4900: AEROSPACE SYSTEMS ENGINEERING

The Bachelor of Science in Aerospace Systems Engineering degree program is intended to produce engineers who possess both a broad, interdisciplinary knowledge of aerospace engineering fundamentals and who will be able to move quickly into the role of project managers, the precursor position to program managers and ultimately, senior managers. These engineers can lead multidisciplinary teams and bring about the integration of components in a variety of systems. The program includes basic engineering and aerospace courses and will also include specific non-engineering courses, selected to meet the goal of developing future senior technical leaders for our aerospace industries. The program features a mandatory co-op component that begins following the sophomore year. The co-op requirement is expected to fill out the student’s technical background as well as provide a basis for broad personal growth that is part of the aim of the General Education requirement. Three fewer hours of General Education courses are required for Aerospace Systems Engineering due to the mandatory co-op.

To meet the curriculum requirements specified by the American Institute of Aeronautics and Astronautics for ABET accreditation, the undergraduate program in Aerospace Systems Engineering must satisfy the following program outcomes:

- Apply knowledge of mathematics, science and engineering in a logical and discerning manner
- Design and perform laboratory experiments for thermal, fluid, mechanical, and aerospace systems; know how to analyze and interpret results
- Design thermal, fluid, mechanical and control systems as well as airborne structures or propulsion systems to meet specifications within environmental, social, political, ethical, health and safety, manufacturability and sustainability constraints
- Participate effectively in teams involving several disciplines
- Identify, formulate, and solve thermal, fluid, mechanical and aerospace systems problems by applying first principles, including open-ended problems
- Develop practical solutions for aerospace systems engineering problems under professional and ethical constraints
- Communicate effectively with written, oral, and visual means in a technical setting
- Understand the impact of engineering in a global, economic, environmental, and societal context
- Be prepared for a lifetime of continuing education
- Know about contemporary issues in engineering
- Have an ability to use modern modeling and simulation techniques, and computing tools