

## **Shri Vaishnav Institute of Architecture**

## **B.** Des in Product Design

					CHING EME/	_		EXAMINA	ATION	SCHEME			
Sr. No.	Course Code	Course Typology	Course Name	L	T	S	REDITS	Exam (50% or	Term	Teachers Assessment* (20%or	Exam	Teachers	OTAL MARKS
1	BDES PD 301	STUDIO	DESIGN STUDIO 2- PRODUCT DESIGN PROCESS BA	SED 0	0	8	ည 8	40%) 0	0	0	200	200	400

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P - Practical; C - Credit;

#### UNIT - II

The objectives are to encourage students to extend their viewpoint beyond conventional solutions, to create a deep sense of details and materials. Various exercises such as brainstorming, mind mapping, key words generation etc. **24HRS** 

#### UNIT - III

DESIGN RESEARCH -Qualitative and qualitative research methodology, Questionnaire design, validation, repeatability testing, psychophysical scales.

**24HRS** 

#### UNIT - IV

DESIGN PROCESS- Importance of Human factors in product design; Creative techniques and tools for Concept generation, concept evaluation; Product prototyping, tools and techniques for model making and prototyping, introduction to prototype driven innovation.

24HRS

#### UNIT – V

DESIGN TECHNOLOGY -Design technology related to product design 24HRS

# **Suggested Reference Books**

- 1. J.Christopher Jones- Design Methods
- 2. Jennifer Hudson 1000 new designs 2 and where to find them
- 3. Manfred Maier Basic principles of Design

<sup>\*</sup>Teacher Assessment shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.



## **Shri Vaishnav Institute of Architecture**

## **B.** Des in Product Design

#### BDES PD 302 – NATURE OF MATERIALS AND PROCESSESS – I

					CHING CME/W			EXAMINA	TION	SCHEME			
Sr. No.		Course	Course Name					THEORY			PRACTICA	AL	RKS
	Course Code	Typology	Course Name	L	Т	S	CREDITS	Exam (50% or	1 erm	Teachers Assessment*	University	Teachers Assessment* (50%)	TOTAL MA
2	BDES PD 302		NATURE OF MATERIALS AND PROCESSES-I AND PROTOTYPING	2	1	1	4	50	20	30	0	100	200

**Legends**: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P - Practical; C - Credit;

## **Course Educational Objectives (CEOs):**

**CEO 1-** To understand how the properties of materials influence the welding methods of within and between different types of materials.

## **Course Outcomes (COs):**

- **CO 1-** Understand basic knowledge of materials and techniques of different materials
- **CO 2-** Learning on Materials and its manufacturing processes along with machinery involved in it.
- **CO 3-** To understand the influence of economical, ethical and environmental aspects when choosing a method for production.

## **Syllabus**

### UNIT - I

INTRODUCTION - Machining workshop, tools and standards; Machining workshop: Lathe, shaper, drilling

12HRS

#### UNIT – II

Manufacturing of Materials; Material Formation; Shaping and Joining, Emerging Materials; Sustainable Materials and Processes; Material Experience in Design **12HRS** 

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### **Shri Vaishnav Institute of Architecture**

## **B.** Des in Product Design

		TEACHING SCHEME/WEEK EXAMINATION SCHEME			SCHEME								
Sr. No.		Course	Carrage Name					THEORY			PRACTICA	AL	RKS
	Course Code	Typology	Course Name	L	Т	s	CREDITS	Exam (50% or	Term	Teachers Assessment* (20%or 30%)	University	Teachers Assessment* (50%)	TOTAL MA
2	BDES PD 302	THEORY+S	NATURE OF MATERIALS AND PROCESSES-I AND PROTOTYPING	2	1	1	4	50	20	30	0	100	200

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P - Practical; C - Credit;

#### UNIT – III

SHEET METAL AND TUBE PROCESSES -Shearing, bending, punching, blanking, rolling, edge rolling, pipe bending; 12HRS

