

<b>RGPV (DIPLOMA WING) BHOPAL</b>	<b>OBE CURRICULUM FOR THE COURSE</b>		<b>FORMAT- 3</b>	<b>Sheet- 1/3</b>	
<b>Branch</b>	<b>ARCHITECTURAL ASSISTANTSHIP</b>		<b>Sem</b>	<b>THIRD</b>	
<b>Course Code</b>	<b>303</b>	<b>Course Name</b>	<b>CAD- II</b>		
<b>Course Outcome1</b>	<b>Student will be able to develop and render 3D building models in SketchUP</b>			<b>Teach Hrs</b>	<b>Marks</b>
<b>Learning Outcome 1</b>	Student will be able to prepare accurate, organized, efficiently constructed three-dimensional models of objects, buildings and interior spaces in SketchUp			<b>12</b>	<b>10</b>
<b>Contents</b>	<ol style="list-style-type: none"> <li>1. Introduction</li> <li>2. Basics of Sketch-up <ol style="list-style-type: none"> <li>a. Using sketch-up</li> <li>b. Viewing and navigation in 3D space</li> <li>c. Creating objects</li> <li>d. Using various draw tool bars</li> <li>e. Creating 3D objects using draw tool bars</li> </ol> </li> </ol>				
<b>Method of Assessment</b>	<b>INTERNAL (PT -1)</b>				
<b>Learning Outcome 2</b>	Student will be able to employ a variety of methods for creating and modifying three-dimensional models of objects, buildings, and interior spaces in SketchUp			<b>13</b>	<b>10</b>
<b>Contents</b>	<ol style="list-style-type: none"> <li>1. Modifying objects <ol style="list-style-type: none"> <li>a. Modification methods</li> <li>b. Editing and modifying of shapes</li> </ol> </li> <li>2. Using Custom materials <ol style="list-style-type: none"> <li>a. Various materials of walls, ceiling, glass, grass etc.</li> <li>b. Blocks of door, window, people, animals, furniture etc.</li> </ol> </li> </ol>				

<b>Method of Assessment</b>	<b><i>INTERNAL: PORTFOLIO SUBMISSION</i></b>		
<b>Learning Outcome 3</b>	Student will be able to import/ export building drawings in SketchUp	<b>13</b>	<b>10</b>
<b>Contents</b>	<ol style="list-style-type: none"> <li>1. Working with Files and Importing &amp; Exporting</li> <li>2. Exporting AutoCAD plan into 3D space</li> </ol>		
<b>Method of Assessment</b>	<b><i>INTERNAL: PORTFOLIO SUBMISSION</i></b>		
<b>Learning Outcome 4</b>	Student will be able to Use SketchUp rendering plug-ins, to enhance visual communication throughout the design process	<b>13</b>	<b>15</b>
<b>Contents</b>	<ol style="list-style-type: none"> <li>1. Light and Cameras <ol style="list-style-type: none"> <li>a. Artificial and Solar lighting in the scene</li> <li>b. Using cameras</li> </ol> </li> <li>2. Walkthroughs- designating path to a camera</li> <li>3. Rendering <ol style="list-style-type: none"> <li>a. Rendering scene</li> <li>b. Creating environment</li> </ol> </li> </ol>		
<b>Method of Assessment</b>	<b><i>EXTERNAL: PRACTICAL</i></b>		
<b>Course Outcome 2</b>	<b>Student will be able to develop and render 3D building models in Autodesk Revit</b>		
<b>Learning Outcome1</b>	Student will be able to prepare accurate, organized, efficiently constructed three-dimensional models of objects, buildings and interior spaces in Autodesk Revit	<b>12</b>	<b>10</b>

