19CE3751- COMPUTER APPLICATIONS IN CIVIL ENGINEERING LAB

Course Category:	Program Core		Credits:		1.5
Course Type:	Laboratory		Lecture-Tutorial-Practical:		0-0-3
Prerequisites:	Nil		Continuous Evaluation:		25
			Semester End Evaluation:		50
			Total Marks:		75

Course Outcomes

Upon successful completion of the course, the student will be able to:

CO1	**Explore** and **evaluate** open-source software applications in civil engineering	K4
CO2	**Analyse** and design structural elements using STAAD Software	K2
CO3	**Analyse** Geo spatial data and create maps and reports using GIS Software	K3
CO4	**Plan**, schedule and allocate resources for projects using Project management software	K3
CO5	Control time schedules and generate reports using Project management software	K3

Contribution of Course Outcomes towards achievement of Program Outcomes

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	2				2									
CO2	2	2		2	2									
CO3	2	2		2	2									
CO4	2	2		2	2									
Avg.	2	2		2	2									

1- Low	2-Medium	3-High

Course Content

Experiment No.1	Introduction to various computer applications in Civil Engineering, Listing out various open source software's available. Download and explore any one open source software in related to civil engineering application and prepare a report and record the same.	CO1
Experiment No.2	List of Analysis or Design to be performed using Various software STAAD.Pro 1. Introduction to STAAD Pro software and basic beam analysis. 2. Analysis and design of structures subjected to wind and earthquake loads. (minimum five storey), Typical detailing of structural elements. 3. Analysis and design of steel truss.	CO2
Experiment No.3	List of experiments to be performed by Geographical Information System (GIS) 1. Creation and analysis of spatial data using GIS. 2. Generation of maps and reports based on specific queries. 3. Simple applications of GIS in water Resources Engineering & Transportation Engineering	CO3
Experiment No.4	List of experiments to be performed by CONSTRUCTION MANAGEMENT APPLICATIONS (either using PRIMAVERA or MS PROJECT or any other open source software). • Planning and Scheduling of residential project using PERT and CPM Techniques. • Resource Allocation for activities of residential project	CO4
Experiment No.5	List of experiments to be performed by CONSTRUCTION MANAGEMENT APPLICATIONS (either using PRIMAVERA or MS PROJECT or any other open source software).	CO5

	• Controlling the time schedule of residential project.	
	Generating reports for residential project	

Learning Resources

Text Books	1. Project Planning and Control with PERT and CPM by Dr. B.C. Punmia and K.K. Khadelwaal,Laxmi Publications Pvt. Ltd., New Delhi
Reference Books	1. Construction Planning and Management by P S Gahlot, B M Dhir , New Age International (P) Ltd., Publishers
e-Resources& other digital material	1. https://www.iitk.ac.in/nicee/IITK-GSDMA/EQ26.pdf 2. https://desktop.arcgis.com/en/arcmap/10.3/map/reports/creating-a-report.htm