PMRF-ISSS Teaching Programme

Prime Minister Research Fellowship students' teaching requirement facilitated by the Institute of Smart Structures and Systems

Module PMRF-ISSS011

Application of FEM using MATLAB

Name of the PMRF student

ROHIT SACHDEVA

Required background of the students taught

Civil Engineering

Mechanical Engineering

Aerospace Engineering

(*Requires some knowledge of Strength of Materials*)

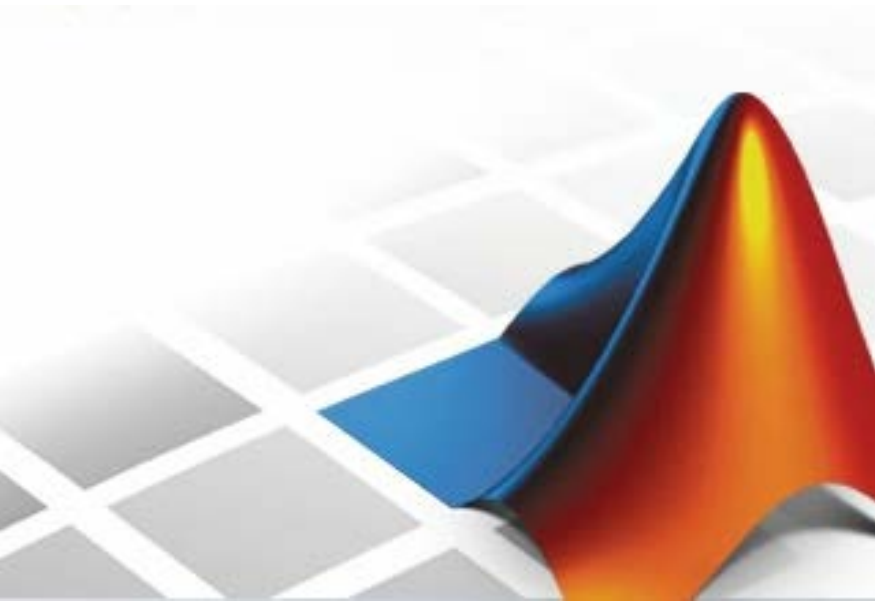
Faculty coordinator

Ms. NAINA R.K.

Dept. of Electronics and Communication Engineering,
Nitte Meenakshi Institute of Technology, Karnataka

Online session coordinator

SAMPREETH H



Details of the content of the module

1. **Introduction to MATLAB**
2. **Basic theory and Overview of FEM**
3. **Spring and Linear Bar Element**
4. **Plane Truss Element**
5. **General Algorithm to Implement FEM in MATLAB**
6. **Beam Element**
7. **Plane Frame Element**
8. **2D Elements and Some Advanced Topics**

The course will include brief theory required to understand FEM. It will then cover how to analyse different type of structures using FEM in MATLAB. The classes will demonstrate step-by-step coding procedure and develop a general algorithm for problem solving.

Schedule of the module

Start date: 18th September, 2021

End date: December, 2021 – January, 2022

Class timing: Every Saturday 5.30 pm – 7 pm. Course will include small take-home self-practice problems.

Basic knowledge of Maths (Vectors & Matrices) is assumed. Some prior basic coding knowledge (any language) will be helpful but not mandatory.

Meeting & WhatsApp group Link:- *WILL BE SHARED AFTER REGISTRATION*

Contact email ID: isss.forum@gmail.com

Registration link:
https://forms.gle/vCfx1PMggSB9B5kb8