Lok Jagruti Kendra University
University with a Difference

Diploma in Architectural Assistantship

LJ Polytechnic

Course Code:025080405

3D Modelling & Animation

Programme / Branch Name			Diploma in Architectural Assistantship			
Course Name	3D Modelling & Animation				**Course Code**	025080405
Course Type	HSSC	BSC	ESC	PCC	OEC	PEC

Legends: HSSC: Humanities and Social Sciences Courses BSC: Basic Science Courses
ESC: Engineering Science Courses PCC: Program Core Courses
OEC: Open Elective Courses PEC: Program Elective Courses

1. Teaching and Evaluation Scheme

Teaching Hours / Week / Credits				**Evaluation Scheme**			
L	**T**	**P**	**Total Credit**	**CCE**	**SEE (Th)**	**SEE (Pr)**	**TOTAL**
0	0	4	2	50	-	50	100

Legends:
L: Lectures T: Tutorial P: Practical
CCE: Continuous & Comprehensive Evaluation
SEE (Th): Semester End Evaluation (Theory)
SEE (Pr): Semester End Evaluation (Practical)

2. Prerequisites

- ✓ 2D drafting softwares like AutoCAD

3. Rationale

A course is designed to get a basic understanding of 3D software & Animation and exposure to 3D modeling lingo, learn how to build basic geometry, and add colors from SketchUp's material library, its components, warehouses, etc. The course gives an introduction to how to convert 2D drawings into 3D modeling by using SketchUp software.

4. Objectives

- ✓ Prepare accurate, organized, efficiently constructed three-dimensional models of objects, architectural forms, and interior spaces.
- ✓ Employ a variety of methods for creating three-dimensional models of objects, architectural forms, and interior spaces, including direct construction within and importing measured drawings and other objects into SketchUp.
- ✓ Manage SketchUp files and components for archiving and greater efficiency during the model-building process.
- ✓ Use SketchUp, Photoshop, and rendering plugins, combined with traditional drawing methods, to enhance visual communication throughout the design process.

5. Contents

Unit No.	Unit Name	Topics	Learning Outcomes	% Weightage	Hours
1.	**Introduction**	1.1. Introduction to 3-Dimensional Drawing. 1.2. Computer System and Peripherals Requirement. 1.3. Introduction of Basic Tools.	• Prepare a New 3D From Scratch With the "Create Drawing". • Save Created 3D Definition as a New Window.	10	08
2.	**Basic Tools**	2.1. Introduction of 3d Tools like Rectangle, Circle, Select, Pencil, Push /Pull, Groups, Components 2.2. Usage of Tools in Drawing	• Prepare a New Drawing from Scratch With the Help of Drawing Tools. • To Set 3D Working Space With the Help of Tools as Per Drawing Requirements.	15	10
3.	**Modeling Practice**	3.1. Create basic 3D 3.2. Apply Door – Window, Frame, Furniture in 3D	• Create Basic 3D for Architecture & Interior Designing.	20	12
4.	**Creating Materials**	4.1. Use of Sketchup Warehouse 4.2. Create a New Material 4.3. Edit Material Block 4.4. Group & Components	• Apply Basic Materials for Architecture and Interior Designing.	20	12
5.	**Basic Render**	5.1. Fixing the Lighting 5.2. Editing Materials 5.3. Vray Material Effects 5.4. Camera Positioning 5.5. Render Settings 5.6. Preparing Views	• Apply Basic Render Materials, Lights to Get a Final 3D View.	30	14
				Total Hours	**56**

6. List of Practicals / Exercises

The practicals/exercises have been properly designed and implemented in an attempt to develop different types of skills, so that students can acquire the competencies/programme outcomes. Following is the list of practicals/exercises.

Sr. No.	Practicals / Exercises	Key Competency	Hours
1.	3D of basic shapes	Students will get familiar with 3D software & shapes	02
2.	3D of basic composition	Students will get familiar with basic 3D composition	02
3.	Add 2D plan in SketchUp	Students will get familiar with different 3D tools	04
4.	How to create a 2D plan in SketchUp	Students will get familiar with how to convert the 2D plan into 3D in software	04
5.	Implementation of tools in plan	Students will get familiar with different 2D/3D tools	04
6.	How to create walls in 3D	Students will get familiar with 3D basics for Architecture & Interior	04
7.	How to add windows, doors opening in 3D	Students will learn about basic openings in 3D	06
8.	Add furniture, materials with the help of a 3D warehouse	Students will get familiar with different components & blocks of 3D	06
9.	The final presentation in 3D	Students will get familiar with final 3D model	06
10.	Add lights, shadows & other render tools	Students will learn to create different view styles- animations in 3D	06
11.	Create final render view	Students will learn to create final 3D views	08
12.	Edit final render view	Students will learn to create final 3D views	04
		Total Hours	**56**

7. Reference Books

1) Building Blocks for Sketchup by Robert Lang, Bob Lang
2) Google SketchUp for Site design by Daniel Tal

8. Open Sources (Website, Video, Movie)

1) http://sketchup.google.com/
2) https://www.sketchup.com/products/3d-warehouse
3) https://www.sketchuptextureclub.com/
4) https://3dwarehouse.sketchup.com/