AE8713 AIRCRAFT DESIGN PROJECT – II

DETAILED SYLLABUS

OBJECTIVES:

- Each group of students is assigned to continue the structural design part of the airplane. The following are the assignments are to be carried out.

1. Preliminary design of an aircraft wing – Shrenck's curve, structural load distribution, shear force, bending moment and torque diagrams

2. Detailed design of an aircraft wing – Design of spars and stringers, bending stress and shear flow calculations – buckling analysis of wing panels

3. Preliminary design of an aircraft fuselage – load distribution on an aircraft fuselage

4. Detailed design of an aircraft fuselage – design of bulkheads and longerons – bending stress and shear flow calculations – buckling analysis of fuselage panels

5. Design of control surfaces - balancing and maneuvering loads on the tail plane and aileron, rudder loads

6. Design of wing-root attachment

7. Landing gear design

8. Preparation of a detailed design report with CAD drawings