PMRF-ISSS Teaching Programme

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

Module **PMRF-ISSS131/III/2024**

Basics of Thermal Physics

Name of the PMRF student

Sugata Paul

Required background of the students taught

This is a basic introductory course to Thermal physics, mainly thermodynamics, designed for students in UG or PG level with a Physics, Engineering or any interdisciplinary background.

Details of the content of the module

Key contents:

- Kinetic theory of gases: Ideal gas behaviour
- Behavior of real gases
- Concept of heat conduction
- Thermodynamics: Zeroth and first law
- Second law of thermodynamics: Concept of entropy
- Maxwell's thermodynamic relations, TdS equations
- Free energy: Understanding equilibria and phase transitions
- Physics at low temperature
- Thermal radiation: physics of black body
- Thermodynamic specific heat behavior of solids

Problem solving sessions will be included in the course lectures

Schedule of the module

Start date: 11th October, 2024

End date: 10th November, 2024 (Tentative, may be extended by a few extra lectures)

Time: Every Friday and Sunday-7 pm to 9 pm (2 hours per class)

Mode: Hybrid (there will be live lectures as well as recorded contents uploaded)

Meeting link : Will be shared later

Contact email ID: isss.forum@gmail.com

Registration link: https://forms.gle/zza9VGuXAd2VBfkW6