

# Student Learning Outcomes for Academic Programs

A.S. in Engineering Science

Catalog Year 2017-18

## General Education Outcomes

1. Communicate effectively through written and oral forms
2. Use analytical reasoning to identify issues or problems and evaluate evidence in order to make informed decisions
3. Reason quantitatively as required in various fields of interest and in everyday life
4. Apply information management and digital technology skills useful for academic research and lifelong learning
5. Discipline specific outcomes: A robust general education is founded on the knowledge, concepts, methods and perspectives that students gain through study of the social sciences and history, the natural sciences, the arts and the humanities. These disciplinary studies stimulate intellectual inquiry, global awareness, and cultural and artistic appreciation; they equip students to make informed judgments and engage with life beyond the classroom.
  - a. Apply concepts and perspectives from history or the social sciences to examine the formation of ideas, human behavior, social institutions, or social processes and to make informed judgments
  - b. Apply concepts and methods of the natural and physical sciences to examine natural phenomena and to make informed decisions
  - c. Apply aesthetic and intellectual criteria to examine or create works in the humanities and the arts and to make informed judgments

## Program Outcomes

Students will demonstrate...

- 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 a 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 multidisciplinary 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

June 20, 2017