<b>Contents</b>	<ol style="list-style-type: none"> <li>1. The Basics of BIM</li> <li>2. Introduction to Autodesk Revit Architecture <ol style="list-style-type: none"> <li>a. Starting the project,</li> <li>b. Understanding the User Interface</li> <li>c. The Basics of the Toolbox Selecting,</li> </ol> </li> <li>3. Creating Walls and Basic Building Components <ol style="list-style-type: none"> <li>a. Modeling Floors, Ceilings, and Roofs</li> <li>b. Understanding Floor Types</li> <li>c. Sketching for Floors, Ceilings, and Roofs</li> <li>d. Modeling Slab Edges</li> <li>e. Modeling Floor Finishes</li> <li>f. Creating Ceilings</li> <li>g. Understanding Roof Modeling Methods</li> <li>h. Using Advanced Shape Editing with Floors and Roofs</li> </ol> </li> <li>4. Creating Stairs and Railings <ol style="list-style-type: none"> <li>a. Designing Stairs and Railings</li> <li>b. Reviewing the Key Components of Stairs and Railings</li> <li>c. Creating Stairs</li> <li>d. Annotating Stairs</li> <li>e. Creating Railings</li> <li>f. Using the Railing Tool for Other Objects</li> </ol> </li> <li>5. Using the Editing Tools <ol style="list-style-type: none"> <li>a. Modifying, and Replacing Elements</li> <li>b. Editing Elements Interactively</li> <li>c. Exploring Other Editing Tools</li> </ol> </li> </ol>		
<b>Method of Assessment</b>	<i>INTERNAL (PT -2)</i>		
<b>Learning Outcome2</b>	Student will be able to employ a variety of methods for creating and modifying three-dimensional models of objects, buildings, and interior spaces in Autodesk Revit	<b>13</b>	<b>10</b>

<b>Contents</b>	<ol style="list-style-type: none"> <li>1. Adding Annotations and Dimensions <ol style="list-style-type: none"> <li>a. Annotating the Design</li> <li>b. Annotation category,</li> <li>c. Annotating with Text and Keynotes</li> <li>d. Annotating with Tags</li> <li>e. Adding Dimensions</li> </ol> </li> <li>2. Extended Modeling Techniques <ol style="list-style-type: none"> <li>a. Creating Simple Curtain Walls</li> <li>b. Creating Complex Curtain Walls</li> </ol> </li> <li>3. Configuring Templates and Standards <ol style="list-style-type: none"> <li>a. Introducing Project Templates</li> <li>b. Customizing Project Settings</li> <li>c. Creating Custom Annotations</li> <li>d. Starting a Project with a Custom Template</li> </ol> </li> </ol>		
<b>Method of Assessment</b>	<i><b>INTERNAL: PORTFOLIO SUBMISSION</b></i>		
<b>Learning Outcome 3</b>	Student will be able to import/ export building drawings in Autodesk Revit	<b>13</b>	<b>10</b>
<b>Contents</b>	<ol style="list-style-type: none"> <li>1. Inserting and using CAD data</li> <li>2. Using inserted 3D data</li> <li>3. Exporting CAD data <ol style="list-style-type: none"> <li>a. Exporting 2D CAD data</li> <li>b. Exporting 3D model data</li> </ol> </li> </ol>		
<b>Method of Assessment</b>	<i><b>INTERNAL: PORTFOLIO SUBMISSION</b></i>		
<b>Learning Outcome 4</b>	Student will be able to Use Autodesk Revit rendering plug-ins, to enhance visual communication throughout the design process	<b>13</b>	<b>15</b>
<b>Contents</b>	<ol style="list-style-type: none"> <li>1. Visualization <ol style="list-style-type: none"> <li>a. Role of Visualization</li> <li>b. View Controls</li> <li>c. Analytic Visualization</li> <li>d. Photorealistic Visualization</li> </ol> </li> </ol>		

