

Old Outcomes (a-k) Through Spring 2019

Change in ABET Student Outcomes

- (a) **Scientific Expertise:** an ability to apply knowledge of mathematics, science, and engineering.
- (b) **Experimental Training:** an ability to design and conduct experiments, as well as to analyze and interpret data.
- (c) **Design Abilities:** an ability to design a system, component, or process to meet desired needs with realistic constraints such as economic, environmental, social, political, ethical, health & safety, manufacturability, and sustainability.
- (d) **Teamwork:** an ability to function on multi-disciplinary teams.
- (e) **Problem Solving:** an ability to identify, formulate, and solve engineering and physics problems.
- (f) **Professional Responsibility:** an understanding of professional and ethical responsibility.
- (g) **Communication Skills:** an ability to communicate effectively.
- (h) **Societal Impact:** the broad education necessary to understand the impact of engineering and physics solutions in a global, economic, environmental, and societal context.
- (i) **Life-long Learning:** a recognition of the need for and an ability to engage in life-long learning.
- (j) **Contemporary Issues:** a knowledge of contemporary issues.
- (k) **Technical Know-How:** an ability to use the techniques, skills, and modern engineering tools necessary for engineering physics practice

New Outcomes (1-7) Change in ABET Student Outcomes

Starting Fall 2019

- (1) **Problem Solving:** an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics
- (2) **Design within Constraints:** an ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors
- (3) **Communication:** an ability to communicate effectively with a range of audiences
- (4) **Ethical and Professional Responsibility:** an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts
- (5) **Teamwork:** an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives
- (6) **Collect, Analyze and Interpret Data:** an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions
- (7) **Ability to Learn on Your Own:** an ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

Change in ABET Student Outcomes

Directly from ABET website

Table 2. Changes in Criterion 3 - Student Outcomes

Current Language EAC Criteria effective 2017-18 and 2018-19 Cycles	New Language Approved by the EAD October 20, 2017 Applicable beginning in the 2019-20 cycle
Criterion 3. Student Outcomes The program must have documented student outcomes that prepare graduates to attain the program educational objectives. Student outcomes are outcomes (a) through (k) plus any additional outcomes that may be articulated by the program.	Criterion 3. Student Outcomes The program must have documented student outcomes that support the program educational objectives. Attainment of these outcomes prepares graduates to enter the professional practice of engineering. Student outcomes are outcomes (1) through (7), plus any additional outcomes that may be articulated by the program.
(a) an ability to apply knowledge of mathematics, science, and engineering (e) an ability to identify, formulate, and solve engineering problems	1. an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics
(b) an ability to design and conduct experiments, as well as to analyze and interpret data	6. an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions
(c) an ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability	2. an ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors
(d) an ability to function on multidisciplinary teams	5. an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives
(f) an understanding of professional and ethical responsibility (h) the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context (j) a knowledge of contemporary issues	4. an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts
(g) an ability to communicate effectively	3. an ability to communicate effectively with a range of audiences
(i) a recognition of the need for, and an ability to engage in life-long learning	7. an ability to acquire and apply new knowledge as needed, using appropriate learning strategies
(k) an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.	Implied in 1, 2, and 6

Change in ABET Student Outcomes

Outcome Assessment		315	315 lab	395	454	455	Capstone
EAC Outcome Number	Title						
1	Problem Solving	X		X	X	X	X
2	Design within constraints		X				X
3	Communication		X				X
4	Ethical and Professional Responsibilities	X					X
5	Teamwork		X				X
6	Collect, Analyze, and Interpret Data		X				X
7	Ability to Learn on your own	X	X				X