



Lok Jagruti Kendra University
University with a Difference

Diploma in Civil Engineering



Course Code:025050605

Civil Engineering Software Tools

Programme / Branch Name			Diploma in Civil Engineering			
Course Name	Civil Engineering Software Tools				Course Code	025050605
Course Type	HSSC	BSC	ESC	PCC	OEC	PEC

Legends: HSSC: Humanities and Social Sciences Courses

ESC: Engineering Science Courses

OEC: Open Elective Courses

BSC: Basic Science Courses

PCC: Program Core Courses

PEC: Program Elective Courses

1. Teaching and Evaluation Scheme

Teaching Hours / Week				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

- ✓ Autocad 2D
- ✓ Microsoft Excel

3. Rationale

Civil engineering software tools that assist engineers during all major project stages, including drafting, designing, visualization and analysis. Civil engineering software offers a solutions for structural analysis, model design and project management. In this course we covered two tools in which 3ds max is used for 3d modeling and MS Project is used for project management.

3ds MAX, is a product from Autodesk, is widely used as a modeling, animation, and rendering software. It is a preferred choice of design professionals for driving solutions for games, films and motion graphics. The powerful capabilities of this design tool enable the users to come up with better 3D content in less time. 3ds MAX course is designed both for the beginners and the professionals looking to explore 3D modeling. The course walks the participants step-by-step through the stages of project development by starting from the software interface.

MS Project is the most popular project management software in the world developed and sold by Microsoft. It has been designed to help project managers in developing plans, assigning resources to specific tasks, tracking progress, managing costing and budgets and analysing workload. It encourages project managers to follow industry-standard best practices related to project management. With the advancing technology in all fields of work these days, using software to manage projects is the best and most effective option. It not only saves time but also eliminates the chances of manual error.

4. Objectives

- ✓ To understand concept and techniques of the 3D modeling.
- ✓ To visualize actual planning in 3D.
- ✓ To develop the skill in 3D modelling.
- ✓ To gain knowledge on lighting and rendering process.
- ✓ To prepare walk through animation video of planning.
- ✓ To develop complete skillset, confidence and knowledge required to manage projects using Microsoft Project.
- ✓ To have adequate capability to design and plan projects using Microsoft Project.
- ✓ To gain the necessary information and skill to draw a logical project plan.
- ✓ To gain knowledge to plan budgets and allocate resources to the project, thus preventing under or over-allocation of any kind.
- ✓ To prepare schedules, anticipating delays/disturbances due to risks.

5. 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.	Practical / Exercises	Key Competency	Hours
I.	3ds Max		
1.	Introduction to components of 3ds max with, view control and unit setup.	Understand components of 3ds max	2
2.	To give basic knowledge of file menu.	Knowledge of File Menu	2
3.	Draw basic 2d diagram of building plan.	Creation of 2d plan	2
4.	Creat a wall in 3d by using autocad 2d planning with wall modify options.	Creation of wall in 3d	4
5.	Creat a door, window, stairs, railing, column with their modifying options.	Creation of Building Components in 3d	10
6.	Prepare a plan with roof modelling, ceiling modelling.	Understand the Roof and Ceiling with Modelling	2
7.	Creat different types of shapes using modifiers.	Knowledge of Modifiers	4
8.	Creat a bed modelling, sofa modelling, curtains modelling, pillow modelling by using cloth modifier in plan.	Application of Cloth Modifier	8
9.	Apply a lighting effects and render it.	Knowledge of Lighting and Rendering Process	2
10.	Creat a camera according to path with their modifires.	Understand the Uses of Camera	2
11.	Prepare a walk through animation video of planning.	Knowledge of Walk Through Animation Video	4
II	MS Project		
1.	Introduction of project management & it's concepts.	Basic Knowledge of Project Management	2
2.	Introduction to Microsoft Project.	Software Knowledge	6
3.	Prepare plan and project calendar in MS project software.	Application of MS Project	4

4.	Create task in detail for the project and define duration as per estimate or plan. Set relationship for the task as per dependencies.	Understand Task Work and it's Dependencies	6
5.	Create resources in resource sheet and resource calendar.	Understand the Resource	2
6.	Prepare report for different views such as Gantt chart & timeline and remove over allocation. (set baseline to the project and view it in the tracking Gantt)	Documentation Work	6
7.	Prepare report to show the project progress. (task costs & it's variance)	Identification of Project Activity and Cost	4
8.	Prepare daily & weekly report, for the use of macro for the repeated activity in project.	MS Project Based Work	4
9.	Samples of project report, for the use of import/export and sub project option in MS project.	MS Project Skill	8

Total Hours**84**

6. Textbook

- 1) Autocad 3ds Max Essentials by Randi L. Derakhshani & Dariush Derakhshani, Autodesk Official Press.

7. Reference Book

- 1) Autodesk 3ds Max 2022 Fundamentals By , SDC Publications.

8. Open Sources (Website, Video, Movie)

- 1) <https://help.autodesk.com/view/3DSMAX/2022/ENU/?guid=GUID-85660E4D-007D-45F9-82E7-661D2BAA7794>
- 2) <https://www.microsoft.com/en-in/microsoft-365/project/project-management-software>

