



GUJARAT TECHNOLOGICAL UNIVERSITY

Bachelor of Design Syllabus (Industrial Design)

Subject Code : 10140305

Subject Name : CAD Modelling I

WEF Academic Year :	2024-25
Semester :	4
Category of the Course :	PCC

Prerequisite :	Technical Communication II
Rationale:	Computer aided design is a norm in industry today. Designers are expected to have competencies in knowledge and application of different CAD modeling software to be able to perform in the real world. The course is aimed at developing competencies in articulating design ideas in CAD modeling and has the proficiency related to visualization of 2D layouts and 3D forms and their effective application in visualization, communication and presentation through software as an integral part of skills and tools.

Course Outcome:

After Completion of the Course, Student will able to:

No	Course Outcomes	RBT Level*
01	Develop competency in use of graphic software for applications in various publishing mediums.	U
02	Enable use and application of organic and complex 3D form visualization and representation with detailed specifications and visual characteristics.	U, A
03	Enable students to apply knowledge and skills in their visualization and presentations of design concepts with clarity, details and visual feel.	U, A
04	Explore various possibilities of different graphic and 3D software and their potential application in work.	U, R
05	Create advanced digital competencies in visualization, representation and design specifications for various design projects.	C

**Revised Bloom's Taxonomy (RBT)*



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Teaching and Examination Scheme:

Teaching Scheme (In Hours)			Total Credits L+T+(PR/2)	Assessment Pattern and Marks				Total Marks
L	T	PR		C	Theory		Tutorial/Practical	
			ESE (E)		PA/CA (M)	ESE (V)	PA/CA (I)	
0	2	4	4	0	30	50	20	100
Continuous marking based on completion of classroom assignments followed by a concluding marked exercise for each section. Final internal presentation incorporating the combined learning of all units will be marked. Concluding jury will assess the interest and effort demonstrated by the student, along with the actual progress demonstrated during the course.								

Course Content:

Unit No.	Course Content	No. of Hours	% of Weightage
1	<p>UNIT I: Introduction to InDesign</p> <p>Basics of software and its application in layouts, visual content and visualization of graphics.</p> <p>Application in design and publish multi page documents containing text, vector artwork, and images.</p> <p>Use precise grids and guides to position page elements and create polished layouts. Application of professional typesetting features to format text consistently across pages, chapters, and publications.</p> <p>Exploration of various features and their applications on design of layouts, fonts, image transformation etc.</p> <p>Suitable file formats and their use for different purposes.</p> <p>Compatibility with other graphic software and printing and publishing mediums.</p>	30	32



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2	<p>UNIT II: Rhinoceros for 3D Visualization</p> <p>Basic features and applications of Rhino in design of products, jewelry, toys, home products, industrial products, architecture, Computer Aided Manufacture, 3D printing, rapid prototyping, multimedia and graphics. Compatibility with different file formats and their specific applications. NURBS geometry and its unique aspects of freeform modeling. <i>Free-form 3D organic surface or solid modeling and flexibility of intuitive visualization.</i></p> <p>Methods of creating files for Rapid Prototyping and manufacturing.</p>	30	32
3	<p>UNIT III: Project applications</p> <p>Assignments to demonstrate application and creative visualization of graphic images and layouts in InDesign.</p> <p>Assignments to demonstrate visualization/representation of complex organic 3D objects/spaces/ products.</p>	30	36
Total		90	100

Suggested Specification Table with Marks :

Distribution of Marks (in %)					
R Level	U Level	A Level	N Level	E Level	C Level
30	15	15	15	10	15

Where R: Remember; U: Understanding; A: Application, N: Analyze and E: Evaluate C: Create (as per Revised Bloom’s Taxonomy)

References/Suggested Learning Resources:

(a) Books:

- Anton, Kelly, DeJard, Tina, Adobe InDesign Classroom in a Book (2022 release) 1st Edition
- Clayton, Dave, How Do I Do That In InDesign?, 2019
- Cheng, Ron, Inside Rhinoceros 5 Paperback, 2013
- Buscaglia, Dana, Rhino 6.0 for Jewelry: A guide to basic jewelry design and model making strategies using Rhino 6.0 level: beginner through intermediate Paperback, 2020
- Marco Di, Gianacarlo, Simplified Complexity Paperback, 2018

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