *Wood: Identification and Use*, Terry Potter

INDUS DESIGN SCHOOL – PRODUCT DESIGN – B.DES		
Subject: MODEL MAKING - I		
Subject Code: IDPD0306	Year: II	Semester: III
L: 0 T: 0 P: 4 C: 2	Hours: 54	Days: 36

Course Objectives:

At the end of the course the student will be able to:

1. Create objects using techniques of 'casting, shaping and turning' metal
2. Make objects using advanced techniques for shaping natural and synthesized wood
3. Make a 'master' form for casting and/or make a mold

Course Content:

The course would focus on advanced explorations in wood and metal:

- Visits to various fabrication & production workshops producing sections, components, furniture, objects
- Workshop based assignments to use various techniques observed, to make forms

Course Reference Material:

1. *Materials for Design*, Chris Lefteri
2. *Metal Techniques for Craftsmen: A Basic Manual on the Methods of Forming and Decorating Metals*, Oppi Untracht
3. *Complete Metalsmith*, Tim McCreight,
4. Creative Metal Forming, Betty Helen Longhi, Cynthia Eid
5. *Understanding Wood: A Craftsman's Guide to Wood Technology*, R. Bruce Hoadley
6. *What wood is that? : A manual of wood identification*, Herbert Leeson Edlin
7. *Identifying Wood: Accurate Results With Simple Tools*, R. Bruce Hoadley
8. *Wood: Identification and Use*, Terry Potter

INDUS DESIGN SCHOOL – PRODUCT DESIGN – B.DES		
Subject: BASIC DESIGN - I		
Subject Code: IDPD0307	Year: II	Semester: III
L: 2 T: 0 P: 2 C: 3	Hours: 54	Days: 36

Course Objectives:

At the end of the course students will be equipped to:

1. Generate and create new, 2 and 3 dimensional forms
2. Transform an existing natural form into newer forms using principles of simplification and stylization
3. Abstract forms and communicate its 'essence'

Course Content:

With the use of drawing and modeling, students will generate new forms and learn to transform existing forms by:

- Generating forms through 'Simplification': Study of Realistic Flower, Plant or any other natural element- animate or inanimate
- Generating forms through 'Abstraction': Using Geometric forms and with an application of corner and edge curvatures, radii manipulation and with the application of elements and principles of Design evolve further attributes in the forms
- Generating forms with 'Movement in Space': Evolving forms with the movement of geometric forms in space

Course Reference Material:

1. The Elements of Design- *Rediscovering Colours, Textures, Forms and Shapes*, Loan Oei & Cecile De Kegel
2. *Elements of Design: Rowena Reed Kostellow and the Structure of Visual Relationships (Design Briefs)*, Gail Greet Hannah
3. *Universal Principles of Design*, Lidwell, Holden, and Butler
4. *Drawing: A Creative Process*, Francis D.K. Ching,
5. *Design by Nature: Using Universal Forms and Principles in Design (Voices That Matter)*, Maggie Macnab

INDUS DESIGN SCHOOL – PRODUCT DESIGN – B.DES		
Subject: DESIGN PROCESS & METHODOLOGY		
Subject Code: IDPD0308	Year: II	Semester: III
L: 0 T: 0 P: 2 C: 1	Hours: 30	Days: 20

Course Objectives:

- To familiarize students with design thinking concepts and principles.
- To ensure students can practice the methods, processes and tools of design thinking.
- To ensure students can apply the design thinking approach and have the ability to model real world situations.
- To enable students to analyze primary and secondary research in the introduction to design thinking

Course Content:

- Examine Design Thinking concepts and principles
- Practice the methods, processes, and tools of Design Thinking
- Apply the Design Thinking approach and model to real world situations
- Analyze the role of primary and secondary research in the discovery stage of Design Thinking
- Gestalt Perception

Course Reference Material:

- The Design Process 2015 Edition by Karl Aspelund.

INDUS DESIGN SCHOOL – PRODUCT DESIGN – B.DES		
Subject: SIMPLE PRODUCT DESIGN		
Subject Code: IDPD0309	Year: II	Semester: III
L: 2 T: 0 P: 4 C: 4	Hours: 84	Days: 56

Course Objectives:

At the end of the course the student will be able to:

1. Design a simple product
2. Create a User-centered design based on User research
3. Prototype and test the product
4. Incorporate feedback received from Users and after Material testing

Course Content:

- Introduction to Product Design
- Introduction to Product Design Process
- Product Analysis of selected product
- Study of existing product with reference to User needs & environment of Use
- Identification of issues with the existing product and stating new requirements to improve the product
- Design Concept Development and Iterations
- Final design Concept and presentation with details of manufacturing
- Final design prototype in 1:1 scale and User feedback

The inputs would be through lectures and presentations on:

- Industrial Design- an overview
- Presentation on the Product design process
- Case study of known industrial designers and simple products

Course Reference Material:

1. *As little design as possible*, Dieter Rams
2. *Design for the real world*, Victor Papa Nek
3. *Design and environment*, H. Kumar Vyas
4. *Design: The Indian Context*, H. Kumar Vyas

