ABET

The following definitions are used for the Engineering programs educational outcomes and objectives. The definitions are from ABET (see http://www.abet.org).

Program Educational Objectives – Program educational objectives are broad statements that describe the career and professional accomplishments that the program is preparing graduates to achieve.

Program Outcomes – Program outcomes are narrower statements that describe what students are expected to know and be able to do by the time of graduation. These relate to the skills, knowledge, and behaviors that students acquire in their matriculation through the program.

Electrical Engineering

The BS degree program in Electrical Engineering is accredited by the Engineering Accreditation Commission of ABET, https://www.abet.org.

Electrical Engineers focus on the design, manufacture, and operation of the electronic technology that is all around us. Along with a technical education, our students learn to think creatively and dynamically as well as to contribute to the culture and society in which they live. Our graduates are working in a variety of areas including defense, manufacturing, research labs, and the federal government, and several have obtained graduate degrees.

Electrical Engineering Program Objectives and Outcomes

Objectives – The program develops graduates who are prepared for careers as electrical engineers, where they will:

- Demonstrate the skills and knowledge to design, develop, evaluate, and operate basic electrical engineering systems for the solution of problems in an economical, efficient, safe, and environmentally acceptable manner
- Demonstrate effective teamwork, leadership, and communication skills
- Demonstrate a social and environmental awareness and understanding that will enable them to fulfill their responsibilities as productive citizens in the general society abiding by professional ethics
- Demonstrate preparation for and a commitment to intellectual, creative and professional growth

Outcomes – The program must have documented student outcomes that support the program educational objectives. Attainment of these outcomes prepares graduates to enter the professional practice of engineering. Student outcomes are outcomes (1) through (7), plus any additional outcomes that may be articulated by the program. The BS Electrical Engineering Program does not have any additional outcomes.

At the completion of the program, all students will have:

1. an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics (previously (a), (e); implied from (k))

2. an ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors (previously (c); implied from (k))

3. an ability to communicate effectively with a range of audiences (previously (g))

4. an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts (previously (f). (h). (j))

5. an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives (previously (d))

6. an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions (previously (b), implied from (k))

7. an ability to acquire and apply new knowledge as needed, using appropriate learning strategies (previously (i))

Computer Engineering

The BS degree program in Computer Engineering is accredited by the Engineering Accreditation Commission of ABET, https://www.abet.org.

Computer engineering students learn how to design, build and use computers for the benefit of our modern society. They study the architecture of computers, their use in products as embedded processors and learn how to connect computers in networks to allow communication among large groups of people for work and social purposes. Our focus is on why computers and networks are designed in a particular way, so that our students can also make contributions in developing the next generation of computers and networks, and make them useful to computer programmers and software users.

Computer Engineering Program Objectives and Outcomes

Objectives – The program develops graduates who are prepared for careers as computer engineers, where they will:

- Demonstrate the skills and knowledge to design, develop, evaluate, and operate basic computer and computer-based systems for the solution of problems in an economical, efficient, safe, and environmentally acceptable manner
- Demonstrate effective teamwork, leadership, and communication skills
- Demonstrate a social and environmental awareness and understanding that will enable them to fulfill their responsibilities as productive citizens in the general society abiding by professional ethics
- Demonstrate preparation for and a commitment to intellectual, creative and professional growth

Outcomes – The program must have documented student outcomes that support the program educational objectives. Attainment of these outcomes prepares graduates to enter the professional practice of engineering. Student outcomes are outcomes (1) through (7), plus any additional outcomes that may be articulated by the program. The BS Computer Engineering Program does not have any additional outcomes.

At the completion of the program, all students will have:

1. an ability to identify, formulate, and solve complex engineering problems by applying

principles of engineering, science, and mathematics (previously (a), (e); implied from (k))

2. an ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors (previously (c); implied from (k))
3. an ability to communicate effectively with a range of audiences (previously (g))
4. an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts (previously (f). (h). (j))
5. an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives (previously (d))
6. an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions (previously (b), implied from (k))
7. an ability to acquire and apply new knowledge as needed, using appropriate learning strategies (previously (i))