GUJARAT TECHNOLOGICAL UNIVERSITY

BACHELOR OF ENGINEERING SYLLABUS

Minor/Honours Degree : Computer Aided Civil Engineering Processes

Subject Code : 115AV01

Subject Name : Advances in Planning - Software Applications

WEF Academic Year :	2023-24
Semester :	5
Category of the Course :	Compulsory

Prerequisite: Basics of Planning, Knowledge of 2D Drafting

Rationale: The subject help to built the thinking process of students to develop 3 three-dimensional view of buildings by using various subjects.

Teaching and Examination Scheme:

Teaching Scheme			Credits	Examination Marks				Total Marks
				Theory Marks		Practical Marks		
L	T	P	C	ESE (E)	PA (M)	ESE (V)	PA (I)	
2	0	4	4	00	00	50	50	100

Content:

Sr. No.	Content	Total Hrs.
1	**Introduction:** Conversion of 2D plan in to 3D, Introduction to the software used for 3D Modelling, Advantages and Disadvantages of various software available for 3D Modelling	04
2	**3D Modelling using AutoCAD** Basic 3D modelling, Advance 3D Modelling by using AutoCAD	10
3	**3D Modelling using Google SketchUp** Introduction and Installation of Google Sketch Up, 3D modelling by using basic to advance command of Google SketchUp.	10
4	**Revit: - Drafting and Modelling Software** Planning of Residential site by using basic command of Revit, introduce with the layers available and working space creation in Revit Preparation of Section, and exterior views of residential site. 3D Modelling in Revit Architectural software.	14
5	**Governance:** E-Governance, Structure of governance and strategies, Planning and Implementation, Civic Engagement, Security & Safety	02

Suggested Specification table with Marks (Theory):

Distribution of Theory Marks					
R Level	U Level	A Level	N Level	E Level	C Level
10%	**15%**	**25%**	**20%**	**10%**	**20%**

Legends: R: Remembrance; U: Understanding; A: Application, N: Analyze and E: Evaluate C: Create and above Levels (Revised Bloom's Taxonomy)

Note: This specification table shall be treated as a general guideline for students and teachers. The actual distribution of marks in the question paper may vary slightly from above table.

Reference Books:

1. Architectural Design with SketchUp: 3D Modeling, Extensions, BIM, Rendering, Making, and Scripting (2nd Edition) by Wiley Publication.
2. Autodesk Revit 2023 Architecture Certified Professional Exam Study Guide: Text and Practice Exam (e book)
3. Introduction to Google SketchUp, 2nd edition by Aidan Chopra, Laura Town, Chris Pichereau
4. Autodesk Revit 2024 Black Book by Gaurav Verma, Published by Matt Weber.

Course Outcomes:

No.	Course Outcomes	Marks % weightage
CO1	Students will be able to learn advance use of AutoCAD Software	30%
CO2	Students will be able to learn basic to advance use of Google SketchUp	25%
CO3	Students will be able to learn basic use of Revit.	45%

List of Experiments:

1. Using AutoCAD Prepare 3D Model of various residential, commercial buildings (Minimum 5)
2. Using Google SketchUp prepare 3D model of various buildings (Minimum 4)
3. Prepare Plan, section and elevation of residential bunglow by using Revit (Minimum 4)
4. Create 3D model by using Revit. (Minimum 4)

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