## Educational Objectives for the ME Program

The mission of the Mechanical Engineering Program is: To promote learning and discovery in mechanical engineering and to prepare students for a career of technical excellence and professional growth and leadership in a complex and competitive technological environment.

The educational objectives of the mechanical engineering faculty and program are to provide students completing the program with the following:

- An understanding of the physical and the mathematical sciences necessary for advanced coursework in mechanical engineering science and mechanical design;
- An understanding of the mechanical engineering sciences e.g. mechanics of solids and fluids/thermal sciences at a level which ensures successful professional practice.
- An understanding of the societal context and ethical responsibilities of the mechanical engineering profession, including a capacity and an awareness of the need for life-long learning whether through self-study or formal graduate study.
- An understanding of the role played by the mechanical engineering sciences in concert with the broader issues associated with creative design.
- An understanding of the dynamics and responsibilities of working on teams and an ability to communicate technical ideas within teams, to the greater profession, and to the non-technical society at large.
- An opportunity for all students of mechanical engineering to pursue, through curricular flexibility and with faculty advising, other academic interests available from the broad offerings of a multi-disciplinary university.

## Educational Outcomes for the ME Program

In addition to successfully completing the requirements for the ME program, graduates from this program must also achieve the following educational outcomes:

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, including both thermal and mechanical systems,

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 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. A familiarity with statistics and linear algebra and the ability to apply advanced mathematics through multivariate calculus and differential equations.