

MECH 481/581: Aerodynamics of Aircraft

- Instructor:
 - Dr. James Olson
- Text
 - Anderson, Aerodynamics of Aircraft

Topics

- Module 1: Aerodynamic fundamentals
 - Potential flow
 - Boundary Layers
 - Bernoulli / Continuity
 - Dimensional analysis
- Module 2: Airfoils (2D wings)
 - Lift & drag behaviour
 - Thin Airfoil Theory
 - Circulation
 - Vortex Panel Method
- Module 3: Wings (3D)
 - Aspect ratio
 - Lifting Line Theory
 - Induced drag
 - Power and thrust
- Module 4: Aircraft
 - Common configurations
 - Downwash
 - High-lift devices
 - Ground Effect