

Year & Sem:	Course Code: ME3617	Course Name: Theory of Plates & Shells	No. of Credits: 4	L	T&PS	P
				2	2	0

1. CLASSICAL PLATE THEORY
Classical Plate Theory – Assumptions – Differential Equation – Boundary Conditions.

2. PLATES OF VARIOUS SHADES
Navier’s Method of Solution for Simply Supported Rectangular Plates – Levy’s Method of Solution for Rectangular Plates under Different Boundary Conditions. Governing Equation – Solution for Axi-symmetric loading – Annular Plates – Plates of other shapes.

3. EIGEN VALUE ANALYSIS
Stability and free Vibration Analysis of Rectangular Plates.

4. APPROXIMATE METHODS
Rayleigh – Ritz, Galerkin Methods– Finite Difference Method – Application to Rectangular Plates for Static, Free Vibration and Stability Analysis.

5. SHELLS
Basic Concepts of Shell Type of Structures – Membrane and Bending Theories for Circular Cylindrical Shells.

References/Text Books:

1. Timoshenko, S.P. Winowsky. S., and Kreger, “Theory of Plates and Shells”, McGraw-Hill Book Co. 1990.
2. Flugge, W. “Stresses in Shells”, Springer – Verlag, 1985.
3. Timoshenko, S.P. and Gere, J.M., “Theory of Elastic Stability”, McGraw-Hill Book Co. 1986..

Lecture Plan: Unit-I & -II syllabus for MID-I, Unit-III & -IV syllabus for MID-II and Unit-V & -VI syllabus for MID-III examinations.

Video Lectures (Web Links):

- 1.
- 2.

Study Materials (Web Links):

- 1.
- 2.

Problems & Solutions (Web Links):

- 1.
- 2.