CE 5420: Structural Analysis by Finite Elements

Course Description:

Use of the finite element method for the analysis of complex structural configurations. Plane stress, solid, Axisymmetric and plate elements. Numerical integration. Use of general purpose finite element programs.

- General Applications of FEA to Detailed Analysis of Structures.
- Introduction to the Advanced FEA using a Commercial Software, ANSYS

Course Outcomes (students will learn):

1. The theoretical background of FEA and other comparable numerical methods.
2. How to apply finite element method to the governing equations of their own research.
3. The underlying theory of typical finite elements and their limitations.
4. Practical knowledge and experiences regarding commercial FEA programs.