

Master of Science
Renewable Energy Engineering
2014-15 Assessment Report

Electrical Engineering and Renewable Energy Department

The Master of Science in Renewable Energy Engineering (REE) program at Oregon Institute of Technology (Oregon Tech) has been designed to prepare graduates to be energy engineering professionals who have advanced knowledge and skills that enable them to assume a broad range of technical leadership roles.

public relations information and potentially provides a point of contact for the development of specific opportunities with industries for students and faculty.

Among the advantages that make Oregon Tech an ideal institution for offering the MSREE program is the benefit of having a campus in urban Portland in proximity to the Pacific Northwest's energy industry cluster, and with close ties to Oregon Tech's campus in rural Southern Oregon, which has exceptional natural energy resources and on-campus facilities generating renewable energy. The Portland campus allows students to leverage their classroom experience within internships at the Northwest's world-class energy and power companies. Graduate-level courses are offered at the Klamath Falls campus and on line to accommodate students in Klamath Falls pursuing the concurrent BS/MS REE option.

Enrollment in the program has been growing. The inaugural graduating class in 2014 included just two students. Fourteen are expected to graduate in 2015 Spring and Summer terms.

Program educational objectives are broad statements that describe the career and professional accomplishments that the program is preparing graduates to achieve. The Program Educational Objectives (PEOs) of Oregon Tech's Master's of Science in Renewable Energy Engineering program are these:

MSREE graduates will excel as leaders in the various fields of energy engineering.

MSREE graduates will demonstrate an ability to apply advanced engineering methods to the solutions of complex energy-related engineering problems.

MSREE graduates will demonstrate an ability to acquire emerging knowledge and remain current in the dynamic field of renewable energy.

These program educational objectives map to the Oregon Tech's institutional mission statement and core themes by offering statewide educational opportunity in an innovative and rigorous applied degree program in engineering oriented toward graduate success and an appreciation for the role of the engineer in public service.

The MSREE program builds on the engineering knowledge students gained as undergraduates. The MSREE program outcomes are these:

- (a) an ability to identify, formulate, and solve energy-related engineering problems.
- (b) an ability to communicate effectively.
- (c) an ability to independently acquire knowledge of contemporary technical, political, and economic issues related to energy.

Assessment of the program outcomes is conducted over a three year-cycle. Table 1 shows the outcomes assessed during each academic year

In addition to direct assessment measures, indirect assessment of the student outcomes is performed on an annual basis through a senior exit survey.

The results of the direct and indirect assessment, as well as the conclusions of the faculty discussion at the Closing-the-Loop meeting are included in the annual MSREE Assessment Report, which is reviewed by the Department Chair and the Director of Assessment for the university. The suggested changes to the curriculum are presented and discussed with all the department faculty at the annual Convocation meeting in Fall, as well as with the Industry Advisory Board at the following IAB meeting. If approved, these changes are implemented in the curriculum and submitted to the University Graduate Council (if catalog changes are required) for the following academic year.

The sections below describe the 2014-15 targeted assessment activities and detail the performance of students for each of the assessed outcomes. Unless otherwise noted, the tables report the number of students performing at a developing level, accomplished level, and exemplary level for each performance criteria, as well as the percentage of students performing at an accomplished level or above.

In addition to the outcome (c) scheduled to be assessed, a single class baseline assessment for outcome (b) was included in the 2014-15 assessment cycle.

The minimum acceptable performance level for all outcomes is to have 80% or more of the students performing at the accomplished or exemplary level for all performance criteria. The summary data presented in this section represent the percentages of students meeting course-specific criteria.

Knowledge of contemporary issues in context	0	6	4	100%
Identifying, gathering and analyzing information.	0	7	3	100%

Wilsonville, REE 573, Spring 2014 | Dr. Teshome Jiru

This outcome was assessed in REE 573- Energy Efficient Building Design in Spring 2014 using term project report on building energy modeling and analysis; and oral presentation of student selected

title, abstract, literature review, scope of the project, proposed work, timeline, budget, and references. By the end of the term, students made a presentation to the rest of the class on the topic developed on their papers.

Nine students were assessed in Spring 2015 using the performance criteria listed in the table below. The minimum acceptable performance level was to have above 80% of the students performing at the accomplished or exemplary level in all performance criteria.

Table 3 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, that is, over 80% of students were able to communicate orally or on writing, and were able to acquire and apply information from information sources.

Outcome (g): an ability to an ability to .				
Performance Criteria	1-Developing	2-Accomplished	3-Exemplary	%Students >= 2
1 - Oral Communication	0	0	9	100%
2 - Written communication	0	1	8	100%
3 - Acquisition and application of information sources	1	2	6	88.9%

