

(a) Apply knowledge of math, science, and engineering

Previous Curriculum Action Review Summary

• There was no specific Curriculum Action specified at the end of 2003 for Outcome (a) during 2004.

Curriculum Review Summary

- Outcome (a) scores increased from 2003 to 2004.
- Outcome (a) score variation among the three metrics decreased from 2003 to 2004
- Outcome (a) assessment indicates improving student performance but statistical variation in the assessment process has not been established.
- No Action is needed at this time.

<i>Code</i>	<i>Curriculum Action Title</i>	<i>Curriculum Action Brief Description</i>
N		

Previous Assessment Process Action Review Summary

• Seeking better instruments for Outcome (a) were suggested as an Assessment Process Action at the end of 2003 for Outcome (a) during 2004. Instruments were the specific target, not metrics.

Assessment Process Review Summary

- The instruments for Outcome (a) seem to be functioning better than thought at the end of 2003. The Assessment Process Action for 2004 in retrospect was not a significant need; however, there remains an interest in moving to more objective measures of student performance using somewhat standardized Instruments.
- A method of using the FE Exam results for the assessment of many of the Outcomes, including (a) has been developed and implemented.
- The use of questions on MET 320 and MATH 373 final exams is being considered for implementation. More objective measures are needed.

<i>Code</i>	<i>Assessment Process Action Title</i>	<i>Assessment Process Action Brief Description</i>
A	Better Assessment of Outcome (a)	Develop more objective instruments to assess Outcome (a).

(b) Design and conduct experiments analyze and interpret data and information

Previous Curriculum Action Review Summary

No actions needed.

Curriculum Review Summary

Student performance has increased considerably from 2003.

<i>Code</i>	<i>Curriculum Action Title</i>	<i>Curriculum Action Brief Description</i>
N		

Previous Assessment Process Action Review Summary

No actions needed.

Assessment Process Review Summary

- Process does a good job of tracking student ability to conduct experiments at the sophomore level. Design of experiments does not seem to be addressed adequately by the instruments used. It is suggested that more senior lab classes should be used.

<i>Code</i>	<i>Assessment Process Action Title</i>	<i>Assessment Process Action Brief Description</i>
W	Use more Senior Lab Classes	More senior lab classes need to be assessed to better track design of experiments: Outcome (b).

(c) Optimally select material and design materials treatment and production processes

Previous Curriculum Action Review Summary

No Curriculum Action needs were stated for Outcome (c) in 2004.

Curriculum Review Summary

- Students continue to perform well.
- No Curricular Action is needed.

<i>Code</i>	<i>Curriculum Action Title</i>	<i>Curriculum Action Brief Description</i>
N		

Previous Assessment Process Action Review Summary

There was no previous Assessment Process Action needed for 2004

Assessment Process Review Summary

- Assessment instruments appear to be working well but additional methods are likely to improve assessment.

<i>Code</i>	<i>Assessment Process Action Title</i>	<i>Assessment Process Action Brief Description</i>

A	Develop Better Instruments for Outcome (c)	Outcome (c) assessment could be improved by adding additional instruments such as a survey or exit exam.
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(d) Function well on teams

Previous Curriculum Action Review Summary

- There were no Curriculum Actions Needed for 2004.

Curriculum Review Summary

- Students are performing very well in teams.
- There is no Curriculum Action Needed for 2005

<i>Code</i>	<i>Curriculum Action Title</i>	<i>Curriculum Action Brief Description</i>
N		

Previous Assessment Process Action Review Summary

- Seeking better instruments for Outcome (d) were suggested as an Assessment Process Action at the end of 2003 for Outcome (d) during 2004. Instruments were the specific target, not metrics.

Assessment Process Review Summary

- The instruments for Outcome (d) seem to be functioning adequately at the end of 2003. There remains an interest in moving to more objective (relative to faculty assessment) measures of student performance perhaps using student's self-reported teaming experience.

<i>Code</i>	<i>Assessment Process Action Title</i>	<i>Assessment Process Action Brief Description</i>
A	Better Assessment of Outcome (d)	Develop student-reported score assignment instruments of team experience to assess Outcome (d).

(e) Identify, formulate, and solve engineering problems

Previous Curriculum Action Review Summary

No Curriculum Action needs were stated for Outcome (e) for 2004.

Curriculum Review Summary

Student performance appears to be at a satisfactory level. A slight decrease is noted compared to the previous two years.

<i>Code</i>	<i>Curriculum Action Title</i>	<i>Curriculum Action Brief Description</i>
N		

Previous Assessment Process Action Review Summary

- There was no previous Assessment Process Actions needed for 2004.

Assessment Process Review Summary

- Assessment instruments appear to be working well with consistent agreement between instruments.

<i>Code</i>	<i>Assessment Process Action Title</i>	<i>Assessment Process Action Brief Description</i>
N		

(f) Know professional and ethical responsibilities and practices

Previous Curriculum Action Review Summary

Meshing Ethics across the curriculum was a required Curriculum Action. This has been implemented in MET 310, MET design, and emphasized in Material Advantage meetings. Ethics canons have also been broadcast on the department's Daktronics board.

Curriculum Review Summary

The outcome summary of ABET criterion (f) for 2004 indicated an increase in student performance. The number of assessments increased from 2 to 32.

<i>Code</i>	<i>Curriculum Action Title</i>	<i>Curriculum Action Brief Description</i>
N	No action needed	Scores were greatly improved as was the number of metrics

Previous Assessment Process Action Review Summary

No items specific to Assessment Process Action Review for ABET criterion (f) were noted.

