



ABET

Successful Transitions to the Planned Changes for Criteria 3 & 5

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Status of Criteria 3 & 5 Changes

- Criteria 3 and 5 changes were approved for public comment by the Engineering Technology Area Delegation (ETAD) in October 2017.
- Comment period extends through June.
- If approved by ETAD in the fall of 2018, these changes will be enforced during the 2019-20 accreditation cycle.

Criterion 3 – Associate Degree

Current ETAC Criteria	Proposed ETAC Criteria
<p>a. an ability to apply the knowledge, techniques, skills, and modern tools of the discipline to narrowly defined engineering technology activities;</p> <p>b. an ability to apply a knowledge of mathematics, science, engineering, and technology to engineering technology problems that require limited application of principles but extensive practical knowledge</p> <p>e. an ability to identify, analyze, and solve narrowly defined engineering technology problems;</p>	<p>(1) an ability to apply knowledge, techniques, skills and modern tools of mathematics, science, engineering, and technology to solve well-defined engineering problems appropriate to the discipline;</p>

Criterion 3 – Associate Degree

Current ETAC Criteria	Proposed ETAC Criteria
<p>No direct equivalent in current ETAC criteria—“design” added from the International Engineering Alliance (IEA) Dublin Accords Graduate Attribute DA3: Design solutions for <i>well-defined technical problems</i> and <i>assist with the design of systems, components or processes to meet specified needs</i></p>	<p>(2) an ability to design solutions for well-defined technical problems and assist with engineering design of systems, components, or processes appropriate to the discipline;</p>

Criterion 3 – Associate Degree

Current ETAC Criteria	Proposed ETAC Criteria
f. 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;	(3) not changed;
c. an ability to conduct standard tests and measurements, and to conduct, analyze, and interpret experiments;	(4) not changed;
d. an ability to function effectively as a member of a technical team;	(5) not changed;

Criterion 3 – Associate Degree

Current ETAC Criteria	Proposed ETAC Criteria
g. an understanding of the need for and an ability to engage in self-directed continuing professional development	Moved to curriculum
h. an understanding of and a commitment to address professional and ethical responsibilities, including a respect for diversity	Moved to curriculum
i. a commitment to quality, timeliness, and continuous improvement	Moved to curriculum

Criterion 3 – Associate Degree Quick Tracking Matrix

Criteria 3 – Existing Format

a. an ability to apply the **knowledge, techniques, skills**, and modern tools of the discipline to narrowly defined engineering technology activities;

b. an ability to apply a knowledge of **mathematics, science, engineering, and technology** to engineering technology problems that require limited application of principles but extensive practical knowledge;

c. an ability to conduct standard tests and measurements, and to conduct, analyze, and interpret experiments;

d. an ability to function effectively as a member of a technical team;

e. an ability to identify, analyze, and solve narrowly defined engineering technology problems;

f. 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;

g. an understanding of the need for and an ability to engage in self-directed continuing professional development;

h. an understanding of and a commitment to address professional and ethical responsibilities, including a respect for diversity; and

i. a commitment to quality, timeliness, and continuous improvement.

Criteria 3 – New Format

(1) an ability to apply **knowledge, techniques, skills and modern tools** of **mathematics, science, engineering, and technology** to solve well-defined engineering problems appropriate to the discipline;

(2) an ability to design solutions for well-defined technical problems and assist with engineering design of systems, components, or processes appropriate to the discipline;

(3) 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;

(4) an ability to conduct standard tests and measurements, and to conduct, analyze, and interpret experiments;

(5) an ability to function effectively as a member of a technical team;

Criterion 5. Curriculum

Criterion 3 – Baccalaureate Degree

Current ETAC Criteria	Proposed ETAC Criteria
<p>a. an ability to select and apply the knowledge, techniques, skills, and modern tools of the discipline to broadly-defined engineering technology activities;</p> <p>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</p> <p>f. an ability to identify, analyze, and solve broadly-defined engineering technology problems;</p>	<p>(1) an ability to apply knowledge, techniques, skills, and modern tools of mathematics, science, engineering, or technology to solve broadly-defined engineering problems;</p>

Criterion 3 – Baccalaureate Degree

Current ETAC Criteria	Proposed ETAC Criteria
d. an ability to design systems, components, or processes for broadly-defined engineering technology problems appropriate to program educational objectives;	(2) not changed;
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;	(3) not changed;

Criterion 3 – Baccalaureate Degree

Current ETAC Criteria	Proposed ETAC Criteria
c. an ability to conduct standard tests and measurements; to conduct, analyze, and interpret experiments; and to apply experimental results to improve processes;	(4) not changed;
e. an ability to function effectively as a member or leader on a technical team;	(5) not changed;

