ENGR 3801: Aerodynamics

3 Credit Hours

Prerequisite: MATH 2202 & Engineering Standing

An introduction to aerodynamics; including circulation theory of lift, thin airfoil theory, viscous flow, boundary layer, finite wing theory, and drag in incompressible flow.

ENGR 3802: Aircraft Design & Performance

3 Credit Hours

Prerequisite: ENGR 3801 and Engineering Standing

Airplane conceptual design principles are developed to meet modern aerodynamics, propulsion, structural, and performance specifications. This course examines the complete airplane design, including specifications, aerodynamic calculations, inboard profile drawing, weight and balance, general arrangement drawing, aerodynamic drag analysis, and complete performance report.

ENGR 3803: Fundamentals of Avionics

3 Credit Hours

Prerequisite: ENGR 3801 & Engineering Standing

The primary topics of this course are related to the understanding of the principles, theory, and technology of modern avionic systems for both military and civil aircraft. Various subsystems including sensory, fly-by-wire control, display, navigation, air data, autopilots, and flight management are examined individually and as an integrated whole. Both mathematical and conceptual approaches to every subsystem will be taught as well as key considerations, such as flight safety, which undergird their usage and functionality.

ENGR 3901: Technology Entrepreneurship: From Ideas to Business Ventures

3 Credit Hours

Prerequisite: ENTR 3001

This course is designed for aspiring engineering students as an introduction to the fundamentals of technology entrepreneurship, as successfully practiced in Silicon Valley and other innovation hotbeds around the world. Through class lectures and experiential learning, students will develop an entrepreneurial mindset and entrepreneurial skill sets that will have a lasting impact on their lives and careers. Students will work together as a project team with the goal to take initial startup ideas to a viable business venture.