

## **Executive Summary**

### **Review of Program Educational Objectives (PEOs)**

The University of Maryland Eastern Shore (UMES) Engineering Program Educational Objectives (PEOs) are subjected to a periodic review (every 4 years) for ABET accreditation purposes. The Engineering Advisory Council (EAC) reviews the Program Educational Objectives (PEOs) to ensure the PEOs are still relevant to the needs of the program constituents including Industry (such as local companies, state/federal agencies and etc), Faculty, Alumni, and Students. If modifications on PEOs are needed, the EAC provides feedback to UMES Engineering Faculty who will revise the PEOs in interactions with the EAC. The revised PEOs must be aligned with both UMES missions and ABET Student Outcomes known as (1) through (7). Note that a new set of Student Learning Outcomes (1)-(7) are effective since the 2019-2020 cycle per ABET Engineering Accreditation Commission (EAC).

The recently updated UMES missions along with the mapping between the current PEOs and the UMES missions are provided in attachment 1.

The ABET Student Outcomes (1) through (7) along with the mapping between the current PEOs and ABET Students Outcomes (1) through (7) are provided in attachment 2.

The UMES Engineering Program Educational Objectives (PEOs) subjected to review are listed below:

#### **UMES Engineering Program Educational Objectives (PEOs):**

UMES Engineering program produces graduates who are expected to achieve the following objectives within a few years after graduation:

- Objective 1: Work as a technically competent engineer at the professional level in industry, government agencies or pursue graduate studies.
- Objective 2: Effectively work on industry or government engineering project teams.
- Objective 3: Be engaged as an effective member of the engineering profession as it relates to and interacts with the global society.
- Objective 4: Actively take steps to remain current with advancing engineering tools and technologies.

## **Attachment 1**

### **UMES Missions (approved in 2016)**

- I. The University of Maryland Eastern Shore (UMES), the State's Historically Black 1890 Land Grant institution, has its purpose and uniqueness grounded in distinctive learning, discovery, and engagement opportunities in the arts and sciences education, technology, engineering, agriculture, business, and health professions.
- II. UMES is a student-centered, doctoral research degree-granting university known for its nationally accredited undergraduate and graduate programs, applied research, and highly valued graduates.
- III. UMES provides individuals, including first generation college students, access to a holistic learning environment that fosters multicultural diversity, academic success, and intellectual and social growth.
- IV. UMES prepares graduates to address challenges in a global knowledge-based economy, while maintaining its commitment to meeting the workforce and economic development needs of the Eastern Shore, the State, the Nation, and the World.

### Mapping Between PEOs and UMES Missions

UMES Missions	I Provides distinctive Learning, Discovery, and Engagement Opportunities	II Operates as a Student- centered Institution known for accredited Programs and highly valued Graduates	III Provides access to holistic Learning  (especially to first-generation college students fostering multicultural diversity, academic success, intellectual and social growth)	IV Prepares Graduates to address Challenges  (in global knowledge-based economy while meeting the workforce and economic development needs of the Eastern Shore, State, Nation and World.)
UMES Engineering Program Educational Objectives				
1 Graduates with Technical Competency ...	X	X	X	X
2 Team Oriented Graduates ...	X	X	X	X
3 Graduates interacting with Global Society ...	X	X	X	X
4 Up-to-date Graduates ...	X	X	X	X

## Attachment 2

### ABET Student Outcomes (1) through (7)

The ABET Student Outcomes (1 through 7) are as follows:

Upon graduation students will have:

1. An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics
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
3. An ability to communicate effectively with a range of audiences
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
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
6. An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions
7. An ability to acquire and apply new knowledge as needed, using appropriate learning strategies

### Mapping Between PEOs and ABET Student Outcomes (1) Through (7)

<b>Program Educational Objectives &gt;&gt;&gt;</b>	Objective 1: Technically Competent ...	Objective 2: Work in Team Projects ...	Objective 3: Member of Engineering Profession in Global Society ...	Objective 4: Remain Current ...
<b>Program Student Outcomes</b>				
(a) Identify, formulate, and solve complex engineering problems ...	X			
(2) Apply engineering design to produce solutions ...	X	X		X
(3) Communicate effectively ...		X	X	
(4) Recognize ethical and professional responsibilities ...			X	X
(5) Function effectively on a team ...		X	X	
(6) Develop and conduct appropriate experimentation ...	X	X		
(7) Acquire and apply new knowledge ...	X			X

## PEOs Review Process:

