



Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore

Shri Vaishnav Institute of Architecture

B. Des in Product Design

SEMESTER – II

BDES PD 201 - DESIGN STUDIO 1 - BASIC PRODUCT DESIGN AND DESIGN THINKING

Sr. No.	Course Code	Course Typology	Course Name	TEACHING SCHEME/WEEK			CREDITS	EXAMINATION SCHEME					TOTAL MARKS
				L	T	S		THEORY			PRACTICAL		
								End Sem University Exam (50% or 40%)	Two Term Exam (20%)	Teachers Assessment* (20% or 30%)	End Sem University Exam (50%)	Teachers Assessment* (50%)	
1	BDES PD 201	STUDIO	DESIGN STUDIO 1 - BASIC PRODUCT DESIGN AND DESIGN THINKING	0	0	8	8	0	0	0	200	200	400

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

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

Course Educational Objectives (CEOs):

CEO1 -To introduce the basics of product designing and to develop skills required for the same.

Course Outcomes (COs):

CO 1- The emphasis of the course is on design projects. Selection of the projects is based on the possibility of user interaction leading to innovation.

CO 2- Projects end with a comprehensive presentation through working/mock up models, design drawing and a report.

CO 3- In this design studio students have to analyze various parameters, derive inferences and come out with a product design solution.

Syllabus

UNIT – I

Intention -Understanding Empathy; User stories; interpretive research;

24HRS

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1	BDES PD 201	STUDIO	DESIGN STUDIO 1 - BASIC PRODUCT DESIGN AND DESIGN THINKING	0	0	8	8	0	0	0	200	200	400

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UNIT – II

Problem Definition -Visual representation of problem statements; contextualization and validation of a problem set; Heat maps; polar maps; Data visualization methods;

24HRS

UNIT – III

Scenario Building -Mapping solutions; partial solutions; incremental solutions

24HRS

UNIT – IV

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

24HRS

UNIT – V

Concept Detailing -User Journey maps; User stories; activity mapping; feature matrix

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

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BDES PD 202 - FUNDAMENTALS OF DESIGN

S r. N o.	Course Code	Course Typology	Course Name	TEACHING SCHEME/WEEK			CREDITS	EXAMINATION SCHEME					TOTAL MARKS
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								End Sem University Exam (50% or 40%)	Two Term Exam (20%)	Teachers Assessment* (20%or 30%)	End Sem University Exam (50%)	Teac hers Asses men t* (50%)	
2	BDES PD 202	THEOR+STUDIO	FUNDAMENTALS OD DESIGN	1	1	2	4	50	20	30	50	50	200

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

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

Course Educational Objectives (CEOs):

CEO 1 -Understanding of characteristics of different elements & their inter-relationship with various elements and to the composition.

Course Outcomes (COs):

CO 1- Understanding the emotional impact of colors on people. Balance – Structural balance and visual balance.

CO 2- Study all the different materials, hardware and software etc. Symmetry, Asymmetry, Radial Balance, Golden proportion, Rules of composition

CO 3- Learn about Scale & Proportion - Unity & Variety – Harmony, Rhythm, Perspective, Emphasis, Orientation, and Repetition.

Syllabus

UNIT – I

Principles of visual design Principles of design, unity/harmony, balance, alignment, hierarchy, emphasis, similarity and contrast; Symmetry, Asymmetry, Radial Balance, Golden proportion, Rules of composition, Scale & Proportion **12HRS**

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2	BDES PD 202	THEOR+STUDIO	FUNDAMENTALS OF DESIGN	1	1	2	4	50	20	30	50	50	200

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

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

UNIT – II

Morphology Scale, proportions, movement, repetition, pattern, rhythm, variety

12HRS

UNIT – III

Emotions and Colors Perception of colors, emotion and colors;

12HRS

UNIT – IV

Grays Understanding the Gray scale, gradation methods;

Composition with grays, black and white;

12HRS

UNIT – V

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;

12HRS

Suggested Reference Books

1. Itten J., The art of colour: the subjective experience and objective rationale of colour, John Wiley and Sons., 1974
2. Sherin, A., Design Elements, Color Fundamentals
3. Impacts Design, Beverly, Mass: Rockport Publishers, 2011

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2	BDES PD 202	THEOR+STUDIO	FUNDAMENTALS OF DESIGN	1	1	2	4	50	20	30	50	50	200

