

## **Mechanical Engineering Program Accreditation**

The Mechanical Engineering Program at Lafayette College is accredited by the Engineering Accreditation Commission of ABET, 111 Market Place, Suite 1050, Baltimore, MD, 21202-4012, telephone: (410) 347-7700.

The mission statements of the College, division, and program are provided below in addition to the established program educational objectives and program outcomes.

Lafayette mission statement: In an environment that fosters the free exchange of ideas, Lafayette College seeks to nurture the inquiring mind and to integrate intellectual, social, and personal growth. The College strives to develop students' skills of critical thinking, verbal communication, and quantitative reasoning and their capacity for creative endeavor; it encourages students to examine the traditions of their own culture and those of others, to develop systems of values that include an understanding of personal, social, and professional responsibility, and to regard education as an indispensable life-long process.

Engineering Division mission statement: Embracing the mission of Lafayette College, the Engineering Division will offer engineering programs, which prepare graduates for entry-level professional engineering practice, further study at the graduate level, or careers where an engineering education will contribute to their success. The engineering curricula will blend innovative engineering education with the opportunities available in the liberal learning environment at Lafayette.

The Engineering Division, with support and assistance from the Lafayette administration, will: actively participate in the matriculation of highly qualified students; maintain the facilities and staff to provide a hands-on learning experience for engineering students; and recruit and nurture a cadre of faculty who are dedicated to excellence in undergraduate teaching, scholarship, and service to the College and the professional community.

Department mission statement: The Mechanical Engineering Department strives to offer the highest quality engineering education to prepare graduates for effective and creative practice as professional engineers, advanced study at the graduate level, and lifelong learning.

- **Program Educational Objectives**

1. Alumni will have the fundamental and modern technical skills necessary
  - (a) to practice mechanical engineering
  - (b) to pursue graduate education in mechanical engineering
  - (c) to pursue careers in non-technical fields of endeavor for which a broadly-based engineering education serves as an outstanding foundation
2. Alumni will have excellent communication skills and the ability to function as effective members of interdisciplinary teams
3. Alumni will understand the professional and ethical responsibilities of practicing engineers
4. Alumni will possess a knowledge of contemporary issues and the broad education necessary to understand the impact of engineering solutions in global, economic, and societal contexts
5. Alumni will have a recognition of the need for, and ability to engage in, life-long learning, and the ability to plan, sustain, and advance a professional career

- **Program Outcomes**

Students will 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 a 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 on multi-disciplinary teams
- (e) an ability to identify, formulate, and solve engineering problems
- (f) an understanding of professional and ethical responsibility
- (g) an ability to communicate effectively
- (h) the broad education necessary to understand the impact of 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
- (j) a knowledge of contemporary issues
- (k) an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice
- (l) familiarity with statistics and linear algebra
- (m) an ability to apply principles of engineering, basic science, and mathematics (including multivariate calculus and differential equations) to model, analyze, design, and realize physical systems, components or processes
- (n) an ability to work professionally in both thermal and mechanical systems areas