



Karmaveer Bhaurao Patil University, Satara

Syllabus for

Advanced Diploma I (3D Architectural Design)

Under

Faculty of Science and Technology

(As per NEP 2020)

With effect from Academic Year 2025-2026

Department of Animation Science

Revised Syllabus of I Year Advanced Diploma Program (PG)

Title: **3D Architectural Design**

1. Year of Implementation: 2024
2. Duration: One Year
3. Pattern: Semester
4. Medium of Instruction: English
5. Contact hours: 7 hours/week
6. Structure of Course

Structure of Course:

Year	Semester	Course No.	Course Code	Contact Hours	Credits (1Credit=15 H)	Total Marks
1	I	ADAST I	ADAST 101	30	2	75
		ADASL I	ADASL102	60	2	150
	II	ADAST II	ADAST 201	30	2	75
		ADASL II	ADASL202	60	2	150
	Annual	ADASP I	ADASP101	60	2	150
	Industrial and or Incubation and or Research and or Field Training			60	2	-
	Total			270	12	600
2	III	ADAST III	ADAST 301	30	2	75
		ADASL III	ADASL 302	60	2	150
	IV	ADAST IV	ADAST 401	30	2	75
		ADASL IV	ADAS L 402	60	2	150
	Annual	ADASP I	ADASP 201	60	2	150
	Industrial and or Incubation and or Research and or Field Training			60	2	-
	Total			270	12	600
				540	24	1200

Total No. of Papers: Theory: 04, Practical: 04,

Project: 02 Number of Lectures per week: 08

Theory: Semester, Practical and Project: Annual

PT: Paper Theory, PL: Paper Lab, PP: Paper Project, AD: Advance Diploma,

AS: Animation Science

Evaluation Pattern of Advanced Diploma Program

Theory Assessments					Practical Assessments			Annual Project
Internal Evaluation			End Semester Evaluation		Internal Evaluation		End Semester Evaluation	Sem I/II/III/IV
ADISE	Attendance	Total	ADESE	Total	PADISE	Attendance	PADESE	Total
30	05	35	40	75	50	20	80	150

Semester I

ADAST I: ADAST-101: Title: Sketchup Foundation

(Contact Hrs: 30 Credits: 2)

Learning Objectives: -

1. To impart basic Architectural model Development System.
2. To Understand the Layout Inspector.

Credits (Total Credits 2)	Semester I	No Of hours
Unit I	Interface Sketchup Basics, 5 Core concept, Selecting Templates, Navigating the 3D Environment, Measurements, Modeling Strategies, precise modeling, Axis, Origin, Axis tool, Inferences, Creating Geometry, Drawing Tools, Edit Tools, Organizing geometry with container, Groups, Creating Groups, Components, Navigating Containers, Modifying Containers, Default Material, Nested Containers, Section Planes, Layer, Style and Scene, The Professional's SketchUp Template, Base Templates, Model Info, Animation, Component and Dimension, Toolbars, Trays and Dialogue, Material Collection, Material Browser, Creating Material, Style Collection, Extension, ConDoc Tools.	15
Unit 2	Layout Introduction to layout, Paper Space and Model Space, Line Control, Layout Interface, Paper Tab, Reference Tab, Application Tab, Backup Tab, Inspectors, Colors Inspector, Pattern Fill Inspector, Shape Style Inspector, SketchUp Model Inspector, Scaled Drawing Inspector, Dimension Style Inspector, Text Style Inspector, Pages Inspector, Layers Inspector, Scrapbooks Inspector, Instructor Inspector, Auto Render, Trays, Basic Layout Template, Layout Tools, Inserting Content, Working With Sketchup Models, Inserting the File, Clipping Mask, Working With Images, Working With Text, Working With Tables, Managing References, Working With Cad.	15

Learning Outcomes:

At the end of the course, the students should be able to:

1. The course aims helping students to gain a solid understanding of the crucial and growing role played by model development in all areas of the modern business and civil industries.
2. This course will also enable the students to expand their business communication with the interior walkthrough development.

Reference Books:

1. Brightman, Michael. The SketchUp Workflow for Architecture. 2nd ed. [September 2018].
2. Kedem, Yael. The Complete Guide to SketchUp Pro: All You Need to Know for Mastering SketchUp Pro, Using the Power of Extension and Layout. [May 11, 2021].
3. Tal, Daniel. Google SketchUp for Site Design: A Guide to Modeling Site Plans, Terrain, and Architecture. [2009].
4. Robin De Jongh]. Google SketchUp for Game Design. [November 30, 2011].

ADASL I : ADASL-102: (Practical): Sketchup

Foundation Lab (Contact Hrs. - 60 Credits: 02)

Learning Objectives:

1. To impart basic Model development systems.
2. To Understand the Architectural environment.

List of Practical's (15)

Credits (Total Credits 2)	Semester I (Lab) Sketchup Foundation	No of hours per Unit Credits
	<ol style="list-style-type: none">1. Creating basic object with Sketchup pro.2. Creating curve, rounded and organic shapes in sketchup Pro.3. Cutting planes and section in Sketchup Pro.4. Importing CAD files in Sketchup Pro.5. Creating basic 3D model using Sketchup Pro.6. Creating 3D Text in Sketchup Pro.7. Creating a wood table design using Sketchup Pro.8. Creating various interior components in Sketchup Pro.9. Creating a simple house model with sketchup pro.10. Working with component copies and curves in sketchup pro.11. Creating Furniture model using sketchup pro.12. Creating kitchen design in SketchUp Pro.13. Creating Floor plan for images in Sketchup Pro.14. Working with units in Sketchup Pro.15. Exporting work from SketchUp Pro.	2

Learning Outcomes:

At the end of the course, the students should be able to:

1. The course aims helping students to gain a solid understanding of the crucial and growing role played by model development in all areas of the modern business and civil industries.
2. This course will also enable the students to expand their business communication with the interior walkthrough development.

