Mechanical Engineering Technology - Baccalaureate Degree
Annual Assessment Report: 2010-2011

I. Introduction

The Bachelor of Science program in Mechanical Engineering Technology is offered in three locations—Klamath Falls, Portland Metro Center, and at the Seattle campus located at Boeing. In Klamath Falls and Seattle the entire program is offered; the Portland 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).

The Mechanical Engineering Technology (MET) Program at Oregon Institute of Technology (OIT) was first accredited by ABET in 1970. There have been no major program changes since the last ABET visit in fall 2008.

However, the Manufacturing and Mechanical Engineering and Technology (MMET) Department in which the MET Program resides has experienced numerous changes and upgrades over the past six years. The first major change was the merger of the Manufacturing Engineering Technology Department with the Mechanical Engineering Technology Department in 2004. This was done to increase administrative efficiency. The result was a stronger program with more resources available and better faculty collaboration. The second major change was the addition of a Bachelor of Science in Mechanical Engineering Degree Program; with the first students graduating in 2007. The Fall 2010 visit from the ABET review committee for Mechanical Engineering was very positive and moved the program toward full accreditation.

II. Program Mission, Objectives and Student Learning Outcomes

Following a fall 2008 ABET visit, the program faculty reviewed the program mission, objectives and student learning outcomes during the fall 2009 quarter to be sure they were correct and current. The faculty and the program's Industrial Advisory Council (IAC) reaffirmed the statements below in the fall 2010 assessment meeting and bi-annual IAC meeting.

Mission Statement

The Mechanical Engineering Technology Program at Oregon Institute of Technology is an applied engineering technology program. Its mission is to provide graduates with the skills and knowledge for successful careers in mechanical and manufacturing engineering.

Program Educational Objectives

Program educational objectives (PEO's) are broad statements that describe the career and professional accomplishments that the program is preparing graduates to achieve. The Program Educational Objectives of OIT's mechanical engineering technology program are established to produce alumni who:

- are able to analyze and design practical mechanical systems.
- communicate effectively and work well on team-based engineering projects.
- succeed in entry-level mechanical and manufacturing engineering positions.
- pursue continued professional development.

The faculty planned an ongoing 3 year assessment cycle for the program's educational objectives as shown in Table 1 below.

Program Objective Assessment Cycle	2010-11	2011-12	2012-13
Review Program Mission and Educational Objectives by the industrial advisory committee		x	
Assess Program Educational Objectives			x

Table 1. Program Education Objectives Assessment Cycle

Student Learning Outcomes

The Mechanical Engineering Technology Program outcomes have been mapped to the ABET a-k outcomes, located in Appendix A. Within this report outcomes will be referenced by the ABET a-k nomenclature. These are listed below for reference. An engineering technology program must demonstrate that graduates have:

a. An appropriate mastery of the knowledge, techniques, skills and modern tools of their disciplines
b. An ability to apply current knowledge and adapt to emerging applications of mathematics, science, engineering and technology
c. An ability to conduct, analyze and interpret experiments and apply experimental results to improve processes
d. An ability to apply creativity in the design of systems, components or processes appropriate to program objectives
e. An ability to function effectively on teams
f. An ability to identify, analyze and solve technical problems
g. An ability to communicate effectively
h. A recognition of the need for, and an ability to engage in lifelong learning
i. An ability to understand professional, ethical and social responsibilities
j. A respect for diversity and a knowledge of contemporary professional, societal and global issues
k. A commitment to quality, timeliness, and continuous improvement

In addition to the eleven a-k outcomes, there is an additional outcome identified through the ABET Mechanical Engineering specific criteria. This outcome is shown below.

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-year assessment cycle for the program's student learning outcomes as shown in Table 2 below. 2010-11 is the final year in the cycle. As shown below, it will be repeated starting in 2011-12 using the same SLO's used for the 2008-09 period (b,d,f and MET a).

Student Learning Outcome	2010-11	2011-12	2012-13
a. An appropriate mastery of the knowledge, techniques, skills and modern tools of their disciplines.	x		
b. An ability to apply current knowledge and adapt to emerging applications of mathematics, science, engineering and technology		x	
c. An ability to conduct, analyze and interpret experiments and apply experimental results to improve processes	x		
d. An ability to apply creativity in the design of systems, components or processes appropriate to program objectives		x	
e. An ability to function effectively on teams			x
f. An ability to identify, analyze and solve technical problems		x	
g. An ability to communicate effectively	x		
h. A recognition of the need for, and an ability to engage in lifelong learning	x		
i. An ability to understand professional, ethical and social responsibilities			x
j. A respect for diversity and a knowledge of contemporary professional, societal and global issues			x
k. A commitment to quality, timeliness, and continuous improvement			x
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.		x	

Table 2. MET Assessment Cycle

Note: SLO a:, which is being assessed this year has been broken down further using the definitions listed below:

a. an appropriate mastery of the knowledge, techniques, skills and modern tools of mechanical engineering technology.
a1. technical expertise in engineering materials, statics, dynamics, strength of materials, fluid mechanics, fluid power, thermodynamics, heat transfer, and electronic control.
a2. technical expertise in manufacturing processes, mechanical design, and computer-aided engineering graphics, engineering materials, automatic controls, industrial operations with added technical depth in manufacturing processes, computer-aided engineering graphics, mechanical design and engineering materials.

IV. Summary of 2010-11 Assessment Activities

The Mechanical Engineering Technology faculty conducted formal assessment of four student learning outcomes during the 2010-11 academic year. These four outcomes have been mapped to the curriculum as shown in Appendix A. The four outcomes are: Outcome a. "An appropriate mastery of the knowledge, techniques, skills and modern tools of their disciplines", c. "An ability to conduct, analyze and interpret experiments and apply experimental results to improve processes", g. "An ability to communicate effectively", h. "A recognition of the need for, and an ability to engage in lifelong learning". Target assessment points are defined in Table 3.

Student Learning Outcome	Assessment Point	Measurement Scale	Minimum Acceptable Performance
TAC SLO a: An appropriate mastery of the knowledge, techniques, skills and modern tools of their disciplines	MET 351 Finite Element Analysis MET 375 Solid Modeling Senior Survey	1 – 4 proficiency scale	80% at 3 or 4
TAC SLO c: Conduct, analyze & interpret experiments	MFG 331 Industrial Controls MET 437 Heat Transfer II Senior Survey	1 – 4 proficiency scale	80% at 3 or 4
TAC SLO g: An ability to communicate effectively	MET 360 Materials II Senior Survey	1 – 4 proficiency scale	80% at 3 or 4
TAC SLO h: A recognition of the need for, and an ability to engage in lifelong learning	MET 454 MET Elective Senior Survey	1 – 4 proficiency scale	80% at 3 or 4

Table 3. 2010-11 Target Assessment Points

The outcomes for the 2010-2011 evaluation period (a,c,g,h) were mapped to courses that are taught in the three OIT MMET locations during the Fall, Winter, and Spring in Klamath Falls, Portland and Seattle as indicated in Table 4.