4. Elam, Kimberly; Geometry of Design: Studies in Proportion and Composition, Princeton Architectural Press,
5. Bervin, M. E. (1984). Design Through Discovery: The Element and Principles. Holt, Rinehart and Winston, Washington.
6. Wong, W. (1972). Principles of two-dimensional design. John Wiley & Sons
7. Brommer, G. F. (1994). "Collage techniques: A guide for artists and illustrators"
8. Watson-Guption Publications.
9. L. Hotzschue, Understanding Colour, VNR, 1995
10. R.M. Proctor, The principles of pattern, Dover Publications, 1990

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BDES PD 203 - REPRESENTATION TECHNIQUE 2

Sr. No.	Course Code	Course Typology	Course Name	TEACHING SCHEME/WEEK			CREDITS	EXAMINATION SCHEME					TOTAL MARKS
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3	BDES PD 203	THEORY+STUDIO	REPRESENTATION TECHNIQUE	1	1	2	4	50	20	30	50	50	200

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

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Course Educational Objectives (CEOs):

CEO 1- To make student efficient in technical drawing and detailing for the purpose of execution.

Course Outcomes (COs):

CO 1- Understanding on Presentation skills, Techniques for Construction as a tool towards effective visualization and presentation.

CO 2- Demonstrate basic principles for technical drawing and orthographic projections.

CO 3- Learning of Drawing projections of a solid at different orientation of its axis

Syllabus

UNIT – I

Introduction - Lines, Lettering, Sketching, Principle of Dimensioning, Basic geometrical constructions, Scales, Engineering Curves. **12HRS**

UNIT – II

Orthographic Projections - Pictorial view, Multi-view, Multi-view Drawing, Terminology, First angle projection and its features, Third angle projections and its features, Symbols, Section lines or hatching, Conversion of pictorial view into orthographic view. **12HRS**

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UNIT – III

Projections of Points - Location of a point, Conventional representations, Projections of a point located at different locations. **12HRS**

UNIT – IV

Projections of Lines - Introduction, Orientation of a line, Projections of a line located at different locations, Projections of a line in different angles. **12HRS**

UNIT – V

Projection of Solids - Introduction, Classification of solids, Recommended method of labeling, Orientation of solids, Drawing projections of a solid at different orientation of its axis, Identify visible and hidden lines. Principals of shades and shadows, drawing techniques, sciography of linear and curved objects. **12HRS**

Suggested Reference Books

1. Perspective & Sciography BY Shankar Mulik, Allied Publishers Perspective
2. Principles, M.G. Shah & K.M. Kale, Asia Publications, Mumbai
3. Geometrical drawing for Art students, I.H. Morris, Orient Longman, Chennai

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- Agrawal, B., and Agrawal, C.M. (2014). Engineering Drawing (2nd Ed), McGraw Hill, New Delhi,
- A Jolhe, Dhananjay., (2008). Engineering drawing, TMH
- French, T.E., Vierck, C.J., and Foster, R.J., (1984). Graphic Science and Design, 4th edition, McGraw Hill, .
- Luzadder, W.J., and Duff, J.M., (1995). Fundamentals of Engineering Drawing, 11th edition, Prentice-Hall of India

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BDES PD 204 - HISTORY OF DESIGN 1

Sr. No.	Course Code	Course Typology	Course Name	TEACHING SCHEME/WEEK			CREDITS	EXAMINATION SCHEME					TOTAL MARKS
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								End Sem University Exam (50% or 40%)	Two Term Exam (20%)	Teachers Assessment* (20% or 30%)	End Sem University Exam (50%)	Teachers Assessment* (50%)	
4	BDES PD 204	THEORY	HISTORY OF DESIGN I	2	0	0	2	50	20	30	0	0	100

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

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

Course Educational Objectives (CEOs):

CEO 1- To provide the knowledge on History of Design and how it changes over the period.

Course Outcomes (COs):

CO 1- To help the student understand the lifestyle and designs from Prehistoric Period to the middle Ages.

