Master of Science in Manufacturing Engineering Technology
Annual Assessment Report for 2013-14

I. Introduction

The master's degree program in Manufacturing Engineering Technology offers courses in four curriculum content areas (CCA):

a. engineering science & design technology
b. manufacturing software & computer integration
c. advanced manufacturing materials & process technology
d. business, financial and management processes

The program was approved by the Oregon Higher Education Board in 2005. It offers master's degree at three locations of Oregon Tech, namely Klamath Falls, Wilsonville and Seattle. The program requires 45 credit hours of graduate work. In addition to the CCA credit hours, students must complete 12 credits toward thesis, or 3 to 9 credits toward an approved final project and 3 credits in graduate seminars. Students must take at least one course in each of the four CCAs and three courses in at least one CCA.

II. Program Mission, Objectives and Learning Outcomes

The faculty in the master's degree program in Manufacturing Engineering Technology reviewed the current mission, objectives, and learning outcomes during the 2013-14 academic year. Changes were made to the outcomes to better align with the curriculum content areas. The current version is listed below:

Program Mission

The mission of the Manufacturing Engineering Technology Master of Science Degree program is to produce engineering graduates with an advanced technical education that allows them to take on leadership roles in globally competitive manufacturing industries.

Educational Objectives

1. Provide manufacturing and non-manufacturing engineers with advanced technical and managerial skills that allow them to be the leaders in manufacturing industries.
2. Expand graduates' expertise through industry-based applied research, lab-based design and analysis.
3. Strengthen graduates' ability to work productively in a global manufacturing environment.

Learning Outcomes

The graduates of the Master of Science Degree program in Manufacturing Engineering Technology must demonstrate:

1. The ability to solve engineering problems using advanced mathematical, computational, and analytical methods appropriate to the discipline;
2. The ability to improve current manufacturing processes using a variety of techniques, including product life cycle management, quality and inventory control, and planning techniques.
3. The ability to use current computer tools for manufacturing problems.
4. The ability to plan and conduct professional activities (including manufacturing projects) in one or more areas of specialization in the discipline by using advanced knowledge.
5. Knowledge related to global awareness.
6. The ability to communicate effectively in both written and oral forms.

III. Three-Year Cycle for Assessment of Student Learning Outcomes

The three-year cycle of assessment of Student Learning Outcomes (SLOs) has been completed twice as indicated in Table 1. This year faculty decided to do a thorough review of assessment results based on the data collected during the past six years.

Learning Outcomes	**'07-08**	**'08-09**	**'09-10**	**'10-11**	**'11-12**	**'12-13**
1.Ability to solve engineering problems using advanced mathematical, computational, and analytical methods appropriate to the discipline;	X			X		
2.Ability to improve current manufacturing processes using a variety of techniques including product life cycle management, quality and inventory control and planning techniques.			X			X
3.The ability to use current computer tools for manufacturing problems.		X			X	
4.Ability to plan and conduct professional activities (including manufacturing projects) in one or more areas of specialization in the discipline by using advanced knowledge.			X			X
5.Knowledge related to global awareness.		X			X	
6. Ability to communicate effectively in both written and oral forms.	X			X		

Table 1. Master's Program in Manufacturing Engineering Technology Assessment Cycle.

IV. Summary of 2013-14 Assessment Activities

The program director conducted a review of the assessment activities completed over the past six years. Two SLOs were consistently assessed each year, but there appeared to be inconsistent assessment methods, performance criteria, and data collection by location. These inconsistences were attributed to several factors including: low enrollment in grad courses, difficulty in administering an assessment plan due to inconsistent course scheduling, and lack of clear alignment of SLOs to curriculum. All this contributed to sparse data which has not been very useful in affecting programmatic improvement.

The faculty would like to redirect assessment efforts with the focus on continuous improvement. There is antidotal evidence that the graduation program would benefit from more clearly defined expectations and guidelines. The program director held several meetings with faculty discussing current policies and the implementation of those policies at all three locations. Again there appears to be some inconsistencies that need to be resolved.

During fall term 2014, faculty will review the six SLOs and their alignment to the curriculum and recommend changes. In addition, a new plan for assessment will be developed to better address the unpredictability of course offerings at the three locations. The possibility of using the master's project/thesis as the basis for assessment will be explored.