SLO	Klamath Falls (Class/Term/Prof)			Portland (Class/Term/Prof)			Seattle (Class/Term/Prof)
a:	MET 351	W11	Wade	MET 351	W11	Wade	Due to unforeseen changes in leadership at the Seattle campus, assessment data was incomplete and therefore the results were unusable for sound assessment although this data is available. There is a current search in progress to rebuild the structure of the program at the Seattle location. Assessment plans are in place for assessment activities to resume in the 2011-12 academic year.
	MET 375	F11	Shea				
	Sr Survey	S11	Peters	Sr Survey	S11	Peters	
c:	MFG 331	S11	Edgeman	MFG 331	W11	Wade	
	MFG 447	S11	Sun	MFG 447	W11	?	
	Sr Survey	S11	Culler	Sr Survey	S11	Peters	
g:	MET 454	F10	Morv	MET 415	F10	Wade	
	Sr Survey	S11	Culler	Sr Survey	S11	Peters	
h:	MET 454	F10	Morv	MET 415	F10	Wade	
	Sr Survey	S11	Culler	Sr Survey	S11	Peters	

Table 4. MET 2010-11 Assessment Schedule

SLO a. An appropriate mastery of the knowledge, techniques, skills and modern tools of their disciplines.

The performance criteria for this learning outcome are:

1. Use computers and a wide range of programs effectively.
2. Appropriate mastery of modern engineering tools.
3. Use the techniques and skills necessary for engineering practice.

Direct Assessment #1 Klamath Campus
The faculty assessed this outcome in MET 375 Solid Modeling fall term 2010, using a CAD and solid modeling assignment scored with a rubric. This assessment was administered to students from all majors in the MMET Department. There were two mechanical engineering technology (MET), ten mechanical engineering and two manufacturing students involved in the assessment. Because of the low numbers of MET students in this assessment activity the combined MMET program results are shown in Table 5 below.

Performance Criteria	Assessment Method	Measurement Scale	Minimum Acceptable Performance	MMET Results
Use computers and a wide range of programs effectively	Rubric, assignment	1-4 proficiency scale	80% score 3 or 4	100%
Appropriate mastery of modern engineering tools.	Rubric, assignment	1-4 proficiency scale	80% score 3 or 4	100%
Use the techniques and skills necessary for engineering practice.	Rubric, assignment	1-4 proficiency scale	80% score 3 or 4	100%

Table 5. Assessment Results for SLO a, fall 2010, Klamath Campus

Strengths: Not only did the two mechanical engineering technology students perform well on this assessment but all 14 students who completed the assignment met proficiency in each of the three criteria assessed. The faculty felt that the assignment was a good representation for this outcome and that student performance was above average.

Weaknesses: There were four students in the course who did not complete the assignment.

Actions: For improved data analysis focus on student participation in the assessment activity.

Direct Assessment #2 Klamath Campus
The faculty assessed this outcome in MET 351 Finite Element Analysis in spring 2011, using a project assignment scored with a rubric. This assessment was administered to students from the MMET Department. There were seven mechanical engineering technology students and one mechanical engineering student involved in the assessment. The MET results are shown in Table 6 below.

Performance Criteria	Assessment Method	Measurement Scale	Minimum Acceptable Performance	MET Results
Use computers and a wide range of programs effectively	Rubric, assignment	1-4 proficiency scale	80% score 3 or 4	85%
Appropriate mastery of modern engineering tools.	Rubric, assignment	1-4 proficiency scale	80% score 3 or 4	85%
Use the techniques and skills necessary for engineering practice.	Rubric, assignment	1-4 proficiency scale	80% score 3 or 4	75%

Table 6. Assessment Results for SLO a, spring 2011, Klamath Campus

Strengths: In all but 2 cases the computer solutions were supported by the hand calculations to demonstrate a good understanding of concepts and not just to accept computer output as final solution to the problems.

Weaknesses: Almost all students did well on the assignment. Only 2 showed a weaker understanding of hand calculations correlating to computer output. After talking with the instructor, we feel that there are better assignments and possibly a different course where this SLO can be assessed. We should look at fluids or thermodynamics as possibilities.

Actions: Select a different assignment / class for this assessment that represents a broader understanding and application of engineering tools, skills and techniques that demonstrate student capability in these areas.

Direct Assessment #3 Portland Campus
The faculty assessed this outcome in MET 351Finite Element Analysis winter term 2011, using an assignment scored with a rubric. This assessment was administered to students from all majors in the MMET Department. There were eight mechanical engineering technology (MET) students and one manufacturing student involved in the assessment. The combined results are shown in Table 7.

Performance Criteria	Assessment Method	Measurement Scale	Minimum Acceptable Performance	MMET Results
Use computers and a wide range of programs effectively	Rubric, assignment	1-4 proficiency scale	80% score 3 or 4	100%
Appropriate mastery of modern engineering tools.	Rubric, assignment	1-4 proficiency scale	80% score 3 or 4	87.5%
Use the techniques and skills necessary for engineering practice.	Rubric, assignment	1-4 proficiency scale	80% score 3 or 4	37.5%

Table 7. Assessment Results for SLO a, winter 2011, Portland Campus

Strengths: The students have strong skills in using CAD software which is a major emphasis in this course. This proficiency is also reflected in the mastery of modern engineering tools criteria.

Weaknesses: Students did not meet faculty expectations for the use of techniques and skills necessary for engineering practice. Due to the nature of the course design as a hands-on skill based course the students seem to be lacking in some of the fundamentals such as "how to define the problem."

Action: Redesign the course to teach fundamental skills such as "how to define the problem" prior to teaching students how to use the software.

Direct Assessment #3 Seattle Campus
Due to unforeseen changes in leadership at the Seattle campus assessment data was incomplete and therefore the results were unusable for sound assessment although this data is available. There is a current search in progress to rebuild the structure of the program at the Seattle location. Assessment plans are in place for assessment activities to resume in the 2011-12 academic year.

Indirect Assessment #1 MMET Undergraduate Exit Survey
During the spring term, each graduating senior completes an exit survey. The survey includes questions on how well the program prepared the student on each SLO. This survey data is reviewed by faculty to determine any strengths or weaknesses as perceived by students on this SLO. Nineteen seniors in mechanical engineering technology responded to the survey, representing all sites. For SLO a, 42.1% indicated that they were highly prepared and 57.9% indicated that they were prepared on this learning outcome.

SLO c. An ability to conduct, analyze and interpret experiments and apply experimental results to improve processes

The performance criteria for this learning outcome are
1. Ability to conduct experiments.
2. Ability to analyze and interpret data.
3. Ability to use experimental results to improve processes.

Direct Assessment #1 Klamath Campus
The faculty assessed this outcome in MFG 447 Lean Manufacturing in spring 2011, using a rubric-graded homework assignment. The results of the 7 mechanical engineering technology seniors involved in the assessment are shown in Table 8 below.