### UNIT - IV

Introduction to casting, welding and joinery processes

**12HRS** 

#### UNIT - V

JOINING AND FORMING PROCESSES -Casting, welding and forging; Fasteners: screws, threads, rivets, gaskets, drilling, boring and tapping; Surface finishing: grinding, polishing, buffing, electroplating, sandblasting, knurling;

**12HRS** 

## **Suggested Book References**

- 1. Murr, Lawrence E, Handbook of Materials Structures, Properties, Processing and Performance.
- 2. Ashby, M. F., & Johnson, K. (2013). Materials and design: the art and science of material selection in product design. Butterworth-Heinemann.
- 3. Lefteri, C. (2007). Making it: Manufacturing techniques for product design. Laurence King.
- 4. Ulrich, K. T. (2003). Product design and development. Tata McGraw-Hill Education.

Chairperson Board of Studies Shri Vaishnav Vidyapeeth Vishwavidyalaya,Indore Chairperson
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### **Shri Vaishnav Institute of Architecture**

## **B.** Des in Product Design

#### BDES PD 303 - PRODUCT ERGONOMICS - I

Sr. No.		Course Typology	Course Name		CHING EME/W			EXAMINA'	FION SC	НЕМЕ			S
				L	L T S			THEORY			PRACTICA	AL .	IARKS
	Course							End Sem	Two	Teachers	End Sem	Teachers	M
	Code						SLI	University Exam	Term Exam	Assessment* (20%or	University Exam	Assessment* (50%)	1
							CREDITS	(50% or	(20%	30%)	(50%)	(3070)	TOTA
							CF	40%)	)				TC
3	BDES PD	THEORY+STU	PRODUCT	2	0	1	3	50	20	30	0	50	150
	303	DIO	ERGONOMICS - I										

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P - Practical; C - Credit;

## **Course Educational Objectives (CEOs):**

**CEO 1-** Introduction about human to machine interaction. Understanding how humans physically interact with products industrial design.

### **Course Outcomes (COs):**

- CO 1- Study of basic human measurements, in terms of scale and proportions
- CO 2- Study data's on Anthropometry and different functional anthropometrics
- **CO 3-** Observation and analysis of different human activities and requirements of spatial design.

## **Syllabus**

### UNIT - I

INTRODUCTION\_ - Introduction to the concept of ergonomics in design 9HRS

#### UNIT - II

HUMAN APPROACHES TO DESIGN -Discipline Approach; Human Physical Dimension Concern; Posture and Movement; 9HRS

#### UNIT – III

Man-Machine Interaction Definition of Ergonomics and its application and overview, Concept of Man Machine Environment System 9HRS

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## **Shri Vaishnav Institute of Architecture**

## **B.** Des in Product Design

Sr. No.		Course Typology	Course Name		TEACHING SCHEME/WEEK			EXAMINA'	TION SC	НЕМЕ			RKS
				L	L T S			THEORY			PRACTICA	<b>L</b>	MARI
	Course Code						CREDITS	End Sem University Exam (50% or 40%)	Two Term Exam (20%	Teachers Assessment* (20%or 30%)	End Sem University Exam (50%)	Teachers Assessment* (50%)	TOTAL
3	BDES PD 303	THEORY+STU DIO	PRODUCT ERGONOMICS - I	2	0	1	3	50	20	30	0	50	150

**Legends**: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P - Practical; C - Credit;

#### UNIT - IV

About Anthropometry human measurements, need of it Anthropometrics. Understanding and applications of anthropometry; Posture, reach, grip and movement.

9HRS

#### UNIT – V

Overview of Human body and its sub systems, Understanding musculoskeletal system and its function in terms of manual activities,

ASPECTS OF DESIGN - Environments Factors and Ergonomic Design Process; Performance Support and Design Intervention. Behavior, Perception And Visual Issues.

9HRS

## **Suggested Reference Books**

- 1. M. S. Sanders and Ernest J. Mc Cormick: Human Factors in engineering and Design, McGraw-Hill Education;7 edition (January 1, 1993)
- 2. Ken Parsons: Human thermal environment, 2nd Edi., Taylor and Francis, 2003.
- 3. Human Dimension & Interior Space, Whitney Library of Design, New York, 1979.