Assessment Process Review Summary

The FE Exam was only taken by one student. If few students are consistently taking the exam, its inclusion in the assessment process may not be appropriate

<i>Code</i>	<i>Assessment Process Action Title</i>	<i>Assessment Process Action Brief Description</i>
W	FE Exam Numbers	The number of students taking the FE Exam is small.

(g) Communicate effectively

Previous Curriculum Action Review Summary

- Report Rewriting (g) – The program faculty will redouble their efforts to require more effort in writing “perfect” reports. This is expected to replace total report quantities submitted with higher quality. The premise of this action is that students gain more writing skill by focused effort on a high-quality work rather than a more diffuse effort with less faculty feedback. Dr. Kellar will periodically require faculty reports on progress on this action item from all program faculty members.

- Seminar Series – The faculty believe that students will gain a better understanding of professional behavior, the need for honed communication skills, and better interaction and assimilation skills through a more active seminar series offered by a combination of off-campus invited speakers and presentations by their peers. Dr. Kellar will appoint a faculty member to complete this task.

Curriculum Review Summary

- Outcome (g) scores remained at a high performance level.

<i>Code</i>	<i>Curriculum Action Title</i>	<i>Curriculum Action Brief Description</i>
N	No Action	

Previous Assessment Process Action Review Summary

- There was no specific Assessment Process Action specified at the end of 2003 for Outcome (g) during 2004

Assessment Process Review Summary

- there was a discussion on the need to develop new instruments to assess outcome (g) beyond course work but no action was deemed necessary.

<i>Code</i>	<i>Assessment Process Action Title</i>	<i>Assessment Process Action Brief Description</i>
N	No Action	

(h) Know engineering's global societal context

Previous Curriculum Action Review Summary

Greater coordination of ABET criteria (h) and (i) within MET 321 and MET 310.

Curriculum Review Summary

Scores stayed essentially constant from 2003 to 2004, but the number and type of review was increased and included more than senior design. The students performed well.

<i>Code</i>	<i>Curriculum Action Title</i>	<i>Curriculum Action Brief Description</i>
W	Watch coordination	Coordinate Outcomes (h) and (i) within MET 321 and MET 310.

Previous Assessment Process Action Review Summary

No Assessment Process Action was suggested.

Assessment Process Review Summary

Assessment Process seems to be working well.

<i>Code</i>	<i>Assessment Process Action Title</i>	<i>Assessment Process Action Brief Description</i>
N		

(i) Engage in life-long learning

Previous Curriculum Action Review Summary

- Coordination of life-long learning (i) instruments in MET 310 and MET 321..

Curriculum Review Summary

- Life-long Learning - Dr. Han has implemented a writing assignment designed to assess cognitive development level. This has been correlated to life-long learning behaviors. The assignment is designed to elicit from each student responses that target the gates needed to determine their cognitive development. Dr. Howard will repeat this in the alternate-year MET 321 course. Additionally, students will be required to write a personal/professional development plan and present it to their peers in MET 321.

- The average increased from 3.5 (2003) to 3.8 (2004). No score variation was given in 2004.

<i>Code</i>	<i>Curriculum Action Title</i>	<i>Curriculum Action Brief Description</i>
A	Coordination MET 310 and 321,	The importance of life-long learning will be enhanced by FC modules in MET 310 and 321 (Han and Howard).

Previous Assessment Process Action Review Summary

Coordination MET 310 with MET 321with for cognitive assessment

Assessment Process Review Summary

Dr. Han completed this during the Spring 2004 presentation of MET 310. It will be continued in MET 321 spring 2005 by Dr. Howard.

<i>Code</i>	<i>Assessment Process Action Title</i>	<i>Assessment Process Action Brief Description</i>
N		

(j) Know contemporary issues

Previous Curriculum Action Review Summary

- There were no specific Curriculum Action items concerning (j) from the previous review cycle.

Curriculum Review Summary

- The mean for this outcome was virtually unchanged from 2003 to 2004.

<i>Code</i>	<i>Curriculum Action Title</i>	<i>Curriculum Action Brief Description</i>
N	No Actions.	

Previous Assessment Process Action Review Summary

- There were no specific Assessment Process Action items concerning (j) from the previous review cycle.

Assessment Process Review Summary

- There is a need to develop an Online Senior Survey as an instrument to assess outcome (j) and broaden instruments inventory beyond MET 321 and 310 if additional instrument can be identified.

<i>Code</i>	<i>Assessment Process Action Title</i>	<i>Assessment Process Action Brief Description</i>
A	New metric development	Seek new instruments for the Outcome.

(k) Use engineering techniques, skills, and tools

Previous Curriculum Action Review Summary

There was no specific Curriculum Action specified at the end of 2003 for outcome (k) during 2004.

Curriculum Review Summary

- Outcome (k) scores decreased slightly from a 2003 to 2004.
- Outcome (k) score variation among the three metrics decreased somewhat from 2003 to 2004.

<i>Code</i>	<i>Curriculum Action Title</i>	<i>Curriculum Action Brief Description</i>
N		

Previous Assessment Process Action Review Summary

A lab equipment quiz was recommended to improve outcome (k).

Assessment Process Review Summary

- The determination of whether the skills assessed with Outcome (k) using the existing WebCT on-line quiz and tutorial administered to juniors and seniors is still not yet determined. Dr. Stone is heading up this work.
- There is concern that the MET 440 instrument is inadequate.
- There is concern that assessment of sophomores is inadvisable.

<i>Code</i>	<i>Assessment Process Action Title</i>	<i>Assessment Process Action Brief Description</i>
W	Higher level of Skills in MET 440	Choose a different 440 lab assignment for future assessment.
W	Sampling sophomores in MET 220	Met 220 instrument appears adequate, the only concern is that it involves sampling of Sophomores who might not have fully developed their engineering skills.