

## Computer Application in Civil Engineering - II

### 01CI2405

#### Objective of the Course

Objectives of introducing this subject at second year level in civil branches are:

- To understand the Revit Architecture Software and its application in Building modeling.
- To study about different Software commands.
- To apply the learning into the different projects by following building bye laws and building information modeling.

**Credits Earned : 1**

#### Students Learning Outcomes

After studying this subject students will be able to:

- Import the Project and work upon the functional aspects of a building in the software.
- To generate 3D view with the help of the software.
- Generate a design with Components like Furniture, Electric Fixtures etc in a building.
- Use various concepts of Building Information Modeling.

#### Teaching and Examination Scheme

Teaching Scheme (Hours)			Credits	Theory Marks			Tutorial/ Practical Marks		Total Marks
Theory	Tutorial	Practical		ESE (E)	IA (M)	CSE (I)	Viva (V)	Term Work (TW)	
00	00	02	01	-	-	-	25	25	50

#### Laboratory Work Contents

Sr No.	Title of the unit	Number of hours
<b>1</b>	<b>Introduction</b>	<b>04</b>
	1.1.Introduction to BIM 1.2.Introduction to Revit Architecture 1.3.Different Versions of Revit Architecture 1.4.Special Features of Revit Architecture	
<b>2</b>	<b>Terms of Technology</b>	<b>04</b>
	2.1 Using Ribbon & Quick Access Toolbar (QAT) 2.2 Using Properties Palette 2.3 Modifying Properties & Professional Palette 2.4 Using Project Browser 2.5 Navigation Views (Zoom, Pan, and Rotate) 2.6 Accessing Revit Operation	

<b>3</b>	<b>Working with Project</b>	<b>04</b>
	3.1 Creating a new project from file 3.2 Accessing Multiuser Projects using work share 3.3 Configure Project Settings 3.4 Adding Levels and Grids 3.5 Referring Layout with temporary dimensions	
<b>4</b>	<b>Modelling Walls</b>	<b>04</b>
	4.1 Adding Walls 4.2 Wall Properties 4.3 Wall types and wall thickness 4.4 Offset, Radius, Arc, Centre end Arc, Fillet.	
<b>5</b>	<b>Doors, Windows and Components</b>	<b>04</b>
	5.1 Adding Doors and Windows, Door and windows from Library. 5.2 Adding Plumbing Fixtures and other components.	
<b>6</b>	<b>Flooring, Roofing and Plastering</b>	<b>04</b>
	6.1 Create Floor Using Pick wall 6.2 Floor using offset, arc, line, rectangle 6.3 Adding roof to the drawing 6.4 Plastering the walls	
<b>7</b>	<b>Linking in Revit</b>	<b>04</b>
	7.1 Linking AutoCAD Drawing Files 7.2 Creating Topography Link 7.3 Understanding CAD Inserts 7.4 Minor Groups to Create a Layout 7.5 Creating Revit Links 7.6 Managing the Links 7.7 Understanding File Formats	
	<b>Total</b>	<b>28</b>

### Suggested Theory Distribution

The suggested theory distribution as per Bloom's taxonomy is as per follows. This distribution serves as guidelines for teachers and students to achieve effective teaching-learning process

Distribution of Theory for course delivery and evaluation					
Remember	Understand	Apply	Analyze	Evaluate	Create
15%	20%	50%	15%	00%	00%

### List of Experiment & Projects

- Individually students have to maintain their folder.
- Students will save their work and submit all the files at the end of the semester.

### Drawing Sheets (A1 Size)

1. At the start of course, the course delivery pattern, prerequisite of the subject will be discussed.

2. Labs will be conducted with the aid of multi-media projector, and Computers with the software installed.
3. Attendance is compulsory in laboratory for regular evaluation.
4. Students have to save their work regularly and submit hard copy in A1 size sheet at the end of semester.

**Instructional Method and Pedagogy**

1. Importance and utilization of software in the Civil Engineering sector shall be discussed.
2. The teaching shall be conducted using various teaching aids in computer lab.
3. Attendance in the session is mandatory and shall contain 5% weightage of the internal evaluation scheme.
4. At the end of each session, an assignment based on the content shall be given to the students which shall carry 5% weightage for timely completion and submission of the assigned work.
5. The course includes a practice session, where students shall have an opportunity to carry hands on experience on the software.

**Recommended Study****Material Reference Books:**

1. Mastering Autodesk Revit 2018 by Eddy Krygiel, Lance Kirby and Marcus Kim.
2. Revit Architecture 2018 for Engineers and Designers by Douglas R. Seidler.
3. Autodesk Revit 2017 for Architecture by Eric Wing.

**Reference Websites:**

1. <https://www.lynda.com/Revit-Architecture-training-tutorials/416-0.html>