



Module PMRF-ISSS074/2022

Introduction to Finite Element Analysis

Name of the PMRF student

Attada Phanendra Kumar

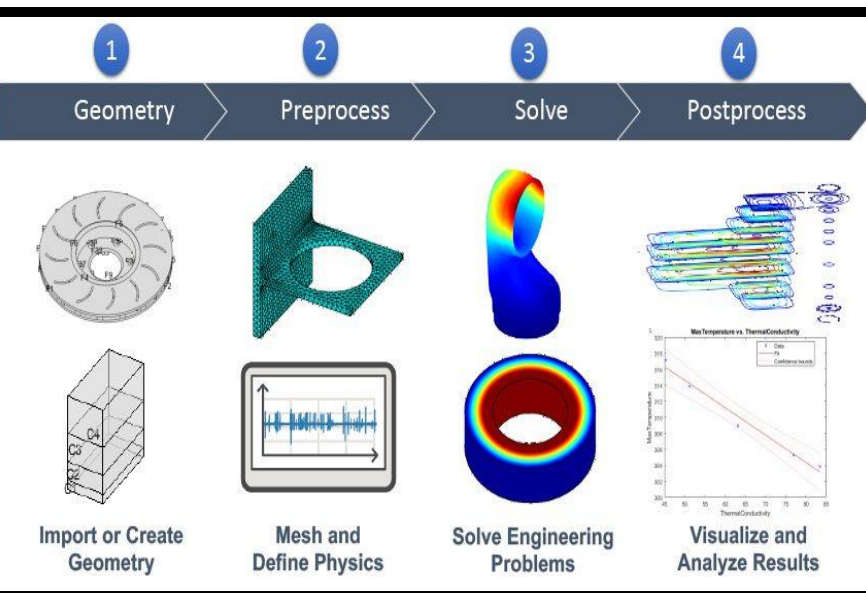
Required background of the students taught

It is an introductory level course.

This lecture series would be beneficial for students pursuing Civil, Mechanical and Aerospace Engineering.

Online session coordinator

Will be chosen from the list of registrants



Source: [Matlab](#)

Details of the content of the module

1. Introduction to Finite Element Analysis (FEA).
2. Finite Element Characterisation for Truss structures.
3. Weighted Integral Formulation of Boundary Value Problem (BVP): Strong form, Weak form, Why weak form?, Galerkin's residual method.
4. Finite Element Formulation for Beams.
5. Finite Element Formulation for Plane Stress and Plane Strain Problems: Shape functions, Rate of convergence, Triangular elements, Rectangular elements.
6. Isoparametric Formulation: Triangular and Quadrilateral isoparametric elements, Numerical integration using Gaussian Quadrature.

Note: Can add additional topics based on the suggestions from the students.

Schedule of the module

TIME: 4:00 PM – 5:30 PM every Saturday & Sunday

START DATE: March 18, 2023

END DATE: May 7, 2023

TOTAL SESSIONS: 17 Lectures (additional sessions for doubts clearance can be taken)

Meeting link : Will be shared later

[Link](#)

Contact email ID: issf.forum@gmail.com

Registration link:

<https://docs.google.com/forms/d/e/1FAIpQLSfVYSqeulAY9xP3TzccL5rROgphclhNq4Z8zEEq91MnFzDFVQ/viewform>