COMPUTER APPLICATIONS IN CIVIL ENGINEERING LAB

Course Code: 20CE1120

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Pre-requisites: Strength of Materials, Structural Analysis

Course Outcomes:

At the end of the course, the student will be able to:

CO1: Analyse 2D and 3D frames using software (L2)

CO2: Calculate the fundamental frequency and mode shapes for a given structure using Software (L2)

CO3: Analyze and design the trusses and pipe networks using software (L2)

CO4: Calculate the area and volume of a given block level survey using software (L2)

CO5: Write a program to calculate the safe bearing capacity of soil (L2)

(Any 12 out of 14 experiments)

LISTOF EXERCISES:

1. Analysis of Continuous beams.
2. Analysis of 2Dframes for combined gravity and lateral loads.
3. Analysis of 3Dframes for combined gravity and lateral loads.
4. Analysis of 3D frames for lateral loads (wind and seismic).
5. Analysis of 2D trusses.
6. Determine the fundamental frequency and mode shapes for a given 2D frame.
7. Calculation of area and volume for a given block level survey data and to plot the contours.
8. Determination of safe bearing capacity of soil.
9. Design the pipe network for a sewer line.
10. Stability analysis of gravity dams.
11. Calculation of earth pressures on retaining wall and assessment of slope stability of a finite slope.
12. Design of Flexible /Rigid pavement.
13. Analyse a water tank for static loading.
14. Analyse a self-standing high steel tower.

References:

1. Computer aided design-Software and Analytical tools by C.S. Krishnamurthy and S. Rajesh, Alpha Science.
2. Computer Aided Design in Reinforced Concrete, V. L. Shah, Standard publishers distributors.