Electrical Engineering Technology (B. Tech) Program Assessment Report – Fall 2015

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Student Learning Outcomes Assessed

Outcome #1 – Demonstrate/Critical Thinking

- Students are expected to demonstrate the mastery of the knowledge, techniques, skills, & modern tools in Electrical Technology.

Outcome #2 – Apply/Critical Thinking

- Students are expected to have the ability to apply current knowledge and adapt to emerging applications of mathematics, science, and engineering technology.

Outcome #3 – Identify/Critical Thinking

- Students are expected to develop an ability to identify, design, analyze, and solve technical problems.

Student Learning Outcomes Assessed Continue -

Outcome # - 4 Communication Skills

- Students are expected to demonstrates the ability to effectively present, organize, and articulate thoughts, ideas, and conclusions both orally and/or in writing.

Outcome #5 - Lifelong Learning

- Students are expected to learn to recognize the need for, and an ability to engage in lifelong learning.

Outcome #6 - Professional, Ethical & Social Responsibilities

- Students are expected to learn the importance of professional, ethical, and social responsibilities.

Student Learning Outcomes Assessed Continue -

Outcome #7 - Respect for Diversity & Knowledge of Contemporary Professional, Societal & Global Issues

- Students are expected to demonstrate respect for diversity and knowledge of contemporary professional, societal and global issues.

Outcomes #8 – Commitment

- Students are expected to have a commitment to quality, timeliness, and continuous improvement.

Course Code	Course Title	SLO #
SOET 377	Engineering Ethics	4, 5, 6, 7, 8
ELEC 101	Electric Circuits I	2, 3, 8
ELEC 231		1, 2, 3, 4, 8
ELEC 405		2, 3, 4, 8
ELEC 385		1, 2, 3, 4, 8
ELEC 386		1, 2, 3, 4, 8
ELEC 380		1, 2, 3, 4, 8
ELEC 109		1, 2, 3, 4, 8
ELEC 141		1, 3, 8
ELEC 215		1, 2, 3, 4, 8
ELEC 213		1, 3, 4, 8
ELEC 343		2, 3, 8
SOET 373		3, 4, 8

How was the assessment accomplished?

- Student work assessed:
  - Examinations (Test, Quiz, Midterm, and Final)
  - Research Papers and Oral Presentations

- Measurement strategy:
  - Rubrics used for oral presentations and research papers
  - Percent of questions answered on examinations

- Sample size (**30** students)

Assessment Results

Course Code	% Target	Target Met (Yes/No)
SOET 377	70	YES
ELEC 101	60	YES
ELEC 231	60	YES
ELEC 405	60	NO
ELEC 385	70	YES
ELEC 386	60	YES
ELEC 380	70	YES
ELEC 109	70	YES
ELEC 141	60	YES
ELEC 215	70	YES
ELEC 213	80	YES
ELEC 343	70	NO
ELEC 373	60	YES

Evaluation of Assessment (ELEC 405)

(1) 16% of students missed question #1. The question asked student to calculate the number of solar cells needed to generate the desired power. They were also asked to calculate the number of cells if the sun rays fell obliquely and making an angle of 15 degrees with the normal. Given power, flux, surface area, efficiency, and sun rays angle.

(2) 50% of students either missed question #2, or received partial credit. This question asked students to calculate the number of cells on board the satellite power system, and also to calculate the total mass of the battery system. Given the initial power, time, energy, capacity of cell, voltage per cell , depth of discharge and discharge efficiency.

Improvement Plans Continue

Course Code	Improvement Proposed
ELEC 343	At the beginning of each semester , faculty will evaluate the students' background knowledge of circuits and mathematical skills. Faculty will spend the first week of the semester to review specific materials that seem to be a weakness and then adjust the paste of teaching. If a few students are very weak on the above skills, faculty will recommend them to drop the course and suggest how to improve their weaknesses before taking the course again.

Improvement Plans

Course Code	Improvement Proposed
ELEC405	Students need to solve more problems in topics related to power systems in satellite communications. Faculty plans to assign more practice problems next time the course is taught before students take the test.
ELEC 109	Each week students will be given very specific and detailed directions on one section of the report and be required to submit that section ONLY along with the lab manual data and questions. At midterm students will be required to complete a full report with ALL sections included. For the second half of the semester the same procedure will be adopted with only one part submitted per week and one complete report submitted at the end of the semester.

Resources needed for improvement

Electrical Engineering Technology Program Needs a New Faculty.