Performance Criteria	Assessment Method	Measurement Scale	Minimum Acceptable Performance	Results
Ability to conduct experiments	Rubric-scored experiment	1-4 proficiency scale	80% score 3 or 4	100%
Ability to analyze and interpret data	Rubric-scored experiment	1-4 proficiency scale	80% score 3 or 4	100%
Ability to use experimental results to improve processes	Rubric-scored experiment	1-4 proficiency scale	80% score 3 or 4	100%

Table 8. Assessment Results for SLO c, spring 2011, Klamath Campus

Strengths: All students met the performance criteria. This assessment activity fits well in this course and is a good indicator of student learning at the senior level.

Weaknesses: none

Actions: None at this time. This assessment activity should be used in the next cycle.

Direct Assessment #2 Portland Campus
The faculty assessed this outcome in MFG 331 Industrial Controls in winter 2011, using a rubric-graded lab assignment. This assessment was administered to students in the MMET Department. There were nine mechanical engineering technology (MET) and four manufacturing students involved in the assessment. The combined results for all 13students are shown in Table 9 below.

Performance Criteria	Assessment Method	Measurement Scale	Minimum Acceptable Performance	MMET Results
Ability to conduct experiments	Rubric-scored experiment	1-4 proficiency scale	80% score 3 or 4	88.9%
Ability to analyze and interpret data	Rubric-scored experiment	1-4 proficiency scale	80% score 3 or 4	77.8%
Ability to use experimental results to improve processes	Rubric-scored experiment	1-4 proficiency scale	80% score 3 or 4	66.7%

Table 9. Assessment Results for SLO c, winter 2011, Portland Campus

Strengths: The students' ability to conduct experiments, and analyze and interpret data were collectively very strong. This course emphasizes experimentation and collecting and analyzing data.

Weaknesses: The students did not meet the minimum acceptable performance for the ability to use results to improve processes. This is not an emphasis in this course.

Actions: The criteria for improving processes needs to be administered in a course where this is emphasized.

Direct Assessment #3 Seattle Campus
Due to unforeseen changes in leadership at the Seattle campus assessment data was incomplete and therefore the results were unusable for sound assessment although this data is available. There is a current search in progress to rebuild the structure of the program at the Seattle location. Assessment plans are in place for assessment activities to resume in the 2011-12 academic year.

Indirect Assessment #1 MMET Undergraduate Exit Survey
During the spring term, each graduating senior completes an exit survey. The survey includes questions on how well the program prepared the student on each SLO. This survey data is reviewed by faculty to determine any strengths or weaknesses as perceived by students on this SLO. Nineteen

seniors in mechanical engineering technology responded to the survey, representing all sites. For SLO c, 31.6% indicated that they were highly prepared and 68.4% indicated that they were prepared on this learning outcome.

SLO g. An ability to communicate effectively.

This student learning outcome was assessed in two parts: written communication and oral communication. Each comprised separate activities with specific performance criteria and separate rubrics.

Written Communication

The performance criteria for written communication are:

1. Clearly conveys purpose and main ideas (purpose and ideas).
2. Organizes written material effectively (organization)
3. Supports main ideas adequately with detail and/or research (support).
4. Uses appropriate voice, word choice and sentence structure (style).
5. Uses standard English (conventions).
6. Documents support correctly and responsibly (documentation).

Direct Assessment #1 Klamath Campus
The faculty assessed this outcome in MET 323 Heat Transfer I in fall 2010, and in MFG 454 Thermal Systems for Manufacturing using a rubric-graded written assignment. There were six mechanical engineering technology (MET) and four manufacturing students involved in the assessment. Some of the MET students are also completing the manufacturing major. The results are shown in Table 10 below.

Performance Criteria	Assessment Method	Measurement Scale	Minimum Acceptable Performance	MET Results	MFG Results
Purpose and Ideas	Rubric-graded assignment	1 to 4 proficiency scale	80% score 3 or 4	83%	50%
Organization	Rubric-graded assignment	1 to 4 proficiency scale	80% score 3 or 4	50%	75%
Support	Rubric-graded assignment	1 to 4 proficiency scale	80% score 3 or 4	83%	50%
Style	Rubric-graded assignment	1 to 4 proficiency scale	80% score 3 or 4	67%	75%
Conventions	Rubric-graded assignment	1 to 4 proficiency scale	80% score 3 or 4	67%	75%
Documentation	Rubric-graded assignment	1 to 4 proficiency scale	80% score 3 or 4	0%	50%

Table 10. Assessment Results for SLO g, fall 2010, Klamath Campus

Students either seemed to do very well or very poorly on this writing assignment, there were not many in between. For the most part students did not include documentation. Writing is not an integral part of the courses targeted for this assessment.

Actions: Select a better course for this assessment in the next cycle, possibly MET 428 Engineering Certification. Emphasize the need for documentation and support for this assignment. To elevate the standard for written work across the manufacturing curriculum use the OIT essay rubric for all writing assignments in the program.

Direct Assessment #2 Portland Campus
The faculty assessed this outcome in MET 415 Design Project in fall 2010, using a rubric-graded written assignment. There were three manufacturing and eight mechanical engineering technology (MET) students involved in the assessment. The results are shown in Table 11 below.

Performance Criteria	Assessment Method	Measurement Scale	Minimum Acceptable Performance	MET Results	MFG Results
Purpose and Ideas	Rubric-graded assignment	1 to 4 proficiency scale	80% score 3 or 4	100%	100%
Organization	Rubric-graded assignment	1 to 4 proficiency scale	80% score 3 or 4	100%	100%
Support	Rubric-graded assignment	1 to 4 proficiency scale	80% score 3 or 4	100%	100%
Style	Rubric-graded assignment	1 to 4 proficiency scale	80% score 3 or 4	75%	100%
Conventions	Rubric-graded assignment	1 to 4 proficiency scale	80% score 3 or 4	87.5%	100%
Documentation	Rubric-graded assignment	1 to 4 proficiency scale	80% score 3 or 4	100%	66.7%

Table 11. Assessment Results for SLO g, fall 2010, Portland Campus

Strengths: Both mechanical engineering technology and manufacturing students performed well on all criteria assessed, the combined results show above 80% of students were proficient in all areas. Faculty report that these results seem consistent with students' writing abilities on other projects and assignments. The Portland students are working professionals for the most part and are employed as technicians who are required to do a significant amount of report writing.

Weaknesses: Writing style is noted to be just below 80%.

Actions: Note style during next evaluation cycle to get second data point before making changes.

Direct Assessment #3 Seattle Campus
Due to unforeseen changes in leadership at the Seattle campus assessment data was incomplete and therefore the results were unusable for sound assessment although this data is available. There is a

current search in progress to rebuild the structure of the program at the Seattle location. Assessment plans are in place for assessment activities to resume in the 2011-12 academic year.