<b>Method of Assessment</b>	<b><i>EXTERNAL: PRACTICAL</i></b>		
<b>Course Outcome 3</b>	<b>Student will be able to develop 3D building models in Autodesk 3Ds Max</b>		
<b>Learning Outcome 1</b>	Student will be able to prepare accurate, organized, efficiently constructed three-dimensional models of objects, buildings and interior spaces in Autodesk 3Ds Max	<b>03</b>	<b>05</b>
<b>Contents</b>	<ol style="list-style-type: none"> <li>1. Introduction to 3D Studio MAX</li> <li>2. Basics of 3D Studio MAX <ol style="list-style-type: none"> <li>a. Using 3D Studio MAX</li> <li>b. Viewing and navigation in 3D space</li> <li>c. Selecting objects, using transformers</li> <li>d. Precision and drawing aids</li> </ol> </li> <li>3. Creating Objects <ol style="list-style-type: none"> <li>a. Creation methods</li> <li>b. Creating geometric primitives and patches</li> <li>c. Creating spline and text shapes. Creating lofts</li> <li>d. Creating morphs, Booleans and particle systems</li> <li>e. Creating space warps and systems</li> <li>f. Creating copies and arrays</li> </ol> </li> </ol>		
<b>Method of Assessment</b>	<b><i>INTERNAL (PT -1)</i></b>		
<b>Learning Outcome 2</b>	Student will be able to employ a variety of methods for creating and modifying three-dimensional models of objects, buildings, and interior spaces in Autodesk 3Ds Max	<b>03</b>	<b>05</b>
<b>Contents</b>	<ol style="list-style-type: none"> <li>1. Modifying objects <ol style="list-style-type: none"> <li>i) Modification methods</li> <li>ii) Applying geometric modifiers</li> <li>iii) Editing and modifying shapes</li> <li>iv) Editing meshes. Editing patch surfaces</li> </ol> </li> </ol>		
<b>Method of Assessment</b>	<b><i>INTERNAL (PT -2)</i></b>		



<b>RGPV (Diploma Wing) Bhopal</b>	<b>SCHEME FOR LEARNING OUTCOME</b>			Branch Code			Course Code			CO Code	LO Code	<b>Format No. 4</b>
				A	0	6	3	0	3	I	I	

<b>COURSE NAME</b>	<b>CAD II</b>
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<b>CO Description</b>	<b>Student will be able to develop and render 3D building models in SketchUP</b>
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<b>LO Description</b>	Student will be able to prepare accurate, organized, efficiently constructed three-dimensional models of objects, buildings and interior spaces in SketchUp
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**SCHEME OF STUDY**

S. No.	Learning Content	Teaching – Learning Method	Description of T-L Process	Teaching Hrs.	Practical /Tut Hrs.	LRs Required	Remarks
1.1.1	Introduction to Sketchup	<ul style="list-style-type: none"> <li>Interactive classroom teachings</li> <li>Demonstration</li> </ul>	<ul style="list-style-type: none"> <li>Teacher will explain the contents and provide handouts to students, guide them for desktop study.</li> <li>The student will learn the basics of Sketchup and submit the assignment given by the faculty</li> </ul>	<b>02</b>	<b>10</b>	<ul style="list-style-type: none"> <li>White board</li> <li>Smart Classroom / similar facility</li> <li>SketchUp software</li> <li>Desktop</li> <li>Internet Connection</li> </ul>	
1.1.2	Basics of Sketch-up <ol style="list-style-type: none"> <li>Using sketch-up</li> <li>Viewing and navigation in 3D space</li> <li>Creating objects</li> <li>Using various draw tool bars</li> <li>Creating 3D objects using draw tool bars</li> </ol>						

**SCHEME OF ASSESSMENT**

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1	Written test	• Short answers/ descriptive questions	10	• Test paper	<b>INTERNAL (PT -I)</b>

**ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY  
(IF ANY)**

**NIL**

RGPV (Diploma Wing) Bhopal		SCHEME FOR LEARNING OUTCOME				Branch Code			Course Code			CO Code	LO Code	Format No. 4
						A	0	6	3	0	3	1	2	
COURSE NAME		CAD II												
CO Description		Student will be able to develop and render 3D building models in SketchUP												
LO Description		Student will be able to employ a variety of methods for creating and modifying three-dimensional models of objects, buildings, and interior spaces in SketchUp												
<b>SCHEME OF STUDY</b>														
S. No.	Learning Content	Teaching – Learning Method	Description of T-L Process	Teaching Hrs.	Practical /Tut Hrs.	LRs Required	Remarks							
1.2.1	Modifying objects a. Modification methods b. Editing and modifying of shapes	<ul style="list-style-type: none"> <li>Interactive classroom teachings</li> <li>Demonstration</li> </ul>	<ul style="list-style-type: none"> <li>Teacher will explain the contents and demonstrate the technique</li> </ul>	-	13	<ul style="list-style-type: none"> <li>White board</li> <li>Smart Classroom / similar facility</li> <li>SketchUp software</li> <li>Desktop</li> <li>Internet Connection</li> </ul>								
1.2.2	Using Custom materials a. Various materials of walls, ceiling, glass, grass etc. b. Blocks of door, window, people, animals, furniture etc.		<ul style="list-style-type: none"> <li>The student will learn to create 3d models of an interior space and small buildings</li> </ul>											
<b>SCHEME OF ASSESSMENT</b>														
S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required			External / Internal							
1	Portfolio submission	<ul style="list-style-type: none"> <li>Drawings will be assessed based on accuracy and presentation techniques.</li> </ul>	10	Desktop, Sketchup software, internet connection, display facility			<i>INTERNAL</i>							
<b>ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)</b>														

<b>RGPV (Diploma Wing) Bhopal</b>		<b>SCHEME FOR LEARNING OUTCOME</b>				Branch Code		Course Code		CO Code	LO Code	<b>Format No. 4</b>
						A	0	6	3	0	3	
<b>COURSE NAME</b>		<b>CAD II</b>										
<b>CO Description</b>		<b>Student will be able to develop and render 3D building models in SketchUP</b>										
<b>LO Description</b>		Student will be able to import/ export building drawings in SketchUp										
<b>SCHEME OF STUDY</b>												
<b>S. No.</b>	<b>Learning Content</b>	<b>Teaching – Learning Method</b>	<b>Description of T-L Process</b>	<b>Teaching Hrs.</b>	<b>Practical /Tut Hrs.</b>	<b>LRs Required</b>		<b>Remarks</b>				
1.3.1	Working with Files and Importing & Exporting	<ul style="list-style-type: none"> <li>Interactive classroom teachings</li> <li>Demonstration</li> </ul>	<ul style="list-style-type: none"> <li>Teacher will explain the contents and demonstrate the technique</li> <li>The student will learn to download 3d models from warehouse and install extensions</li> </ul>	-	<b>13</b>	<ul style="list-style-type: none"> <li>White board</li> <li>Smart Classroom / similar facility</li> <li>SketchUp software</li> <li>Desktop</li> <li>Internet Connection</li> </ul>						
1.3.2	Exporting AutoCAD plan into 3D space											
<b>SCHEME OF ASSESSMENT</b>												
<b>S. No.</b>	<b>Method of Assessment</b>	<b>Description of Assessment</b>		<b>Maximum Marks</b>	<b>Resources Required</b>			<b>External / Internal</b>				
1	Portfolio submission	• Drawings will be assessed based on accuracy and presentation techniques.		10	Desktop, Sketchup software, internet connection, display facility			<b>INTERNAL</b>				
<b>ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)</b>												