Reference Books:

The following material is recommended for the course:

1. Brightman, Michael. The SketchUp Workflow for Architecture. 2nd ed. [City of Publication: Publisher, Year of Publication].
2. Kedem, Yael. The Complete Guide to SketchUp Pro: All You Need to Know for Mastering SketchUp Pro, Using the Power of Extension and Layout. [City of Publication: Publisher, Year of Publication].
3. Tal, Daniel. Google SketchUp for Site Design: A Guide to Modeling Site Plans, Terrain, and Architecture. [City of Publication: Publisher, Year of Publication].
4. Robin De Jongh]. Google SketchUp for Game Design. [November 30, 2011].

Semester II

ADAST II: ADAST -201: Title: Advanced Sketchup Techniques (Contact Hrs: 30 Credits: 2)

Learning Objectives:-

1. To impart basic Model development systems.
2. To Understand the Architectural environment.

Credits (Total Credits 2)	Semester II	No Of hours
Unit I	Model Organization	15
	Sketchup Basics, 5 Core concept, Selecting Templates, Navigating the 3D Core Concepts of Model Organization, Nesting Groups and Layers, TSWFA/ConDoc Default Layers, CONDOC Layers, Simplify The System, Expand The System, New Construction Process, Working with selected project, The project Site, Finding nearby building, PlaceMarker, GeoModeling, Importing 2D detail, Making unique Material, Working with CAD drawing, Renovation Process, Recording Field Notes.	
Unit 2	Rendering	15
	Introduction To Visualization/Preparation, Presentations, Animation, Virtual Tours, Virtual Reality, Real Objects, Populating A Scene, Preparing A Model, Rendering, Sketchup Stills, Choosing An Appropriate Style, Creating Scenes, Exporting Images From Sketchup, Sketchup Animations, Creating An Animation Model, Adding Scenes, Exporting Animations, Photorealistic Rendering, Sketchup Rendering Extensions, Post processing, Altered Reality, Virtual Reality, Design Process, Client Presentations, Augmented Reality, Construction Documents.	

Learning Outcomes:

At the end of the course, the students should be able to:

1. The course aims helping students to gain a solid understanding of the crucial and growing role played by model development in all areas of the modern business and civil industries.
2. This course will also enable the students to expand their business communication with the interior walkthrough development.

Reference Books:

1. Brock, John. SketchUp for Builders: A Comprehensive Guide for Creating 3D Building Models Using SketchUp. [December 2018].
2. [L Cline]. SketchUp for Interior Design: 3D Visualizing, Designing, and Space Planning. [City of Publication: Publisher, 7 March 2014].
3. [Alexander C. Schreyer]. Architectural Design with SketchUp: 3D Modeling, Extensions, BIM, Rendering, Making, and Scripting. 2nd ed. [3 July 2023].
4. [Robin De Jongh]. Google SketchUp for Game Design. [November 30, 2011].

ADASL II- ADASL-202: (Practical): Advanced Sketchup Techniques

(Contact Hrs. 60 Credits: 02)

Learning Objectives:

1. To impart basic Model development systems.
2. To Understand the Architectural environment.

List of Practical's (15)

Credits (Total Credits 2)	Semester II (Lab) Advanced Sketchup Techniques	No of hours per Unit Credits
	<ol style="list-style-type: none">1. Adding Doors and Windows in Floor Plan in Sketchup Pro.2. Importing and using images in Sketchup Pro.3. Creating Interior design using Sketchup Pro.4. Creating Bedroom interior using Sketchup Pro.5. Creating Realistic interior rendering in Sketchup Pro (Image).6. Modeling a Landscape in Sketchup Pro.7. Working with Vray in Sketchup Pro.8. Working with perspective in Sketchup Pro.9. Rendering with Sketchup Pro (Animation).10. Working with construction documents in SketchUp pro.11. Exporting to DWG format from SketchUp Pro.12. Create walkthrough in SketchUp Pro.13. Animating camera along the path in Sketchup Pro.14. Rendering a scene in SketchUp Pro.15. Rendering with external plugins in SketchUp Pro.	2

Learning Outcomes:

At the end of the course, the students should be able to:

1. The course aims to help students to gain a solid understanding of the crucial and growing role played by model development in all areas of the modern business and civil industries.
2. This course will also enable the students to expand their business communication with the interior walkthrough development.

Reference Books:

The following material is recommended for the course:

1. Brock, John. SketchUp for Builders: A Comprehensive Guide for Creating 3D Building Models Using SketchUp. Manifesto for Agile Software Development, [December 2018].
2. [L Cline]. SketchUp for Interior Design: 3D Visualizing, Designing, and Space Planning. [City of Publication: Publisher, 7 March 2014].
3. [Alexander C. Schreyer]. Architectural Design with SketchUp: 3D Modeling, Extensions, BIM, Rendering, Making, and Scripting. 2nd ed. [3 July 2023].
4. [Robin De Jongh]. Google SketchUp for Game Design. [November 30, 2

ADASP I: ADASP 101 (Project)
(Contact Hrs. 30/60, Credits: 1/2)
Industrial and or Incubation and or Research and or Field Training
(Contact Hrs. 60, Credits: 2)

BOS Sub-Committee

- 1) Mrs.Doke P.S
- 2) Mr. Bhambure R.V.

1. Department of Animation Science
2. Department of Animation Science

Expert Committee

- 1) Mr.Pimpale S. N.
- 2) Mr.Unkule Mandar

- 1.Shivaji college,Satara
2. Paps Studio,Satara