

Advanced Solid Mechanics (APL 796) 3-0-0

Course Co-ordinator : Gaurav Singh (E: gsingh@am.iitd.ac.in, O: IV-255, P: 1184)

Class Schedule:

- a. Asynchronous mode (pre-recorded lectures), and
- b. Pre-announced (live) doubt clearing / problem solving sessions during slot A

Outline :

S. No.	Topic
1	Theory of small strain & stress
2	Linear elasticity & thermo-elasticity
3	Problem formulation (stress and displacement), Boundary conditions, Principle of superposition, Saint-Venant's principle
4	Strain energy, Uniqueness of elasticity BVP, Principle of virtual work, Rayleigh-Ritz method
5	Plane strain and stress, Airy stress function
6	Polar co-ordinates – Contact & Fracture applications
7	Anisotropic Elasticity

Book :

Sadd M.H., Elasticity : Theory, Applications, and Numerics, Third Edition, Academic Press, 2014

Evaluation :

Minor	:	30%
Quiz/Viva	:	30%
Participation in live sessions	:	10%
Major	:	30%

Note :

- a. All evaluative components of this course are open-book in nature with access only to the textbook and hand-written notes
- b. Minimum of 30% and 40% marks needed for passing this course in credit and audit mode respectively