

*Hands-on education for real-world achievement.*

Mechanical Engineering Technology  
Oregon Institute of Technology  
2015-16 Annual Assessment Report

## I. Introduction

The Bachelor of Science program in Mechanical Engineering Technology is offered in three locations: Klamath Falls, Wilsonville, and at the Seattle campus for Boeing employees. In Klamath Falls and Seattle the entire program is offered; the Wilsonville campus offers a degree-completion program (i.e. only Junior and Senior courses are offered, the lower-division courses are expected to be taken at a community college). During the years 2004-2015, fall term full and part-time enrollment ranged from 75 to 147, with a high during 2005 of 147 students. Fall term 2015 enrollment was 104 full and part-time students in MET. During the 2014-15 year, 17 students graduated, and 21 graduates are expected in 2016. Data derived from a



There is an additional outcome identified through the ABET MET specific criteria. This outcome is:  
MET a: Baccalaureate degree programs must demonstrate that graduates can apply specific program principles to the analysis, design, development, implementation, or oversight of more advanced mechanical systems or processes depending on program orientation and the needs of their constituents.

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

The faculty planned a three-  
shown in Table 2 below:

Student Learning Outcome	2015-16	2016-17	2017-18
a. an ability to select and apply the knowledge, techniques,			

#### IV. Summary of 2015-16 Assessment Activities

The Mechanical Engineering Technology faculty conducted formal assessment of four student learning outcomes during 2015-16. These four outcomes have been mapped to the curriculum as shown in Appendix A. The four outcomes are Outcome e " an ability to function effectively as a member or leader on a technical team an understanding of and a commitment to address professional and ethical responsibilities including a respect for diversity a knowledge of the impact of engineering technology solutions in a societal and global context A commitment to quality, timeliness, and continuous improvement



Identify/achieve goal/purpose	Rubric, team project	1-4 proficiency scale	80% score 3 or 4	100%
Assume roles and responsibilities as appropriate	Rubric, team project	1-4 proficiency scale	80% score 3 or 4	100%
Interacts appropriately with team/group members	Rubric, team project	1-4 proficiency scale	80% score 3 or 4	100%
Recognize and help reconcile differences among team/group members	Rubric, team project	1-4 proficiency scale	80% score 3 or 4	100%
Share appropriately in work of team/group.	Rubric, team project	1-4 proficiency scale	80% score 3 or 4	92%

Develop strategies for effective action.

Rubric,  
team  
project

1-4  
proficiency  
scale







Direct Assessment #3 Wilsonville Campus

The faculty assessed this outcome in ENGR 111 Engineering Orientation, fall term 2015, using a rubric-graded ethics based exam/assignment. There were 9 Mechanical Engineering Technology students involved in the assessment. The results are shown in Table 10 below.

Performance Criteria	Assessment Method	Measurement Scale	Minimum Acceptable Performance	Results
Knowledge of professional code of ethics	Rubric-graded assignment	1 to 4 proficiency	80% score 3 or 4	78%
Describes ethics issue(s)	Rubric-graded assignment	1 to 4 proficiency	80% score 3 or 4	78%
Describes parties involved and points of view	Rubric-graded assignment	1 to 4 proficiency	80% score 3 or 4	78%
Describes and analyzes possible/alternative approaches Chooses an approach and	Rubric-graded assignment	1 to 4 proficiency	80% score 3 or 4	89%

Share appropriately in work  
of team/group.

Rubric,  
team  
project

Direct Assessment #1 Klamath Campus

The faculty assessed this outcome in MET 490 Senior Project I fall term 2015, using a rubric-graded assignment. There were three Mechanical Engineering Technology students involved in the assessment. The results are shown in Table 13 below.

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Performance Criteria	Assessment Method	Measurement Scale	Minimum Acceptable Performance	Results
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Direct Assessment #3 Wilsonville Campus

The faculty assessed this outcome in MET 313 Applied Thermodynamics, spring 2016, using a rubric-graded assignment. There were 7 Mechanical Engineering Technology students involved in the assessment. The results are shown in Table 15 below.

