



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

**Photonic Science and Engineering - B.S.P.S.E.**

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

- 1. Graduates have an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.**
- 2. Graduates have 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. Graduates have an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.**
- 4. Graduates have an ability to acquire and apply new knowledge as needed, using appropriate learning strategies.**

**Critical Thinking**

- 1. Graduates have an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.**
- 2. Graduates have 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. Graduates have 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. Graduates have 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.**
- 5. Graduates have an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.**

6. Graduates have an ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

### **Communication**

1. Graduates have an ability to communicate effectively with a range of audiences.
2. Graduates have 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.

### **Assessment of Photonic Science and Engineering - B.S.P.S.E. Outcomes**

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

- Undergraduate student forums, senior design course evaluations, course assessment reports, oral and written examinations, lab reports, tests and exams, and research reports.