Accreditation Criteria for Accrediting Engineering Technology Programs

Institute of Engineering Education Taiwan
Accreditation Council

Approved by the Accreditation Council on January 31, 2019

Criteria 1 to 9 apply to bachelor's degree program; Criterion G applies to master's and above degree program

Criterion 1: Program Educational Objectives

This criterion assesses the program educational objectives (PEOs) and the validity of such objectives. The program seeking accreditation must:

1.1 publish detailed PEOs that demonstrate the program's characteristics and relevance to the contemporary trends and societal demands;
1.2 describe the relationship between the PEOs of the program and those of institution, as well as the process of establishing these objectives;
1.3 describe the manner in which the design of the curriculum is consistent with the PEOs;
1.4 institutionalize an effective assessment process to assure the achievement of the PEOs.

Criterion 2: Students

This criterion assesses the quality of education for students and capacity of the graduates. The program seeking accreditation must:

2.1 have appropriate regulations that are consistent with the PEOs;
2.2 have measures and policies encouraging students to engage in academic exchange and related learning activities;
2.3 institutionalize an effective advising and assessment system.

Criterion 3: Graduate Attributes and Assessment

This criterion assesses the graduate attributes. The program must demonstrate that students have attained the following outcomes by graduation:

3.1 ability to apply with familiarity of knowledge, skills, and current tools required for engineering technology practice;
3.2 ability to conduct standard operating procedures and to design, conduct, analyze, interpret, and apply experiments to improve engineering technology practice;
3.3 ability to apply innovation in engineering technology practice;
3.4 ability to manage projects, communicate effectively and function on teams;
3.5 ability to identify, analyze, and solve broadly-defined engineering technology problems within realistic constraints;
3.6 knowledge of contemporary issues; an understanding of the impact of engineering technology practice in an environmental, societal, and global context; and the ability and habit to engage in life-long learning;
3.7 apply ethical principles and commit to professional ethics and responsibilities and norms of technical practice, and a sense of respect for diversity.

Criterion 4: Curriculum

This criterion assesses the curriculum of the program:

4.1 Design and contents of the curriculum must be consistent with the PEOs, and the program must demonstrate through transcript analysis that coursework of each graduate includes the following three major components: mathematics and basic sciences, engineering technology professional

component, and general education. Specifically:

4.1.1 mathematics and basic sciences must be appropriate to the attainment of the PEOs and training of students for engineering technology practice;

4.1.2 engineering technology and professional component that train students to be proficient in engineering technology practice must account for at least three eighths of the credits required for graduation, including: 1. Capstone design project and 2. Eight credits of at least 288 hours of lab or technical components that involve major elements of engineering technology design (up to two credits and 72 hours of lab or technical components can be waived from internship courses that are consistent with the PEOs);

4.1.3 general education component must complement the technical contents of the discipline and be consistent with the PEOs.

4.2 Design and implementation of the curriculum must correlate with the development of the industry and prepare students to culminate the learned knowledge and skills in engineering technology practice.

Criterion 5: Faculty

This criterion assesses the faculty of the program with regard to the following:

5.1 The full-time faculty must be of sufficient number;

5.2 The faculty must be involved in the formation and execution process of the PEOs;

5.3 The faculty must have the qualification and competencies to cover the professional knowledge of the subject areas in which they teach, at least half the faculty should have two or more years of related industry experience or of Class B (or equivalent) certified Technician or above certification;

5.4 The program must demonstrate the effectiveness of faculty-student interactions and student advising;

5.5 The program must demonstrate the effectiveness of interactions of the faculty with industry;

5.6 The program must provide the faculty with appropriate channels and incentives for professional growth and development;

5.7 The faculty must participate in relevant academic and professional organizations and activities.

Criterion 6: Space and Facilities

This criterion assesses instructional facilities, space, and hard and software:

6.1 The program must provide an environment to foster effective faculty-student interaction;

6.2 The program must provide an environment to support the development of professional knowledge and skills of students;

6.3 The program must provide enough opportunities and guidance for students to learn the use of specialized equipment and tools;

6.4 Computing and information infrastructure must be in place to support the teaching activities of the program;

6.5 The program must provide a safe learning environment and have appropriate system in place to maintain, upgrade, and manage these facilities.

Criterion 7: Institutional Support and Financial Resources

This criterion assesses the institutional support and financial resources of the program:

7.1 The institution must provide adequate support and financial resources to assure the quality and continuity of the program, along with constructive leadership and management;

7.2 Resources must be sufficient to support the ongoing professional development of the faculty;

7.3 Administrative personnel and technical staff must be adequate to meet the program's needs;

7.4 Financial resources must be sufficient to acquire, maintain, and operate the facilities, infrastructure, and equipment appropriate for the program to support educational needs.

Criterion 8: Discipline-based Criteria

This criterion assesses whether the program satisfies the criteria stipulated specifically for each discipline, where: all courses and faculty qualifications must be consistent with the respective disciplines; and if a program encompasses multiple disciplines, it must satisfy the criteria of all respective disciplines.

Criterion 9: Continuous Improvement

The program must institutionalize a process to assess and evaluate the extent to which the student outcomes are being attained and demonstrate that the results of such evaluations are being systematically utilized as input for the continuous improvement of the program:

9.1 demonstrate in a consistent manner that students have attained the graduate attributes by graduation;

9.2 demonstrate in a consistent manner that planning and implementation of the curriculum must correlate the development of the industry and prepare students to culminate the learned knowledge and skills in engineering technology practice;

9.3 demonstrate in a consistent manner that continuous improvements are attained in other areas.

Criterion G: Education for master's or beyond degrees extends from that of the bachelor's and with a more specialized focus. The program under review must:

G.0 have appropriate admission policies;

G.1 fulfill the requirements of Criterion 1;

G.2 fulfill the requirements of Criterion 2. In addition, it must demonstrate the effective interactions between faculty advisors and graduate students;

G.3 fulfill the requirements of Criterion 3, and students must attain the following outcomes by graduation:

- G.3.1 professional knowledge in a specific field;
- G.3.2 ability to organize and implement a research project;
- G.3.3 ability to conduct professional journal writing;
- G.3.4 ability for innovative thinking and independent problem solving;
- G.3.5 ability to collaborate with people in an interdisciplinary setting;
- G.3.6 sound international scope of view;
- G.3.7 leadership, management, and planning;
- G.3.8 ability for life-long learning.

G.4 provide appropriate curriculum to satisfy students' development in professional field;

G.5 fulfill the requirements of Criterion 5. In addition, faculty members must demonstrate outcomes of academic scholarship in the forms of academic or applied research, and participate in international and domestic academic activities;

G.6 fulfill requirements of Criterion 6 and must meet the needs for the research activities;

G.7 fulfill requirements of Criterion 7;

G.8 fulfill requirements of Criterion 8;

G.9 fulfill requirements of Criterion 9.