

# NEW STUDENT OUTCOMES & NEW RUBRICS

## OUTCOME 1 through 7

**Outcome 1** an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics

33.00%	33.00%	33.00%
The student identifies and formulates the problem by specifying the performance requirements	The student is able to develop a solution based in mathematical, scientific and engineering principles	The student solves the problem as defined in the performance requirements

**Outcome 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

20.00%	20.00%	20.00%	20%	20.00%
The student proposes and analyzes alternative solutions	The student follows and documents a logical and orderly design procedure to meet specifications	Besides meeting technical specification, the student considered environmental, or social constraints to choose the solution	Besides meeting technical specification, the student considered public health, safety, and welfare to choose the solution	The student carries out cost or economic analysis of the system, component or process designed

**Outcome 3** an ability to communicate effectively with a range of audiences

25.00%	25.00%	25.00%	25.00%
The student is able to communicate graphically using schematics, tables, graphics or mathematical equations	The student's work reflects proper use of the language (Spanish or English)	The student delivers as well organized public presentation, shows ability to handle the audience, and answers questions related to his/her work	The student delivers well organized written documents

**Outcome 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

25.00%	25.00%	25.00%	25.00%
The student identifies ethical problems, or impacts of engineering solutions and their ramifications	The student analyzed and evaluates the environmental and social impact of engineering solutions	The student analyzes and evaluates the global and economic impact of engineering solutions.	The student makes informed judgements and decisions considering professional responsibilities around the impact of engineering solutions.

**Outcome 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

25.00%	25.00%	25.00%	25.00%
The team of students subdivides a complex problem.	The team of students establishes goals, and plans tasks.	The team of students assigns responsibilities to each team member balancing workloads.	The team of students integrates peer work to meet the objectives of their solution.

**Outcome 6** an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions

33.00%	33.00%	33.00%
The student can calibrate, configure, and test the instruments or tools.	The student develops and conducts experimentation to characterize a system of a process.	The student analyzes and interprets data to draw conclusions.

**Outcome 7** an ability to acquire and apply new knowledge as needed, using appropriate learning strategies

25.00%	25.00%	25.00%	25.00%
The student explores and identifies a topic that requires new information indicating interest in the subject.	The student makes references and applies new knowledge in engineering context.	The student integrates new knowledge to prior learning revealing clarified meanings	After completing required work, the student identifies future work to expand knowledge, skills, and abilities.

Rubrics 1,2,3,4,6, and 7 approved in a departmental meeting on September, 25, 2018 and rubric 5 on January, 29, 2019.

### ASSESSMENT PLAN:

- January 2021: outcomes 6, 7
- August 2021: outcomes 1, 5
- January 2022 - outcomes 2,3,4
- August 2022 - outcomes 6,7
- January 2023 - outcomes 1,5
- August 2023 - outcomes 2, 3, 4
- January 2024 - outcomes 6,7
- **August 2024 - outcomes 1, 5**