Mission / Purpose

The mission of the Industrial Engineering Technology program is to produce graduates who can easily make the transition from the university to planning and supervisory positions in the workforce, particularly that of the industrial sector, including manufacturing and service industries. In light of this, courses are infused with industrial applications and students are required to study problems identified in local industries. In their senior project course, students frequently interface with local industry and, under the guidance of faculty, analyze and solve problems that have real-world applications.

Student Learning Outcomes/Objectives, with Any Associations and Related Measures, Targets, Findings, and Action Plans

SLO 1:OBJ01 -- ABET General Criteria a

IET students will have an ability to select and apply the knowledge, techniques, skills, and modern tools of their disciplines to broadly-defined engineering technology activities. (ABET General Criteria 'a')

Related Measures:

M 1:M1.1 -- ABET-GCa -- Assessment Aggregates
M1.1: (ABET-GCa) Aggregate of assessments for ABET General Criteria 'a'.

Source of Evidence: Academic direct measure of learning - other

Target:
80% of students receive a score of 70 (out of 100) or better on assessments supporting ABET General Criteria 'a'.

Findings (2011-2012) - Target: Met
89% (569 of 637) of student work samples (projects, exams, quizzes, papers) were scored 70 (out of 100) or better on all assessments supporting ABET General Criteria 'a'

FA11: F-F = 100% (6 of 6); ONL = 88% (313 of 357);
SP12: F-F = 0% (0 of 0); ONL = 91% (250 of 274);

Related Action Plans (by Established cycle, then alpha):
For full information, see the Details of Action Plans section of this report.

AEC 390 Engineering Economics
Established in Cycle: 2010-2011
Some of the IET and BCT students missed at least 1 or 2 quizzes and 1 assignments because either they didn't see the quiz posted...

IET 406 Industrial Automation
Established in Cycle: 2010-2011

Action necessary for Project (2): Instructor make sure students understand the requirement, due date & desired content for...

M 2:M1.2 -- ABET-GCa -- Exit/Alumni Survey Results
M1.2: (ABET-GCa) Exit and Alumni Survey results for ABET General Criteria 'a'.

Source of Evidence: Academic indirect indicator of learning - other

Target:
80% of scores on the evaluation category supporting ABET General Criteria 'a' will have a minimum rating of "satisfactory" (3 or higher out of 5).

Findings (2011-2012) - Target: Not Reported This Cycle

SLO 2:OBJ02 -- ABET General Criteria b
IET students will have an ability to select and apply a knowledge of mathematics, science, engineering, and technology to engineering technology problems that require the application of principles and applied procedures or methodologies. (ABET General Criteria 'b')

Related Measures:

M 3:M2.1 -- ABET GCb -- Assessment Aggregates
M2.1: (ABET-GCb) Aggregate of assessments for ABET General Criteria 'b'.

Source of Evidence: Academic direct measure of learning - other

Target:
80% of students receive a score of 70 (out of 100) or better on assessments supporting ABET General Criteria 'b'.

Findings (2011-2012) - Target: Met
90% (521 of 577) of student work samples (projects, exams, quizzes, papers) were scored 70 (out of 100) or better on all assessments supporting ABET General Criteria 'b'
FA11: F-F = 100% (4 of 4); ONL = 89% (297 of 332);
SP12: F-F = 78% (14 of 18); ONL = 92% (206 of 223);

Related Action Plans (by Established cycle, then alpha):
For full information, see the Details of Action Plans section of this report.

AEC 390 Engineering Economics
Established in Cycle: 2010-2011
Some of the IET and BCT students missed at least 1 or 2 quizzes and 1 assignments because either they didn't see the quiz posted...

IET 406 Industrial Automation
Established in Cycle: 2010-2011

Action necessary for Project (2): Instructor make sure students understand the requirement, due date & desired content for...

M 4:M2.2 -- ABET-GCb -- Exit/Alumni Survey Results
M2.2: (ABET-GCb) Exit and Alumni Survey results for ABET General Criteria 'b'.

Source of Evidence: Academic indirect indicator of learning - other

Target:
80% of scores on the evaluation category supporting ABET General Criteria 'b' will have a minimum rating of "satisfactory" (3 or higher out of 5).
**SLO 3:OBJ03 -- ABET General Criteria c**

IET students will have an ability to conduct standard tests and measurements; to conduct, analyze, and interpret experiments; and to apply experimental results to improve processes. (ABET General Criteria 'c')

**Related Measures:**

**M 5:M3.1 -- ABET-GCc -- Assessment Aggregates**

M3.1: (ABET-GCc) Aggregate of assessments for ABET General Criteria 'c'.

Source of Evidence: Academic direct measure of learning - other

**Target:**

80% of students receive a score of 70 (out of 100) or better on assessments supporting ABET General Criteria 'c'.

**Findings (2011-2012) - Target: Met**

95% (58 of 61) of student work samples (projects, exams, quizzes, papers) were scored 70 (out of 100) or better on all assessments supporting ABET General Criteria 'c'

FA11: F-F = 0% (0 of 0); ONL = 100% (10 of 10);

SP12: F-F = 0% (0 of 0); ONL = 94% (48 of 51);

**M 6:M3.2 -- ABET-GCc -- Exit/Alumni Survey Results**

M3.2: (ABET-GCc) Exit and Alumni Survey results for ABET General Criteria 'c'.

Source of Evidence: Academic indirect indicator of learning - other

**Target:**

80% of scores on the evaluation category supporting ABET General Criteria 'c' will have a minimum rating of "satisfactory" (3 or higher out of 5).

