Departmental Objectives and Outcomes

The Department of Aerospace Engineering at Mississippi State University provides an accredited undergraduate curriculum with the mission of preparing students to enter the workplace as qualified entry-level aerospace engineers or to enter any aerospace engineering graduate program adequately prepared for advanced study. The mission is accomplished by a strong foundation in mathematics and physical and engineering sciences upon which student problem solving and application skills are developed. The curriculum stresses analytical and communication skills, with particular emphasis placed on engineering design throughout the curriculum. A capstone design experience in the senior year provides the opportunity to integrate design, analytical, and problem solving skills along with communication skills in a team environment that emulates aerospace engineering practice.

The mission is accomplished by the following *educational objectives*, which describe the career and professional accomplishments we are preparing our graduates to achieve. Our graduates shall:

1. Demonstrate an understanding of engineering principles and an ability to solve unstructured engineering problems that will allow them to successfully enter into and advance in the engineering profession;
2. Demonstrate an appreciation for lifelong learning and for the value of continuing professional development through continual study of the current literature in the field, participation in graduate education, professional education or continuing education opportunities, attainment of professional licensure, or membership in professional societies;
3. Demonstrate an understanding of professional and ethical responsibilities to the profession, society, and the environment incumbent on an engineering professional;
4. Successfully interact with others of different backgrounds, educations, and cultures;
5. Demonstrate effective communication skills in their profession.

Program Outcomes:

Our Program Outcomes describe what students are expected to know or be able to do by the time of graduation, when each student should have

(a) An ability to apply knowledge of mathematics, science, and engineering;
(b) An ability to design and conduct experiments, as well as to analyze and interpret data;
(c) An ability to design an aerospace or related system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability;

(d) An ability to function in multi-disciplinary teams;
(e) An ability to identify, formulate, and solve aerospace or related engineering problems, and to assess the solutions obtained critically and objectively;
(f) An understanding of professional and ethical responsibility;
(g) An ability to communicate effectively;
(h) The broad education necessary to understand the impact of aerospace or related engineering solutions in a global, economic, environmental, and societal context;
(i) A recognition of the need for, and an ability to engage in life-long learning, including the ability to assess critically and objectively information so obtained;
(j) A knowledge of contemporary issues;
(k) An ability to use the techniques, skills, and modern engineering tools necessary for aerospace or related engineering practice.

Approved: September 26th, 2008