Oral Communication

The performance criteria for oral communication are:

1. Supports thesis adequately with detail and/or research, and documents support correctly and responsibly (content).
2. Organizes oral material effectively (organization).
3. Presents appropriately for audience and purpose (style).
4. Speaks clearly and correctly, using standard English (delivery).
5. Uses visual communication effectively (visuals).

Direct Assessment #1 Klamath Campus

The faculty assessed this outcome in MET 360 Materials II in fall 2010, using a rubric-graded oral presentation. There were four mechanical engineering technology (MET) students, three manufacturing and three mechanical engineering students involved in the assessment. Some of the MET students are also completing the manufacturing major. The combined results are shown in Table 12 below.

Performance Criteria	Assessment Method	Measurement Scale	Minimum Acceptable Performance	MMET Results
Content	Rubric-graded presentation	1 to 4 proficiency scale	80% score 3 or 4	90%
Organization	Rubric-graded presentation	1 to 4 proficiency scale	80% score 3 or 4	90%
Style	Rubric-graded presentation	1 to 4 proficiency scale	80% score 3 or 4	80%
Delivery	Rubric-graded presentation	1 to 4 proficiency scale	80% score 3 or 4	90%
Visuals	Rubric-graded presentation	1 to 4 proficiency scale	80% score 3 or 4	90%

Table 12. Assessment Results for SLO g, fall 2010, Klamath Campus

Strengths: All students showed strength in content, organization and the use of visuals.

Weaknesses: None noted

Actions: None

Direct Assessment #2 Portland Campus
The faculty assessed this outcome in MET 415 Design Project fall term 2010, using a rubric-graded oral presentation. There were eight mechanical engineering technology (MET) and three manufacturing students and involved in the assessment. The results are shown in Table 13 below.

Performance Criteria	Assessment Method	Measurement Scale	Minimum Acceptable Performance	MET Results	MFG Results
Content	Rubric-graded presentation	1 to 4 proficiency scale	80% score 3 or 4	25%	66.7%
Organization	Rubric-graded presentation	1 to 4 proficiency scale	80% score 3 or 4	37.5%	66.7%
Style	Rubric-graded presentation	1 to 4 proficiency scale	80% score 3 or 4	50%	66.7%
Delivery	Rubric-graded presentation	1 to 4 proficiency scale	80% score 3 or 4	25%	66.7%
Visuals	Rubric-graded presentation	1 to 4 proficiency scale	80% score 3 or 4	50%	66.7%

Table 13. Assessment Results for SLO g, fall 2010, Portland Campus

Student performance was disappointing in all categories. In general Portland MMET students seem to have poor oral communication skills. They do not know how to effectively present information, prepare graphics and need additional practice to develop presentation skills.

Actions: Review the curriculum map indicating where students have opportunities to give oral presentations on each campus. Consider including data analysis and presentation of information as a course outcome for the freshman orientation course.

Direct Assessment #3 Seattle Campus
Due to unforeseen changes in leadership at the Seattle campus assessment data was incomplete and therefore the results were unusable for sound assessment although this data is available. There is a current search in progress to rebuild the structure of the program at the Seattle location. Assessment plans are in place for assessment activities to resume in the 2011-12 academic year.

Indirect Assessment #1 MMET Undergraduate Exit Survey
During the spring term, each graduating senior completes an exit survey. The survey includes questions on how well the program prepared the student on each SLO. This survey data is reviewed by faculty to determine any strengths or weaknesses as perceived by students on this SLO. Nineteen seniors in mechanical engineering technology (MET) responded to the survey, representing all sites. For SLO g, 36.8% indicated that they were highly prepared and 52.6% indicated that they were prepared on this learning outcome.

SLO h. A recognition of the need for, and an ability to engage in lifelong learning

The performance criteria for this learning outcome are:

1. Identify and discuss the concept of lifelong learning.
2. Demonstrate awareness of appropriate professional societies and organizations and discuss their relationship to career development.
3. Identify and discuss desired credentials and avenues for continuing education.
4. Describe short- and long-term career plans.

Direct Assessment #1 Klamath Campus
The faculty assessed this outcome in MET 323 Heat Transfer I and MFG 454 Thermal Systems for Manufacturing and using a rubric-graded written assignment. There were six mechanical engineering technology (MET) and four manufacturing students involved in the assessment. The results are shown in Table 14 below.

Performance Criteria	Assessment Method	Measurement Scale	Minimum Acceptable Performance	MET Results	MFG Results
Lifelong learning	Rubric-graded assignment	1 to 4 proficiency scale	80% score 3 or 4	100%	100%
Professional societies and organizations	Rubric-graded assignment	1 to 4 proficiency scale	80% score 3 or 4	100%	75%
Credentials	Rubric-graded assignment	1 to 4 proficiency scale	80% score 3 or 4	100%	75%
Continuing Education	Rubric-graded assignment	1 to 4 proficiency scale	80% score 3 or 4	100%	100%
Short and long-term career plans	Rubric-graded assignment	1 to 4 proficiency scale	80% score 3 or 4	100%	100%

Table 14. Assessment Results for SLO h on lifelong learning, fall 2010, Klamath Campus

Strengths: Most students have clear career goals and understand the need to stay current in the field.

Weaknesses: None noted.

Actions: None

Direct Assessment #2 Portland Campus
The faculty assessed this outcome in MET 415 Design Project fall term 2010, using a rubric-graded written assignment. There were eight mechanical engineering technology (MET) and three manufacturing students involved in the assessment. The results are shown in Table 15.

Performance Criteria	Assessment Method	Measurement Scale	Minimum Acceptable Performance	MET Results	MFG Results
Lifelong learning	Rubric-graded assignment	1 to 4 proficiency scale	80% score 3 or 4	87.5%	100%
Professional societies and organizations	Rubric-graded assignment	1 to 4 proficiency scale	80% score 3 or 4	87.5%	33.3%
Credentials	Rubric-graded assignment	1 to 4 proficiency scale	80% score 3 or 4	87.5%	33.3%
Continuing Education	Rubric-graded assignment	1 to 4 proficiency scale	80% score 3 or 4	75%	66.7%
Short and long-term career plans	Rubric-graded assignment	1 to 4 proficiency scale	80% score 3 or 4	50%	66.7%

Table 15. Assessment Results for SLO h on lifelong learning, fall 2010, Portland Campus

Strengths: Since most of the Portland students are working professionals, they are in the MMET programs because they are lifelong learners. In addition, the MET students typically recognize the importance of receiving certification and are very focused on getting their FE licensure. Until recent changes in the MET program, the students did not pursue FE licensure, therefore the credentialing and professional societies was of less importance to this group of students. Recognizing this, the MET program now requires ENGR 485 and students are required to sit for the FE exam.

