
*We are bridging the
gap between
university education
and industrial demand*

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FlowThermoLab
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Shaping the next
generation Engineers!

Introduction to FEM

About the Course

This is an introductory course on Finite Element Method (FEM). Without going into the scary mathematics behind FEM, and by incorporating hands-on coding using MATLAB/Octave throughout, this course is carefully designed to help newcomers understand the formulations and implementation aspects of FEM. By the end of this course, you will gain an understanding of (i) weak formulations and derivation of stiffness matrices for scalar field problems and linear elasticity, and (ii) key ingredients of FEM such as basis functions, numerical quadrature, and local-to-global mapping, in addition to implementing a FEM solver for Poisson equation and linear elasticity. Your understanding of concepts and progress in the course is assessed through regular quizzes and assignments. The use of mathematics is kept to a bare minimum. However, basic knowledge of matrix algebra and calculus (integration and differentiation of polynomials, and chain rule), and basic programming skills in MATLAB/Octave are expected.

More Details

INSTRUCTOR

Dr. Chennakesava Kadapa is the main instructor. He has a master's degree in Machine Design from IIT Kanpur (India) and a doctorate from Zienkiewicz Centre for Computational Engineering, Swansea University (UK). He has 2 years of industrial experience at GE Aviation (India) and thirteen years of research experience in the field of Computational Mechanics, with a particular focus on computational FSI, among others

CONTENT

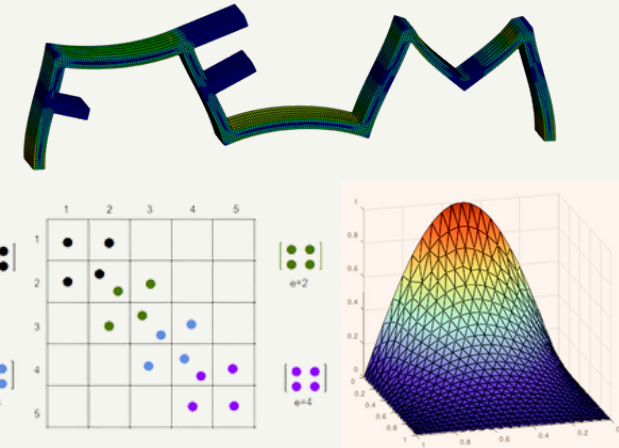
Contains a total of 30 lessons split into seven modules. With about 30 hours of pre-recorded videos, quizzes, and assignments

Course Content:

- Direct stiffness method
- Weighted residual and weak formulations
- Formulations for Poisson equation
- Formulations for linear elasticity
- Basis functions for popular 1D, 2D and 3D elements
- Mapping from local coordinates to global coordinates
- Numerical integration and rules for different element types
- Hands-on coding using MATLAB/Octave Hands-on tutorials on ANSYS.

SUPPORT

- Live discussion forum
- Zoom support to clarify questions



FEE

\$79 Excluding Tax
[~ ₹6500 Excluding 18% GST]

Enrolment Details

PROCEDURE

[CLICK HERE](#)

- Make the online payment on the course page. Once the payment is made, the login details and invoice will be emailed automatically to the registered email address
- You can start accessing the course immediately and will have access for another **6 months**
- After the course completion, course completion certificate will be issued

*High quality
affordable education
for any one with
internet access !!!*