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ME 290 (JAN) 3:0

Mechanical of Slender Elastic Structures

Instructor(s): Ramsharan Rangarajan

Course description:

A rigorous study of strength-of-materials-based theories with a geometric flavor. Classical theories of beams, rods and plates. Introduction to geometrically nonlinear theories-Euler's elastica, Kirchhoff rods and von Karman plates. Application to problems with large deflections, delamination and topics of recent research interest.

Prerequisites:

Resources:

1. Audoly & Pomeau, Elasticity and geometry, Oxford University Press, 2010
2. Shames & Dym, Energy and finite element methods in structural mechanics, New Age International, 1995
3. Antman, Nonlinear problems of elasticity, Springer 2013
4. Hartog, Advanced strength of materials, Dover 1987

Outcomes:

Additional information:

Course website: