Program Outcomes Assessment

BS in Mechanical Engineering Technology

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General Information (Program Outcomes Assessment)
Standing Requirements

Mission Statement
The mission of an undergraduate BS program in Mechanical Engineering Technology (MET) is to prepare individuals by providing a comprehensive knowledge and hands-on skills in a state-of-the-art mechanical engineering technology education. The MET program perpetuates Indiana State University’s mission to educate students to become productive citizens and enhance the quality of life of the citizens of Indiana by preparing technical professionals for business and industry through a balanced curriculum.

Outcomes Library

BS in Mechanical Engineering Technology

Program Educational Objective 1: Solve technical problems
Apply the latest technology and engineering tools to solve technical problems in the practice of mechanical engineering technology and related interdisciplinary fields.

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Mapping</th>
</tr>
</thead>
<tbody>
<tr>
<td>SLO a: Appropriate mastery of techs, skills, and tools</td>
<td>No Mapping</td>
</tr>
<tr>
<td>an appropriate mastery of the knowledge, techniques, skills, and modern tools of the MET discipline</td>
<td></td>
</tr>
<tr>
<td>SLO b: Apply current knowledge, adapt to emerging applications</td>
<td>No Mapping</td>
</tr>
<tr>
<td>an ability to apply current knowledge and adapt to emerging applications of mathematics, science, engineering, and technology</td>
<td></td>
</tr>
<tr>
<td>SLO c: Conduct, analyze and interpret experiments</td>
<td>No Mapping</td>
</tr>
<tr>
<td>an ability to conduct, analyze and interpret experiments, and apply experimental results to improve processes</td>
<td></td>
</tr>
<tr>
<td>SLO d: Apply creativity in the design of systems</td>
<td>No Mapping</td>
</tr>
<tr>
<td>an ability to apply creativity in the design of systems, components, or processes appropriate to the MET program educational objective</td>
<td></td>
</tr>
<tr>
<td>SLO f: Identify, analyze and solve technical problems</td>
<td>Foundational Studies: 2. Critically evaluate the ideas of others.</td>
</tr>
<tr>
<td>an ability to identify, analyze and solve technical (close-ended analysis and open-ended design) problems</td>
<td></td>
</tr>
<tr>
<td>PO 1: Develop, simulate, and analyze mechanical systems</td>
<td>No Mapping</td>
</tr>
<tr>
<td>Develop, simulate, and analyze mechanical components/systems using computer-aided design and analysis tools</td>
<td></td>
</tr>
<tr>
<td>PO 2: Select engineering materials</td>
<td>No Mapping</td>
</tr>
<tr>
<td>Select engineering materials for specific applications.</td>
<td></td>
</tr>
<tr>
<td>Program Outcomes Assessment</td>
<td>No Mapping</td>
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<td>-----------------------------</td>
<td>------------</td>
</tr>
<tr>
<td>BS in Mechanical Engineering Technology</td>
<td>No Mapping</td>
</tr>
</tbody>
</table>

| PO 3: Identify and inspect tolerances | No Mapping |
| Identify and inspect tolerances in mechanical parts and assemblies. | No Mapping |

| PO 4: Manage design work/processes. | No Mapping |
| Manage design work/processes. | No Mapping |

| PO 5: Implement design and produce parts. | No Mapping |
| Implement design and produce parts. | No Mapping |

| PO 6: Estimate cost and manage engineering projects. | No Mapping |
| Estimate cost and manage engineering projects. | No Mapping |

| PO 7: Analyze/plan system’s control and integration. | No Mapping |
| Recognize the need and analyze/plan the requirement for system’s control and integration. | No Mapping |

| PO 8: Provide an integrated educational experience | No Mapping |
| Provide an integrated educational experience that develops the ability of students to apply pertinent knowledge to solving problems in MET specialty. | No Mapping |

### Program Educational Objective 2: Remain technically current with continuous learning
Remain technically current and adapt to rapidly changing technologies through self improvement with continuous learning or post-graduate education.

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Mapping</th>
</tr>
</thead>
<tbody>
<tr>
<td>SLO h: Engage in lifelong learning.</td>
<td>No Mapping</td>
</tr>
<tr>
<td>a recognition of the need for, and an ability to engage in lifelong learning.</td>
<td>No Mapping</td>
</tr>
</tbody>
</table>

| SLO k: Quality, timeliness, and continuous improvement | No Mapping |
| a commitment to quality, timeliness, and continuous improvement. | No Mapping |

### Program Educational Objective 3: Demonstrate independent thinking, self-management, and functioning effectively in team-oriented activities
Demonstrate independent thinking, self-management, and functioning effectively in team-oriented and open-ended activities in an industrial environment.

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Mapping</th>
</tr>
</thead>
<tbody>
<tr>
<td>SLO e: An ability to function effectively on teams</td>
<td>No Mapping</td>
</tr>
<tr>
<td>an ability to function effectively on teams.</td>
<td>No Mapping</td>
</tr>
</tbody>
</table>

### Program Educational Objective 4: Communicate effectively in oral, written, and graphical forms.

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Mapping</th>
</tr>
</thead>
<tbody>
<tr>
<td>SLO g: Communicate through engineering drawings, reports</td>
<td>Foundational Studies: 10. Express themselves effectively, professionally, and persuasively both orally and in writing.</td>
</tr>
<tr>
<td>an ability to communicate effectively through engineering drawings, written reports, or oral presentations.</td>
<td>No Mapping</td>
</tr>
</tbody>
</table>

### Program Educational Objective 5: Perform ethically and professionally in business, industry, and society.

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Mapping</th>
</tr>
</thead>
<tbody>
<tr>
<td>SLO i: understand professional, ethical, social responsibility</td>
<td>No Mapping</td>
</tr>
<tr>
<td>an ability to understand professional, ethical and social responsibilities.</td>
<td>No Mapping</td>
</tr>
</tbody>
</table>
Program Educational Objective 6: Develop leadership skills and responsibility in their chosen career field.

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Mapping</th>
</tr>
</thead>
<tbody>
<tr>
<td>SLO e: An ability to function effectively on teams.</td>
<td>No Mapping</td>
</tr>
<tr>
<td>an ability to function effectively on teams.</td>
<td></td>
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</tbody>
</table>

Program Educational Objective 7: Understand global issues and the impact of technology and engineering solutions

Understand global issues and the impact of technology and engineering solutions on the society and environment.

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Mapping</th>
</tr>
</thead>
<tbody>
<tr>
<td>SLO j: A respect for diversity</td>
<td>No Mapping</td>
</tr>
<tr>
<td>a respect for diversity and a knowledge of contemporary professional, societal and global issues.</td>
<td></td>
</tr>
</tbody>
</table>

Curriculum Map

Active Curriculum Maps

- **BS in Mechanical Engineering Technology** (See appendix)
  - **Alignment Set**: BS in Mechanical Engineering Technology
  - Created: 06/08/2012 9:32:27 am CST
  - Last Modified: 06/11/2012 1:05:04 pm CST

Communication of Outcomes

The MET program's educational objectives are published in the university's online catalog and the department web site and are posted on the MET display board.

Web Links:

1. MET Educational Objectives and Program Outcomes
Archive (This area is to be used for archiving pre-TaskStream assessment data and for current documents.)

File Attachments:

1. **Mechanical Engineering Technology Program** (See appendix)
   Mechanical Engineering Technology Program Assessment Plan
   ..............................................................................................................
# 2012-2013 Assessment Cycle

## Assessment Plan

### Outcomes and Measures

<table>
<thead>
<tr>
<th>Program Educational Objective 1: Solve technical problems</th>
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<tbody>
<tr>
<td>Apply the latest technology and engineering tools to solve technical problems in the practice of mechanical engineering technology and related interdisciplinary fields.</td>
</tr>
</tbody>
</table>

#### SLO f: Identify, analyze and solve technical problems

- **Measure:** Faculty survey
- **Details/Description:**
- **Target:**
- **Implementation Plan (timeline):** Spring 2013 and every three years thereafter
- **Responsible Individual(s):** MET program coordinator

#### SLO g: Develop, simulate, and analyze mechanical systems

- **Measure:** Student survey
- **Details/Description:**
- **Target:**
- **Implementation Plan (timeline):** Spring 2013 and every three years thereafter
- **Responsible Individual(s):** MET program coordinator

#### SLO h: Develop, simulate, and analyze mechanical systems

- **Measure:** Student work samples from MET 408 and 409
- **Details/Description:** Student work samples from MET 403, 405, 406, 408, 409 and 413 are collected and the quality of the samples is satisfactory, based on the rubric created for each course
- **Target:**
- **Implementation Plan (timeline):** Spring 2013 and every three years thereafter
- **Responsible Individual(s):** MET program coordinator

#### SLO i: Develop, simulate, and analyze mechanical systems

- **Measure:** Student survey
- **Details/Description:**
- **Target:**
- **Implementation Plan (timeline):** Spring 2013 and every three years thereafter
- **Responsible Individual(s):** MET program coordinator
PO 2: Select engineering materials
Select engineering materials for specific applications.

