Supplement of Accreditation Criteria for Accrediting Engineering Technology Programs Institute of Engineering Education Taiwan

Applicable to bachelor's degree program

Criterion 1: Program Educational Objectives

This criterion assesses the program educational objectives (PEOs) and the validity of such objectives.

Criterion		Self-study Report	Displays On-Site
1.1	Publish detailed PEOs that demonstrate the program's characteristics and relevance to the contemporary trends and societal demands.	Demonstrate evidence of communication of the program educational objectives with its constituencies.	1) Promotion materials on the program educational objectives. 2) Evidence of agenda/minutes for the formation of the program educational objectives, including bylaw of the advisory board. 3) Assessment of the educational objectives through interview or surveys of alumni, employers, etc. 4) Evidence of meeting minutes on the reflection of the evaluation of the program educational objectives and curriculum designs, etc.
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) Demonstrate involvement of faculty members and advisory board in the process of forming, reflecting and evaluating the program educational objectives. 2) Demonstrate the relationship of educational objectives between the institution, the college, and the program.	
1.3	Describe the manner in which the design of the curriculum is consistent with the PEOs.	Demonstrate the relationship between the curriculum designs and the program educational objectives.	
1.4	Institutionalize an effective assessment process to assure the achievement of the PEOs.	1) Demonstrate the use of diverse assessment methods on the level of achievement of the program educational objectives on a regular basis. 2) Demonstrate evidence of reflection on the evaluation of the program educational objectives.	

Criterion 2: Students

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

Criterion		Self-study Report	Displays On-Site
2.1	Have appropriate regulations that are consistent with the PEOs.	1) Demonstrate policies on student enrollment, graduation, and career search are in place. 2) Demonstrate results in tracking of student enrollment, graduation, and career advising. 3) Demonstrate regulations and results of advising for transfer students from different academic systems and policies on recognition of transferred credits.	1) Policies on enrollment and graduating. 2) Policies and records of execution of student dropout/suspension advising and early warning system. 3) Records and results of transfer student advising. 4) Records and results of advising on graduating, advancement, and career search. 5) Records and results of student advising on club activity, domestic/international academic exchange, internship, scholarship, intercollegiate competition, etc. 6) Records and results of financial support and advising for high achieving and low-income students. 7) Records of student advising. 8) Policies on graduation.
2.2	Have measures and policies encouraging students to engage in academic exchange and related learning activities.	1) Demonstrate results on encouraging students to partake in academic exchange, personal growth, and related learning activities 2) Record of domestic and international intercollegiate competition.	
2.3	Institutionalize an effective advising and assessment system.	1) Demonstrate regulations of student advising such as office hour, faculty advisor-student time, early warning systems, etc. 2) Demonstrate results of student advising.	

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:

Criterion		Self-study Report	Displays On-Site
3.1	Ability to apply with familiarity of knowledge, skills, and current tools required for engineering technology	1) Demonstrate relationship between the program educational objectives and the graduate attributes.	1) Records of meetings on formation and revision of the graduate attributes. 2) All records and assessments on related

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	practice.	2) Demonstrate the program's graduate attributes encompasses TAC 2018 graduate attributes. 3) Demonstrate achievement of graduate attributes through Capstone design project. 4) Demonstrate achievement of graduate attributes though graduate surveys. *According to the Sydney Accord, broadly-defined engineering technology problems are problems that cannot be resolved without a coherent and detailed knowledge of defined aspects of a professional discipline with a strong emphasis on the application of developed technology, and having the following characteristics: ● Involve a variety of factors which may impose conflicting constraints ● Can be solved by application of well-proven analysis techniques ● Belong to families of familiar problems which are solved in well-accepted ways ● May be partially outside those encompassed by standards or codes of practice ● Involve several groups of stakeholders with differing and occasionally conflicting needs ● Are parts of, or systems within complex engineering problems	engineering technology courses and Capstone design projects. 3) Related questionnaires and surveys from graduates.
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:

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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:	1) Demonstrate a curriculum map (Must include guidelines on prerequisites.) 2) Provide a yearly listing of courses offered and demonstrate the courses' alignment with the graduate attributes. 3) Demonstrate curriculum can cultivate achievement of graduate attributes with each attribute cultivated by at least 2 to 3 courses. 4) Demonstrate student fulfillment of curriculum requirements of criteria 4.1.-4.1.3. using transcript analysis. 5) Documentation of experiment/hands-on courses with information on number of credits, hours, assessment, and results. * Minimal credits required for graduation are set by the Ministry of Education, which is 128.	1) Curriculum map. 2) Lists and portfolios of professional courses including: ▪ Syllabus, list of textbooks used, and sample of tests and homework organized by score of high, middle, and low with 2 of each. ▪ Instructor self-made handouts if any. ▪ Sample of midterm and final examinations organized by score of high, middle, and low with 2 each. ▪ Sample of homework organized by score of high, middle and low with 2 each. ▪ Course analysis table. 3) Transcript of graduates. 4) Syllabus of Capstone design project and sample of finished project/report organized by score of high, middle, and low with 2 of each. 5) Student ranking based on overall scores for each class years.
	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		

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	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.	1) Demonstrate the curriculum and instructions fulfill the future needs of the industry including feedbacks from the advisory board, curriculum committee, etc. 2) Demonstrate regulations and results of incorporation of seminars by professionals, field trips, internships, competitions, and other industry related activities to provide students with experiences in the industry.	1) Records of student internships and related information. 2) Records of industry-experience events for students and related information.