INDUS DESIGN SCHOOL – PRODUCT DESIGN – B.DES		
Subject: ELECTIVES (PHOTOGRAPHY)		
Subject Code: IDPD0310	Year: II	Semester: III
L: 1 T: 0 P: 2 C: 2	Hours: 45	Days: 30

Course Objectives:

At the end of the course students will:

1. Use advanced techniques of photography to create photographic compositions
2. Create narratives using single frames in continuity
3. Document and communicate, processes of manufacturing and making

Course Content:

- Introduction to technicalities of Picture styles, RAW image, Digital imaging, Sensor, Crop factor, Light meter reading (Incident, reflected)
- Photography as Contemporary Art
- Work of famous photographers
- Composition & Shooting at night
- Creating a body of work through Narrative photography

This would be learned through:

- Outdoor Photography based on parameters of time, space, etc.
- Live Photography of workshops, public spaces, factories, cottage industries - documenting processes, people at work, and making
- Editing images to refine the presentation of images

Course Reference Material:

1. *Starting Photography*, Andrews, Philip & Langford,
2. *Light and Lens: Photography in the Digital Age*, Hirsch, Robert
3. *Photographic Composition: A Visual Guide*, Page, David A. & Zakia, Richard D.,
4. *Light Science and Magic: An Introduction to Photographic Lighting*, Hunter, Fil & Biver, Steven & Fuqua, Paul
5. *Perception and Imaging: Photography – A Way of Seeing*, Zakia, Richard D.,

Indus Design School								
B.Design II Year Semester IV								
Code	Course	T/P/T&P	Hours/course	Hours/week	Lecture	Practical	Credits	Days
IDPD0401	SLA - I	T&P	30	2	0	2	1	20
IDPD0402	Representation Techniques - II	P	60	4	2	2	3	40
IDPD0403	Technical Studies - I	T&P	30	2	0	2	1	20
IDPD0404	Ergonomics-Display & Control	T&P	45	3	1	2	2	30
IDPD0405	Materials & Processes – II	T&P	30	2	0	2	1	20
IDPD0406	Model Making – II	P	60	4	0	4	2	40
IDPD0407	Graphic Design – I	P	60	4	2	2	3	40
IDPD0408	History of Design – II	P	60	4	0	4	2	40
IDPD0409	Display & Control Project	P	105	7	3	4	5	70
IDPD0410	Electives	P	60	4	0	4	2	40
IDPD0411	Industry Training		60	4		4	2	15
	Jury Preparation		30					5
	Hours & Credits		570	35			24	

INDUS DESIGN SCHOOL – PRODUCT DESIGN – B.DES		
Subject: Studies in Liberal Arts - I		
Subject Code: IDPD0401	Year: II	Semester: IV
L: 0 T: 0 P: 2 C: 1	Hours: 30	Days: 20

Course Objectives:

- Study of Sociology, Culture and Tradition and its impact on Design.

Course Content:

- Different models of Sociology, Culture, and Tradition and how do they relate or influence design.

INDUS DESIGN SCHOOL – PRODUCT DESIGN – B.DES		
Subject: Representation Techniques - II		
Subject Code: IDPD0402	Year: II	Semester: IV
L: 2 T: 0 P: 2 C: 3	Hours: 60	Days: 40

Course Objectives:

At the end of the course student will be able to:

- Visualize and represent products and their components using various drawing methods
- Draw Perspective, Orthographic and Axonometric views of products and their assembly

Course Content:

- Design Drawing: Drawing products and mechanisms illustrating 'construction and assembly': Drawing Simple Product's components & assembly like a spectacle, fountain pen, mobile phone, wheelbarrow, etc.
- Process Drawings: Diagrams illustrating a process of construction
- Detail Drawings: Drawing technical mechanisms and details;
 - Drawing Complex Mechanisms Components & Assembly like a cycle chain, brake details, seat assembly, etc.

Course Reference Material:

1. *Design Drawing*, Francis D K Ching & Steven Juroszek
2. *Drawing for Product Designers*, Kevin Henry
3. *Drawing for Designers*, Alan Pipes
4. *Creative Metal Forming*, Betty Helen Longhi

INDUS DESIGN SCHOOL – PRODUCT DESIGN – B.DES		
Subject: Technical Studies - I		
Subject Code: IDPD0403	Year: II	Semester: IV
L: 0 T: 0 P: 2 C: 1	Hours: 30	Days: 20

Course Objectives:

Introduction to Electronics as a part of Technical Studies to understand the technical requirements, components and processes to design and develop an electronic product.

This course deals with the study of the process of developing an electronic product, components that form an electronic product and understanding of parameters required to define the components.

understanding and application of properties and relationships of form and structure and is a vital resource for design related tasks. This course is a critical input in pursuance of design learning.

Geometry is often seen in a limited perspective as concrete derivations of abstract concepts in mathematics.

The approach to teaching this subject is redefined for our context. We will draw upon the knowledge base of generations of mathematicians, scientists, artists, engineers, architects and designers who have helped to develop, refine and elaborate. A term that could describe this approach is morphology – the study of form and structure taken to its broadest possible interpretation for any kind of design task or undertaking.