<b>RGPV (Diploma Wing) Bhopal</b>		<b>SCHEME FOR LEARNING OUTCOME</b>				Branch Code			Course Code			CO Code	LO Code	<b>Format No. 4</b>
						A	0	6	3	0	3	1	4	
<b>COURSE NAME</b>		<b>CAD II</b>												
<b>CO Description</b>		<b>Student will be able to develop and render 3D building models in SketchUP</b>												
<b>LO Description</b>		Student will be able to Use SketchUp rendering plug-ins, to enhance visual communication throughout the design process												
<b>SCHEME OF STUDY</b>														
<b>S. No.</b>	<b>Learning Content</b>	<b>Teaching – Learning Method</b>	<b>Description of T-L Process</b>	<b>Teaching Hrs.</b>	<b>Practical /Tut Hrs.</b>	<b>LRs Required</b>	<b>Remarks</b>							
1.4.1	Light and Cameras a. Artificial and Solar lighting in the scene b. Using cameras	<ul style="list-style-type: none"> <li>Interactive classroom teachings</li> <li>Demonstration</li> </ul>	<ul style="list-style-type: none"> <li>Teacher will explain the contents and demonstrate the technique</li> <li>The student will learn to adjust the lighting and create realistic render of 3d models</li> </ul>	-	13	<ul style="list-style-type: none"> <li>White board</li> <li>Smart Classroom / similar facility</li> <li>SketchUp software</li> <li>Desktop</li> <li>Internet Connection</li> </ul>								
1.4.2	Walkthroughs- designating path to a camera													
1.4.3	Rendering a. Rendering scene b. Creating environment													
<b>SCHEME OF ASSESSMENT</b>														
<b>S. No.</b>	<b>Method of Assessment</b>	<b>Description of Assessment</b>			<b>Maximum Marks</b>	<b>Resources Required</b>			<b>External / Internal</b>					
1	Portfolio and display	• Presentation on drawings submitted by Student			15	• Display facility			<b><i>EXTERNAL: PRACTICAL</i></b>					
<b>ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)</b>														
NIL														

<b>RGPV (Diploma Wing) Bhopal</b>	<b>SCHEME FOR LEARNING OUTCOME</b>						Branch Code			Course Code			CO Code	LO Code	<b>Format No. 4</b>
							A	0	6	3	0	3	2	1	

<b>COURSE NAME</b>	<b>CAD II</b>
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<b>CO Description</b>	<b>Student will be able to develop and render 3D building models in Autodesk Revit</b>
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<b>LO Description</b>	Student will be able to prepare accurate, organized, efficiently constructed three-dimensional models of objects, buildings and interior spaces in Autodesk Revit
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**SCHEME OF STUDY**

S. No.	Learning Content	Teaching – Learning Method	Description of T-L Process	Teaching Hrs.	Practical /Tut Hrs.	LRs Required	Remarks
2.1.1	The Basics of BIM	<ul style="list-style-type: none"> <li>• Interactive classroom teachings</li> <li>• Demonstration</li> </ul>	<ul style="list-style-type: none"> <li>• Teacher will explain the contents and provide handouts to students, guide them for desktop study.</li> <li>• The student will learn the basics of 3ds Max and submit the assignment given by the faculty</li> </ul>	-	12	<ul style="list-style-type: none"> <li>• White board</li> <li>• Smart Classroom / similar facility</li> <li>• Revit software</li> <li>• Desktop</li> <li>• Internet Connection</li> </ul>	
2.1.2	Introduction to Autodesk Revit Architecture <ul style="list-style-type: none"> <li>a. Starting the project,</li> <li>b. Understanding the User Interface</li> <li>c. The Basics of the Toolbox Selecting,</li> </ul>						
2.1.3	Creating Walls and Basic Building Components <ul style="list-style-type: none"> <li>a. Modeling Floors, Ceilings, and Roofs</li> <li>b. Understanding Floor Types</li> <li>c. Sketching for Floors, Ceilings, and Roofs</li> <li>d. Modeling Slab Edges</li> <li>e. Modeling Floor Finishes</li> <li>f. Creating Ceilings</li> <li>g. Understanding Roof Modeling Methods</li> <li>h. Using Advanced Shape Editing with Floors and Roofs</li> </ul>						

2.1.4	<p>Creating Stairs and Railings</p> <ul style="list-style-type: none"> <li>a. Designing Stairs and Railings</li> <li>b. Reviewing the Key Components of Stairs and Railings</li> <li>c. Creating Stairs</li> <li>d. Annotating Stairs</li> <li>e. Creating Railings</li> <li>f. Using the Railing Tool for Other Objects</li> </ul>						
2.1.5	<p>Using the Editing Tools</p> <ul style="list-style-type: none"> <li>a. Modifying, and Replacing Elements</li> <li>b. Editing Elements Interactively</li> </ul>						

