

Goals for Each Outcome, Assessment Data, and Processes by which Results are Applied to Further Develop and Improve the Program

In the following section we present for each program outcome (EEE SLOs 1-15) the assessment instruments used, the indicators and measures of success as appropriate, assessment for continuous improvement, and annual faculty action to provide perspective on our processes.

- **E&EE Student Learning Outcome 1:** *Knowledge of mathematics through differential and integral calculus, differential equations, physics and chemistry.*
Assessment Instruments: Course syllabi and student performance in Math 30, 31, 32, and 45, Phys 11A, and 11C, and Chem 1A
Indicator: Individual course grades
Measure: Passing grade
Assessment for Continuous Improvement: Feedback from students in exit surveys (graduating seniors), alumni surveys, site visits, Assessment Committee review
Annual Faculty Action: Assess feedback from students/faculty and develop recommendations for action
- **E&EE Student Learning Outcome 2:** *Knowledge of basic engineering sciences including statics and dynamics.*
Assessment Instruments: Course syllabi and student performance in ENGR 17 and 70
Indicator: Individual course grades
Measure: Passing grade
Assessment for Continuous Improvement: Course Embedded Assessment in ENGR 17, feedback from students in exit surveys (graduating seniors), alumni surveys, site visits, Assessment Committee review
Annual Faculty Action: Assess feedback from students/faculty and develop recommendations for action
- **E&EE Student Learning Outcome 3:** *The ability to apply knowledge of mathematics, science and engineering to solve problems in E&EE*
Assessment Instruments: Course syllabi and student performance in ENGR 17, EEE 108, EEE 108L, 117, 117L, 130, 131, 141, 143, 144, 154, 161, 162, 165, 166, 174, 180, 181, 182, 184, 185, 187, 192A/B, 193 A/B, CpE/EEE 64, CpE 151, CpE 166
Indicator: Individual course grades
Measure: Passing grade
Assessment for Continuous Improvement: *Course Embedded Assessment in ENGR 17, EEE 117, 117L, 108, 108L, 161, 174, 180, 192 A/B, 193 A/B, feedback from students in exit surveys (graduating seniors), alumni surveys, and site visits*
Annual Faculty Action: Assess feedback from constituents and develop recommendations for action

- E&EE Student Learning Outcome 4: *Knowledge of core E&EE topics in circuits, electronics, communications, control systems, microprocessors, electromagnetics, and electric machines*

Assessment Instruments: Course syllabi and student performance in ENGR 17, EEE 108, EEE 108L, 117, 117L, 130, 131, 141, 143, 144, 154, 161, 162, 163, 165, 166, 174, 180, 181, 182, 183, 184, and 185

Indicator: Individual course grades

Measure: Passing grade

Assessment for Continuous Improvement: Annual Course Embedded Assessment in ENGR 17, EEE 117, 117L, 108, 108L, 161, 174, and 180, feedback from students in exit surveys (graduating seniors), alumni surveys, and site visits

Annual Faculty Action: Assess feedback from constituents and develop recommendations for action.
- E&EE Student Learning Outcome 5: *Depth in at least one area of E&EE out of Analog/Digital Electronics, Control Systems, Communications and Power*

Assessment Instruments: Course syllabi and student performance in EEE 109, 110, 111, 131, 135, 143, 141, 144, 154, 162, 163, 165, 167, 181, 182, 183, 186, CpE 151, CpE 166, CpE 186, CpE 138, CpE 187, and EEE 187, 188, 189

Indicator: Individual course grades

Measure: Passing grade

Assessment for Continuous Improvement: Feedback from students in exit surveys (graduating seniors), alumni surveys, and site visits

Annual Faculty Action: Assess feedback from constituents and develop recommendations for action.
- E&EE Student Learning Outcome 6: *Knowledge of probability, and statistics and applications to E&EE*

Assessment Instruments: Course syllabi and student performance in EEE 166, 183, 185, 186

Indicator: Individual course grades

Measure: Passing grade

Assessment for Continuous Improvement: Feedback from students in exit surveys (graduating seniors), alumni surveys, and site visits

Annual Faculty Action: Assess feedback from constituents and develop recommendations for action.
- E&EE Student Learning Outcome 7: The ability to use contemporary engineering techniques, and tools for analysis and design

Assessment Instruments: Course syllabi and student performance in EEE 108, 108L, 109, 117L, 135, 154, 161, 167, 174, 181, 182, 183, 184, 187, 192A/B, 193 A/B, CpE/EEE 64, CpE 166, and CpE 187.

Indicator: Individual course grades

Measure: Passing grade

Assessment for Continuous Improvement: Course Embedded Assessment in EEE 108, 108L, 161, 174, 192A/B, 193 A/B, CpE/EEE 64, feedback from students in exit surveys (graduating seniors), alumni surveys, and site visits

Annual Faculty Action: Assess feedback from constituents and develop recommendations for action

- E&EE Student Learning Outcome 8: *The ability to work with modern instrumentation, software and hardware, design and perform experiments, and analyze and interpret the results*

Assessment Instruments: Course syllabi and student performance in ENGR 1, EEE 108L, 117L, 131, 143, 148, 154, 162, 163, 167, 174, 182, 183, 187, 192 A/B, 193 A/B, CpE/EEE 64, CpE 151, 166, 187.

