



**College of Engineering and Computer Science  
Academic Learning Compacts**

**Materials Science and Engineering - B.S.**

**Discipline Specific Knowledge, Skills, Behavior and Values**

- 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 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.**
- 4. An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.**
- 5. An ability to acquire and apply new knowledge as needed, using appropriate learning strategies.**

**Critical Thinking**

- 1. 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.**
- 2. 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.**
- 3. An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.**

**Communication**

- 1. An ability to communicate effectively with a range of audiences.**
- 2. 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.**

3. 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.
4. An ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

#### **Assessment of Materials Science and Engineering - B.S. Outcomes**

These outcomes will be assessed using a variety of assessment methods, including:

- Data for the assessment will be collected through surveys (graduating students, employers, alumni), interviews and focus groups (students, industry advisory committee, corporate affiliate board), concept tests in selected courses, peer review of lab course reports, peer review of senior design course reports and presentations, Fundamentals of Engineering exam, and course improvement process forms.