**SCHEME OF ASSESSMENT**

<b>S. No.</b>	<b>Method of Assessment</b>	<b>Description of Assessment</b>	<b>Maximum Marks</b>	<b>Resources Required</b>	<b>External / Internal</b>
1	Written test	• Short answers/ descriptive questions	10	• Test paper	<b><i>INTERNAL (PT -2)</i></b>

**ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY  
(IF ANY)**

**NIL**

<b>RGPV (Diploma Wing) Bhopal</b>	<b>SCHEME FOR LEARNING OUTCOME</b>			Branch Code			Course Code			CO Code	LO Code	<b>Format No. 4</b>
				A	0	6	3	0	3	2	2	

<b>COURSE NAME</b>	<b>CAD II</b>
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<b>CO Description</b>	<b>Student will be able to develop and render 3D building models in Autodesk Revit</b>
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<b>LO Description</b>	Student will be able to employ a variety of methods for creating and modifying three-dimensional models of objects, buildings, and interior spaces in Autodesk Revit
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**SCHEME OF STUDY**

S. No.	Learning Content	Teaching – Learning Method	Description of T-L Process	Teaching Hrs.	Practical /Tut Hrs.	LRs Required	Remarks
2.2.1	Adding Annotations and Dimensions a. Annotating the Design b. Annotation category, c. Annotating with Text and Keynotes d. Annotating with Tags e. Adding Dimensions	<ul style="list-style-type: none"> <li>Interactive classroom teachings</li> <li>Demonstration</li> </ul>	<ul style="list-style-type: none"> <li>Teacher will explain the contents and demonstrate the technique</li> <li>The student will learn to create 3d models of an interior space and small buildings</li> </ul>	-	13	<ul style="list-style-type: none"> <li>White board</li> <li>Smart Classroom / similar facility</li> <li>Revit software</li> <li>Desktop</li> <li>Internet Connection</li> </ul>	
2.2.2	Extended Modeling Techniques a. Creating Simple Curtain Walls b. Creating Complex Curtain Walls						
2.2.3	Configuring Templates and Standards a. Introducing Project Templates b. Customizing Project Settings c. Creating Custom Annotations d. Starting a Project with a Custom Template						

**SCHEME OF ASSESSMENT**

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
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1	Portfolio submission	• Drawings will be assessed based on accuracy and presentation techniques.	10	Desktop, Revit software, internet connection, display facility	<i><b>INTERNAL</b></i>
<b>ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)</b>					
<b>NIL</b>					

<b>RGPV (Diploma Wing) Bhopal</b>		<b>SCHEME FOR LEARNING OUTCOME</b>				Branch Code			Course Code			CO Code	LO Code	<b>Format No. 4</b>
						A	0	6	3	0	3	2	3	
<b>COURSE NAME</b>		<b>CAD II</b>												
<b>CO Description</b>		<b>Student will be able to develop and render 3D building models in Autodesk Revit</b>												
<b>LO Description</b>		Student will be able to import/ export building drawings in Autodesk Revit												
<b>SCHEME OF STUDY</b>														
<b>S. No.</b>	<b>Learning Content</b>	<b>Teaching – Learning Method</b>	<b>Description of T-L Process</b>	<b>Teaching Hrs.</b>	<b>Practical /Tut Hrs.</b>	<b>LRs Required</b>	<b>Remarks</b>							
2.3.1	Inserting and using CAD data 1. Using inserted 3D data Exporting CAD data a. Exporting 2D CAD data b. Exporting 3D model data	<ul style="list-style-type: none"> <li>Interactive classroom teachings</li> <li>Demonstration</li> </ul>	<ul style="list-style-type: none"> <li>Teacher will explain the contents and demonstrate the technique</li> <li>The student will learn to assemble files and manage them in 3ds Max</li> </ul>	-	13	<ul style="list-style-type: none"> <li>White board</li> <li>Smart Classroom / similar facility</li> <li>Revit software</li> <li>Desktop</li> <li>Internet Connection</li> </ul>								
<b>SCHEME OF ASSESSMENT</b>														
<b>S. No.</b>	<b>Method of Assessment</b>	<b>Description of Assessment</b>			<b>Maximum Marks</b>	<b>Resources Required</b>			<b>External / Internal</b>					
1	Portfolio submission	• Drawings will be assessed based on accuracy and presentation techniques.			10	Desktop, Revit software, internet connection, display facility			<b><i>INTERNAL</i></b>					
<b>ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)</b>														
<b>NIL</b>														