Measure: Student survey
Indirect - Survey

Details/Description:
Target:
Implementation Plan (timeline): Fall 2012 and every three years thereafter
Responsible Individual(s): MET program coordinator

PO 3: Identify and inspect tolerances
Identify and inspect tolerances in mechanical parts and assemblies.

Measure: Student survey
Indirect - Survey

Details/Description:
Target:
Implementation Plan (timeline): Fall 2012 and every three years thereafter
Responsible Individual(s): MET program coordinator

Measure: Student work samples from MET 403
Direct - Student Artifact

Details/Description:
Target:
Implementation Plan (timeline): Spring 2013 and every three years thereafter
Responsible Individual(s): MET program coordinator

Program Educational Objective 3: Demonstrate independent thinking, self-management, and functioning effectively in team-oriented activities
Demonstrate independent thinking, self-management, and functioning effectively in team-oriented and open-ended activities in an industrial environment.

SLO e: An ability to function effectively on teams

Measure: Faculty survey
Indirect - Survey
Details/Description:
Target:
Implementation Plan (timeline): Spring 2013 and every three years thereafter
Responsible Individual(s): MET program coordinator

**Measure:** Student survey
Indirect - Survey

Details/Description:
Target:
Implementation Plan (timeline): Spring 2013 and every three years thereafter
Responsible Individual(s): MET program coordinator

**Measure:** Student work samples from MET 405 and 409
Direct - Student Artifact

Details/Description:
Target:
Implementation Plan (timeline): Spring 2013 and every three years thereafter
Responsible Individual(s): MET program coordinator

**Assessment Findings**

**Finding per Measure**

**BS in Mechanical Engineering Technology**

**Program Educational Objective 1: Solve technical problems**
Apply the latest technology and engineering tools to solve technical problems in the practice of mechanical engineering technology and related interdisciplinary fields.

**SLO f: Identify, analyze and solve technical problems**
an ability to identify, analyze and solve technical (close-ended analysis and open-ended design) problems.

**Measure:** Faculty survey
Indirect - Survey

Details/Description:
Target:
Implementation Plan (timeline): Spring 2013 and every three years thereafter
Responsible Individual(s): MET program coordinator

**Findings for Faculty survey**

**Summary of Findings:** Three responses to the survey in Fall 2012:

- Question 8: Benchmark (Average Score on survey) = 86.67%
- Question 9: Benchmark (Average Score on survey) = 93.33%

**Results:** Target Achievement: Met

**Recommendations:** Good: No action

**Reflections/Notes:** The Assessment Findings and Action Plan document attached below
contains all findings for 2012-13 and has been uploaded only in this area.

**Substantiating Evidence:**


**Measure:** Student survey

**Details/Description:**

**Target:**

**Implementation Plan (timeline):** Spring 2013 and every three years thereafter

**Responsible Individual(s):** MET program coordinator

**Supporting Attachments:**

MET Student Survey.pdf (Adobe Acrobat Document) (See appendix)

**Findings for Student survey**

**Summary of Findings:** On a scale from (1) to (5), please rate how well this course has helped you to perform the following outcomes.

(1 = Very dissatisfied, 5 = Very satisfied). If anything is not applicable to this course, check 'NA.'

In Spring 2013, 40 students completed the survey in MET 302, 306, 351, 404, 405, 406, 408, and 409.

Q 8: The Benchmark (Average score on survey) was 67.00%

Q 9: The Benchmark (Average score on survey) was 72.50%

**Results:** Target Achievement: Met

**Recommendations:** Good: No action

**Reflections/Notes:**

**Measure:** Student work samples from MET 408 and 409

**Details/Description:** Student work samples from MET 403, 405, 406, 408, 409 and 413 are collected and the quality of the samples is satisfactory, based on the rubric created for each course

**Target:**

**Implementation Plan (timeline):** Spring 2013 and every three years thereafter

**Responsible Individual(s):** MET program coordinator

**Findings for Student work samples from MET 408 and 409**

**Summary of Findings:** Analysis Rubric (for assignments/projects requiring a process formulation to get results - MET 403, 405, 406, 408, 413).

Nine student work samples were evaluated according to the rubric. Results shows that for each of the five traits:

- **Poor** = 1
- **Acceptable** = 3
- **Excellent** = 5

Report Rubric (for Senior Project in Industrial Technology - MET 409)
PO 1: Develop, simulate, and analyze mechanical systems

Develop, simulate, and analyze mechanical components/systems using computer-aided design and analysis tools.

Measure: Student survey
Indirect - Survey

Details/Description:
Target:
Implementation Plan (timeline): Spring 2013 and every three years thereafter
Responsible Individual(s): MET program coordinator

Findings for Student survey

Summary of Findings: On a scale from (1) to (5), please rate how well this course has helped you to perform the following outcomes.
(1 = Very dissatisfied, 5 = Very satisfied). If anything is not applicable to this course, check 'NA.'

In Spring 2013, 40 students completed the survey in MET 203 and 403.
Q 16: The Benchmark (Average score on survey) was 74.00%
Q 17: The Benchmark (Average score on survey) was 66.50%
Q 18: The Benchmark (Average score on survey) was 65.00%

Results: Target Achievement: Met
Recommendations: Good: No action
Reflections/Notes:

Measure: Student work samples from MET 403

Details/Description:
Target:
Implementation Plan (timeline): Spring 2013 and every three years thereafter
Responsible Individual(s): MET program coordinator

Findings for Student work samples from MET 403

Summary of Findings: Analysis Rubric (for assignments/projects requiring a process formulation to get results - MET 403, 405, 406, 408, 413).

Nine student work samples were evaluated according to the rubric. Results shows that for each of the five traits:
Poor = 1
PO 2: Select engineering materials
Select engineering materials for specific applications.

Measure: Student survey
Indirect - Survey

Details/Description:
Target:
Implementation Plan (timeline): Fall 2012 and every three years thereafter
Responsible Individual(s): MET program coordinator

Findings for Student survey

Summary of Findings: On a scale from (1) to (5), please rate how well this course has helped you to perform the following outcomes.
(1 = Very dissatisfied, 5 = Very satisfied). If anything is not applicable to this course, check 'NA.'

In Fall 2012, 53 students completed the survey in MET 404, 413, 306, and 406.
Q 19: The Benchmark (Average score on the survey) = 76.98%

Results: Target Achievement: Met
Recommendations: Good: No action
Reflections/Notes:

Measure: Student work samples from MET 406
Direct - Student Artifact

Details/Description:
Target:
Implementation Plan (timeline): Fall 2012 and every three years thereafter
Responsible Individual(s): MET program coordinator

Findings for Student work samples from MET 406

Summary of Findings: Analysis Rubric (for assignments/projects requiring a process formulation to get results - MET 403, 405, 406, 408, 413).

Nine student work samples were evaluated according to the rubric. Results shows that for each of the five traits:
Poor = 1
Acceptable = 3
Excellent = 5

Results: Target Achievement: Met
Recommendations:
Reflections/Notes:
PO 3: Identify and inspect tolerances

Measure: Student survey
Indirect - Survey

Details/Description:
Target:
Implementation Plan (timeline): Fall 2012 and every three years thereafter
Responsible Individual(s): MET program coordinator

Findings for Student survey

Summary of Findings: In Fall 2012, 53 students completed the survey in MET 404, 413, 306, and 406.

