

## Mission, Objectives, and Desired Educational Outcomes

### Mission

The mission of the Biological Systems Engineering Undergraduate Program is to provide a technology-advanced, biology-based engineering education that will enable students to design and implement efficient and environmentally sensitive methods of producing and processing food, fiber and renewable energy resources for an ever-increasing world population.

### Program Objectives

The Biological Systems Engineering Department recognizes that our graduates will choose to use the knowledge and skills they have acquired during their undergraduate years to pursue a wide variety of career and life goals, and we encourage this diversity of paths. Whatever path graduates choose, be it a job, graduate school, or volunteer service, be it in engineering or another field, we have for our graduates the following objectives; that they will:

1. exhibit strong skills in problem solving, leadership, teamwork, and communication;
2. use these skills to contribute to their communities;
3. make thoughtful, well-informed career choices; and
4. demonstrate a continuing commitment to and interest in their own and others' education.

### Desired Educational Outcomes

Upon graduation Biological Systems Engineering students are expected to have the following knowledge and skills:

1. an ability to analyze systems, components and processes. This includes:
  - a. an ability to apply knowledge of mathematics, science, and engineering fundamentals,
  - b. an ability to use the techniques and tools of modern engineering practice,
  - c. an ability to identify, formulate, and solve engineering problems
2. an ability to create 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

3. an ability to formulate and conduct basic investigations such as laboratory experiments, prototype tests, field trials, computer simulations and market analyses
4. an ability to identify important resources, and to retrieve, interpret, analyze and critique information for use in solving engineering problems and conducting basic investigations
5. an ability to communicate effectively. This includes:
  - a. an ability to effectively orally communicate,
  - b. an ability to write in a clear, concise, grammatically correct and organized manner,
  - c. an ability to document work activities and properly archive information,
  - d. an ability to develop appropriate illustrations including hand sketches, computer generated drawings/graphs and pictures
6. an understanding of professional and ethical responsibility
7. an ability to function on multidisciplinary teams
8. the broad education necessary to understand and assess the impact of engineering solutions in a global, economic, environmental, and societal context
9. a recognition of the need for, and an ability to engage in lifelong learning
10. a knowledge of contemporary issues



ASABE officers meet prior to a monthly meeting