Weaknesses: Only half of the MMET students in general were able to define reasonable short and long-term career plans. The faculty felt that this prompt was especially difficult for some students to respond to given the broad range of possible career paths. Those students who are currently employed in the field were able to describe their career plans proficiently.

Actions: Consider reworking the prompts for this assignment next time lifelong learning is assessed in the cycle. In addition, look for improvements in students' ability to identify professional societies and appropriate credentials, based on the changes in the MET program, next time lifelong learning is assessed.

Direct Assessment #3 Seattle Campus
Due to unforeseen changes in leadership at the Seattle campus assessment data was incomplete and therefore the results were unusable for sound assessment although this data is available. There is a current search in progress to rebuild the structure of the program at the Seattle location. Assessment plans are in place for assessment activities to resume in the 2011-12 academic year.

Indirect Assessment #1 MMET Undergraduate Exit Survey
During the spring term, each graduating senior completes an exit survey. The survey includes questions on how well the program prepared the student on each SLO. This survey data is reviewed by faculty to determine any strengths or weaknesses as perceived by students on this SLO. Nineteen

seniors in mechanical engineering technology responded to the survey, representing all sites. For SLO h, 42.1% indicated that they were highly prepared and 57.9% indicated that they were prepared on this learning outcome.

V. Summary of Student Learning for 2010-11

MMET faculty from all sites met on May 31, 2011 to review assessment results, to determine if improvements were needed, and to decide upon future action plans. A summary of the findings is outlined below and the meeting minutes are available on the MMET Department common electronic storage site.

SLO a. An appropriate mastery of the knowledge, techniques, skills and modern tools of their disciplines

Strengths: Students are competent in the use of software and computer applications related to design and testing of design.

Weaknesses: Faculty observed that students have difficulty converting real world problems to the mathematical models and computer applications. In addition, students show limited ability to define the problem. These observations were not measured by the assessment activities, but may need further discussion in relation to all outcomes.

Actions: The faculty would like to review the performance criteria, assessment method and course the next time this outcome is assessed in the cycle as the data seems to indicate a problem with the assessment method. The assignment should be redesigned to ensure it covers the performance criteria on the rubric for this outcome or create two assignments if necessary. In addition, to focus student effort, distribute and review the rubric when the assignment is given to students.

SLO c. An ability to conduct, analyze and interpret experiments and apply experimental results to improve processes

Strengths: Students were able to conduct, analyze and interpret experiments with proficiency. In addition, students in MFG 447 were able to use data to improve processes successfully.

Weaknesses: Portland students have limited opportunity to use results to improve processes.

Actions: Review the Portland curriculum to select better assessment points; consider.

SLO g. An ability to communicate effectively in writing

Strengths: Portland students met expectations in all performance criteria.

Weaknesses: Klamath students showed weaknesses in all performance criteria. Faculty felt that the weaknesses could be attributed to lack of effort by students due to the nature of the assignment and the course where the assessment was administered.

Actions: Faculty would like to modify the assignment and review the curriculum map for a better assessment point next time this outcome is assessed in the cycle. In addition, faculty will put more emphasis on the documentation requirement for this assignment which showed the greatest weakness. Next time this assessment is done, use two faculty raters for each paper.

SLO g. An ability to communicate effectively orally

Strengths: Klamath students showed strength in content, organization and the use of visuals.

Weaknesses: Portland students showed weaknesses in all performance criteria.

Actions: Recommend faculty review the OIT public speaking rubric and prior oral presentation knowledge with students while preparing for technical presentations. Review the curriculum map looking for courses where students can gain more experience doing oral presentations. Next time this assessment is done, use two faculty raters for each oral presentation.

SLO h. A recognition of the need for, and an ability to engage in lifelong learning

Strengths: Most students have clear career goals and understand the need to stay current in the field.

Weaknesses: Faculty reported a lack of student effort on this assignment because the assignment did not fit well in the course.

Actions: Faculty will put more emphasis on the assignment next time this outcome is assessed in the cycle. Faculty will also put more emphasis on the required documentation for this assignment. This assignment should be administered in a course where it fits the content better such as ENGR 485 at the beginning of spring term, MET 415 in the junior year, or senior projects winter term.

VI. Changes Resulting from Assessment (2010-11 progress on 2009-10 planned improvements from Spring 2010 faculty meeting)

SLO e. An ability to function effectively on teams

In the 2009-10 assessment of this outcome faculty noted a weakness with student teams not sharing work appropriately and failing to develop effective strategies if they have an ineffective student leader. The faculty decided to approach these issues by increasing instruction in the area of project planning and management, in order to provide students with an increased skill set for working effectively in teams. This area of instruction has recently been added to MET 111-112, Orientation, and will also be emphasized in upper-division courses.

Though the added emphasis in MET 111-112 was implemented three years ago, faculty report no improvement at the senior project level. The faculty recommends implementing a project planning and management elective in the curriculum. This recommendation also is in alignment with recommendations from the industry advisory council.

SLO h. A recognition of the need for, and an ability to engage in lifelong learning
This outcome was first assessed in the spring of 2010 showing weakness in the areas of student understanding of continuing education and professional societies and organization requirements. At that time it was recommended to address these topics in MET 111-112, Orientation, and add this material as a review in ENGR 485 Fundamentals of Engineering Exam. This course is a new requirement for all manufacturing majors, effective in the 2011-12 catalog. In addition, the MET 111-112 faculty use the lifelong learning rubric for assignments at the lower-division level.

Lifelong learning was reassessed in the fall term of 2010 showing some improvement, results are shown in section IV of this report. Faculty further recommend putting more emphasis on the assignment next time this outcome is assessed in the cycle. Faculty will also put more emphasis on the required documentation for this assignment. This assignment should be administered in a course where it fits the content better such as ENGR 485 at the beginning of spring term, MET 415 in the junior year, or senior projects winter term.

SLO i. An ability to understand professional, ethical and social responsibilities.

This outcome was assessed in 2009-10 showing a weakness in the areas of student ability to describe parties involved and points of view, analyzing possible alternative approaches, and supporting an approach with benefits and risks. The faculty recommended increased student exposure to analyzing ethics scenarios in MET 111-112, Orientation, through course assignments and the use of the OIT ethics rubric in these courses. These actions have been implemented; data will be collected in MET 111 fall 2011.

Degree Requirements

In the curriculum listings appear several courses titled "MET elective." MET electives allow the student to select and pursue specific career objectives within the mechanical engineering technology field. MET electives are upper-division MET courses, not specifically required for graduation.

Students from other institutions should refer to the sections of this catalog titled "Transfer Students" and "Admission to Baccalaureate Programs." The Bachelor of Science in Mechanical Engineering Technology requires 190 credit hours as prescribed in the following curriculum outline.

