Year & Sem:	Course Code: ME3602	Course Name: **Experimental Stress Analysis**	No. of Credits: 4	L	T&PS	P
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Stress Stress at a point - Stress equations of Equilibrium - Laws of stress transformation - Principal stresses - Maximum Shear stress - Dimensional state of stress.

Strain Measurement Strain - its relation to experimental determination - properties of strain Gauge systems - Electrical resistance strain gauges - strain gauge circuits - recording instruments - analysis of strain gauge data.

Moire Methods Mechanism of formation of Moire fringe - geometrical approach to Moire fringe analysis - displacement field approach to Moire fringe analysis - out of plane measurements experimental procedure.

Photoelasticity Methods Temporary double refraction - stress optic law - effects of stressed model in a plane polariscope fringe multiplication - isochromatic fringe patterns - isoclinic fringe pattern compensation techniques - calibration methods - separation methods - scaling model to phototype stresses - materials.

Birefrigent Coatings Coating stresses and strains - sensitivity - materials and applications - effect of thickness - stress separation.

References/Text Books:

1. Dove Adams, Experimental Stress Analysis, McGraw Hill, 1992.

2. James Dalley, W.F.Riley, " Experimental mechanics ", int. Student Edition McGraw Hill, Kogakusha Ltd., 1992.

3. Perry and Lissiener, " Strain Gauge Primer ", McGraw Hill, 1965.

4. Durelli, Photomechanics Prentice Hall, 1972.

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.