Q 20: The average of the responses was 3.94. (AVG% = 78.87)

Results: Target Achievement: Met
Recommendations: Good: No action
Reflections/Notes: On a scale from (1) to (5), please rate how well this course has helped you to perform the following outcomes.
(1 = Very dissatisfied, 5 = Very satisfied). If anything is not applicable to this course, check 'NA.'

Measure: Student work samples from MET 413
Direct - Student Artifact

Details/Description: Evaluate student work using rubric on training program
Target:
Implementation Plan (timeline): Fall 2012 and every three years thereafter
Responsible Individual(s): MET program coordinator

Findings for Student work samples from MET 413

Summary of Findings: Analysis Rubric (for assignments/projects requiring a process formulation to get results - MET 403, 405, 406, 408, 413).

Nine student work samples were evaluated according to the rubric. Results shows that for each of the five traits:
Poor = 1
Acceptable = 3
Excellent = 5

Results: Target Achievement: Met
Recommendations:
Reflections/Notes:

Program Educational Objective 3: Demonstrate independent thinking, self-management, and functioning effectively in team-oriented activities

Demonstrate independent thinking, self-management, and functioning effectively in team-oriented and open-ended activities in an
### SLO e: An ability to function effectively on teams

An ability to function effectively on teams.

<table>
<thead>
<tr>
<th>Measure: Faculty survey</th>
<th>Details/Description:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Target:</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Implementation Plan (timeline):</strong> Spring 2013 and every three years thereafter</td>
<td></td>
</tr>
<tr>
<td><strong>Responsible Individual(s):</strong> MET program coordinator</td>
<td></td>
</tr>
</tbody>
</table>

#### Findings for Faculty survey

**Summary of Findings:** Three responses to the survey in Fall 2012:

Question 7: Benchmark (Average Score on survey) = 93.33%

**Results:** Target Achievement: Met

**Recommendations:**

**Reflections/Notes:**

<table>
<thead>
<tr>
<th>Measure: Student survey</th>
<th>Details/Description:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Target:</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Implementation Plan (timeline):</strong> Spring 2013 and every three years thereafter</td>
<td></td>
</tr>
<tr>
<td><strong>Responsible Individual(s):</strong> MET program coordinator</td>
<td></td>
</tr>
</tbody>
</table>

#### Findings for Student survey

**Summary of Findings:** On a scale from (1) to (5), please rate how well this course has helped you to perform the following outcomes. (1 = Very dissatisfied, 5 = Very satisfied). If anything is not applicable to this course, check 'NA.'

In Spring 2013, 40 students completed the survey in MET 404, 413, 306, and 406.

Question 7: Benchmark (Average score on survey) = 79.50%

**Results:** Target Achievement: Met

**Recommendations:** Good: No action

**Reflections/Notes:** On a scale from (1) to (5), please rate how well this course has helped you to perform the following outcomes. (1 = Very dissatisfied, 5 = Very satisfied). If anything is not applicable to this course, check 'NA.'

<table>
<thead>
<tr>
<th>Measure: Student work samples from MET 405 and 409</th>
<th>Details/Description:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Target:</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Implementation Plan (timeline):</strong> Spring 2013 and every three years thereafter</td>
<td></td>
</tr>
</tbody>
</table>

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13
**Responsible Individual(s):** MET program coordinator

**Findings for Student work samples from MET 405 and 409**

**Summary of Findings:** Analysis Rubric (for assignments/projects requiring a process formulation to get results - MET 403, 405, 406, 408, 413).

Nine student work samples were evaluated according to the rubric. Results shows that for each of the five traits:
- Poor = 1
- Acceptable = 3
- Excellent = 5

Report Rubric (for Senior Project in Industrial Technology - MET 409)
- Poor = 1
- Acceptable = 3
- Excellent = 5

**Results:** Target Achievement: Met

**Recommendations:** Good: No action

**Reflections/Notes:**

---

**Overall Recommendations**

*No text specified*

**Overall Reflection**

*No text specified*

---

**Action Plan**

**Actions**

BS in Mechanical Engineering Technology

**Action Plan**

**Action:** Continue to monitor

**This Action is associated with the following Findings**
No supporting Findings have been linked to this Action.

**Action Details:** Student and faculty survey responses and student achievement on work samples satisfactory. Continue to monitor and reassess in three years.

**Implementation Plan (timeline):** Reassess in 2015-16

**Key/Responsible Personnel:** MET Program Director

**Measures:** outcomes data collected, analyzed, and reported

**Resource Allocations:** none

**Priority:** Medium
Status Report

Action Statuses

BS in Mechanical Engineering Technology

Action Plan

Action: Continue to monitor

Action Details: Student and faculty survey responses and student achievement on work samples satisfactory. Continue to monitor and reassess in three years.

Implementation Plan (timeline): Reassess in 2015-16

Key/Responsible Personnel: MET Program Director

Measures: outcomes data collected, analyzed, and reported

Resource Allocations: none

Priority: Medium

Status for Continue to monitor

Current Status: Completed

Resource Allocation(s) Status:

Next Steps/Additional Information: continue to monitor and reassess in three years

Status Summary

continue to monitor and reassess in three years

Summary of Next Steps

No text specified
# 2013-2014 Assessment Cycle

## Assessment Plan

### Outcomes and Measures

**BS in Mechanical Engineering Technology**

**Program Educational Objective 1: Solve technical problems**
Apply the latest technology and engineering tools to solve technical problems in the practice of mechanical engineering technology and related interdisciplinary fields.

| SLO a: Appropriate mastery of techs, skills, and tools | **Measure:** Faculty survey  
Indirect - Survey |
|-------------------------------------------------------|--------------------------------------------------|
| Details/Description: Selected items from survey of program faculty  
Target: Benchmark (Average score on survey) will be 60%  
Implementation Plan (timeline): Spring 2014 and every three years thereafter  
Responsible Individual(s): MET program coordinator  
Supporting Attachments: [MET Assessment Plan_F13-Sp14.pdf](Adobe Acrobat Document) (See appendix) |

| **Measure:** Student survey  
Indirect - Survey |
|--------------------------------------------------|
| Details/Description: Selected items from student survey  
Target: Benchmark (Average score on survey) will be 60%  
Implementation Plan (timeline): Spring 2014 and every three years thereafter  
Responsible Individual(s): MET program coordinator |

| **Measure:** Student work samples from MET 409  
Direct - Student Artifact |
|--------------------------------------------------|
| Details/Description: rubric used to evaluate samples of student work produced in MET 409  
Target:  
Implementation Plan (timeline): Spring 2014 and every three years thereafter  
Responsible Individual(s): MET program coordinator  
Supporting Attachments: [MET Assessment_Student Work Rubrics_F13-Sp14.pdf](Adobe Acrobat Document) (See appendix) |

**SLO b: Apply current knowledge, adapt to emerging applications**

| **Measure:** Faculty survey  
Indirect - Survey |
|--------------------------------------------------|
knowledge and adapt to emerging applications of mathematics, science, engineering, and technology.

Details/Description: Selected items from survey of program faculty
Target: Benchmark (Average score on survey) will be 60%
Implementation Plan (timeline): Spring 2014 and every three years thereafter
Responsible Individual(s): MET program coordinator

Measure: Student survey
Indirect - Survey

Details/Description: Selected items from student survey
Target: Benchmark (Average score on survey) will be 60%
Implementation Plan (timeline): Spring 2014 and every three years thereafter
Responsible Individual(s): MET program coordinator

Measure: Student work samples from MET 302 and 304
Direct - Student Artifact

Details/Description: rubric used to evaluate samples of student work produced in MET 302 and 304
Target:
Implementation Plan (timeline): Spring 2014 and every three years thereafter
Responsible Individual(s): MET program coordinator
Supporting Attachments:
MET Assessment_Student Work Rubrics_F13-Sp14.pdf (Adobe Acrobat Document) (See appendix)

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

Measure: Faculty survey
Indirect - Survey

Details/Description: Selected items from survey of program faculty
Target: Benchmark (Average score on survey) will be 60%
Implementation Plan (timeline): Spring 2014 and every three years thereafter
Responsible Individual(s): MET program coordinator

Measure: Student survey
Indirect - Survey

Details/Description: Selected items from student survey
Target: Benchmark (Average score on survey) will be 60%
Implementation Plan (timeline): Fall 2013 and every three years thereafter
Responsible Individual(s): MET program coordinator

Measure: Student work samples from MET 329 and MFG 371
Direct - Student Artifact

Details/Description: rubric used to evaluate samples of student work produced in MET 329 and MFG 371
Target:
**Program Outcomes Assessment**
**BS in Mechanical Engineering Technology**

**Implementation Plan (timeline):** Fall 2013 and every three years thereafter  
**Responsible Individual(s):** MET program coordinator

**Supporting Attachments:**
- MET Assessment_Student Work Rubrics_F13-Sp14.pdf (Adobe Acrobat Document) (See appendix)

**PO 4: Manage design work/processes.**
Manage design work/processes.

**Measure:** Student survey  
Indirect - Survey

**Details/Description:** Selected items from student survey  
**Target:** Benchmark (Average score on survey) will be 60%
**Implementation Plan (timeline):** Fall 2013 and every three years thereafter  
**Responsible Individual(s):** MET program coordinator

**Measure:** Student work samples from MET 404  
Direct - Student Artifact

**Details/Description:** rubric used to evaluate samples of student work produced in MET 404  
**Target:**  
**Implementation Plan (timeline):** Fall 2013 and every three years thereafter  
**Responsible Individual(s):** MET program coordinator

**Supporting Attachments:**
- MET Assessment_Student Work Rubrics_F13-Sp14.pdf (Adobe Acrobat Document) (See appendix)

**Program Educational Objective 2: Remain technically current with continuous learning**
Remain technically current and adapt to rapidly changing technologies through self improvement with continuous learning or post-graduate education.

**SLO h: Engage in lifelong learning.**  
a recognition of the need for, and an ability to engage in lifelong learning.

**Measure:** Homework in MET 430  
Direct - Student Artifact

**Details/Description:**
**Target:**  
**Implementation Plan (timeline):** Fall 2013 and every three years thereafter  
**Responsible Individual(s):** MET program coordinator

**Measure:** Membership in professional societies  
Indirect - Other

**Details/Description:** Students will be polled concerning their membership in professional societies  
**Target:**  
**Implementation Plan (timeline):** Fall 2013 and every three years thereafter  
**Responsible Individual(s):** MET program coordinator

**SLO k: Quality, timeliness, and continuous improvement**

**Measure:** Faculty survey  
Indirect - Survey
a commitment to quality, timeliness, and continuous improvement.

**Details/Description:** Selected items from survey of program faculty
**Target:** Benchmark (Average score on survey) will be 60%
**Implementation Plan (timeline):** Spring 2014 and every three years thereafter
**Responsible Individual(s):** MET program coordinator

**Measure:** Student survey
Indirect - Survey

**Details/Description:** Selected items from student survey
**Target:** Benchmark (Average score on survey) will be 60%
**Implementation Plan (timeline):** Fall 2013 / Spring 2014 and every three years thereafter
**Responsible Individual(s):** MET program coordinator

**Measure:** Student work samples from MET 404 and 409
Direct - Student Artifact

**Details/Description:** Proposing and committing a timeline to finish steps of the project, improving quality (continuous improvement) from proposal phase to final phase,
**Target:**
**Implementation Plan (timeline):** Fall 2013 / Spring 2014 and every three years thereafter
**Responsible Individual(s):** MET program coordinator

**Supporting Attachments:**
- MET Assessment_Student Work Rubrics_F13-Sp14.pdf (Adobe Acrobat Document) (See appendix)

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**Program Educational Objective 4: Communicate effectively in oral, written, and graphical forms.**

**SLO g: Communicate through engineering drawings, reports**

an ability to communicate effectively through engineering drawings, written reports, or oral presentations.

**Measure:** Faculty survey
Indirect - Survey

**Details/Description:** Selected items from survey of program faculty
**Target:** Benchmark (Average score on survey) will be 60%
**Implementation Plan (timeline):** Spring 2014 and every three years thereafter
**Responsible Individual(s):** MET program coordinator

**Measure:** Student survey
Indirect - Survey

**Details/Description:** Selected items from student survey
**Target:** Benchmark (Average score on survey) will be 60%
**Implementation Plan (timeline):** Spring 2014 and every three years thereafter
**Responsible Individual(s):** MET program coordinator

**Measure:** Student work samples from MET 403 and 409
Direct - Student Artifact

**Details/Description:**
**Target:**
Implementation Plan (timeline): Spring 2014 and every three years thereafter
Responsible Individual(s): MET program coordinator
Supporting Attachments:
MET Assessment Student Work Rubrics F13-Sp14.pdf (Adobe Acrobat Document) (See appendix)

Assessment Findings

Finding per Measure

BS in Mechanical Engineering Technology

Program Educational Objective 1: Solve technical problems
Apply the latest technology and engineering tools to solve technical problems in the practice of mechanical engineering technology and related interdisciplinary fields.

 Measure: Faculty survey
Indirect - Survey

Details/Description: Selected items from survey of program faculty
Target: Benchmark (Average score on survey) will be 60%
Implementation Plan (timeline): Spring 2014 and every three years thereafter
Responsible Individual(s): MET program coordinator
Supporting Attachments:
MET Assessment Plan F13-Sp14.pdf (Adobe Acrobat Document) (See appendix)

Findings for Faculty survey

Summary of Findings: Three responses to the survey in Spring 2014:
Question 1: Benchmark (Average Score on survey) = 86.67%
Question 2: Benchmark (Average Score on survey) = 93.33%
Results: Target Achievement: Exceeded
Recommendations:
Reflections/Notes:

 Measure: Student survey
Indirect - Survey

Details/Description: Selected items from student survey
Target: Benchmark (Average score on survey) will be 60%
Implementation Plan (timeline): Spring 2014 and every three years thereafter
Responsible Individual(s): MET program coordinator

Findings for Student survey

Summary of Findings: 53 responses to the survey in Spring 2014:
Question 1: Benchmark (Average Score on survey) = 84.53%
Question 2: Benchmark (Average Score on survey) = 83.02%
**Results:** Target Achievement: Exceeded
**Recommendations:**
**Reflections/Notes:**

**Measure:** Student work samples from MET 409
**Direct - Student Artifact**

**Details/Description:** rubric used to evaluate samples of student work produced in MET 409
**Target:**
**Implementation Plan (timeline):** Spring 2014 and every three years thereafter
**Responsible Individual(s):** MET program coordinator
**Supporting Attachments:**
- MET Assessment_Student Work Rubrics_F13-Sp14.pdf (Adobe Acrobat Document) (See appendix)

**Findings** for Student work samples from MET 409

**Summary of Findings:** Data not provided
**Recommendations:**
**Reflections/Notes:**

**SLO b: Apply current knowledge, adapt to emerging applications**

an ability to apply current knowledge and adapt to emerging applications of mathematics, science, engineering, and technology.

**Measure:** Faculty survey
**Indirect - Survey**

**Details/Description:** Selected items from survey of program faculty
**Target:** Benchmark (Average score on survey) will be 60%
**Implementation Plan (timeline):** Spring 2014 and every three years thereafter
**Responsible Individual(s):** MET program coordinator

**Findings** for Faculty survey

**Summary of Findings:** Three responses to the survey in Spring 2014:
Question 3: Benchmark (Average Score on survey) = 93.33%
**Results:** Target Achievement: Exceeded
**Recommendations:**
**Reflections/Notes:**

**Measure:** Student survey
**Indirect - Survey**

**Details/Description:** Selected items from student survey
**Target:** Benchmark (Average score on survey) will be 60%

**Implementation Plan (timeline):** Spring 2014 and every three years thereafter

**Responsible Individual(s):** MET program coordinator

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**Findings** for Student survey

**Summary of Findings:** 53 responses to the survey in Fall 2013:

Question 3: Benchmark (Average Score on survey) = 88.30%

**Results:** Target Achievement: Exceeded

**Recommendations:**

**Reflections/Notes:**

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**Measure:** Student work samples from MET 302 and 304

Direct - Student Artifact

**Details/Description:** rubric used to evaluate samples of student work produced in MET 302 and 304

**Target:**

**Implementation Plan (timeline):** Spring 2014 and every three years thereafter

**Responsible Individual(s):** MET program coordinator

**Supporting Attachments:**

- MET Assessment_Student Work Rubrics_F13-Sp14.pdf (Adobe Acrobat Document) (See appendix)

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**Findings** for Student work samples from MET 302 and 304

**Summary of Findings:** Data not provided

**Recommendations:**

**Reflections/Notes:**

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**SLO c: Conduct, analyze and interpret experiments**

an ability to conduct, analyze and interpret experiments, and apply experimental results to improve processes.

**Measure:** Faculty survey

Indirect - Survey

**Details/Description:** Selected items from survey of program faculty

**Target:** Benchmark (Average score on survey) will be 60%

**Implementation Plan (timeline):** Spring 2014 and every three years thereafter

**Responsible Individual(s):** MET program coordinator

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**Findings** for Faculty survey

**Summary of Findings:** Three responses to the survey in Fall 2013:

Question 4: Benchmark (Average Score on survey) = 53.33%

Question 5: Benchmark (Average Score on survey) = 53.33%

Question 6: Benchmark (Average Score on survey) = 60.00%
**Results:** Target Achievement: Not Met

**Recommendations:**

**Reflections/Notes:**

These Findings are associated with the following Actions:

**Continue to monitor LO:**
(Action Plan; 2013-2014 Assessment Cycle)

**Measure:** Student survey
Indirect - Survey

**Details/Description:** Selected items from student survey
**Target:** Benchmark (Average score on survey) will be 60%
**Implementation Plan (timeline):** Fall 2013 and every three years thereafter
**Responsible Individual(s):** MET program coordinator

**Findings for Student survey**

**Summary of Findings:** 58 responses to the survey in Fall 2013:
Question 4: Benchmark (Average Score on survey) = 57.59%
Question 5: Benchmark (Average Score on survey) = 48.97%
Question 6: Benchmark (Average Score on survey) = 75.17%
**Results:** Target Achievement: Not Met
**Recommendations:**
**Reflections/Notes:**

These Findings are associated with the following Actions:

**Continue to monitor LO:**
(Action Plan; 2013-2014 Assessment Cycle)

**Measure:** Student work samples from MET 329 and MFG 371
Direct - Student Artifact

**Details/Description:** rubric used to evaluate samples of student work produced in MET 329 and MFG 371
**Target:**
**Implementation Plan (timeline):** Fall 2013 and every three years thereafter
**Responsible Individual(s):** MET program coordinator

**Supporting Attachments:**

MET Assessment_Student Work Rubrics_F13-Sp14.pdf (Adobe Acrobat Document) (See appendix)

**Findings for Student work samples from MET 329 and MFG 371**

**Summary of Findings:** Data not provided
**Recommendations:**
**Reflections/Notes:**
PO 4: Manage design work/processes.
Manage design work/processes.

**Measure:** Student survey
Indirect - Survey

**Details/Description:** Selected items from student survey
**Target:** Benchmark (Average score on survey) will be 60%
**Implementation Plan (timeline):** Fall 2013 and every three years thereafter
**Responsible Individual(s):** MET program coordinator

**Findings** for Student survey

**Summary of Findings:** Data not provided
**Recommendations:**
**Reflections/Notes:**

**Measure:** Student work samples from MET 404
Direct - Student Artifact

**Details/Description:** rubric used to evaluate samples of student work produced in MET 404
**Target:**
**Implementation Plan (timeline):** Fall 2013 and every three years thereafter
**Responsible Individual(s):** MET program coordinator

**Supporting Attachments:**
- MET Assessment_Student Work Rubrics_F13-Sp14.pdf (Adobe Acrobat Document) (See appendix)

**Findings** for Student work samples from MET 404

**Summary of Findings:** Data not provided
**Recommendations:**
**Reflections/Notes:**

**Program Educational Objective 2:** Remain technically current with continuous learning
Remain technically current and adapt to rapidly changing technologies through self improvement with continuous learning or post-graduate education.

**SLO h: Engage in lifelong learning.**
a recognition of the need for, and an ability to engage in lifelong learning.

**Measure:** Homework in MET 430
Direct - Student Artifact

**Details/Description:**
**Target:**
**Implementation Plan (timeline):** Fall 2013 and every three years thereafter
**Responsible Individual(s):** MET program coordinator
Findings for Homework in MET 430

Summary of Findings: Data not provided
Recommendations:
Reflections/Notes:

Measure: Membership in professional societies
Indirect - Other

Details/Description: Students will be polled concerning their membership in professional societies
Target:
Implementation Plan (timeline): Fall 2013 and every three years thereafter
Responsible Individual(s): MET program coordinator

Findings for Membership in professional societies

Summary of Findings: Data not provided
Recommendations:
Reflections/Notes:

SLO k: Quality, timeliness, and continuous improvement
a commitment to quality, timeliness, and continuous improvement.

Measure: Faculty survey
Indirect - Survey

Details/Description: Selected items from survey of program faculty
Target: Benchmark (Average score on survey) will be 60%
Implementation Plan (timeline): Spring 2014 and every three years thereafter
Responsible Individual(s): MET program coordinator

Findings for Faculty survey

Summary of Findings: Three responses to the survey in Fall 2013:
Question 16: Benchmark (Average Score on survey) = 93.33
Question 17: Benchmark (Average Score on survey) = 100.00%

Three responses to the survey in Spring 2014:
Question 16: Benchmark (Average Score on survey) = 93.33%
Question 17: Benchmark (Average Score on survey) = 100.00%
Results: Target Achievement: Exceeded
Recommendations:
Reflections/Notes:
**Measure:** Student survey  
Indirect - Survey

**Details/Description:** Selected items from student survey  
**Target:** Benchmark (Average score on survey) will be 60%  
**Implementation Plan (timeline):** Fall 2013 / Spring 2014 and every three years thereafter  
**Responsible Individual(s):** MET program coordinator

**Findings** for Student survey

**Summary of Findings:** 58 responses to the survey in Fall 2013:  
Question 16: Benchmark (Average Score on survey) = 87.24%  
Question 17: Benchmark (Average Score on survey) = 76.21%

53 responses to the survey in Spring 2014:  
Question 16: Benchmark (Average Score on survey) = 88.68%  
Question 17: Benchmark (Average Score on survey) = 85.28%  
**Results:** Target Achievement: Exceeded  
**Recommendations:**  
**Reflections/Notes:**

**Measure:** Student work samples from MET 404 and 409  
Direct - Student Artifact

**Details/Description:** proposing and committing a timeline to finish steps of the project, improving quality (continuous improvement) from proposal phase to final phase,  
**Target:**  
**Implementation Plan (timeline):** Fall 2013 / Spring 2014 and every three years thereafter  
**Responsible Individual(s):** MET program coordinator  
**Supporting Attachments:**  
[MET Assessment_Student Work Rubrics_F13-Sp14.pdf](Adobe Acrobat Document) (See appendix)

**Findings** for Student work samples from MET 404 and 409

**Summary of Findings:** Data not provided  
**Recommendations:**  
**Reflections/Notes:**

**Program Educational Objective 4:** Communicate effectively in oral, written, and graphical forms.

**SLO g:** Communicate through engineering drawings, reports  
an ability to communicate

**Measure:** Faculty survey  
Indirect - Survey
effectively through engineering drawings, written reports, or oral presentations.

**Details/Description:** Selected items from survey of program faculty

**Target:** Benchmark (Average score on survey) will be 60%

**Implementation Plan (timeline):** Spring 2014 and every three years thereafter

**Responsible Individual(s):** MET program coordinator

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**Findings for Faculty survey**

**Summary of Findings:** Three responses to the survey in Spring 2014:

Question 11: Benchmark (Average Score on survey) = 60.00%

Question 12: Benchmark (Average Score on survey) = 93.33%

**Results:** Target Achievement: Exceeded

**Recommendations:**

**Reflections/Notes:**

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**Measure:** Student survey

**Indirect - Survey**

**Details/Description:** Selected items from student survey

**Target:** Benchmark (Average score on survey) will be 60%

**Implementation Plan (timeline):** Spring 2014 and every three years thereafter

**Responsible Individual(s):** MET program coordinator

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**Findings for Student survey**

**Summary of Findings:** 53 responses to the survey in Fall 2013:

Question 11: Benchmark (Average Score on survey) = 74.34%

Question 12: Benchmark (Average Score on survey) = 83.02%

**Results:** Target Achievement: Exceeded

**Recommendations:**

**Reflections/Notes:**

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**Measure:** Student work samples from MET 403 and 409

**Direct - Student Artifact**

**Details/Description:**

**Target:**

**Implementation Plan (timeline):** Spring 2014 and every three years thereafter

**Responsible Individual(s):** MET program coordinator

**Supporting Attachments:**

- [MET Assessment_Student Work Rubrics_F13-Sp14.pdf](Adobe Acrobat Document) (See appendix)

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**Findings for Student work samples from MET 403 and 409**
Summary of Findings: Data not provided
Recommendations:
Reflections/Notes:

Overall Recommendations
No text specified

Overall Reflection
No text specified

Action Plan

BS in Mechanical Engineering Technology

Program Educational Objective 1: Solve technical problems
Apply the latest technology and engineering tools to solve technical problems in the practice of mechanical engineering technology and related interdisciplinary fields.

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

Action: Continue to monitor LO:c

This Action is associated with the following Findings

Findings for Faculty survey
(Assessment Plan and Assessment Findings; 2013-2014 Assessment Cycle)
Summary of Findings: Three responses to the survey in Fall 2013:
Question 4: Benchmark (Average Score on survey) = 53.33%
Question 5: Benchmark (Average Score on survey) = 53.33%
Question 6: Benchmark (Average Score on survey) = 60.00%

Findings for Student survey
(Assessment Plan and Assessment Findings; 2013-2014 Assessment Cycle)
Summary of Findings: 58 responses to the survey in Fall 2013:
Question 4: Benchmark (Average Score on survey) = 57.59%
Question 5: Benchmark (Average Score on survey) = 48.97%
Question 6: Benchmark (Average Score on survey) = 75.17%

Action Details: Date: Nov. 13th, 2014
Subject: MET faculty meeting
Location: AETM Dept. Office
Present Faculties: Affan Badar, Todd Alberts, and Mehran Shahhosseini

Mehran presented the assessment data from MET students and faculties for the 2013-14 cycle. All the assessment results showed that the students and faculties achieved the target except one learning outcome, LO:c. These LO scores were 49%, 53%, and 58%; whereas the average needed score on the survey is 60%.
In the previous cycles, the target was met for this outcome assessment. Faculty discussed that this cycle assessment might be just one of a kind. It is better to wait for the next assessment cycle
Status Report

Action Statuses

BS in Mechanical Engineering Technology

Program Educational Objective 1: Solve technical problems
Apply the latest technology and engineering tools to solve technical problems in the practice of mechanical engineering technology and related interdisciplinary fields.

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

Action: Continue to monitor LO:c

Action Details: Date: Nov. 13th, 2014
Subject: MET faculty meeting
Location: AETM Dept. Office
Present Faculties: Affan Badar, Todd Alberts, and Mehran Shahhosseini

Mehran presented the assessment data from MET students and faculties for the 2013-14 cycle. All the assessment results showed that the students and faculties achieved the target except one learning outcome, LO:c. These LO scores were 49%, 53%, and 58%; whereas the average needed score on the survey is 60%.

In the previous cycles, the target was met for this outcome assessment. Faculty discussed that this cycle assessment might be just one of a kind. It is better to wait for the next assessment cycle before we decide to recommend any action.

Implementation Plan (timeline):

Key/Responsible Personnel:

Measures:

Resource Allocations:

Priority: Medium

Status for Continue to monitor LO:c

No Status Added

Status Summary

No text specified

Summary of Next Steps
No text specified
# 2014-2015 Assessment Cycle

## Assessment Plan

### Outcomes and Measures

### BS in Mechanical Engineering Technology

#### Program Educational Objective 1: Solve technical problems
Apply the latest technology and engineering tools to solve technical problems in the practice of mechanical engineering technology and related interdisciplinary fields.

| SLO d: Apply creativity in the design of systems | Measure: Faculty survey
| Details/Description: Rubric on training program | Target: |
| Implementation Plan (timeline): Spring 2015 and every three years thereafter | Responsible Individual(s): MET program coordinator |

| Measure: Sample of student work from MET 409 and 403. Direct - Student Artifact |
| Details/Description: Rubric on training program |
| Target: |
| Implementation Plan (timeline): Spring 2015 and every three years thereafter |
| Responsible Individual(s): MET program coordinator |

#### PO 5: Implement design and produce parts.
Implement design and produce parts.

| Measure: Sample student work from MET 409 and MFG 370. Direct - Student Artifact |
| Details/Description: Rubric on training program |
| Target: |
| Implementation Plan (timeline): Spring 2015 and every three years thereafter |
| Responsible Individual(s): MET program coordinator |

| Measure: Student survey Indirect - Survey |
| Details/Description: Rubric on training program |
| Target: |
| Implementation Plan (timeline): Spring 2015 and every three years thereafter |
| Responsible Individual(s): MET program coordinator |
| **PO 6:** Estimate cost and manage engineering projects. | **Measure:** Sample student work from MET 404 and 405.  
Direct - Student Artifact |
|---|---|
| **Details/Description:** Rubric on training program  
**Target:**  
**Implementation Plan (timeline):** Fall 2014/Spring 2015 and every three years thereafter  
**Responsible Individual(s):** MET program coordinator |
| **PO 7:** Analyze/plan system’s control and integration. | **Measure:** Faculty survey  
Indirect - Survey |
| **Details/Description:** Rubric on training program  
**Target:**  
**Implementation Plan (timeline):** Fall 2014 and every three years thereafter  
**Responsible Individual(s):** MET program coordinator |
| **PO 8:** Provide an integrated educational experience | **Measure:** Faculty survey,  
Indirect - Survey |
| **Details/Description:** Rubric on training program  
**Target:**  
**Implementation Plan (timeline):** Spring 2015 and every three years thereafter  
**Responsible Individual(s):** MET program coordinator |
Program Outcomes Assessment
BS in Mechanical Engineering Technology

- **Measure:** Sample of student work from MET 409
  Direct - Student Artifact

  **Details/Description:** Rubric on training program
  **Target:**
  **Implementation Plan (timeline):** Spring 2015 and every three years thereafter
  **Responsible Individual(s):** MET program coordinator

Program Educational Objective 5: Perform ethically and professionally in business, industry, and society.

- **SLO i:** understand professional, ethical, social responsibility
  an ability to understand professional, ethical and social responsibilities.

  - **Measure:** Faculty survey
    Indirect - Survey

    **Details/Description:** Rubric on training program
    **Target:**
    **Implementation Plan (timeline):** Fall 2014 and every 3 years thereafter
    **Responsible Individual(s):** MET program coordinator

- **Measure:** Student survey
  Indirect - Survey

  **Details/Description:** Rubric on training program
  **Target:**
  **Implementation Plan (timeline):** Fall 2014 and every 3 years thereafter
  **Responsible Individual(s):** MET program coordinator

Program Educational Objective 7: Understand global issues and the impact of technology and engineering solutions

Understand global issues and the impact of technology and engineering solutions on the society and environment.

- **SLO j:** A respect for diversity
  a respect for diversity and a knowledge of contemporary professional, societal and global issues.

  - **Measure:** Report in MET 130- Team building and diversity
    Direct - Student Artifact

    **Details/Description:** A hand-out on Team building and diversity, and assigning students to write a report in MET 130
    Rubric on training program
    **Target:**
    **Implementation Plan (timeline):** Fall 2014 and every three years thereafter
    **Responsible Individual(s):** MET program coordinator

  - **Measure:** Report in MET 130- Technology and social impacts
    Direct - Student Artifact

    **Details/Description:** A hand-out on Technology and social impacts, and assigning students to write a report in MET 130
    Rubric on training program
    **Target:**
Implementation Plan (timeline): Fall 2014 and every three years thereafter
Responsible Individual(s): MET program coordinator

Measure: Student survey.
Indirect - Survey

Details/Description: Rubric on training program
Target:
Implementation Plan (timeline): Fall 2014 and every three years thereafter
Responsible Individual(s): MET program coordinator

Assessment Findings

Finding per Measure

BS in Mechanical Engineering Technology

Program Educational Objective 1: Solve technical problems
Apply the latest technology and engineering tools to solve technical problems in the practice of mechanical engineering technology and related interdisciplinary fields.