This works at both the micro and the macro level observations to reveal meaningful patterns and relationships that are an essential design resource. Further, these concepts and skills will provide a framework for the subsequent generation and manipulation of form and as an important basis for a vocabulary for analysis and description of forms, patterns and structures. An understanding of these relationships constitutes an essential part of design training.

This knowledge is a tool in concept formation and also in translation of these concepts into tangible expressions.

Course Content:

1. Introduction to Electronics (Hardware)
2. Different types of Screens – parameters required to decide on the screen type and size
3. Different types of Button/Keyboards – parameters required to decide on keyboard buttons
4. How to simplify products for electronic design?
5. Proof of concept for prototype building
6. Develop Electronic Hardware:
 - a. Create preliminary production design
 - i. System block diagram
 - ii. Selection of components
 - iii. Estimate the production cost
 - b. Design the schematic circuit diagram
 - c. Design of printed circuit board (PCB)
 - d. Generate final BOM
 - e. Order the PCB prototype
 - f. Evaluate, Program, Debug & Repeat

7. Considerations required for enclosure design
Do let me know if this is feasible or there are some changes required?
Your help and support regarding the same is highly appreciated.

Course Material:

1. A4 and A3 Size Sketch Book (hard bound)
2. Grid/Graph Paper
3. Pencil (2H and HB)
4. Steel Scale (450 mm)
5. Set Square Set
6. Compass Set
7. Screw Driver Set

INDUS DESIGN SCHOOL – PRODUCT DESIGN – B.DES		
Subject: Visual Ergonomics - Display & Control		
Subject Code: IDPD0404	Year: II	Semester: IV
L: 1 T: 0 P: 2 C: 2	Hours: 45	Days: 30

Course Objectives:

- Promote basic and applied ergonomic research within the domain of visual ergonomics.
- Promote best ergonomics practice within the domain of Visual Ergonomics so that it is comfortable, safe and efficient work.
- Encourage high standards within academic and practical Visual Ergonomics education/

Course Content:

- Introducing Ergonomics
- Discipline approach: Ergonomics/ Human factors
- Behaviour and perception
- Ergonomic design process
- Visual Issues

Course Reference Material:

- Visual Ergonomics in the Workplace Book by Jeffrey Anshel
- The Design of Everyday Things Book by Don Norman

INDUS DESIGN SCHOOL – PRODUCT DESIGN – B.DES		
Subject: Materials & Processes - II		
Subject Code: IDPD0405	Year: II	Semester: IV
L: 0 T: 0 P: 2 C: 1	Hours: 30	Days: 20

Course Objectives:

At the end of the course the student will be

1. Equipped to understand plastics as a material, various compositions of plastics available currently and their application in current context
2. Understand methods of making consumer and industrial products using various manufacturing techniques for plastics

Course Content:

Unit 1 Introduction to various kinds of plastics

Unit 2 Various methods of producing plastic goods

- 2.1 Injection Moulding, Extrusion Moulding, Blow Moulding
- 2.2 Dye Casting, Mould Making & Master making
- 2.3 Fabrication, Thermo- forming etc.
- 2.4 Documentation of various processes seen through Industry visits

Unit 3 Practice based studio work

- 3.1 Exploration & Fabrication of simple forms & objects using variety of processes, including bonding, carving, cutting, sticking, turning and welding

Unit 4 Plastics & Environment; issues of sustainable practice

Course Reference Material:

- 1. Plastic Dreams by Charlotte and Peter Fiell
- 2. Industrial Design Reference & Specification Book: Dan Cuffaro, Isaac Zaksenberg
- 3. I Am Plastic: The Designer Toy Explosion by Paul Budnitz

INDUS DESIGN SCHOOL – PRODUCT DESIGN – B.DES		
Subject: Model Making - II		
Subject Code: IDPD0406	Year: II	Semester: IV
L: 0 T: 0 P: 4 C: 2	Hours: 60	Days: 40

Course Objectives:

At the end of the course the student will be

- 3. Equipped to understand plastics as a material, various compositions of plastics available currently and their application in current context
- 4. Understand methods of making consumer and industrial products using various manufacturing techniques for plastics

Course Content:

Unit 1 Introduction to various kinds of plastics

Unit 2 Various methods of producing plastic goods

- 4.1 Injection Moulding, Extrusion Moulding, Blow Moulding
- 4.2 Dye Casting, Mould Making & Master making
- 4.3 Fabrication, Thermo- forming etc.
- 4.4 Documentation of various processes seen through Industry visits

Unit 3 Practice based studio work

- 3.1 Exploration & Fabrication of simple forms & objects using variety of processes, including bonding, carving, cutting, sticking, turning and welding

Unit 4 Plastics & Environment; issues of sustainable practice

Course Reference Material:

- 4. Plastic Dreams by Charlotte and Peter Fiell
- 5. Industrial Design Reference & Specification Book: Dan Cuffaro, Isaac Zaksenberg

