

Program Outcomes Guide (POG)

Program Title: A.S. Engineering

Program Team: Ed Sigler

Expected Program Learning Outcomes (PLO)

Students will demonstrate the following:

1. An ability to apply knowledge of mathematics, science, and engineering
2. An ability to design and conduct experiments, as well as to analyze and interpret data
3. 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
4. An ability to function on multidisciplinary teams
5. An ability to identify, formulate, and solve engineering problems
6. An ability to communicate effectively
7. An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice

Assessment

1. Students will complete homework problems, exams, and design projects throughout the course of study.
2. Students will complete lab assignments and design projects throughout the course of study.
3. Students will complete engineering design projects throughout the course of study. They will be given the constraints (i.e. budget, materials) and develop solutions to solve the given problem while meeting the given constraints.
4. Several design projects of the course of study will be team projects. Students will be evaluated by their instructor and their peers on their ability to work within a team to complete a design project.
5. Students will complete homework problems, exams, and design projects throughout the course of study.
6. Students will be evaluated on their ability to produce written solutions to homework problems and exams. The solutions must demonstrate the ability to communicate their understanding of the problem and solution. In addition, students will produce written and oral reports for design projects throughout the course of study.
7. Use of computer assisted techniques and modeling throughout engineering coursework (e.g. MATLAB, CREO, PSPICE)

Course-level assessments.

See the COGS for the individual Courses.

Validation

Pending data collection and analysis.

Results

Date collection and data analysis began at the end of the Spring 2012 semester.

Follow-up

Evaluate program objectives every two years. Use changes in ABET program outcomes as a guide for necessary changes to program outcomes. In addition, identify any program outcomes in which students, on average, show a weakness and make necessary adjustments to alleviate discrepancies.

Analysis through Spring 2016 shows that students successfully completing the program are accepted into engineering programs at 4-year degree granting institutions.

In progress or planned:

Engineering pathways for Electrical/Computer, Mechanical/Aerospace/Civil, and Chemical/Environmental/Materials are in progress.

Budget Justification

See individual COGS for course needs.