

PMRF-ISSS Teaching Programme

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



Module PMRF-ISSS031/2022

Introduction to Continuum Mechanics

Name of the PMRF student

Anshul Shrivastava

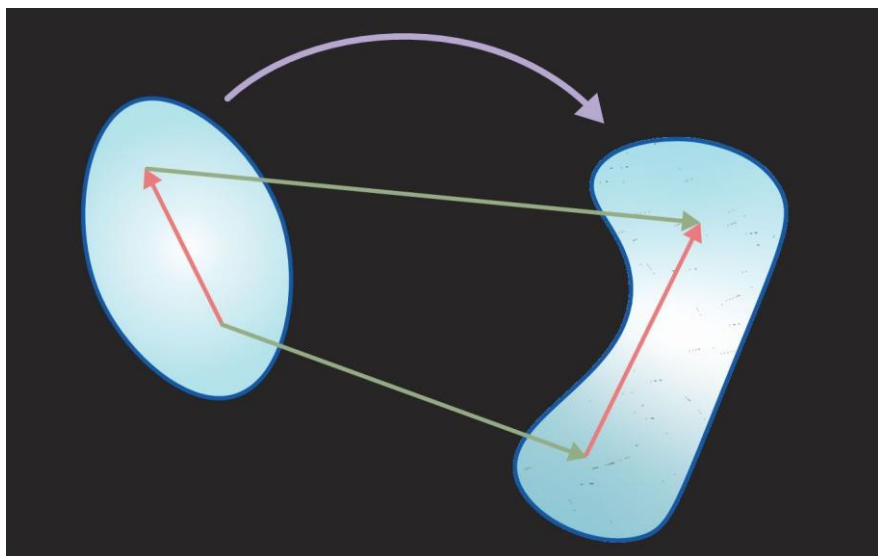
PhD Scholar,
Indian Institute of Science, Bengaluru

Course Relevant to :

UG/PG students of Mechanical
Engineering, Aerospace Engineering,
Materials Engineering, Civil
Engineering, Biotechnology /
Bioengineering, Physics

Online session coordinator

Will be chosen from the list of registrants



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Schedule of the module

Start Date : 22nd September 2022

Class Schedule : Every Thursday 6:30 PM to
8:00 PM IST

End date : 1st December 2022

Teaching Mode: Online through MS Teams

Last date to Register: 20th September 2022

Detailed content of the module

1. Introduction to Tensors

- Algebra of Vectors
- Algebra of Tensors
- Higher order Tensors
- Different types of Tensors
- Divergence and Stokes' Theorem

2. Kinematics

- Configurations and Motion of Continuum Bodies
- Displacement, Velocity and Acceleration fields
- Deformation Gradient, Strain tensors
- Examples of simple motions

3. Balance Laws

- Conservation of Mass
- Concept of Stress
- Balance of Linear and Angular Momentum
- Energy Equation

4. Constitutive Equations

- Concept of Objectivity
- Principle of Material Frame Indifference
- Hyperelastic Materials

Meeting link : Will be shared only to the registrants.

Contact email ID: issf.forum@gmail.com

Register for free at: <https://forms.gle/5gs8LW1u8Dbykosa9>

Or Scan the QR code