<b>RGPV (Diploma Wing) Bhopal</b>	<b>SCHEME FOR LEARNING OUTCOME</b>						Branch Code			Course Code			CO Code	LO Code	<b>Format No. 4</b>
							A	0	6	3	0	3	2	4	

<b>COURSE NAME</b>	<b>CAD II</b>
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<b>CO Description</b>	<b>Student will be able to develop and render 3D building models in Autodesk Revit</b>
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<b>LO Description</b>	Student will be able to Use Autodesk Revit rendering plug-ins, to enhance visual communication throughout the design process
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**SCHEME OF STUDY**

S. No.	Learning Content	Teaching – Learning Method	Description of T-L Process	Teaching Hrs.	Practical /Tut Hrs.	LRs Required	Remarks
2.4.1	Visualization a. Role of Visualization b. View Controls c. Analytic Visualization d. Photorealistic Visualization	<ul style="list-style-type: none"> <li>Interactive classroom teachings</li> <li>Demonstration</li> </ul>	<ul style="list-style-type: none"> <li>Teacher will explain the contents and demonstrate the technique</li> <li>The student will learn to adjust the lighting, camera position and create realistic render of 3d models</li> </ul>	-	<b>13</b>	<ul style="list-style-type: none"> <li>White board</li> <li>Smart Classroom / similar facility</li> <li>Revit software</li> <li>Desktop</li> <li>Internet Connection</li> </ul>	

**SCHEME OF ASSESSMENT**

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1	Portfolio and display	• Presentation on drawings submitted by Student	15	• Display facility	<b>EXTERNAL: PRACTICAL</b>

**ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY  
(IF ANY)**

<b>RGPV (Diploma Wing) Bhopal</b>	<b>SCHEME FOR LEARNING OUTCOME</b>						Branch Code			Course Code			CO Code	LO Code	<b>Format No. 4</b>
							A	0	6	3	0	3	3	1	

<b>COURSE NAME</b>	<b>CAD II</b>
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<b>CO Description</b>	<b>Student will be able to develop 3D building models in Autodesk 3Ds Max</b>
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<b>LO Description</b>	Student will be able to prepare accurate, organized, efficiently constructed three-dimensional models of objects, buildings and interior spaces in Autodesk 3Ds Max
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**SCHEME OF STUDY**

S. No.	Learning Content	Teaching – Learning Method	Description of T-L Process	Teaching Hrs.	Practical /Tut Hrs.	LRs Required	Remarks
3.1.1	Introduction to 3D Studio MAX	<ul style="list-style-type: none"> <li>Interactive classroom teachings</li> </ul>	<ul style="list-style-type: none"> <li>Teacher will explain the contents and provide handouts to students, guide them for desktop study.</li> <li>The student will learn to import/ export files from Sketchup and submit assignment given by the faculty</li> </ul>	-	3	<ul style="list-style-type: none"> <li>White board</li> <li>Smart Classroom / similar facility</li> <li>3Ds Max software</li> <li>Desktop</li> <li>Internet Connection</li> </ul>	
3.1.2	Basics of 3D Studio MAX <ul style="list-style-type: none"> <li>a. Using 3D Studio MAX</li> <li>b. Viewing and navigation in 3D space</li> <li>c. Selecting objects, using transformers</li> <li>d. Precision and drawing aids</li> </ul>	<ul style="list-style-type: none"> <li>Demonstration</li> </ul>					
3.1.3	Creating Objects <ul style="list-style-type: none"> <li>a. Creation methods</li> <li>b. Creating geometric primitives and patches</li> <li>c. Creating spline and text shapes. Creating lofts</li> <li>d. Creating morphs, Booleans and particle systems</li> <li>e. Creating space warps and systems</li> <li>f. Creating copies and arrays</li> </ul>						