6. I Am Plastic: The Designer Toy Explosion by Paul Budnitz

INDUS DESIGN SCHOOL – PRODUCT DESIGN – B.DES		
Subject: Graphic Design - I		
Subject Code: IDPD0407	Year: II	Semester: IV
L: 2 T: 0 P: 2 C: 3	Hours: 60	Days: 40

Course Objectives:

- To familiarize the student with basic principles and fundamentals in visual art and design.
- To introduce terminology necessary to communicate concepts and theory in art and design.
- Create computer-based projects using Adobe Photoshop and Illustrator software programs

Course Content:

- Elements of Graphic Design
- Principles of Graphic Design
- Moodboard magic
- Design to communicate
- Color combos

Course Reference Material:

- Graphic design Book by Ellen Lupton
- The Graphic Design Idea Book Book by Gail Anderson and Steven Heller

INDUS DESIGN SCHOOL – PRODUCT DESIGN – B.DES		
Subject: History of Design - II		
Subject Code: IDPD0408	Year: II	Semester: IV
L: 0 T: 0 P: 4 C: 2	Hours: 60	Days: 40

Course Objectives:

At the end of the course the student will:

1. Understand the co- relation between Form, Function and Technology in the creation of objects and devices
2. Comprehend the evolution of technical know-how and the use of technology to improvise
3. Research on the human impulse for critical thinking to innovate with objects, tools and devices

Course Content:

To introduce students to what governs the development of objects:

- Geography and context of available materials,
- Needs of society; trade and expansion,
- Know-how and understanding of materials, technique and technology,
- Semantic meanings associated with the use and hence symbolic orientation with material, colour, form, ownership
- Inspirational principles and ideals associated with intangible attributes like power etc. The course will combine visual lectures, which would include scholarly theoretical frameworks.

Learning would also be initiated through Individual assignments based on objects and their various functions. For

example, Dry grinders, Juice Makers, Kettles, Roti making Devices, Oil containers & Dispensers, Ink Pots, Writing Instrument-Pens, Hammers etc.

Course Reference Material:

1. *Design and Environment: A Primer*, H. Kumar Vyas
2. *Design, the Indian Context: Learning the Historical Rationale of the Indian Design Idiom*, H. Kumar Vyas
3. *The Design of Everyday Things*, Don Norman
4. *Emotional Design*, Don Norman
5. *The Earthen Drum*, Pupul Jayakar

INDUS DESIGN SCHOOL – PRODUCT DESIGN – B.DES		
Subject: Display and Control Project / Techno Aesthetic Detailing		
Subject Code: IDPD0409	Year: II	Semester: IV
L: 3 T: 0 P: 4 C: 5	Hours: 105	Days: 70

Course Objectives:

Through this design project course, students will:

1. Understand the mechanics involved in a simple object or device to be improved upon
2. Design and produce a working prototype of the simple mechanical device/ appliance
3. Base their design solutions on user research, user experience and user- testing
4. Create solutions that are based on knowledge of materials and processes
5. Understand various qualitative and quantitative research methods specific to design projects

Course Content:

Unit 1: Basic concepts of research methods

The course will look at the basic concepts of research methods and the tools that are generally used for quantitative and qualitative research methods

- 1.1 Survey and Questionnaire methods
- 1.2 Observation methods, stakeholder research, Ethnographic and user research
- 1.3 Market Research and opportunity mapping

Unit 2: Identification of Need

Through application of the methods introduced in Unit 1, the students will;

- 1.1 Identify the needs of people in their daily life related to work and home environment where a mechanical device/ appliance is used.
- 1.2 Study in detail the above mentioned objects and products specific to functional and/ or other needs
- 1.3 Study User environments where such objects are in use.

Unit 3: User research, market research and opportunity Mapping

- 3.1 Stakeholder research, Ethnographic study
- 3.2 Identification of problems/ opportunities for redesign if any, in the products studied
- 3.3 Study of existing devices/ applications in the market; materials used technology of production of the products

Unit 4: Articulation of Brief, Design Ideations, Concept finalization

- 4.1 Redesign/ Improvement/ innovating on the product
- 4.2 Making of mock- up models
- 4.3 Making of 1:1 scale final prototype in actual material

Course Reference Material:

1. The Design of Everyday Things by Don Norman
2. Designing Design by Kenya Hara
3. Universal principles of Design by William Lidwell, Kritina Holden and Jill Butler
4. Cradle to Cradle: Remaking the Way We Make Things by William McDonough and Michael Braungart

INDUS DESIGN SCHOOL – PRODUCT DESIGN – B.DES		
Subject: Electives		
Subject Code: IDPD0410	Year: II	Semester: IV
L: 0 T: 0 P: 4 C: 2	Hours: 60	Days: 40

Course Objectives:

Course Content:

Course Reference Material:

INDUS DESIGN SCHOOL – PRODUCT DESIGN – B.DES		
Subject: Industry Training		
Subject Code: IDPD0411	Year: II	Semester: IV
L: 0 T: 0 P: 4 C: 2	Hours: 60	Days: 10

Course Objectives:

At the end of the Summer Internship-Apprenticeship of 6 weeks the students will:

1. Develop and enhance professional competencies
2. Have exposure to real life working environment
3. Understand the importance of industry work environment, market requirements, project deadlines, team-work and methodologies in practice, professional work ethics etc.