CO 2- Demonstrate the understanding of interiors and architecture from medieval period

CO 3- Analyze the processes and development during colonial times

Syllabus

UNIT –I

EARLY CLASSICAL PERIOD - Study of Man and its culture from the ancient periods, Pre historic ages, cave paintings development of civilization such as Egyptian, Greek, Roman, Gothic, Early Christian and Renaissance periods. **6HRS**

UNIT – II

MIDDLE AGES- Pre renaissance spans, religious themes and cathedral architecture and interiors, tudor homes, Interiors in Romanesque, Gothic, and renaissance periods , Industrial Revolution . **6HRS**

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4	BDES PD 204	THEORY	HISTORY OF DESIGN I	2	0	0	2	50	20	30	0	0	100

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

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

UNIT – III

COLONIAL TO THE BEGINNING OF THE 20TH CENTURY-Colonial, Victorian designs, Arts & Crafts movement, Art Nouveau, Eclectic, Frank Lloyd Wright. **6HRS**

UNIT – IV

POST WAR MODERNISM BAUHAUS -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**

UNIT – V

Study of products from different periods **6HRS**

Suggested Reference Books:

1. Frederick Litchfield – Illustrated history of Furniture's
2. History of Architecture, Sir Banister Fletcher, CBS Publishers & distributors, New Delhi
3. Time Saver Standards for Interior Design, Joseph De Chiara, McGraw Hill, New York.

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BDES PD 205 - RENDERING AND ILLUSTRATION TECHNIQUES

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5	BDES PD 205	STUDIO	RENDERING AND ILLUSTRATION TECHNIQUES	0	0	3	3	0	0	0	75	75	150

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

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

Course Educational Objectives (CEOs):

CEO 1- Different ways in design ideas can be represented for better visualization

Course Outcomes (COs):

CO 1- Basic rendering skills, working upon the sketching and its types.

CO 2- Methods of pencil drawing through exercises, to coordinate eye, hand and body movements to acquire necessary control over the line drawing.

CO 3- Development of an analytical attitude and ability to deal with complexity of imagination and visualization of object from any angle.

Syllabus

UNIT – I

DRAWING AND SKETCHING -Drawing and sketching interior and exterior environments, perspectives drawings, shades and shadows, Visual effects. **9HRS**

UNIT – II

PEN AND INK RENDERING -Inking and pen techniques for rendering, tracing, structures, interiors, landscape, use and handling of tools. **9HRS**

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5	BDES PD 205	STUDIO	RENDERING AND ILLUSTRATION TECHNIQUES	0	0	3	3	0	0	0	75	75	150

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

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

UNIT – III

RENDERING WITH COLOR MEDIUM -Color pencils and sketch pens , poster/water colors, Stroke effects, smudge effects etc. transparency effects in water colors – block effects in poster colors Understanding and representing the structure of forms in detail with wireframes. Color representation in the object drawing with section and exploded view.

9HRS

UNIT – IV

PRESENTATION OF THE DESIGN -Panel presentation skills, communication, body language, presentation of the drawing, explanation of the concept and design.

9HRS

UNIT V

Composition – Taking all the elements of design and inspiration from nature. SCIOGRAPHY Principals of shades and shadows, drawing techniques, sciography of linear and curved objects.

9HRS

Suggested Reference Books

1. Scott Robertson and Thomas Bertling – How to Render
2. Roy R. Behrens – Design in the Visual arts
3. Thomas Hudson – Rendering with pen + ink



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5	BDES PD 205	STUDIO	RENDERING AND ILLUSTRATION TECHNIQUES	0	0	3	3	0	0	0	75	75	150

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

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

4. Scott Robertson and Thomas Bertling – How to Draw
5. Wood, P., & McDonnell, P. (1994). Scientific illustration: a guide to biological, zoological, and medical rendering techniques, design, printing, and display. John Wiley & Sons.
6. Buxton, B. (2010). Sketching user experiences: getting the design right and the right design: getting the design right and the right design. Morgan Kaufmann
7. Manfred Maier – Basic principles of Design
8. Paricio M.I.D – Perspective Sketching

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BDES PD 206 - DIGITAL STUDIO - 2D SOFTWARE (COREL AND CAD)

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								End Sem University Exam (50% or 40%)	Two Term Exam (20%)	Teachers Assessment* (20% or 30%)	End Sem University Exam (50%)	Teachers Assessment* (50%)	
6	BDES PD 206	LAB	DIGITAL STUDIO - 2D SOFTWARE (COREL AND CAD)	0	0	2	2	0	0	0	50	50	100

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

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

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

FUNDAMENTALS OF COMPUTERS -Terminology used, Creating icon, short keys. Introduction to MS Office software, word documents, spreadsheet, Power point

6HRS

UNIT – II

Corel Draw– 2D - 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.

