AE8612 COMPUTER AIDED SIMULATION LABORATORY

DETAILED SYLLABUS

OBJECTIVE:

• To make the students familiarize with computational fluid dynamics and structural analysis software tools. By employing these tools for Aerospace applications students will have an opportunity to expose themselves to simulation software.

LIST OF EXPERIMENTS

1. Grid independence study and convergence test using any simple case like pipe flow, diffuser flow, flow over a cylinder, aero foil etc.

2. Simulation of flow over backward facing step.

3. Simulation of Karman vortex trail (vortex shedding) using circular cylinder.

4. External flow simulation of subsonic and supersonic aero foils.

5. Internal flow simulation of subsonic, sonic and supersonic flow through a CD nozzle.

6. Structural analysis of bar, beam and truss.

7. Structural analysis of tapered wing.

8. Structural analysis of fuselage structure.

9. Analysis of composite laminate structures.

10. Heat transfer analysis of structures.