AE8511 AIRCRAFT STRUCTURES LABORATORY

DETAILED SYLLABUS

OBJECTIVES:

- To enable the students, understand the behavior of aircraft structural components under different loading conditions.
- To provide the Principle involved in photo elasticity and its applications in stress analysis for composite laminates.

LIST OF EXPERIMENTS

1. Deflection of Beams
2. Verification of superposition theorem
3. Verification of Maxwell's reciprocal theorem
4. Buckling load estimation of slender eccentric columns
5. Determination of flexural rigidity of composite beams
6. Unsymmetrical Bending of a Cantilever Beam
7. Combined bending and Torsion of a Hollow Circular Tube
8. Material Fringe Constant of a Photo elastic Models
9. Shear Centre of a Channel Section
10. Free Vibration of a Cantilever Beam
11. Forced Vibration of a cantilever Beam
12. Fabrication of a Composite Laminate.
13. Determination of Elastic constants for a Composite Tensile Specimen.
14. Determination of Elastic constants for a Composite Flexural Specimen.
15. Tension field beam