CPET Program Educational Objectives and Student Outcomes

Program Objectives
The ETAC/ABET outcome-based accreditation assures quality education of engineering technology students. This approach focuses on inputs from constituencies, the teaching-learning process and outcomes, student achievement, graduation, employment, faculty qualifications and development, supporting facilities and resources, and continuous improvement. Accreditation decisions are based solely on the ETAC/ABET criteria, policies and procedures as defined in the ABET “Accreditation Policy and Procedure Manual” and “Criteria for Accrediting Engineering Technology Programs” for evaluation during the annual accreditation cycle.

ETAC/ABET defines program educational objectives as
“…broad statements that describe what graduates are expected to attain within a few years after graduation.”

CPET program educational objectives are consistent with the mission of Indiana University Purdue University Fort Wayne (IPFW), the College of ETCS and the need of program’s constituents. The program educational objectives describe the expected skills, knowledge, and abilities that a graduate should achieve during the initial years following graduation. These program educational objectives were developed, and are annually evaluated, with the IPFW Strategic Objectives/Goals and the needs of the program’s constituents being kept in mind. Educational objectives are closely related to the student outcomes. Assessment of these objectives is coupled to assessment of the program and course outcomes using the tables developed below. The CPET program educational objectives are:

B.S. CPET Program Educational Objectives
1. Demonstrate the knowledge and ability to function as a member of a technical staff who can use current industrial practices and design procedures for development, implementation, and project management of computer-based software and systems or electrical/electronic(s) hardware and software.
2. Demonstrate readiness for career advancement, promotion, and mobility.
3. Demonstrate continuous learning, either on-the-job or in graduate school.
4. Demonstrate the ability to function as a contributing member of society and the profession.
5. Demonstrate effective teamwork skills and recognize ethical responsibilities.
Student Outcomes

CPET student outcomes are based on ETAC/ABET student outcomes which are defined as “describe what students are expected to know and be able to do by the time of graduation. These relate to the knowledge, skills, and behaviors that students acquire as they progress through the program.”

The ETAC/ABET Criteria for Accrediting Engineering Technology Programs states that each program must demonstrate that graduates have:

a. an ability to select and apply the knowledge, techniques, skills, and modern tools of the discipline to broadly-defined engineering technology activities;
b. 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;
c. an ability to conduct standard tests and measurements; to conduct, analyze, and interpret experiments; and to apply experimental results to improve processes;
d. an ability to design systems, components, or processes for broadly-defined engineering technology problems appropriate to program educational objectives;
e. an ability to function effectively as a member or leader on a technical team;
f. an ability to identify, analyze, and solve broadly-defined engineering technology problems;
g. 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;
h. an understanding of the need for and an ability to engage in self-directed continuing professional development;
i. an understanding of and a commitment to address professional and ethical responsibilities including a respect for diversity;
j. a knowledge of the impact of engineering technology solutions in a societal and global context; and
k. a commitment to quality, timeliness, and continuous improvement.

Achievement of these student outcomes should show that the graduate is equipped to achieve the program educational objectives. CPET student outcomes are statements that describe what students are expected to know and be able to do by the time of graduation. These are related to the skills, knowledge and behaviors that students acquire in their matriculation through the program. Assessment of CPET student outcomes and ETAC/ABET student outcomes is simultaneous and is completed as described using the instrument described below:

B.S. Computer Engineering Technology - Student Outcomes

Graduates will have:

a. an appropriate mastery of the knowledge, techniques, skills and modern tools of computer engineering technology,
b. an ability to apply current knowledge and adapt to emerging applications of mathematics, science, engineering and technology,
c. an ability to conduct, analyze and interpret experiments and apply experimental results to improve processes,
d. an ability to apply creativity in the design of systems, components or processes appropriate to program objectives,
e. an ability to function effectively on teams,
f. an ability to identify, analyze and solve technical problems,
g1. an ability to communicate effectively in writing.
g2. an ability to communicate effectively in oral presentation.
h. a recognition of the need for, and an ability to engage in lifelong learning,
i. an ability to understand professional, ethical and social responsibilities,
j1. the knowledge of and respect for diverse backgrounds
j2. the knowledge of contemporary societal issues concerning the profession
j3. the knowledge of contemporary global issues concerning the profession
k1. a commitment to quality
k2. a commitment to timeliness
k3. a commitment to continuous improvement.