6HRS

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				L	T	S		THEORY			PRACTICAL		
								End Sem University Exam (50% or 40%)	Two Term Exam (20%)	Teachers Assessment* (20% or 30%)	End Sem University Exam (50%)	Teachers Assessment* (50%)	
6	BDES PD 206	LAB	DIGITAL STUDIO - 2D SOFTWARE (COREL AND CAD)	0	0	2	2	0	0	0	50	50	100

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

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

UNIT – III

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 operations for both standard and compound primitives, lofting, modeling with lofts, low polygon modeling , different building elements designing, use of default library, and nurbs modeling. Application of colors and texture Using material editor, material browser, settings of library, mapping textures , editing of texture files etc.

6HRS

UNIT IV

Image Editing Techniques, Workspace-navigation, the tools, palettes, arranging document windows, All about pixels, resolution, and color Depth, Understanding and using color modes- RGB, CMYK and Grayscale, Using Bridge

6HRS

UNIT V

Fundamental Concepts Basic Techniques, Re-Touching Techniques & Amp; Selection Techniques - Using brushes, choosing colors, Sampling colors from an image, Using Pantone colors. Multiple undo and taking snapshots 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, The history brush, The Red –Eye and Color Replacement tools.

6HRS

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				L	T	S		THEORY			PRACTICAL		
								End Sem University Exam (50% or 40%)	Two Term Exam (20%)	Teachers Assessment* (20% or 30%)	End Sem University Exam (50%)	Teachers Assessment* (50%)	
6	BDES PD 206	LAB	DIGITAL STUDIO - 2D SOFTWARE (COREL AND CAD)	0	0	2	2	0	0	0	50	50	100

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

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

Suggested Reference Books

1. Mark Galer and Philip Andrews- Photoshop CC Essential Skills: A Guide to Creative Image Editing,
2. Vickie Ellen Wolper Photograph Restoration and Enhancement: Using Adobe Photoshop CC 2017
3. Andrew Faulkner- Adobe Photoshop CC Classroom in a Book 2018
4. Jennifer Smith- Photoshop CC Digital Classroom Book 2018

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BDES PD 207 - SEMESTER TOUR PROJECT

Sr. No.	Course Code	Course Typology	Course Name	TEACHING SCHEME/WEEK			CREDITS	EXAMINATION SCHEME					TOTAL MARKS
				L	T	S		THEORY			PRACTICAL		
								End Sem University Exam (50% or 40%)	Two Term Exam (20%)	Teachers Assessment* (20% or 30%)	End Sem University Exam (50%)	Teachers Assessment* (50%)	
7	BDES PD 207	SEMINAR	TOUR PROJECT/INDUSTRIAL VISIT	0	0	1	1	0	0	0	0	50	50

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

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

Course Educational Objectives (CEOs):

CEO 1- Semester Break Tours will be conducted in winter semester vacations, documentation of tour will help student to understand various styles and great designer's work of different regions.

Course Outcomes (COs):

CO 1- Get exposure to different regional work at different region, country and the world.

CO 2- Appraise the relevance of art and craft environment by observing & photo documentation of selected places

CO 3- Understand various styles and great designer's work of different regions.

GUIDELINES

- A tour report of A-3 size sheets with proper sketches, photographs, and theory documentation of the topic.
- Videos or any other supporting documentation can also be a part of submission as per the requirement.

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SEMESTER – II

BDES PD 301 – DESIGN STUDIO – II

Sr. No.	Course Code	Course Typology	Course Name	TEACHING SCHEME/WEEK				EXAMINATION SCHEME					TOTAL MARKS
				L	T	S	CREDITS	THEORY			PRACTICAL		
								End Sem University Exam (50% or 40%)	Two Term Exam (20%)	Teachers Assessment* (20% or 30%)	End Sem University Exam (50%)	Teachers Assessment* (50%)	
1	BDES PD 301	STUDIO	DESIGN STUDIO 2- PRODUCT DESIGN PROCESS BASED	0	0	8	8	0	0	0	200	200	400

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

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

Course Educational Objectives (CEOs):

CEO 1-Lectures on simplicity; Complex nature of simple products; Single Function Products; Material Property as function; Form as function. Student will follow the process based product design.

Course Outcomes (COs):

CO 1- Learning on design process along with the understanding on form and its functionality.

CO 2- Ability to create innovative single component single feature solution.

CO 3- Compare the Qualitative and qualitative research methodology,

Syllabus

UNIT – I

DESIGN THINKING- Consolidation of fundamentals of form based design & lateral thinking will be emphasized. Considerable research will be involved to recognize the virtue of design processes.

24HRS

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