Criterion 5: Faculty

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

Criterion		Self-study Report	Displays On-Site
5.1	The full-time faculty must be of sufficient number.	1) Demonstrate the qualifications, competencies, and sufficient number of faculty members to cover professional subject knowledge that the program offers. 2) Statistics on faculty weekly workload.	1) Faculty hourly instruction duty roster. 2) Faculty review meeting minutes. 3) Records and procedures on faculty hiring, promotion, and evaluation. 4) Records and results of faculty involvement with the formation and execution of the program educational objectives. 5) Faculty CVs (including the basic information, publication records of the last 5 years, and subject related
5.2	The faculty must be involved in the formation and execution process of the PEOs.	Demonstrate with records and results of faculty members' involvement in the formation and execution of the program educational objectives.	

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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.	1) Demonstrate incorporation of academic research into instruction by the faculty. 2) Demonstrate professional knowledge and/or certifications/licenses on the subjects the faculty teach. 3) Demonstrate retainment of technical abilities and experiences personnel as faculty. 4) Demonstrate faculty has proper level of industry experience.	certifications/licenses or industry experience). 6) Lists of faculty office hour and related records. 7) Records and procedures on applying grants from government and industry by the faculty members. 8) Records of industry-academia cooperation and involvements. 9) Policies on encouraging faculty professional development and research. 10) Policies on encouraging faculty participation in domestic/international field related/ professional societies and activities.
5.4	The program must demonstrate the effectiveness of faculty-student interactions and student advising.	Demonstrate the effectiveness and results of faculty-student interaction system, such as student advising, office hour, and other real-time student inputs on curriculum.	
5.5	The program must demonstrate the effectiveness of interactions of the faculty with industry.	Demonstrate faculty-industry interactions including consultancy, partnership, advisory committee, and other educational training related activity.	
5.6	The program must provide the faculty with appropriate channels and incentives for professional growth and development.	1) Demonstrate how the program assist faculty members to create an atmosphere of team work aimed for professional development. 2) Demonstrate how the program assist faculty members to grow in teaching pedagogy, course designs, and assessment. 3) Demonstrate how the program assist faculty members in balancing teaching and research. 4) Demonstrate how the program encourage faculty members to pursue professional growth.	

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5.7	The faculty must participate in relevant academic and professional organizations and activities.	Demonstrate records and results of faculty research and involvement with professional organizations and activities.	

Criterion 6: Space and Facilities

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

Criterion		Self-study Report	Displays On-Site
6.1	The program must provide an environment to foster effective faculty-student interaction.	1) Demonstrate appropriate number/amount of facilities and space to support student hands-on learning activity, e.g.: • Hands-on learning and working space. • IT infrastructure and support. • Library resources. • Self-study computer software • Group/teamwork space • Safe, health, and learning encouraging environment. 2) Demonstrate professional facilities and tools that are of industry standards. 3) Demonstrate the program has an appropriate regulation on facilities/space maintenance and management, e.g.: listings of space and facilities, user manuals, maintenance records, etc.	1) Inventory of subscribed domestic/ international periodicals, magazines, professional journals, etc. 2) Plans and records of facilities and space usage. 3) Management policies on labs and teaching facilities. Inventory of labs and teaching facilities. 4) Lab course syllabi, manuals, and safety guides. 5) Records and logs on environmental safety and health seminars/meetings.
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:

Criterion		Self-study Report	Displays On-Site
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.	1) Demonstrate sound and proper plans for current objectives and future goals. 2) Explain in detail the budgeting policies and past budget allocation of the institution and of the program to demonstrate sufficient financial supports. 3) Demonstrate supports of the administration for the upkeep and development of the program.	1) Policies and records of program chair selection. 2) Meeting minutes on forming the program's short, intermediate, and long-term goals. 3) Policies and budgeting on supporting faculty growth (training, professional growth, research, domestic and international exchanges). 4) Job descriptions of the teaching assistants, administrative staff, and technicians. 5) Policies and budging for facilities and space.
7.2	Resources must be sufficient to support the ongoing professional development of the faculty.	Demonstrate the program has appropriate regulations and records on financial and other capacities (grants, incentives, materials, etc.) to support professional growth of the faculty members.	
7.3	Administrative personnel and technical staff must be adequate to meet the program's needs.	Demonstrate sufficient number of teaching assistants, administrative staff, and technician to support the program.	
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.	Demonstrate financial resources of the program sufficient to acquire, maintain, and operate the facilities, infrastructures, and equipment.	

Criterion 8: Discipline-based Criteria

This criterion assesses whether the program satisfies the criteria stipulated specifically for each discipline:

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All courses and faculty qualifications must be consistent with the respective disciplines; and	1) Demonstrate the program name is in consistency with the PEO.	1) Information on the association between the program name and the disciplines it covers.

Criterion	Self-study Report	Displays On-Site
if a program encompasses multiple disciplines, it must satisfy the criteria of all respective disciplines.	2) Demonstrate the program name reflects the curriculum.	2) Records of coordination of inter-programs courses.

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:

Criterion		Self-study Report	Displays On-Site
9.1	Demonstrate in a consistent manner that students have attained the graduate attributes by graduation	1) Demonstrate the program has a system of periodic review on its self-evaluation process. 2) Demonstrate the program has a system of periodic review to ensure the achievement of the graduate attributes.	Records of reviews on achievement of graduate attributes.
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.	1) Demonstrate the program through advisory board and other means in assessing curriculum that continue to meet the industry needs and needs to cultivate student hands-on abilities. 2) Demonstrate the program has a system of periodic review to ensure curriculum and teaching continue to meet the industry needs and needs to cultivate student hands-on abilities.	Records of reviews on curriculum planning related works and meetings.
9.3	Demonstrate in a consistent manner that continuous improvements are attained in other areas.	Demonstrate important assessments and results of improvement in other criteria.	Records of reviews on assessments and improvements in other criteria.