SLO d: Apply creativity in the design of systems
an ability to apply creativity in the design of systems, components, or processes appropriate to the MET program educational objective.

Measure: Faculty survey
Indirect - Survey

Details/Description: Rubric on training program
Target:
Implementation Plan (timeline): Spring 2015 and every three years thereafter
Responsible Individual(s): MET program coordinator

Findings for Faculty survey
No Findings Added

Measure: Sample of student work from MET 409 and 403.
Direct - Student Artifact

Details/Description: Rubric on training program
Target:
Implementation Plan (timeline): Spring 2015 and every three years thereafter
Responsible Individual(s): MET program coordinator

Findings for Sample of student work from MET 409 and 403.
No Findings Added

PO 5: Implement design and produce parts.
Implement design and
PO 6: Estimate cost and manage engineering projects.

**Measure:** Sample student work from MET 404 and 405.

*Direct - Student Artifact*

**Details/Description:** Rubric on training program
**Target:**
**Implementation Plan (timeline):** Fall 2014/Spring 2015 and every three years thereafter
**Responsible Individual(s):** MET program coordinator

**Findings** for Sample student work from MET 404 and 405.

No Findings Added

PO 7: Analyze/plan system's control and integration.

**Measure:** Faculty survey

*Indirect - Survey*
PO 8: Provide an integrated educational experience

Provide an integrated educational experience that develops the ability of students to apply pertinent knowledge to solving problems in MET specialty.

Details/Description: Rubric on training program
Target:
Implementation Plan (timeline): Spring 2015 and every three years thereafter
Responsible Individual(s): MET program coordinator

Findings for Faculty survey,

No Findings Added

Measure: Sample of student work from MET 409
Direct - Student Artifact

Details/Description: Rubric on training program
Target:
Implementation Plan (timeline): Fall 2014 and every three years thereafter
Responsible Individual(s): MET program coordinator

Findings for Sample student work from MET 409

No Findings Added

Measure: Sample student work from ECT 281
Direct - Student Artifact

Details/Description: Rubric on training program
Target:
Implementation Plan (timeline): Fall 2014 and every three years thereafter
Responsible Individual(s): MET program coordinator

Findings for Sample student work from ECT 281

No Findings Added

Measure: Student survey
Indirect - Survey

Details/Description: Rubric on training program
Target:
Implementation Plan (timeline): Fall 2014 and every three years thereafter
Responsible Individual(s): MET program coordinator

Findings for Student survey

No Findings Added

Measure: Faculty survey,
Indirect - Survey

Details/Description: Rubric on training program
Target:
Implementation Plan (timeline): Spring 2015 and every three years thereafter
Responsible Individual(s): MET program coordinator

Findings for Faculty survey,

No Findings Added

Measure: Sample student work from ECT 281
Direct - Student Artifact

Details/Description: Rubric on training program
Target:
Implementation Plan (timeline): Fall 2014 and every three years thereafter
Responsible Individual(s): MET program coordinator

Findings for Sample student work from ECT 281

No Findings Added

Measure: Sample student work from MET 409
Direct - Student Artifact

Details/Description: Rubric on training program
Target:
Implementation Plan (timeline): Spring 2015 and every three years thereafter
Responsible Individual(s): MET program coordinator

Findings for Sample student work from MET 409

No Findings Added

Measure: Student survey
Indirect - Survey

Details/Description: Rubric on training program
Target:
Implementation Plan (timeline): Spring 2015 and every three years thereafter
Responsible Individual(s): MET program coordinator

Findings for Student survey

No Findings Added

Measure: Faculty survey,
Indirect - Survey

Details/Description: Rubric on training program
Target:
Implementation Plan (timeline): Spring 2015 and every three years thereafter
Responsible Individual(s): MET program coordinator

Findings for Faculty survey,

No Findings Added
**Program Educational Objective 5: Perform ethically and professionally in business, industry, and society.**

**SLO i: understand professional, ethical, social responsibility**

<table>
<thead>
<tr>
<th>Details/Description</th>
<th>Rubric on training program</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Target:</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Implementation Plan (timeline):</strong></td>
<td>Spring 2015 and every three years thereafter</td>
</tr>
<tr>
<td><strong>Responsible Individual(s):</strong></td>
<td>MET program coordinator</td>
</tr>
</tbody>
</table>

**Findings for Sample of student work from MET 409**

No Findings Added

<table>
<thead>
<tr>
<th>Measure: Faculty survey</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indirect - Survey</td>
</tr>
</tbody>
</table>

**Details/Description: Rubric on training program**

**Target:**

**Implementation Plan (timeline):** Fall 2014 and every 3 years thereafter

**Responsible Individual(s):** MET program coordinator

**Findings for Faculty survey**

No Findings Added

**Measure: Student survey**

**Indirect - Survey**

**Details/Description: Rubric on training program**

**Target:**

**Implementation Plan (timeline):** Fall 2014 and every 3 years thereafter

**Responsible Individual(s):** MET program coordinator

**Findings for Student survey**

No Findings Added

**Program Educational Objective 7: Understand global issues and the impact of technology and engineering solutions**

Understand global issues and the impact of technology and engineering solutions on the society and environment.

**SLO j: A respect for diversity**

<table>
<thead>
<tr>
<th>Details/Description</th>
<th>Report in MET 130- Team building and diversity</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Target:</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Implementation Plan (timeline):</strong></td>
<td>Fall 2014 and every three years thereafter</td>
</tr>
</tbody>
</table>

**Measure: Report in MET 130- Team building and diversity**

**Direct - Student Artifact**

**Details/Description: A hand-out on Team building and diversity, and assigning students to write a report in MET 130**

**Rubric on training program**

**Target:**

**Implementation Plan (timeline):** Fall 2014 and every three years thereafter
**Responsible Individual(s):** MET program coordinator

**Findings for Report in MET 130- Team building and diversity**

*No Findings Added*

**Measure:** Report in MET 130- Technology and social impacts

**Direct - Student Artifact**

**Details/Description:** A hand-out on Technology and social impacts, and assigning students to write a report in MET 130

Rubric on training program

**Target:**

**Implementation Plan (timeline):** Fall 2014 and every three years thereafter

**Responsible Individual(s):** MET program coordinator

**Findings for Report in MET 130- Technology and social impacts**

*No Findings Added*

**Measure:** Student survey.

**Indirect - Survey**

**Details/Description:** Rubric on training program

**Target:**

**Implementation Plan (timeline):** Fall 2014 and every three years thereafter

**Responsible Individual(s):** MET program coordinator

**Findings for Student survey.**

*No Findings Added*

**Overall Recommendations**

*No text specified*

**Overall Reflection**

*No text specified*

**Action Plan**

**Status Report**
2015-2016 Assessment Cycle

Assessment Plan

Assessment Findings

Action Plan

Status Report
2016-2017 Assessment Cycle

Assessment Plan

Assessment Findings
2017-2018 Assessment Cycle

Assessment Plan

Assessment Findings
2018-2019 Assessment Cycle

Assessment Plan

Assessment Findings
Program Outcomes Assessment
BS in Mechanical Engineering Technology

2019-2020 Assessment Cycle

Assessment Plan

Assessment Findings
Appendix

A. BS in Mechanical Engineering Technology (Curriculum Map)
B. Mechanical Engineering Technology Program (Adobe Acrobat Document)
C. MET Student Survey.pdf (Adobe Acrobat Document)
E. MET Course outcome survey Fall 2012.pdf (Adobe Acrobat Document)
F. MET Assessment_Student Work Rubrics_F13-Sp14.pdf (Adobe Acrobat Document)
BS in Mechanical Engineering Technology Program

Mission
The mission of an undergraduate BS program in Mechanical Engineering Technology (MET) is to prepare individuals by providing a comprehensive knowledge and hands-on skills in a state-of-the-art mechanical engineering technology education. The MET program perpetuates Indiana State University’s mission to educate students to become productive citizens and enhance the quality of life of the citizens of Indiana by preparing technical professionals for business and industry through a balanced curriculum.