Bachelor of Science in Mechanical Engineering Technology

Curriculum

Required courses and recommended terms during which they should be taken:

Freshman Year	Fall	
CHE 101/201	Chemistry	3
CHE 104/204	Chemistry Laboratory	1
MATH 111	College Algebra	4
MET 111	Orientation I	2
WRI 121	English Composition	3
	Psychology elective*	3
Total		16

Freshman Year	Winter	
MATH 112	Trigonometry	4
MET 112	Orientation II	2
MFG 103	Introductory Welding Processes	3
WRI 122	English Composition	3
	Social Science elective	3
Total		15

Freshman Year	Spring	
MATH 251	Differential Calculus	4
MFG 120	Manufacturing Processes I	4
SPE 111	Fundamentals of Speech	3
	Economics elective	3
	Humanities elective	3
Total		17

Sophomore Year	Fall	
MATH 252	Integral Calculus	4
MET 160	Materials I	3
MET 241	CAD for Mechanical Design I	2
PHY 201/221	General Physics	4
WRI 227	Technical Report Writing	3
Total		16

Sophomore Year	Winter	
ENGR 211	Statics**	4
MATH 254N	Vector Calculus I	4
MET 242	CAD for Mechanical Design II	2
MFG 112	Introduction to Manufacturing Processes	3
PHY 202/222	General Physics	4
Total		17

Sophomore Year	Spring	
ENGR 213	Strength of Materials**	4
MATH 361	Statistical Methods I	4
MET 218	Fluid Mechanics	4
PHY 203/223	General Physics	4
Total		16

Junior Year	Fall	
ENGR 236	Fundamentals of Electric Circuits	3
ENGR 266	Computer Programming for Engineers	3
MET 315	Machine Design I	3
MET 360	Materials II	3
MET 363	Instrumentation	3
Total		15

Junior Year	Winter	
ENGR 212	Dynamics	3
ENGR 355	Thermodynamics***	3
MET 316	Machine Design II	3
MET 375	Solid Modeling	3
	Social Science elective	3
Total		15

Junior Year	Spring	
MET 313	Applied Thermodynamics	3
MET 415	Design Project	3
MET 351	Finite Element Analysis	3
MFG 314	Geometric Dimensioning and Tolerancing	3
	Humanities elective	3
Total		15

Senior Year	Fall	
MGT 345	Engineering Economy	3
MET 323	Heat Transfer I	3
MET 326	Electric Power Systems	3
MET 490	Senior Projects I	3
WRI 321	Advanced Technical Communication	1
	MET elective	3
Total		16

Senior Year	Winter	
MET 426	Fluid Power Systems	3
MET 437	Heat Transfer II	2
MET 491	Senior Projects II	3
SPE 321	Small Group and Team Communication	3
WRI 322	Advanced Technical Communication	1
	MET elective	3
Total		15

Senior Year	Spring	
MET 492	Senior Projects III	3
MFG 331	Industrial Controls	3
WRI 323	Advanced Technical Communication	1
	Engineering Exam****	1
	Humanities elective	3
	MET electives	6
Total		17

* PSY 201 Recommended

** ENGT 230, ENGT 231, ENGT 232 sequence may be substituted for the ENG 211, ENGR 213 sequence

*** MET 232 Thermodynamics may be substituted for ENGR 355 Thermodynamics

**** Engineering Exam to be selected from:
- ENGR 485 Fundamentals of Engineering Exam
- MFG 428 Manufacturing Engineering Certification

Appendix A1

SLO-Curriculum Map

Outcome a: An appropriate mastery of the knowledge, techniques, skills and modern tools of their disciplines.

I = Introduced R = Reinforced E = Emphasize

	Freshman			Sophomore			Junior			Senior		
Fall	Math 111	Coll Algebra		MATH 252	Integral Calc		ENGR 236	Elect Circuits		MET 323	Heat Transfer	
	MET 111	Orient I		MET 160	Materials I		ENGR 266	Comp Program		MET 326	EPS	
	WRI 121	Eng Comp		PHY 201/221	Physics		MET 315	Machine Design I		IMGT 345	Engineer Economy	
	CHE 101	Chem		WRI 227	Tech Report		MET 360	Materials II		MET 490	Senior Proj I	
	CHE 104	Chem Lab		MET 241	CAD I		MET 363	Instrum		WRI 321	Adv Tech Wr	
		Psy Elective									MET Elective	
Win	Math 112	Trig		ENGR 211	Statics		ENGR 212	Dynamics		MET 426	FPS	
	MET 112	Orient II		Math 254N	Vector Calc I		ENGR 355	Thermo		MET 437	Heat Tran Lab	
	MFG 103	Welding		MET 242	CAD II		MET 316	Machine Design II		MET 491	Senior Proj II	
	WRI 122	Eng Comp		MFG 112	Intro Mfg Proc		MET 375	Solid Modeling		SPE 321	Small Group	
		Soc Sci Elevtive		PHY 202/222	Physics			Soc Sci Elective		WRI 322	Adv Tech Wr	
											MET Elective	
Spr	Math 251	Diff Calc		ENGR 213	Strengths		MET 313	Applied Thermo		MET 492	Senior Proj III	
	MFG 120	Mfg Proc I		Math 361	Stats I		MET 415	Design Project		MFG 331	Indust Controls	
	SPE 111	Speech		MET 218	Fluids		MET 351	FEA		WRI 323	Adv Tech Wr	
		Econ Elective		PHY 203/223	Physics		MFG 314	GDT			Engineer Exam	
		Hum Elective						Hum Elective			Hum Elective	
											MET Elective	
											MET Elective	

Appendix A2

SLO-Curriculum Map

Outcome c: An ability to conduct, analyze and interpret experiments and apply experimental results to improve processes.

I = Introduced R = Reinforced E = Emphasize

	Freshman			Sophomore			Junior			Senior		
Fall	Math 111	Coll Algebra		MATH 252	Integral Calc		ENGR 236	Elect Circuits		MET 323	Heat Transfer	
	MET 111	Orient I		MET 160	Materials I		ENGR 266	Comp Program		MET 326	EPS	
	WRI 121	Eng Comp		PHY 201/221	Physics		MET 315	Machine Design I		IMGT 345	Engineer Economy	
	CHE 101	Chem		WRI 227	Tech Report		MET 360	Materials II		MET 490	Senior Proj I	
	CHE 104	Chem Lab		MET 241	CAD I		MET 363	Instrum		WRI 321	Adv Tech Wr	
		Psy Elective									MET Elective	
Win	Math 112	Trig		ENGR 211	Statics		ENGR 212	Dynamics		MET 426	FPS	
	MET 112	Orient II		Math 254N	Vector Calc I		ENGR 355	Thermo		MET 437	Heat Tran Lab	
	MFG 103	Welding		MET 242	CAD II		MET 316	Machine Design II		MET 491	Senior Proj II	
	WRI 122	Eng Comp		MFG 112	Intro Mfg Proc		MET 375	Solid Modeling		SPE 321	Small Group	
		Soc Sci Elevtive		PHY 202/222	Physics			Soc Sci Elective		WRI 322	Adv Tech Wr	
											MET Elective	
Spr	Math 251	Diff Calc		ENGR 213	Strengths		MET 313	Applied Thermo		MET 492	Senior Proj III	
	MFG 120	Mfg Proc I		Math 361	Stats I		MET 415	Design Project		MFG 331	Indust Controls	
	SPE 111	Speech		MET 218	Fluids		MET 351	FEA		WRI 323	Adv Tech Wr	
		Econ Elective		PHY 203/223	Physics		MFG 314	GDT			Engineer Exam	
		Hum Elective						Hum Elective			Hum Elective	
											MET Elective	
											MET Elective	

Appendix A3

SLO-Curriculum Map

Outcome g: An ability to communicate effectively—oral.