Course Content:

Unit 1: Apprenticeship in the chosen industry

- a. Application of design skills learnt in previous semesters
- b. Development of practical knowledge related to specialization
- c. Strengthening work values
- d. Developing communication skills
- e. Developing an understanding of market requirements, client briefs etc.
- f. Understanding the work environment and design processes/methods used

Unit 2: Documentation of Experience

Documentation of the summer internship – apprenticeship

- 2.1 Organization profile
- 2.2 Processes/methods observed, work portfolio, experience and knowledge gained
- 2.3 New skills developed and insights gathered

Course Reference Material:

1. AIGA Professional Practice in Graphic Design, Tad Crawford
2. The Professional Practice of Design, Dorothy Goslett

Indus Design School								
B.Design III Year Semester V								
Code	Course	T/P/T&P	Hours/course	Hours/week	Lecture	Practical	Credits	Days
IDPD0501	SLA – II	T&P	30	2	0	2	1	20
IDPD0502	Representation Techniques - III	P	60	4	2	2	3	40
IDPD0503	Technical Drawing – II	T&P	45	3	1	2	2	30
IDPD0504	Ergonomics – Workstation	T&P	45	3	1	2	2	30
IDPD0505	Materials & Processes – III	T&P	30	2	0	2	1	20
IDPD0506	Model Making – III	P	60	4	0	4	2	40
IDPD0507	Graphic Design – II	P	60	4	2	2	3	40
IDPD0508	Production Techniques – I	T&P	30	2	0	2	1	20
IDPD0509	Techno-Aesthetic Detailing	P	120	8	2	6	5	80
IDPD0510	Electives (Craft Documentation & Revitalization)	P	60	4	0	4	2	40
IDPD0511	Self-Study - CAD Software	P	90	6		6	3	15
	Jury Preparation		30					5
	Hours & Credits		570	35			26	

INDUS DESIGN SCHOOL – PRODUCT DESIGN – B.DES		
Subject: SLA - II		
Subject Code: IDPD0501	Year: III	Semester: V
L: 0 T: 0 P: 2 C: 1	Hours: 30	Days: 20

Course Objectives:

- Study of Philosophy, Trend and culture of the existing products

Course Content:

Different methods of understanding the brand and their philosophy of design language and how it influences their current trend and the design

INDUS DESIGN SCHOOL – PRODUCT DESIGN – B.DES		
Subject: REPRESENTATION TECHNIQUES -III		
Subject Code: IDPD0502	Year: III	Semester: V
L: 2 T: 0 P: 2 C: 3	Hours: 60	Days: 40

Course Objectives:

At the end of the course student will be able to:

3. Visualize and represent products and their components using Solid Works
4. Be able to do Product renderings and will master presentation techniques using Key Shot

Course Content:

- Introduction to Solid Works
- Rendering techniques using pen & ink, colour, values, tones etc using key shot .

INDUS DESIGN SCHOOL – PRODUCT DESIGN – B.DES		
Subject: TECHNICAL DRAWING - II		
Subject Code: IDPD0503	Year: III	Semester: V
L: 1 T: 0 P: 2 C: 2	Hours: 45	Days: 30

Course Objectives:

At the end of the course student will be able to:

3. Draw Perspective, Orthographic and Axonometric views of products
4. Communicate product construction and details through production drawings

Course Content:

- Detail Drawings: Drawing technical mechanisms and details in projections

Course Reference Material:

2. *Engineering Drawing*, N. D. Bhatt

INDUS DESIGN SCHOOL – PRODUCT DESIGN – B.DES		
Subject: ERGONOMICS -WORKSTATION		
Subject Code: IDPD0504	Year: III	Semester: V
L: 1 T: 0 P: 2 C: 2	Hours: 45	Days: 30

Course Objectives:

At the end of the course students will be able to:

1. Understand the basics of ergonomics
2. Ergonomic considerations while designing
3. Differentiate good and bad ergonomics
4. How a bad ergonomics might effect a person's body and health
5. Understand various Ergonomic Analysis
6. Do a complete analysis of Vision and Reach(RULA) in Catia V5

Course Content:

Unit 1: Introduce Students to Ergonomics

- Understand where and how ergonomics plays a vital part.
- Understand different ergonomics
- Importance of postures
- Understand how a bad ergonomics might effect the body and health of the user/person
- Various ergonomic analysis that are carried out
- How to build a manikin and perform analysis of vision and reach.

Unit 2: Activities

- To select products used in daily life and classify them as good or bad in terms of ergonomics
- To analyze the posture of a person and identify the stress points

- To conduct a survey for working people to identify their discomfort with their work interface
- To study the ergonomics of automotive seating
- To design a work interface based on the survey conducted and analyze the postures, identify the pressure points on the body of the person and carry out Vision and Reach analysis by building a Human(manikin) in Catia V5
- To propose the possible changes in design, improving posture of the person that would enhance their productivity.