Criterion 3 – Baccalaureate Degree

Current ETAC Criteria	Proposed ETAC Criteria
h. an understanding of the need for and an ability to engage in self-directed continuing professional development;	Moved to curriculum
i. an understanding of and a commitment to address professional and ethical responsibilities including a respect for diversity;	Moved to curriculum
j. a knowledge of the impact of engineering technology solutions in a societal and global context; and	Moved to curriculum
k. a commitment to quality, timeliness, and continuous improvement.	Moved to curriculum

Criterion 3 –Baccalaureate Degree Quick Tracking

Criteria 3 – Existing Format

- a. an ability to apply the **knowledge, techniques, skills, and modern tools** of the discipline to broadly defined engineering technology activities;
- b. an ability to 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, and 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 of 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.

Criteria 3 – New Format

- (1) an ability to apply **knowledge, techniques, skills and modern tools** of **mathematics, science, engineering, and technology** to solve broadly defined engineering problems;
- (2) an ability to design systems, components, or processes for broadly-defined engineering technology problems appropriate to the discipline;
- (3) 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;
- (4) an ability to conduct standard tests and measurements, and to conduct, analyze, and interpret experiments;
- (5) an ability to function effectively as a member of a technical team;

Criterion 5. Curriculum

Criterion 5 – Curriculum

Current ETAC Criteria	Proposed ETAC Criteria
<p>The curriculum must effectively develop the following subject areas in support of student outcomes and program educational objectives.</p>	<p>Curricular requirements specify topics appropriate to engineering technology but do not prescribe courses. The curriculum must combine technical, professional and general education components in support of student outcomes to prepare students for a career, further study, and lifelong professional development. To differentiate the discipline, Program Criteria may add specificity for program curricula. The curriculum must include the following:</p>

Criterion 5 – Curriculum

Current ETAC Criteria	Proposed ETAC Criteria
<u>Technical Content</u>	<u>Technical Content</u>
Added	<p>d. Include design considerations appropriate to the discipline and degree level such as: industry and engineering standards and codes; public safety and health; and local and global impact of engineering solutions on individuals, organizations, and society;</p> <p>e. Include topics related to professional and ethical responsibilities, respect for diversity; and quality and continuous improvement.</p>

Criteria 3 & 5 – Advantages

- Similar to EAC and CAC proposed changes
- Reduces the required number of Student Outcomes
- Reduces assessment burden
 - Fewer Student Outcomes are required by General Criteria
 - Adds performance indicators for assessment
- Moves some of the difficult/impossible to measure items to Criterion 5, Curriculum
- Programs not required to change Student Outcomes to comply*
- More closely aligned with IEA student attributes
- Strengthens ties between General Criteria and Program Criteria

Criterion 3 & 5 – Disadvantages

- * Associate Degree programs compelled to put appropriate “design” (back) into their Student Outcomes. (IEA Dublin Accords)
- All Student Outcomes identified by the program must be assessed. To take advantage of reduced assessment burden, programs must change their outcomes.
- Program must ensure that curricular requirements are met.

Program Criteria – Background

- Mission
- Program Educational Objectives (PEOs)
 - Attained after graduation
 - Support accomplishment of the mission
- Student Outcomes (SOs)
 - Attained by students before graduation
 - Support accomplishment of PEOs
- Curriculum
 - Means and materials to achieve SOs
- Program Criteria
 - Specificity of curriculum to differentiate the discipline

Program Criteria

- ETAC has revised Program Criteria template for societies.
- Template includes sections for Associate and Baccalaureate degree requirements.
- Under each of these sections, societies may differentiate the discipline by specifying requirements for:
 - Curriculum
 - Faculty
- Discipline-specific requirements are not intended to place additional burden on programs.

Criterion 3 –Baccalaureate Degree Quick Tracking

Criteria 3 – Existing Format

- a. an ability to apply the **knowledge, techniques, skills, and modern tools** of the discipline to broadly defined engineering technology activities;
- b. an ability to 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, and 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 of 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.

Criteria 3 – New Format

- (1) an ability to apply **knowledge, techniques, skills and modern tools** of **mathematics, science, engineering, and technology** to solve broadly defined engineering problems;
- (2) an ability to design systems, components, or processes for broadly-defined engineering technology problems appropriate to the discipline;
- (3) 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;
- (4) an ability to conduct standard tests and measurements, and to conduct, analyze, and interpret experiments;
- (5) an ability to function effectively as a member of a technical team;

Criterion 5. Curriculum

Questions and Discussion

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