I = Introduced R = Reinforced E = Emphasize

	Freshman			Sophomore			Junior			Senior		
Fall	Math 111	Coll Algebra		MATH 252	Integral Calc		ENGR 236	Elect Circuits		MET 323	Heat Transfer	
	MET 111	Orient I		MET 160	Materials I		ENGR 266	Comp Program		MET 326	EPS	
	WRI 121	Eng Comp		PHY 201/221	Physics		MET 315	Machine Design I		IMGT 345	Engineer Economy	
	CHE 101	Chem		WRI 227	Tech Report		MET 360	Materials II		MET 490	Senior Proj I	
	CHE 104	Chem Lab		MET 241	CAD I		MET 363	Instrum		WRI 321	Adv Tech Wr	
		Psy Elective									MET -454 Elective	
Win	Math 112	Trig		ENGR 211	Statics		ENGR 212	Dynamics		MET 426	FPS	
	MET 112	Orient II		Math 254N	Vector Calc I		ENGR 355	Thermo		MET 437	Heat Tran Lab	
	MFG 103	Welding		MET 242	CAD II		MET 316	Machine Design II		MET 491	Senior Proj II	
	WRI 122	Eng Comp		MFG 112	Intro Mfg Proc		MET 375	Solid Modeling		SPE 321	Small Group	
		Soc Sci Elevtive		PHY 202/222	Physics			Soc Sci Elective		WRI 322	Adv Tech Wr	
											MET Elective	
Spr	Math 251	Diff Calc		ENGR 213	Strengths		MET 313	Applied Thermo		MET 492	Senior Proj III	
	MFG 120	Mfg Proc I		Math 361	Stats I		MET 415	Design Project		MFG 331	Indust Controls	
	SPE 111	Speech		MET 218	Fluids		MET 351	FEA		WRI 323	Adv Tech Wr	
		Econ Elective		PHY 203/223	Physics		MFG 314	GDT			Engineer Exam	
		Hum Elective						Hum Elective			Hum Elective	
											MET Elective	
											MET Elective	

Appendix A4

SLO-Curriculum Map

Outcome g: An ability to communicate effectively—written.

I = Introduced R = Reinforced E = Emphasize

	Freshman			Sophomore			Junior			Senior		
Fall	Math 111	Coll Algebra		MATH 252	Integral Calc		ENGR 236	Elect Circuits		MET 323	Heat Transfer	
	MET 111	Orient I		MET 160	Materials I		ENGR 266	Comp Program		MET 326	EPS	
	WRI 121	Eng Comp		PHY 201/221	Physics		MET 315	Machine Design I		IMGT 345	Engineer Economy	
	CHE 101	Chem		WRI 227	Tech Report		MET 360	Materials II		MET 490	Senior Proj I	
	CHE 104	Chem Lab		MET 241	CAD I		MET 363	Instrum		WRI 327	Adv Tech Wr	
		Psy Elective									MET 454 Elective	
Win	Math 112	Trig		ENGR 211	Statics		ENGR 212	Dynamics		MET 426	FPS	
	MET 112	Orient II		Math 254N	Vector Calc I		ENGR 355	Thermo		MET 437	Heat Tran Lab	
	MFG 103	Welding		MET 242	CAD II		MET 316	Machine Design II		MET 491	Senior Proj II	
	WRI 122	Eng Comp		MFG 112	Intro Mfg Proc		MET 375	Solid Modeling		SPE 321	Small Group	
		Soc Sci Elevtive		PHY 202/222	Physics			Soc Sci Elective		WRI 322	Adv Tech Wr	
											MET Elective	
Spr	Math 251	Diff Calc		ENGR 213	Strengths		MET 313	Applied Thermo		MET 492	Senior Proj III	
	MFG 120	Mfg Proc I		Math 361	Stats I		MET 415	Design Project		MFG 331	Indust Controls	
	SPE 111	Speech		MET 218	Fluids		MET 351	FEA		WRI 323	Adv Tech Wr	
		Econ Elective		PHY 203/223	Physics		MFG 314	GDT			Engineer Exam	
		Hum Elective						Hum Elective			Hum Elective	
											MET Elective	
											MET Elective	

Appendix A5

SLO-Curriculum Map

Outcome h: A recognition of the need for, and an ability to engage in lifelong learning.

I = Introduced R = Reinforced E = Emphasize

	Freshman			Sophomore			Junior			Senior		
Fall	Math 111	Coll Algebra		MATH 252	Integral Calc		ENGR 236	Elect Circuits		MET 323	Heat Transfer	
	MET 111	Orient I		MET 160	Materials I		ENGR 266	Comp Program		MET 326	EPS	
	WRI 121	Eng Comp		PHY 201/221	Physics		MET 315	Machine Design I		IMGT 345	Engineer Economy	
	CHE 101	Chem		WRI 227	Tech Report		MET 360	Materials II		MET 490	Senior Proj I	
	CHE 104	Chem Lab		MET 241	CAD I		MET 363	Instrum		WRI 321	Adv Tech Wr	
		Psy Elective									MET Elective	
Win	Math 112	Trig		ENGR 211	Statics		ENGR 212	Dynamics		MET 426	FPS	
	MET 112	Orient II		Math 254N	Vector Calc I		ENGR 355	Thermo		MET 437	Heat Tran Lab	
	MFG 103	Welding		MET 242	CAD II		MET 316	Machine Design II		MET 491	Senior Proj II	
	WRI 122	Eng Comp		MFG 112	Intro Mfg Proc		MET 375	Solid Modeling		SPE 321	Small Group	
		Soc Sci Elevtive		PHY 202/222	Physics			Soc Sci Elective		WRI 322	Adv Tech Wr	
											MET Elective	
Spr	Math 251	Diff Calc		ENGR 213	Strengths		MET 313	Applied Thermo		MET 492	Senior Proj III	
	MFG 120	Mfg Proc I		Math 361	Stats I		MET 415	Design Project		MFG 331	Indust Controls	
	SPE 111	Speech		MET 218	Fluids		MET 351	FEA		WRI 323	Adv Tech Wr	
		Econ Elective		PHY 203/223	Physics		MFG 314	GDT			Engineer Exam	
		Hum Elective						Hum Elective			Hum Elective	
											MET Elective	