Indicator: Individual course grades

Measure: Passing grade

Assessment for Continuous Improvement: Course Embedded Assessment in EEE 108L, 174, 192A/B, 193 A/B, CpE/EEE 64, feedback from students in exit surveys (graduating seniors), alumni surveys, and site visits

Annual Faculty Action: Assess feedback from constituents and develop recommendations for action
- E&EE Student Learning Outcome 9: *The ability to integrate knowledge gained from the core curriculum to solve a complex design problem. This includes the identification, specification, design and implementation of products/components and/or systems that meet desired safety, economic and performance criteria*

Assessment Instruments: Course syllabi and student performance in EEE 111, 135, 141, 144, 162, 187, 192A/B, 193 A/B, CpE/EEE 64, CpE 151, CpE 187.

Indicator: Individual course grades

Measure: Passing grade

Assessment for Continuous Improvement: Course Embedded Assessment in EEE 192A/B, 193 A/B, CpE/EEE 64, feedback from students in exit surveys (graduating seniors), alumni surveys, and site visits

Annual Faculty Action: Assess feedback from constituents and develop recommendations for action
- E&EE Student Learning Outcome 10: *The ability to function on multi-disciplinary teams and exercise leadership to accomplish project goals*

Assessment Instruments: Course syllabi and student performance in ENGR 1, EEE 108L, 117L, 174, 187, 192A/B, 193 A/B, CpE 166, CpE 187.

Indicator: Individual course grades

Measure: Passing grade

Assessment for Continuous Improvement: Course Embedded Assessment in EEE 192A/B, 193 A/B, CpE/EEE 64, feedback from students in exit surveys (graduating seniors), alumni surveys, and site visits

Annual Faculty Action: Assess feedback from constituents and develop recommendations for action

- E&EE Student Learning Outcome 11: *The ability to communicate effectively through written technical papers and/or project reports*

Assessment Instruments: Course syllabi and student performance in ENGR 1, EEE 108, 108L, 109, 111, 117L, 143, 165, 167, 174, 182, 184, 185, 187, 192A/B, 193 A/B, CpE 166, CpE 187.

Indicator: Individual course grades

Measure: Passing Grade

Assessment for Continuous Improvement: Course Embedded Assessment in EEE 108, 108L, 117L, 174, 192A/B, 193 A/B, CpE/EEE 64, feedback from students in exit surveys (graduating seniors), alumni surveys, and site visits

Annual Faculty Action: Assess feedback from constituents and develop recommendations for action
- E&EE Student Learning Outcome 12: *The ability to make effective oral presentations and convey technical material to an audience*

Assessment Instruments: Course syllabi and student performance in ENGR 1, EEE 108L, 117L, 163, 165, 167, 180, 192A/B, 193 A/B, CpE/EEE 64.

Indicator: Individual course grades

Measure: Passing grade

Assessment for Continuous Improvement: Course Embedded Assessment in EEE 108L, 117L, 192A/B, 193 A/B, CpE/EEE 64, Feedback from Students in exit surveys (graduating seniors), alumni surveys, and site visits

Annual Faculty Action: Assess feedback from constituents and develop recommendations for action
- E&EE Student Learning Outcome 13: *An understanding of professional and ethical responsibility and a broad education to appreciate the impact of engineering solutions in the societal context*

Assessment Instruments: Course syllabi and student performance in EEE 192A/B, 193 A/B, CpE 166, CpE 187, coursework on Philosophy and Ethics in GE Area C3 (Introduction to the Humanities)

Indicator: Individual course grades

Measure: Passing grade

Assessment for Continuous Improvement: Course Embedded Assessment in EEE 192A/B, 193 A/B, feedback from students in exit surveys (graduating seniors), alumni surveys, and site visits

Annual Faculty Action: Assess feedback from constituents and develop recommendations for action
- E&EE Student Learning Outcome 14: *Recognition of the need for and an ability to engage in “life-long” learning*

Assessment Instruments: Course syllabi and student performance in ENGR 1, EEE 185, 187, 192A/B, 193 A/B, CpE 166, CpE 187.

Indicator: Individual course grades

Measure: Passing grade

Assessment for Continuous Improvement: Course Embedded Assessment in EEE 192A/B, 193 A/B, feedback from students in exit surveys (graduating seniors), alumni surveys, and site visits

Annual Faculty Action: Assess feedback from constituents and develop recommendations for action

- E&EE Student Learning Outcome 15: *An appreciation for and knowledge of diverse cultures and demonstrated proficiency in a foreign language*
Assessment Instruments: Course syllabi and student performance in EEE 192A/B, 193 A/B, GE Foreign Language Proficiency requirement for graduation, coursework in GE Area D2 (Social Studies)
Indicator: Individual course grades
Measure: Passing grade
Assessment for Continuous Improvement: Course Embedded Assessment in EEE 192A/B, 193 A/B, feedback from students in exit surveys (graduating seniors), alumni surveys, and site visits
Annual Faculty Action: Assess feedback from constituents and develop recommendations for action