Educational Objectives
The undergraduate program in Mechanical Engineering Technology will prepare graduates with knowledge, problem solving ability, and hands-on skills to enter careers in the design, installation, manufacturing, testing, evaluation, technical sales, maintenance, or management of mechanical and related systems and processes. The graduates can:

1. Apply the latest technology and engineering tools to solve technical problems in the practice of mechanical engineering technology and related interdisciplinary fields.
2. Remain technically current and adapt to rapidly changing technologies through self improvement with continuous learning or post-graduate education.
3. Demonstrate independent thinking, self-management, and functioning effectively in team-oriented and open-ended activities in an industrial environment.
4. Communicate effectively in oral, written, and graphical forms.
5. Perform ethically and professionally in business, industry, and society.
6. Develop leadership skills and responsibility in their chosen career field.
7. Understand global issues and the impact of technology and engineering solutions on the society and environment.

Student Learning Outcomes
This Mechanical Engineering Technology discipline encompasses the areas (and principles) of materials, applied mechanics, computer-aided drafting/design, manufacturing, experimental techniques/procedures, analysis of engineering data, machine/mechanical design/analysis, and automation/control systems, among others. The Mechanical Engineering Technology (MET) students by the time of graduation will have:

a. an appropriate mastery of the knowledge, techniques, skills, and modern tools of the MET discipline (all the courses)
b. an ability to apply current knowledge and adapt to emerging applications of mathematics, science, engineering, and technology (MATH 115 or MET 215), MATH 123, 301, CHEM 100, PHYS 105, MET 302, 304, 306, 406)
c. an ability to conduct, analyze and interpret experiments, and apply experimental results to improve processes (MFG 370, 371/225, MET 403, MET 406, MET 413)
d. an ability to apply creativity in the design of systems, components, or processes appropriate to the MET program educational objectives (MET 103, 203, 403, 302, 306, 406, 408)
e. an ability to function effectively on teams (MET 130, 302, 405, 406, 413)
f. an ability to identify, analyze and solve technical problems (MET 302, 306, 404, 405, 406, 408)
g. an ability to communicate effectively (COMM 101, ENG 305T, MET 130, 103, 203, 403, 405, 413, 430)
h. a recognition of the need for, and an ability to engage in lifelong learning (MET 130, 430, TGMT 421)
i. an ability to understand professional, ethical and social responsibilities (MET 130, 404, 430, other Gen Ed, professional society)
j. a respect for diversity and a knowledge of contemporary professional, societal and global issues (MET 130, TMGT 335, 421, Gen Ed: USD, IC)
k. a commitment to quality, timeliness, and continuous improvement (All the courses)

Specifically, the students will be able to:
1. Identify mechanical systems that satisfy the given engineering requirements. (MET 306/404/406)
2. Describe the necessary assumptions in designing mechanical systems. (All the courses)
3. Apply proper engineering principles and theories to solve close-ended analysis and open-ended design problems. (MET 215/302/304/306/406)
4. Develop, simulate, and analyze mechanical components/systems using computer-aided design and analysis tools. (MET 103/203/403)
5. Select engineering materials for specific applications. (MFG 371)
6. Design mechanical parts and systems. (MET 406/408)
7. Identify and inspect tolerances in mechanical parts and assemblies. (MET 103/413)
8. Communicate through engineering drawings, written reports, or oral presentations. (MET 103/130/203/430 and other courses)
9. Manage design work/processes. (MET 404)
10. Implement design and produce parts. (MET 351/409/493 and MFG 370/371)
11. Estimate cost and manage engineering projects. (MET 404/405/409)
12. Evaluate the performance of mechanical systems. (MET 409)
13. Explain the potential impact of mechanical systems on environment and society, including safety. (MET 404/409)
14. Recognize the need and analyze/plan the requirement for system’s control and integration. (ECT 280)

Assessment
The faculty of the MET program has adopted the following processes/evidences to assess the achievements of the program learning outcomes and education objectives listed above including computer usage, drawings, and written and oral communications. Single evidence may not be enough to assess all the outcomes. Therefore several evidences have been identified.

Direct Evidence:
1. Co-op/Internship Evaluation by Supervisor/faculty (N.A.: can be kept in file from MET 351): Which of the outcomes were assessed and how did the students do?
2. Senior Project (can be kept in file from MET 409)
3. Course Project (can be kept in file from MET 203, 302, 304, 306, 403, 404, 405, 406, 408, 413)
4. HW/Quiz/Exam (can be kept in file from MET 103, 203, 302, 304, 306, 403, 404, 405, 406, 408, 413)
5. Lab reports (can be kept from MFG 370/371, ECT 280)
6. Student Portfolio (MET 430)
7. MET program faculty assessment on students’ attainment of the learning outcomes based on the Exit Interview (not available: can be done)
8. Society for Manufacturing Engineers (SME) Certification Exam (don’t have record)

Indirect Evidence:
1. Course outlines (syllabi) and textbooks
2. Graduation Rate
3. Placement Rate
4. Student Evaluation on the program learning outcomes assessment (Not available: can be done in MET 430)
5. Alumni Survey
6. Employer Survey
7. Rate of Students going into graduate programs

Evaluation/Continuous Improvement
Every semester program faculty members meet to interpret the data and evidences collected from the assessment practices. This helps to find the extent to which program outcomes and educational objectives are being achieved and to take decisions and actions to continuously improve the program through a documented plan.

Curriculum
Major Required Courses: 48 credit hours
MET 103 (3) Intro to Technical Graphics
MET 130 (2) Intro to Engr. & Tech.
MET 203 (3) Intro to Solid Modeling
MET 302 (3) Applied Statics
MET 306 (3) Applied Mechanisms
MET 403 (3) Advanced CAD Concepts
MET 404 (3) Engr. Design & Mgmt.
MET 405 (3) Econ. Analy. For Engr. & Tech
MET 406 (3) Strength of Materials
MET 408 (3) Elements of Machine Design
MET 413 (3) Applications & Gaging of GD&T
MET 430 (1) Senior Seminar
CS 151 (3) Intro to Computer Science
ECT 160 (3) Fundamentals of Electronics
*ECT 280 (3) Intro to Automation
MFG 370 (3) Fund. of Machine Tool Processes
*MFG 371 (3) Manufact. Processes & Materials

Technical Electives: 6 cr. hours from the following:
MET 304 (3) Engr. Analysis (Dynamics)
MET 329 (3) Fluid Power Technology
*MET 337 (3) Thermo Systems
MET 351 (3) Industrial Co-op
MET 407 (3) Tools & Die Design
MET 409 (3) Senior Project
Other courses approved by the MET advisor

Management Electives: 6 cr. hours from the following:
TMGT 471 (3) Production Plan & Control I
TMGT 473 (3) Quality control of Ind. Products I
TMGT 478 (3) Industrial Organ. & Functions
MGT 301 (3) Survey of Management

Science and Math Required Courses: 24 cr. hours
MATH 115 (3)
MATH 123 (3)
MET 215 (3)
MATH 301 (3)

SMS: F  4 Chem. 100 (3) & 100L (1)
SMS: F or E  4 Phys. 105 (3) & 105L (1)
     4 * Phys. 106 (3) & 106L (1)

Other General Education: 41 - 44 cr. hours
COMM 101 (3) Intro to Speech
ENG 101/5 (6) Freshman Writing OR
   ENG 107 (3) Rhetoric & Writing
ENG 305T (3) Technical Writing
PE 101 (2) Fitness for Life

Foreign Language (6)
SBS: F  3
SBS: F or E  3
LAPS: LL  3
LAPS: LE  3
HS  3
MCS: USD  3
MSC: IC  3
GECAP  3

* or a similar course approved by the MET advisor

Total: Minimum 125 semester hours required for graduation.
Transfer credits will be accepted based on a course-by-course evaluation, or an agreement between ISU and a partner institution.