2010-11 MMET Assessment Schedule: Updated 03-9-11

Klamath Falls				Portland				Seatle			
SLO/Course	Term	Student Work	Who	SLO/Course	Term	Student Work	Who	SLO/Course	Term	Student Work	Who
Knowledge, techniques, skills & tools (TAC a, EAC k)											
ME	student work collected & survey completed 2009-10										
MECH 351											
MECH 437											
Sr. Project											
MET											
MET 351	S11	Assignment	Shih	MET 351	W11	Assignment	Wade	MET 315	F10	Assignment	Mead
MET 375	F10	Assignment	Shih	MET 375	Fall	Assignment	Wade	ENGR 355	F10	Assignment	Woodall
Sr Survey	S11	Online surve	Culler	Sr Survey	S11	Online surve	Peters	Sr Survey	S11	Online survey	Woodall
MFG											
MFG 344	S11	Assignment	Stuart	MFG 344	S11	Assignment	Kraft	MET 315	F10	Assignment	Mead
MET 375	F10	Assignment	Shih	MET 351	W11	Assignment	Wade	ENGR 355	F10	Assignment	Woodall
Sr Survey	S11	Online surve	Stuart	Sr Survey	S11	Online surve	Peters	Sr Survey	S11	Online survey	Woodall
Conduct, analyze & interpret experiments (TAC c, EAC b)											
ME	student work collected & survey completed 2009-10										
MECH 363											
MECH 437											
MECH 480											
MET											
MFG 331	S11	Assign/Lab	Edgeman	MFG 331	W11	Assign/Lab	Wade	MET 160	W11	Assign/Lab	Mead
MFG 447	S11	Assign/Lab	Sun	MFG 447	Not com	Assign/Lab	Falcon	MET 4XX	S11	Assign/Lab	XXX
Sr Survey	S11	Online surve	Culler	Sr Survey	S11	Online surve	Peters	Sr Survey	S11	Online survey	Woodall
MFG											
MFG 331	S11	Assign/Lab	Edgeman	MFG 331	W11	Assign/Lab	Wade	MET 160	W11	Assign/Lab	Mead
MFG 447	S11	Assign/Lab	Sun	MFG 447	Not com	Assign/Lab	Falcon	MET 4XX	S11	Assign/Lab	XXX
Sr Survey	S11	Online surve	Stuart	Sr Survey	S11	Online surve	Peters	Sr Survey	S11	Online survey	Woodall
Alternate option:				MET 218	W11		Cohen				
Lifelong Learning/Writing (TAC g & h, EAC g & i)											
ME	student work collected & survey completed 2009-10										
ENGR 485											
MET											
MET 323	F10	Paper	Moravec	MET 415	F10	Paper	Wade	ENGR 355	F10	Paper	Woodall
Sr Survey	S11	Online surve	Culler	Sr Survey	S11	Online surve	Peters	MET 490	F10	Paper	Mead
								Sr Survey	S11	Online survey	Woodall
MFG											
MFG 454	F10	Paper	Moravec	MET 415	F10	Paper	Wade	ENGR 355	F10	Paper	Woodall
Sr Survey	S11	Online surve	Stuart	Sr Survey	S11	Online surve	Peters	MET 490	F10	Paper	Mead
								Sr Survey	S11	Online survey	Woodall
Oral Communication (TAC g, EAC g)											
ME	survey completed spring 2010										
MECH 360	W11	Presentation	Stuart								
MET											
MET 360	F10	Presentation	Stuart	MET 415	F10	Presentation	Wade	MET 490	F10	Presentation	Mead
Sr Survey	S11	Online surve	Culler	Sr Survey	S11	Online surve	Peters	Sr Survey	S11	Online survey	Woodall
MFG											
MET 360	F10	Presentation	Stuart	MET 415	F10	Presentation	Wade	MET 490	F10	Presentation	Mead
Sr Survey	S11	Online surve	Stuart	Sr Survey	S11	Online surve	Peters	Sr Survey	S11	Online survey	Woodall

Klamath Falls				Portland				Seatle			
SLO/Course	Term	Student Work	Who	SLO/Course	Term	Student Work	Who	SLO/Course	Term	Student Work	Who
Contemporary Issues (EAC j ME only)											
ME	survey completed spring 2010										
Sr Project	S11	Paper									
Program Specific Outcomes											
Apply technologies... (TAC M2 MFG only)											
MFG											
MFG 344	S11	Project	Stuart	MFG 344	S11	Project	Kraft	MFG 344	S11	Project	Mead
MFG 453	F10	Project	Edgeman	MFG 453	S11	Project	Wade	MFG 453	W11	Project	Mead
Sr Survey	S11	Online surve	Stuart	Sr Survey	S11	Online surve	Peters	Sr Survey	S11	Online survey	Woodall
MFG 333	W11	Assign/Lab	Sun								
Alternate option:											
Our goal at this point to improve is to view this as a pre-test, with the aim of assessing students at the senior project stage for maintenance.											
PEO Surveys											
2009-10 Closing the Loop											
ME											
None											
MET											
SLO e	Teams: Increase instruction in planning and management in upper-division courses.										
SLO i	Ethics: Use ethics rubric in MET 111-112, increase exposure to ethics scenarios.										
SLO b	Continue work with math subcommittee to add applied math problems to coursework.										
SLO d	Continue efforts to consistantly use design rubric for all design project assignments.										
SLO f	Continue efforts to consistantly use engineering problem solving rubric for all engineering problem assignments; assess progress.										
MFG											
MET 111-112				MET 111-112				MET 111-112			
Increase instruction in the area of project planning and management, in order to provide students with an increased skill set for working effectively in teams.											
Address topics of continuing education and professional societies and organization requirements.											
Use the lifelong learning rubric for assignments at the lower-division level.											
Increase student exposure to analyzing ethics scenarios through course assignments and implement use of the OIT ethics rubric in these courses.											
ENGR 485				ENGR 485				ENGR 485			
Require for all manufacutring majors, effective 2011-12											
Add material on continuing education and professional societies and organizations.											
Sr Proj	S11		Stuart	Sr Proj	S11		Wolf	Sr Proj	W11		Mead
Increase instruction in the area of project planning and management, in order to provide students with an increased skill set for working effectively in teams.											
M3			Stuart								
The faculty felt that there was insufficient and conflicting data to define corrective action on this learning out come.											
They decided to develop a new rubric for comprehensive design projects in 2010 and implement it in 2011.											
Additional Notes:											
In future assignments of this nature, faculty will provide examples and clarify expectations for the assignment.											
The program faculty need to more closely align assessment expectations and procedures.											
-Students did not meet performance criteria for determining constraints and performance criteria and for generating one or more creative solutions.											
As a program, we need to increase the number of students who complete assignments that demonstrate key student learning outcomes for the program.											
Teamwork will also be emphasized in upper-division courses.											
Code											
Fall											
Winter											
Spring											