Course Reference Material:

- Occupational Ergonomics Theory and Applications, Second Edition by Elayne Coakes Affiliation University of Westminster, UK Jim Coakes Affiliation University of Westminster, UK
- Occupational Ergonomics A Practical Approach by Theresa Stack, Lee T. Ostrom, Cheryl A. Wilhelmsen
- Handbook of Human Factors and Ergonomics by Gavriel Salvendy
- Ergonomics in the Automotive Design Process by Vivek D. Bhise

INDUS DESIGN SCHOOL – PRODUCT DESIGN – B.DES		
Subject : MATERIALS & PROCESSES -III		
Subject Code: IDPD0505	Year: III	Semester: V
L: 0 T: 0 P: 2 C: 1	Hours: 30	Days: 20

Course Objectives:

At the end of the course the student will be

1. Equipped to understand Wood as a material, various compositions and types of Wood available in the market currently and their application in current context
2. Understand methods of making consumer and industrial products using various manufacturing techniques for Wood

Course Content:

- Unit 1 Introduction to various kinds of Wood
- Unit 2 Understanding how different kind of woods are made and their application In the current scenario
- Unit 3 Practice based studio work

INDUS DESIGN SCHOOL – PRODUCT DESIGN – B.DES		
Subject: MODEL MAKING -III		
Subject Code: IDPD0506	Year: III	Semester: V
L: 0 T: 0 P: 4 C: 2	Hours: 60	Days: 40

Course Objectives:

At the end of the course the student will be able to:

Create objects using techniques of 'casting, shaping and turning' metal

Make objects using advanced techniques for shaping natural and synthesized wood
Make a 'master' form for casting and/or make a mold

Course Content:

The course would focus on advanced explorations in wood and metal:

- Visits to various fabrication & production workshops producing sections, components, furniture, objects
- Workshop based assignments to use various techniques observed, to make forms

Course Reference Material:

9. *Materials for Design*, Chris Lefteri
10. *Metal Techniques for Craftsmen: A Basic Manual on the Methods of Forming and Decorating Metals*, Oppi Untracht
11. *Complete Metalsmith*, Tim McCreight,
12. *Creative Metal Forming*, Betty Helen Longhi, Cynthia Eid
13. *Understanding Wood: A Craftsman's Guide to Wood Technology*, R. Bruce Hoadley
14. *What wood is that? : A manual of wood identification*, Herbert Leeson Edlin
15. *Identifying Wood: Accurate Results With Simple Tools*, R. Bruce Hoadley
16. *Wood: Identification and Use*, Terry Potter

INDUS DESIGN SCHOOL – PRODUCT DESIGN – B.DES		
Subject: GRAPHIC DESIGN -II		
Subject Code: IDPD0507	Year: III	Semester: V
L: 2 T: 0 P: 2 C: 3	Hours: 60	Days:40

Course Content:

Understanding graphic design for the web designing a website or redesigning an existing one by using the tools like adobe XD and InDesign

Understanding how a app functions and how to design a low to high fidelity wireframe models

Course Objectives:

- To Benchmark a website and study its user experience
- To understand how to use tools like Adobe Xd and InDesign
- To do research on the existing website and see what changes can be done
- Redesigning the website and improving the overall Ui to make it much more user friendly and interesting

INDUS DESIGN SCHOOL – PRODUCT DESIGN – B.DES		
Subject: PRODUCTION TECHNIQUES -I		
Subject Code: IDPD0508	Year: III	Semester: V
L: 0 T: 0 P: 2 C: 1	Hours: 30	Days: 20

Course Outline:

At the end of the Module Students will get to understand

1. What is manufacturing and its techniques?
2. Types of manufacturing
3. Modern technologies in manufacturing techniques
4. How a Product manufactures and rolls out?

Unit-1:

- What is manufacturing
- 6 Types of manufacturing techniques
- What is rapid prototyping
- How dose Rapid Prototyping works and its processes
- What are different types of rapid prototyping techniques
- Applications of Rapid Prototyping

Unit –II:

- How Rapid Prototyping is applied and used for business
- Benefits of using rapid prototyping
- How to make most of rapid prototyping
- What Is additive manufacturing and its processes
- Applications

Unit-III:

- What is machining
- What are different types of Machining
- How dose machining works
- What are the advantages & Disadvantages of machining?
- What Is a lathe machine and different operations involved in lathe machines

INDUS DESIGN SCHOOL – PRODUCT DESIGN – B.DES		
Subject: TECHNO-AESTH ETIC DETAILING		
Subject Code: IDPD0509	Year: III	Semester: V
L: 2 T: 0 P: 6 C: 5	Hours: 120	Days: 80

Course Objectives:

- Deals with study of human aesthetic values, experiences, and judgements of beauty connected to technology.
- Techno-aesthetics questions the origin and nature of aesthetic values and human experience concerning technology and its role in human life and society.