<sup>\*</sup>Teacher Assessment shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks



## **Shri Vaishnav Institute of Architecture**

## **B.** Des in Product Design

#### BDES PD 304 - BASIC PHOTOGRAPHY AND TYPOGRAPHY

Sr.		Course	Course Name	TEAC	HING			EXAMINAT	TION SCI	HEME			
No.		Typology		SCHE	ME/WE	EK							S
				L	T	S		THEORY			PRACTICA	L	RKS
	Course							End Sem Two Teachers			End Sem	Teachers	MA
	Code						S				University	Assessment*	
								Evon Evon (200/ or			Exam	(50%)	V V
							REDI	(50% or	(20%)	30%)	(50%)		E
							CR	40%)					T0
4	BDES	STUDIO	BASIC	0	0	3	3	0	0	0	75	75	150
	PD 304		PHOTOGRAPHY AND										
			TYPOGRAPHY										

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P - Practical; C - Credit;

## **Course Educational Objectives (CEOs):**

**CEO 1-** To explore the unique experience of ingenuity & creativity. The essence of creative domain can be achieved by exploring different technology, techniques, processes, concepts, compositions.

### **Course Outcomes (COs):**

- **CO 1-** Understand the basics of photography and typography and its techniques.
- **CO 2-** Study how to incorporate typography in graphic illustrations and understanding the form technically.
- **CO 3-** Demonstrate and explore different technology, techniques, processes, concepts, compositions.

# **Syllabus**

#### UNIT - I

**1. Photography-** Introduction to Photography: History and Evolution, Camera Principles, Techniques and Applications. Introduction to Moving pictures: History and Evolution of Cinema, Video and Animation; Principles Techniques and Applications. Visual Identity Design **9HRS** 

#### **UNIT II-**

Photography Basics and Digital Imaging Introduction to Photography: Subject, Background and foreground relationships. Photography techniques; Introduction to Image processing software, color correction, exposure correction, frame correction; Expression and Imagery, Time and space in Image;

9HRS

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## **Shri Vaishnav Institute of Architecture**

## **B.** Des in Product Design

Sr. No.		Course Typology	Course Name	_	HING ME/WE	EK		EXAMINAT	TION SCI	IEME			70
				L	T	S		THEORY			PRACTICA	L	RKS
	Course							End Sem Two Teachers			End Sem	Teachers	MA
	Code						S	University Term Assessment*			University	Assessment*	
							II	Exam Exam (20%or			Exam	(50%)	1
							REDIT	(50% or (20%) 30%)		30%)	(50%)		TA
							CR	40%)					TO
4	BDES	STUDIO	BASIC	0	0	3	3	0	0	0	75	75	150
	PD 304		PHOTOGRAPHY AND TYPOGRAPHY										

 $\label{lem:Legends: L-Lecture; T-Tutorial/Teacher Guided Student Activity; P-Practical; C-Credit;$ 

#### **UNIT III-**

Interaction with Light Highlights, shadow and reflection study of objects; Direct and indirect illumination **9HRS** 

#### **UNIT IV**

**2. Typography-** Introduction to Typography; Typefaces and description; Typographic Anatomy; Type Classification; History of Type Development; Typographic hierarchy and Grid system; Examples of Expressive and unconventional typography. Introduction to Print Media: Forms of Printing, History and Evolution Interrelation of Print and Digital Technologies, Applications. Photorealistic Visualization Rendering objects by observation Image Processing Migration of forms and Image manipulation, Digital Illustration Techniques Exposure and demonstration of Illustration and Image making software Digital sketching; Vector illustrations; Procedural Illustrations; **9HRS** 

#### UNIT V-

Introduction to Identity Design, Branding and Rebranding; Applications in - Stationary Design, Template Design, Souvenir Design, Signage Design and Web Design.