**SCHEME OF ASSESSMENT**

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1	Written test	• Short answers/ descriptive questions	5	• Test paper	<i>INTERNAL (PT -1)</i>
<b>ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)</b>					
<b>NIL</b>					

<b>RGPV (Diploma Wing) Bhopal</b>		<b>SCHEME FOR LEARNING OUTCOME</b>				Branch Code			Course Code			CO Code	LO Code	<b>Format No. 4</b>
						A	0	6	3	0	3	3	2	
<b>COURSE NAME</b>		<b>CAD II</b>												
<b>CO Description</b>		<b>Student will be able to develop 3D building models in Autodesk 3Ds Max</b>												
<b>LO Description</b>		Student will be able to employ a variety of methods for creating and modifying three-dimensional models of objects, buildings, and interior spaces in Autodesk 3Ds Max												
<b>SCHEME OF STUDY</b>														
<b>S. No.</b>	<b>Learning Content</b>	<b>Teaching – Learning Method</b>	<b>Description of T-L Process</b>	<b>Teaching Hrs.</b>	<b>Practical /Tut Hrs.</b>	<b>LRs Required</b>	<b>Remarks</b>							
3.2.1	Modifying objects Modification methods Applying geometric modifiers Editing and modifying shapes Editing meshes. Editing patch surfaces	<ul style="list-style-type: none"> <li>Interactive classroom teachings</li> <li>Demonstration</li> </ul>	<ul style="list-style-type: none"> <li>Teacher will explain the contents and provide handouts to students, guide them for desktop study.</li> <li>The student will learn to import/ export files from 3Ds Max and submit assignment given by the faculty</li> </ul>	-	3	<ul style="list-style-type: none"> <li>White board</li> <li>Smart Classroom / similar facility</li> <li>3Ds Max software</li> <li>Desktop</li> <li>Internet Connection</li> </ul>								
<b>SCHEME OF ASSESSMENT</b>														
<b>S. No.</b>	<b>Method of Assessment</b>	<b>Description of Assessment</b>			<b>Maximum Marks</b>	<b>Resources Required</b>		<b>External / Internal</b>						
1	Written test	• Short answers/ descriptive questions			5	• Test paper		<b>INTERNAL (PT -2)</b>						
<b>ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)</b>														
<b>NIL</b>														

RGPV (Diploma Wing) Bhopal			SEMESTER TEACHING LEARNING & ASSESSMENT PLAN										FORMAT- 6				
NAME OF PROGRAMME		THREE YEARS DIPLOMA			SCHEME		OBE		IMPLEMENTING YEAR			2020-21					
BRANCH CODE	A06	NAME OF BRANCH		ARCHITECTURAL ASSISTANTSHIP							SEMESTER		THIRD				
S. No	COURSE DETAILS				T-L PLAN			ASSESSMENT PLAN									
	COURSE CODE	COURSE NAME		PAPER CODE	No. of COs	No. of LOs	Total T-L Hrs.	T-L Hrs. /Week	Internal Assessment		External Assessment (University Exam)					Grand Total of Marks	
									No. of LOs	Total Marks	Theory Paper			Practical Exam *			
1	303	CAD II			03	10	120	08	08	70	-	-	-	02	30	3Hrs.	100
2																	
3																	
4																	
TOTAL																	
												No. of Theory Papers		nil	No. of Practical Exams		01