PMRF-ISSS Teaching Programme

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

Module PMRF-ISSS063/2025
Conduction Heat Transfer using Finite Volume Method

Name of the PMRF student

Aalekh Srivastava, IISc Bangalore

### Required background of the students taught

Any learner with UG level understanding of Heat Transfer, Basic Mathematics and Coding

Details of the content of the module

The course aims to provide understanding of conduction heat transfer using finite volume method and writing your own solver.

In this course, the key concepts that will be covered are:

- Review of fundamentals of conduction heat transfer and engineering mathematics.

- Discretisation of domain and steady state diffusion equation into algebraic form.

- Tri-Diagonal matrix algorithm.

- Iterative solution procedure for steady state diffusion equation.

- Unsteady state solver
    - Explicit method
    - Implicit method

- Tutorials on different class of problems with understanding of boundary conditions.
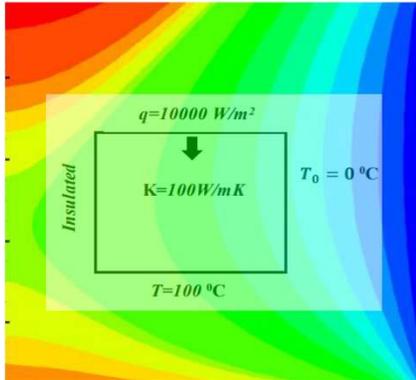
Schedule of the module

Registration Deadline: 12th July 2025

Start Date: 14th July 2025

End Date: 25th July 2025

Lecture uploaded: Every Monday, Wednesday and Friday-7PM

Meeting link : Will be shared later

Contact email ID: isss.forum@gmail.com

Registration link:
https://forms.gle/b1U3AoMVy5jLQEKNA