9HRS

## **Suggested Reference Books:**

- 1. Alex W. White, Advertising Design and Typography, **ISBN-10**: 1621534812
- 2. Ellen Lupton, Thinking with Type, 2nd revised and expanded edition

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## **Shri Vaishnav Institute of Architecture**

## **B.** Des in Product Design

#### BDES PD 305 - HISTORY OF DESIGN – II

					HING ME/W			EXAMINA	TION S	<b>СНЕМЕ</b>			
		_						THEORY			PRACTICA	AL	RKS
Sr. No.	Course Code	Course Typology	Course Name	L	Т	S	EDITS	End Sem University Exam (50% or 40%)	Term Evam	Teachers Assessment*	End Sem University Exam (50%)	Teachers Assessment* (50%)	TOTAL MA
5	BDES PD 305	THEORY	HISTORY OF DESIGN - I I	2	0	0	2	50	20	30	0	0	100

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P - Practical; C - Credit;

## **Course Educational Objectives (CEOs):**

**CEO 1-** To explore and understand the emergences of product design during the industrialization, Modernism and Post Modernism period.

## **Course Outcomes (COs):**

- **CO 1-** Learning's on design incorporated during old times. The knowledge about their lifestyle and interior.
- **CO 2-** Study different design movements to be studied on the basis of the region, its culture, necessity of changes, theories given by great designers
- **CO 3-** Understand outcome in terms of new trends of that period.

## **Syllabus**

### UNIT – I

Modernism and Post Modernism Late Modernism, High Technology, Post Modernism, and De Constructivism and Minimalism.

6HRS

#### UNIT - II

Post War Modernism Bauhas and Postwar Modernism design movements. International modernism, regionalism and concerns with vernacular etc. cultural identity and its expression. Comparative study of interiors all over the world with time frame. Theory & criticism based on the total knowledge of History. **6HRS** 

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					CHING EME/W			EXAMINA'	TION S	СНЕМЕ			
Sr. No.	Course Code	Course Typology	Course Name	L	Т	S	REDITS	THEORY End Sem University Exam (50% or 40%)	Term Exam	Teachers Assessment*	lExam .	Teachers Assessment* (50%)	TOTAL MARKS
5	BDES PD 305	THEORY	HISTORY OF DESIGN - I I	2	0	0	2	50	20	30	0	0	100

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P - Practical; C - Credit;

#### UNIT - III

NON EUROPEAN PERIODS China, Japan & the Islamic World – Influences of Pre Columbian American art & culture, African influences in interiors **6HRS** 

#### UNIT - IV

SCANDINAVIAN PERIODS - Interior Design in Sweden, Finland, Norway. **6HRS** 

#### UNIT - V

INDIAN TRADITIONAL STYLE Traditional interior styles i n India including Rajasthan, Gujarat, Andhra, Tamil Nadu, Madhya Pradesh etc. **6HRS** 

#### REFERENCE BOOKS

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

<sup>\*</sup>Teacher Assessment shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.



## **Shri Vaishnav Institute of Architecture**

## **B.** Des in Product Design

#### BDES PD 306 - DIGITAL STUDIO - II

					CHING EME/V	; VEEK		EXAMINA	ATION	SCHEME			S
Sr. No.	Course Code	Course Typology	Course Name	L	Т	s	EDITS	Exam (50% or	Term	Teachers Assessment* (20%or	University Exam	Teachers	TOTAL MARK
6	BDES PD 306	LAB	DIGITAL STUDIO - II (PHOTOSHOP AND ILLUSTRATOR)	0	0	2	2	0	0	0	50	50	100

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P - Practical; C - Credit;

## **Course Educational Objectives (CEOs):**

**CEO 1-** Understanding and exploring the generation product design through computer aided design.

### **Course Outcomes (COs):**

- **CO1-** To help the student understand the technology of computer and its terminology.
- **CO2-** To enable the student to understand the applications of the software and graphic system.
- **CO3-** Maximize the understanding of digital three-dimensional modeling by further exploring computer as a tool for product design.