Performance Criteria	Assessment Method	Measurement Scale	Minimum Acceptable Performance	Results
Understands the global impact of engineering decisions.	Rubric-graded assignment	1 to 4 proficiency scale	80% score 3 or 4	100%
Understands the macro-economic impact of engineering solutions.	Rubric-graded assignment	1 to 4 proficiency scale	80% score 3 or 4	100%
Understands the environmental and the social impact of engineering decisions.	Rubric-graded assignment	1 to 4 proficiency	80% score 3 or 4	100%

Table 15. Assessment Results for SLO j, Spring 2016, Wilsonville Campus

Strengths: Completed the assignment with little to no preparation or understanding.

Weaknesses: Following instructions.

Actions: Plan more lecture material and assignments geared toward emphasizing the importance of these aspects. Put more grade weighting to these topics as they are related to the assignment for students to put more effort into research.

Direct Assessment #4 Wilsonville Campus

The faculty assessed this outcome in MET 491 Senior Project, winter 2016, using a rubric-graded assignment. There were 6 Mechanical Engineering Technology students involved in the assessment. The results are shown in Table 15 below.

Performance Criteria	Assessment Method	Measurement Scale	Minimum Acceptable Performance	Results
Understands the global impact of engineering decisions.	Rubric-graded assignment	1 to 4 proficiency scale	80% score 3 or 4	100%
Understands the macro-economic impact of engineering solutions.	Rubric-graded assignment	1 to 4 proficiency scale	80% score 3 or 4	100%
Understands the environmental and the social impact of engineering decisions.	Rubric-graded assignment	1 to 4 proficiency scale	80% score 3 or 4	100%

Table 15. Assessment Results for SLO j, Spring 2016, Wilsonville Campus

Strengths: work experience and in



Weaknesses: Some students treat assignments lightly and put low effort into quality / accountability.

Actions: None recommended.

Direct Assessment #2 Klamath Campus

Second direct assessment was assigned to MET 351 but there was some confusion as the same assignment repeated during next cycle.

Direct Assessment #4 Wilsonville Campus

The faculty assessed this outcome in MET 407, fall term 2015, using multiple rubric-graded assignments. There were 14 Mechanical Engineering Technology student involved in the assessment. The results are shown in Table 19 below.

Performance Criteria	Assessment Method	Measurement Scale	Minimum Acceptable Performance	Results
Quality/Professionalism of work (course expectations)	Rubric-graded assignments	1 to 4 proficiency scale	80% score 3 or 4	100%
Quality/Professionalism of work (final product)	Rubric-graded assignments	1 to 4		



MET426 Students demonstrated a willingness to talk with each other, to discuss ideas, and to accept others' suggestions.

MET492 Students performed well on overall teamwork.

### Weaknesses

Klamath:

MET 426 None reported.

MET 492 Although the MET student performed well, other students in MMET had difficulties with the about their ability to assess the performance of individual students in a team based project.

Wilsonville:

MET426 the students demonstrated satisfactory team work spirit..

MET492 None demonstrated

### Actions

Klamath:

Actions: Program faculty will redesign this assessment and create a new teamwork rubric that will better evaluate individual student performance.

Wilsonville:

MET426 None.

MET492 None reported. ( )TJETETQq0.00000912 0 612 792 reW\*BT/F5 11.04 Tf1 0 0 1 199.49 364.63 2.04 0 G( )JTJ

SLO i. an understanding of and a commitment to address professional and ethical responsibilities including a respect for diversity

### Strengths

Klamath:

ENGR111 Successful identification of stakeholders, alternative resolution scenarios, ethical/ve rs, alternative resolution 9





MET314 Plan more lecture material and assignments geared toward emphasizing the importance of these aspects. Put more grade weighting to these topics as they are related to the assignment for students to put more effort into research.

SLO k. A commitment to quality, timeliness, and continuous improvement

Strengths

Klamath:

MFG314 Improvement in work/drawings and adherence to schedules/due dates.

Wilsonville:

MET 407

APPENDIX A: Curriculum Maps for Assessing Student Outcomes  
Mechanical Engineering Technology (MET)  
SLO-Curriculum Map

- e. an ability to function effectively as a member or leader on a technical team

I = Introduced

R = Reinforced

E = Emphasized



Mechanical Engineering Technology (MET)  
SLO-

Mechanical Engineering Technology (MET)  
SLO-











