ME606   Advanced Solid Mechanics

Credit: 3-0-0-3   Approval: Approved in 2nd Senate

Prerequisite:

Students intended for: MS/PhD

Elective or Core: Semester: Odd/Even: Odd

Course content:

Shear centre and unsymmetrical bending. Beam columns: beams on electric foundations, curved beams, Rotating discs and thick cylinders, Virtual work; minimum potential energy; Hamilton's principle.   Plate theory: formulation by Hamilton's principle: bending and buckling of homogeneous and sandwich plates. Shell theory: introduction to theory of surface; formulation by Hamilton's principle; membrane, bending and buckling analysis of shells of revolution.

Text & Reference Books:

Srinath L.S., Advanced Mechanics of Solids, Tata McGraw-Hill, 1980

Boresi, A.P. and Sidebottom, O.M., Advanced Mechanics of Materials, John Wiley, 1993.

Timoshenko, S.P. and Goodier, J.B., Theory of Elasticity, McGraw-Hill Kogakusha Ltd., 1970.

Reddy, J.N., Theory and Analysis of Elastic Plates and Shells, Second Edition