Course Content:

Unit-I

- Understanding the types of Product Technologies
- Examples of Product Technology
- 5 Examples of technologies which you can use now
- Design Principles
- What is Aesthetic Design?
- Why Aesthetic Design Matters??
- What is Design for Aesthetic Pleasure???
- How to Balance Aesthetics and usability????

Unit-II

- Role of Aesthetics in Product design
- 6 Steps to Establish Design Aesthetics for Your Brand
- Visual Design language: The Building Blocks of Design

Unit-III

Project

INDUS DESIGN SCHOOL – PRODUCT DESIGN – B.DES		
Subject: ELECTIVES (CRAFT DOCUMENTATION & REVITALIZATION)		
Subject Code: IDPD0510	Year: III	Semester: V
L: 0 T: 0 P: 4 C: 2	Hours: 60	Days: 40

Course Content: In this Module the student will understand how different cultures adopt different crafts based on their geographical location and how it plays a role on design front

Course Objective:

- To explore different crafts and their cultures
- To select any one craft of their choice and to study and examine that craft
- To develop sustainable methods for the craftsmen to keep up with the current scenario and solve the existing problems

INDUS DESIGN SCHOOL – PRODUCT DESIGN – B.DES		
Subject: SELF STUDY - CAD SOFTWARE		
Subject Code: IDPD0511	Year: III	Semester: V
L: 0 T: 0 P: 6 C: 3	Hours: 90	Days: 15

Indus Design School								
B.Design III Year Semester VI								
Code	Course	T/P/T&P	Hours/course	Hours/week	Lecture	Practical	Credits	Days
IDPD0601	SLA - III	T&P	30	2	0	2	1	20
IDPD0602	Representation Techniques - IV	P	60	4	2	2	3	40
IDPD0603	Technical Studies-II (Elec & Mech)	T&P	30	2	0	2	1	20
IDPD0604	Emerging Technologies – I	P	30	2	0	2	1	20
IDPD0605	Materials & Processes – IV	T&P	30	2	0	2	1	20
IDPD0606	Model Making – IV	P	60	4	0	4	2	40
IDPD0607	Packaging & Transport	T&P	45	3	1	2	2	30
IDPD0608	Production Techniques – II	T&P	30	2	0	2	1	20
IDPD0609	Technically Complex Project	P	165	11	3	8	7	110
IDPD0610	Electives (Eco-Friendly Project)	P	60	4	0	4	2	40
IDPD0611	Industry Training	P	150	10		10	5	25
	Jury Preparation		30					5
	Hours & Credits		570	35			26	

INDUS DESIGN SCHOOL – PRODUCT DESIGN – B.DES		
Subject: SLA - III		
Subject Code: IDPD0601	Year: III	Semester: VI
L: 0 T: 0 P: 2 C: 1	Hours: 30	Days: 20

INDUS DESIGN SCHOOL – PRODUCT DESIGN – B.DES		
Subject: REPRESENTATION TECHNIQUES -IV		
Subject Code: IDPD0602	Year: III	Semester: VI
L: 2 T: 0 P: 2 C: 3	Hours: 60	Days: 40

Course Content:

At the end of the course student will be able to:

1. Visualize and represent products and their components using Rhino V6
2. Be able to do Product renderings and will master presentation techniques using Rhino

Course Objectives:

1. Introduction to Rhinoceros
2. Learning basic curves
3. Fillet chamfer and offset curves
4. Basic lines and angle drawings

Unit:2

1. Adjustable curve blend G0. G1, G2
2. Project, and pull function
3. Rectagular and Polar Array
4. Boolean Operations
5. Extrude and sprocket design

Unit: 3

1. Demo screwdriver
2. Demo mouse
3. Demo ring

INDUS DESIGN SCHOOL – PRODUCT DESIGN – B.DES		
Subject: TECHNICAL STUDIES - II (ELEC & MECH)		
Subject Code: IDPD0603	Year: III	Semester: VI
L: 0 T: 0 P: 2 C: 1	Hours: 30	Days: 20

INDUS DESIGN SCHOOL – PRODUCT DESIGN – B.DES		
Subject: EMERGING TECHNOLOGIES -I		
Subject Code: IDPD0604	Year: III	Semester: VI
L: 0 T: 0 P: 2 C: 1	Hours: 30	Days: 20

INDUS DESIGN SCHOOL – PRODUCT DESIGN – B.DES		
Subject: MATERIALS & PROCESSES -IV		
Subject Code: IDPD0605	Year: III	Semester: VI
L: 0 T: 0 P: 2 C: 1	Hours: 30	Days: 20

INDUS DESIGN SCHOOL – PRODUCT DESIGN – B.DES		
Subject: MODEL MAKING -IV		
Subject Code: IDPD0606	Year: III	Semester: VI
L: 0 T: 0 P: 4 C: 2	Hours: 60	Days:40

INDUS DESIGN SCHOOL – PRODUCT DESIGN – B.DES		
Subject: PACKAGING & TRANSPORT		
Subject Code: IDPD0607	Year: III	Semester: VI
L: 1 T: 0 P: 2 C: 2	Hours: 45	Days: 30

INDUS DESIGN SCHOOL – PRODUCT DESIGN – B.DES		
Subject: PRODUCTION TECHNIQUES -II		
Subject Code: IDPD0608	Year: III	Semester: VI
L: 0 T: 0 P: 2 C: 1	Hours: 30	Days: 20

INDUS DESIGN SCHOOL – PRODUCT DESIGN – B.DES		
Subject: TECHNICALLY COMPLEX PROJECT		
Subject Code: IDPD0609	Year: III	Semester: VI
L: 3 T: 0 P: 8 C: 7	Hours: 165	Days: 110

INDUS DESIGN SCHOOL – PRODUCT DESIGN – B.DES		
Subject: ELECTIVES (ECO - FRIENDLY PROJECT)		
Subject Code: IDPD0610	Year: III	Semester: VI
L: 0 T: 0 P: 4 C: 2	Hours: 60	Days: 40

INDUS DESIGN SCHOOL – PRODUCT DESIGN – B.DES		
Subject: INDUSTRY TRAINING		
Subject Code: IDPD0611	Year: III	Semester: VI
L: 0 T: 0 P: 10 C: 5	Hours: 150	Days: 25

B. Design Product Design | Fourth Year:

Indus Design School								
B.Design IV Year Semester VII								
Code	Course	T/P/T&P	Hours/ course	Hours/we ek	Lecture	Practical	Credits	Days
IDPD0701	Research Methods	T&P	30	2	0	2	1	20
IDPD0702	Presentation Techniques	P	30	2	0	2	1	20
IDPD0703	Production Techniques – III	T&P	60	4	2	2	3	40
IDPD0704	Emerging Technologies – II	P	30	2	0	2	1	20
IDPD0705	Design Management	T&P	45	3	1	2	2	30
IDPD0706	Design Strategy	T&P	45	3	1	2	2	30
IDPD0707	Design Project – Systems	P	240	16	4	12	10	160
IDPD0708	Electives (Film Making)	P	60	4	0	4	2	40
	Jury Preparation		30					5
	Hours & Credits		570	35			22	

INDUS DESIGN SCHOOL – PRODUCT DESIGN – B.DES		
Subject: Research Methods		
Subject Code: IDPD0701	Year: IV	Semester: VII
L: 0 T: 0 P: 2 C: 1	Hours: 30	Days: 20

INDUS DESIGN SCHOOL – PRODUCT DESIGN – B.DES		
Subject: Presentation Techniques		
Subject Code: IDPD0702	Year: IV	Semester: VII
L: 0 T: 0 P: 2 C: 1	Hours: 30	Days: 20

INDUS DESIGN SCHOOL – PRODUCT DESIGN – B.DES		
Subject: PRODUCTION TECHNIQUES- III		
Subject Code: IDPD0703	Year: IV	Semester: VII
L:2 T: 0 P: 2 C: 3	Hours:60	Days: 40

INDUS DESIGN SCHOOL – PRODUCT DESIGN – B.DES		
Subject: EMERGING TECHNOLOGIES - II		
Subject Code: IDPD0704	Year: IV	Semester: VII
L: 0 T: 0 P: 2 C: 1	Hours: 30	Days: 20

IDPD0706	Design Strategy	T&P	45	3	1	2	2	30
IDPD0707	Design Project – Systems	P	240	16	4	12	10	160
IDPD0708	Electives (Film Making)	P	60	4	0	4	2	40

INDUS DESIGN SCHOOL – PRODUCT DESIGN – B.DES		
Subject: DESIGN MANAGEMENT		
Subject Code: IDPD0705	Year: IV	Semester: VII
L: 1 T: 0 P: 2 C: 2	Hours: 45	Days: 30

INDUS DESIGN SCHOOL – PRODUCT DESIGN – B.DES		
Subject: DESIGN STRATEGY		
Subject Code: IDPD0706	Year: IV	Semester: VII
L: 1 T: 0 P: 2 C: 2	Hours: 45	Days:30

INDUS DESIGN SCHOOL – PRODUCT DESIGN – B.DES		
Subject: DESIGN PROJECT - SYSTEMS		
Subject Code: IDPD0707	Year: IV	Semester: VII
L: 4T: 0 P: 10 C: 12	Hours:240	Days: 160

INDUS DESIGN SCHOOL – PRODUCT DESIGN – B.DES		
Subject: ELECTIVES (FILM MAKING)		
Subject Code: IDPD0708	Year: IV	Semester: VII
L: 0 T: 0 P: 4 C: 2	Hours:60	Days: 40

Indus Design School								
B.Design IV Year Semester VIII								
Code	Course	T/P/T&P	Hours/ course	Hours/we ek	Lecture	Practical	Credits	Days
IDPD0801	Internship Project	T&P	480	35	1	34	18	80
	Jury Preparation		30					5
	Hours & Credits		570	35			18	

INDUS DESIGN SCHOOL – PRODUCT DESIGN – B.DES		
Subject: INTERNSHIP PROJECT		
Subject Code: IDPD0801	Year: IV	Semester: VIII
L: 1 T: 0 P: 34 C: 18	Hours: 480	Days: 80

