# Electrical and Computer Engineering Technology **Program Educational Objectives**

The educational objectives of the Penn State Behrend Electrical and Computer Engineering Technology Program are to produce graduates who, within three years of graduation are able to:

1. be employed in fields of engineering such as design, research, development, applications, testing, manufacturing, processing, safety, quality, and technical sales or service:
   1. for B.S. degree recipients, as an engineer or engineering technologist
   2. for A.S. degree recipients, as a technician or technologist or designer or engineering assistant
2. achieve positions of increased responsibility (technical and/or supervisory) within an organization; and
3. progress through advanced degree or certificate programs or participate in continuing education in engineering, business, and/or other professionally related fields.

# Student Outcomes (Bachelor's Degree)

* + 1. An ability to select and apply the knowledge, techniques, skills, and modern tools of the discipline to broadly-defined engineering technology activities;
    2. An ability to select and apply a knowledge of mathematics, science, engineering, and technology to engineering technology problems that require the application of principles and applied procedures or methodologies;
    3. An ability to conduct standard tests and measurements; to conduct, analyze, and interpret experiments; and to apply experimental results to improve processes;
    4. An ability to design systems, components, or processes for broadly-defined engineering technology problems appropriate to program educational objectives;
    5. An ability to function effectively as a member or leader on a technical team;
    6. An ability to identify, analyze, and solve broadly-defined engineering technology problems;
    7. An ability to apply written, oral, and graphical communication in both technical and non-technical environments; and an ability to identify and use appropriate technical literature;
    8. An understanding of the need for and an ability to engage in self-directed continuing professional development;
    9. An understanding of and a commitment to address professional and ethical responsibilities including a respect for diversity;
    10. A knowledge of the impact of engineering technology solutions in a societal and global context; and
    11. a commitment to quality, timeliness, and continuous improvement.

1. Program-specific (ECET) Outcome (1): The ECET program must demonstrate knowledge and hands-on competence in the application of circuit analysis and design, computer programming, associated software and applications, analog and digital electronics, microcomputers, operating systems, and local area networks to the building, testing, operation, and maintenance of computer systems, associated software systems, and electrical/electronic(s) systems.
2. Program-specific (ECET) Outcome (2): The ECET program must demonstrate knowledge and hands-on competence in the application of physics or chemistry to computer systems and electrical/electronic(s) circuits in a rigorous mathematical environment at or above the level of algebra and trigonometry.
3. Program-specific (ECET) Outcome (3): The ECET program must demonstrate that graduates can analyze, design, and implement control systems, instrumentation systems, communications systems, or power systems, and hardware and software computer systems.
4. Program-specific (ECET) Outcome (4): The ECET program must demonstrate that graduates can apply project management techniques to computer systems and electrical/electronic(s) systems.
5. Program-specific (ECET) Outcome (5): The ECET program must demonstrate that graduates can utilize statistics/probability, transform methods, discrete mathematics, or applied differential equations in suppport of computer systems and networks, and electrical/electronic(s) systems.

# Student Outcomes (Associate Degree - 2EET)

* 1. An ability to apply the knowledge, techniques, skills, and modern tools of the discipline to narrowly-defined engineering technology activities;
  2. An ability to apply a knowledge of mathematics, science, engineering, and technology to engineering technology proglems that require limited application of principles but extensive practical knowledge;
  3. An ability to conduct standard tests and measurements; to conduct, analyze, and interpret experiments;
  4. Student Outcome “d” is left blank intentionally
  5. An ability to function effectively as a member of a technical team;
  6. An ability to identify, analyze, and solve narrowly-defined engineering technology problems;
  7. An ability to apply written, oral, and graphical communication in both technical and non-technical environments; and an ability to identify and use appropriate technical literature;
  8. An understanding of the need for and an ability to engage in self-directed continuing professional development;
  9. An understanding of and a commitment to address professional and ethical responsibilities including a respect for diversity; and
  10. Student Outcome "j" is left blank intentionally
  11. A commitment to quality, timeliness, and continuous improvement.

1. Program-specific (2EET) Outcome (1): The 2EET program must demonstrate knowledge and hands-on competence in the application of circuit analysis and design, computer programming, associated software, analog and digital electronics, and microcomputers to the building, testing, operation, and maintenance of electrical/electronic(s) systems.
2. Program-specific (2EET) Outcome (2): The 2EET program must demonstrate knowledge and hands-on competence in the application of physics or chemistry to electrical/electronic(s) circuits in a rigorous mathematical environment at or above the level of algebra and trigonometry.