

Electrical Engineering
2012–2013 Assessment Report

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Appendix C: Samples of the Senior Exit Survey (Indirect Assessment)#####!"#\$%&##' () "" %* #+% - ./ * - , 0"

Appendix D: Course-to-Outcome Mapping#####", "

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of employment and graduate studies

			Semiconductor Industry
7, 2011	Novellus	Product Engineer	Manufacturing Equipment for Semiconductor Industry
8, 2011	Biotronix	Test Engineer	Biomedical
9, 2011	Schweitzer Eng.	Design Engineer	Automation, Telecommunications & Power
10, 2011	US Air Guard	Comm. Engineer	Military

This allowed the acquisition of ten current probes with 50-Ohm terminators (one

1.6 Program Locations!

The BSEE program is located

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- (j) a knowledge of contemporary issues
- (k) an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice
- (l) a k

Table 3: BSEE Assessment Cycle for Student Outcomes

		2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
(a)	Fundamentals		X		X	X			X

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Indirect Measure: KSU IDEA Evaluations

At OIT, course evaluations are conducted using the course evaluation form developed by the IDEA Center², an organization originating from Kansas State University. From collected student evaluation forms, an IDEA Center diagnostic report is generated and returned to the instructor.

Methodology for this indirect assessment was detailed under Criterion 3 of the 2011–12 BSEE ABET Self-Study.

Indirect Measure: Senior Exit Survey

This measure was developed and deployed during the spring term of 2012. Sample questions and an analysis of the first set of results are given in the appendices at the end of this document.

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fixed, but faculty have the academic freedom to make adjustments to the descriptors of levels of achievement, which they are required to share with their assessment coordinator.

above 80% of the students performing at the accomplished or exemplary level in all performance criteria.

The table below summarizes the results of this targeted assessment. The results indicate that the minimum acceptable performance level of 80% was met on all performance criteria for this program outcome. Students met or exceeded expectations; they demonstrated their abilities to identify a professional code of ethics and analyze the ethical dimensions of an industrial type situation. The main issue noted in this assessment was that there seem to be some misunderstanding between a conflict of interest and an actual bribe. Some students thought giving a contract bid to relative was a bribe and not a conflict of interest. Please note that performance criteria F3 was not evaluated in this assignment (it will be evaluated later by all program faculty on the senior class). This assignment was also used for the Institutional Student Learning Outcome (ISLO) assessment for AY 2012–13.

Table 13: Targeted Assessment for Outcome (f)

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Assessment (g)2: EE 325, Spring 2012, Klamath Falls Campus

This outcome was assessed via lab presentations given for a design experiment. Most speakers were lab partner pairs; one was an individual.

Nine EE

Recommendations based on the End-of-Year Faculty Review of Outcome (g)

Students' performances were weakest in terms of organization and delivery.

Even though it is still too early to see much impact from the changes recommended in 2011-12, these results reinforce the recommendation to fit in more speaking assignments in the BSEE curriculum, particularly in the labs. In this process, faculty also need to encourage quality presentations where the organization of the speech drives the visuals, not the other way around.

3.2.8 Targeted Assessment of Outcome (h)

Assessment (h): EE 423, Winter 2013, Klamath Falls Campus

This outcome was assessed via an independent-learning project presented by each student in the form of a report.

Twelve EE students were assessed Winter 2013

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Recommendations based on the End-

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Recommendations based on the End-

opportunity here is to use these data to start a conversation with the math department, as well as internally in EERE, to see how we can prepare our students to grasp engineering-relevant Statistics and Probability concepts.

Table 27: Targeted Assessment for Outcome (I)

(I) a knowledge of differential and integral calculus and advanced mathematics including differential equations, linear algebra, vector calculus, complex variables, sequences and series, Laplace transforms, Fourier transforms, and Probability and Statistics, with appropriate applications
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Performance Criteria

1-Developing

2-Accomplished

3-Exemplary

3.3 Summary of Direct-Measure Assessment and Recommendations for 2012–13

The results of this year's academic assessment are promising, with about half the outcomes meeting targets. For the remaining outcomes, the faculty discussion was particularly fruitful, with all the Klamath Falls EE faculty engaged in analyzing the results, hypothesizing about the causes, and proposing potential solutions.

Outcome (b) was not met. The recommendations included specific ways to reinforce concepts related to the design of experiments, as well as the analysis and interpretation of data in sophomore-level courses .

Outcomes (d), (f), and (h) were found satisfactory.

Outcome (g) is to be simply reassessed following the assessment cycle.

The faculty reached the consensus that the rubrics for outcomes (i) and (j) need to be redesigned. These outcomes concern lifelong learning and contemporary issues. It was also recommended to explore methodologies and rubrics that have been successful at other universities.

Finally, regarding outcome (l), the faculty felt the need to work with the Mathematics department to evaluate the content of the mathematical Statistics course to make sure all relevant concepts are adequately covered, as well as providing a brief review of pertinent math at the beginning of math intensive courses such as Communication Systems.

Appendix A: The Year's Direct-Assessment Activities

Program Outcomes Assessed During the 2012–13 Academic Year

We have collected assessment data for the following outcomes.

- (b) an ability to design and conduct experiments, as well as to analyze and interpret data
- (d) an ability to function on multi-disciplinary teams
- (f) an understanding of professional and ethical responsibility
- (g) an ability to communicate effectively
- (h) the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context
- (i) a recognition of the need for, and an ability to engage in lifelong (independent) learning
- (j) a knowledge of contemporary issues
- (l) a knowledge of differential and integral calculus and advanced mathematics including differential equations, linear algebra, vector calculus, complex variables, Laplace transforms, Fourier transforms, and probability and statistics with appropriate applications.

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Grduating seniors' responses to questions about the quality, relevance, and availability of the curriculum are summarized in -. /012", . There is some disagreement (less than half) from the students that the curriculum provides everything needed. For instance, one student disagreed with

The most common of the complaints is in terms of the availability of courses. While some courses are offered multiple times per year and have trailing sequences, it is true that some do not. The EE curriculum as listed in the OIT Catalog specifies "required courses and recommended terms during which they should be taken." The curriculum is rigorous and demanding. Those students who somehow do not to put in the necessary effort, or who were not adequately prepared prior to the program or face extracurricular difficulties may need to take courses out of the ideal sequence and timing. This is a natural aspect of college education, and every effort is made within departmental resources to make as many alternate-term courses available as possible. As indicated by the next figure, the students are indeed satisfied with the quality of education they have received (-./012"\$).

Appendix C: Course-to-Outcome Mapping

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Appendix D: Mapping the IDEA Center Objectives to BSEE Outcomes for Indirect Assessment

At Oregon Tech, course evaluations are conducted using the course evaluation form developed by the IDEA Center⁵, an organization originating from Kansas State University in the 1960s. Using the course-evaluation forms, an IDEA Center Diagnostic Report is generated and returned to the instructor. The report provides feedback from the students over a range of topics. Of interest in this indirect assessment is the "Progress on Relevant Objectives" section of the evaluation. These objectives are listed in Table 3-

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: Writing is explicitly identified by the IDEA Center as one of the "creative capacities" applicable to this objective. Whether technical writing qualifies as a creative capacity is debatable, so the correlation between this objective and program

" : In perhaps a trivial way, the gaining of knowledge of what contemporary issues exist (which is prerequisite to gaining knowledge of such contemporary issues overall) is a form of gaining factual knowledge.

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the need to conduct assessment in various courses, not just one course for all outcomes,

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Appendix F: Relationship of Courses in the Curriculum to the Program Outcomes

The course listing and program outcome mapping is shown in Table F-1. This table shows when