## **Syllabus**

#### UNIT - I

 $AUTOCAD-2D\ /3D\ -Drawing\ tools,\ drawing\ objects\ ,\ shapes\ ,\ editing\ ,\ setting\ limits\ ,\ scales.\ Lettering,\ Dimensioning,\ its\ editing\ Transparent\ overlays\ ,\ Hatching\ and\ rendering\ ,\ symbol\ library\ ,\ Layers\ .\ Concept\ of\ viewport,\ concept\ of\ object\ linking\ and\ editing\ session$ 

#### UNIT - II

INTRODUCTION TO 3-D MODELLING -Settings for the drawings, limits, creating objects, transforming objects, modifiers & modifier stack, Compound objects, hand on viewports, setting of viewports etc. Lathing, displacement, Boolean Application of colors and texture Using material editor, material browser, settings of library ,mapping textures, editing of texture files etc. **6HRS** 

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## **Shri Vaishnav Institute of Architecture**

Sr. No.			Course Name	t <b>-Design</b> scheme/week				EXAMINATION SCHEME					
		Course Typology		L	Т	s	End Se Univer Exam	Exam (50% or	Two Term	Teachers Assessment* (20%or	University Exam	Teachers	TOTAL MARK
6	BDES PD 306	LAB	DIGITAL STUDIO - II (PHOTOSHOP AND ILLUSTRATOR)	0	0	2	2	0	0	0	50	50	100

**Legends**: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P - Practical; C - Credit;

#### **UNIT-III**

INTRODUCTION TO PHOTOSHOP – Photography image post processing and rendering techniques. **6HRS** 

#### UNIT -IV

FUNDAMENTAL CONCEPTS BASIC TECHNIQUES, RE-TOUCHING TECHNIQUES and SELECTION TECHNIQUES- Using brushes, choosing colors, Sampling colors from an image, Using Pantone colors. Using the History palette, Cropping and rotating images, Changing image size and resolution, Retouching Fixing images using the Clone Stamp Tool and the Healing tools **6HRS** 

#### UNIT -V

## COMPOSITION AND DESIGN TECHNIQUES COLOR CORRECTION-

Working with layers, Transformation-Scaling and rotating, Using colour fill layers Using gradients and patterns, Applying a Mask to an Adjustments layer, Color correction, Using the levels command histogram, Curves and exposure, Using the Color balance command to modify Color casts, Adjusting vibrancy, Hue and Saturation: general and specific color range adjustment, Colorizing, Working with type layers. Formatting type, Converting type to pixels Effects.

6HRS

## **Suggested Reference Books**

- 1. V. Rajaraman, principles of Computer Programming Prentice Hall of India
- 2. Byron S.Gottfried, Theory and Problems of Programming with C.Schaum's outline series, McGraw Hill Publishing Co.

<sup>\*</sup>Teacher Assessment shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.



## **Shri Vaishnav Institute of Architecture**

## **B.** Des in Product Design

#### **BDES PD 307 - ELECTIVE - I**

		Typology		TEACHING SCHEME/WEEK				<b>EXAMIN</b> A	ATION	SCHEME	SCHEME		
				L	Т	S	REDITS	THEORY			PRACTICAL		RK
Sr. No.	Course Code							Exam (50% or	Term	Assessment* (20%or	University Exam	Teachers Assessment* (50%)	TOTA
7	BDESE PD 307	ELECTIVE	ELECTIVE - I	0	0	2	2	0	0	0	0	100	100

**Legends**: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P - Practical; C - Credit;

## **Course Educational Objectives (CEOs):**

**CEO 1-** The students have to choose one elective in this semester to detail out. A separate report to be submitted for the elective.

## **Course Outcomes (COs):**

- **CO 1-** At the end of the course, students will be able to overall nurturing of the student with issues in practice and field outside
- CO 2- Understand better grooming than just books and theories.
- **CO** 3- Analyze and research on the selected topics

# Elective 1 – Sustainable Design

**Elective 2 – Furniture and Interior Design (Craft based)** 

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