Graduate Certificate in Aerospace Engineering

Students who pursue a Graduate Certificate in Aerospace Engineering will achieve the following educational objectives:

1. The ability to apply the fundamentals of both incompressible and compressible flows, wing and airfoil theory, and fluid kinematics and dynamics.
2. How to analyze aircraft engines and spacecraft propulsion systems.
3. The mechanics and design issues associated with aerospace structures; including the analysis of thin skins with stiffeners for external surfaces, bulkheads and frames for shape support, and fasteners for holding components together.
4. How to analyze the flight mechanics of aircraft and spacecraft, including flight performance, flight dynamics and stability, orbital maneuvers, and flight control.

Requirements

The certificate will be both a stand-alone and for degree seeking students. It is comprised of 12 hours of graduate study at the 7000 level, requiring 4 courses to be taken, one from each core area within our aerospace curriculum.

Choose one 3 credit hour course from each of the following areas:		
Aerospace Fluid Mechanics		
MAE 7420	Intermediate Fluid Mechanics	3
MAE 7430	Introduction to Computational Fluid Dynamics and Heat Transfer	3
MAE 7440	Aerodynamics	3
MAE 7450	Gas Dynamics	3
Aerospace Propulsion		
MAE 7390	Aerospace Propulsion	3
Aerospace Structures		
MAE 7210	Aerospace Structures	3
MAE 7600	Advanced Mechanics of Materials	3
MAE 7940	Aircraft Design	3
Aerospace Flight Mechanics		
MAE 7620	Aircraft Flight Performance	3
MAE 7630	Space Flight Mechanics	3
MAE 7635	Spacecraft Attitude Dynamics and Control	3
MAE 7690	Aircraft Flight Dynamics	3