**Findings (2011-2012) - Target: Not Reported This Cycle**

**SLO 4:OBJ04 -- ABET General Criteria d**

IET students will have an ability to design systems, components, or processes for broadly-defined engineering technology problems appropriate to program educational objectives. (ABET General Criteria 'd')

**Related Measures:**

**M 7:M4.1 -- ABET-GCd -- Assessment Aggregates**

M4.1: (ABET-GCd) Aggregate of assessments for ABET General Criteria 'd'.

Source of Evidence: Academic direct measure of learning - other

**Target:**

80% of students receive a score of 70 (out of 100) or better on assessments supporting ABET General Criteria 'd'.

**Findings (2011-2012) - Target: Met**

87% (354 of 406) of student work samples (projects, exams, quizzes, papers) were scored 70 (out of 100) or better on all assessments supporting ABET General Criteria 'd'

FA11: F-F = 100% (4 of 4); ONL = 85% (206 of 242);

SP12: F-F = 78% (14 of 18); ONL = 92% (130 of 142);
Related Action Plans (by Established cycle, then alpha):
For full information, see the Details of Action Plans section of this report.

AEC 390 Engineering Economics
Established in Cycle: 2010-2011
Some of the IET and BCT students missed at least 1 or 2 quizzes and 1 assignments because either they didn’t see the quiz posted...

IET 406 Industrial Automation
Established in Cycle: 2010-2011

Action necessary for Project (2): Instructor make sure students understand the requirement, due date & desired content for...

M 8:M4.2 -- ABET-GCd -- Exit/Alumni Survey Results
M4.2: (ABET-GCd) Exit and Alumni Survey results for ABET General Criteria 'd'.

Source of Evidence: Academic indirect indicator of learning - other

Target:
80% of scores on the evaluation category supporting ABET General Criteria 'd' will have a minimum rating of "satisfactory" (3 or higher out of 5).

Findings (2011-2012) - Target: Not Reported This Cycle

SLO 5:OBJ05 -- ABET General Criteria e
IET students will have an ability to function effectively as a member or leader on a technical team. (ABET General Criteria 'e')

Related Measures:

M 9:M5.1 -- ABET-GCe -- Assessment Aggregates
M5.1: (ABET-GCe) Aggregate of assessments for ABET General Criteria 'e'.

Source of Evidence: Academic direct measure of learning - other

Target:
80% of students receive a score of 70 (out of 100) or better on assessments supporting ABET General Criteria 'e'.

Findings (2011-2012) - Target: Met
98% (46 of 47) of student work samples (projects, exams, quizzes, papers) were scored 70 (out of 100) or better on all assessments supporting ABET General Criteria 'e'
FA11: F-F = 0% (0 of 0); ONL = 100% (32 of 32);
SP12: F-F = 0% (0 of 0); ONL = 93% (14 of 15);

Related Action Plans (by Established cycle, then alpha):
For full information, see the Details of Action Plans section of this report.

IET 406 Industrial Automation
Established in Cycle: 2010-2011

Action necessary for Project (2): Instructor make sure students understand the requirement, due date & desired content for...
M 10:M5.2 -- ABET-GCe -- Exit/Alumni Survey Results
M5.2: (ABET-GCe) Exit and Alumni Survey results for ABET General Criteria 'e'.

Source of Evidence: Academic indirect indicator of learning - other

Target:
80% of scores on the evaluation category supporting ABET General Criteria 'e' will have a minimum rating of "satisfactory" (3 or higher out of 5).

Findings (2011-2012) - Target: Not Reported This Cycle

SLO 6:OBJ06 -- ABET General Criteria f
IET students will have an ability to identify, analyze, and solve broadly-defined engineering technology problems. (ABET General Criteria 'f')

Related Measures:

M 11:M6.1 -- ABET-GCf -- Assessment Aggregates
M6.1: (ABET-GCf) Aggregate of assessments for ABET General Criteria 'f'.

Source of Evidence: Academic direct measure of learning - other

Target:
80% of students receive a score of 70 (out of 100) or better on assessments supporting ABET General Criteria 'f'.

Findings (2011-2012) - Target: Met
87% (596 of 688) of student work samples (projects, exams, quizzes, papers) were scored 70 (out of 100) or better on all assessments supporting ABET General Criteria 'f'
FA11: F-F = 100% (34 of 34); ONL = 86% (320 of 374);
SP12: F-F = 78% (14 of 18); ONL = 87% (228 of 262);

Related Action Plans (by Established cycle, then alpha):
For full information, see the Details of Action Plans section of this report.

AEC 390 Engineering Economics
Established in Cycle: 2010-2011
Some of the IET and BCT students missed at least 1 or 2 quizzes and 1 assignments because either they didn't see the quiz posted...

IET 406 Industrial Automation
Established in Cycle: 2010-2011

Action necessary for Project (2): Instructor make sure students understand the requirement, due date & desired content for...

M 12:M6.2 -- ABET-GCf -- Exit/Alumni Survey Results
M6.2: (ABET-GCf) Exit and Alumni Survey results for ABET General Criteria 'f'.

Source of Evidence: Academic indirect indicator of learning - other

Target:
80% of scores on the evaluation category supporting ABET General Criteria 'f' will have a minimum rating of "satisfactory" (3 or higher out of 5).
Findings (2011-2012) - Target: Not Reported This Cycle

SLO 7:OBJ07 -- ABET General Criteria g
IET students will have an ability to communicate effectively regarding broadly-defined engineering technology activities. (ABET General Criteria 'g')

Related Measures:

M 13:M7.1 -- ABET-GCg -- Assessment Aggregates
M7.1: (ABET-GCg) Aggregate of assessments for ABET General Criteria 'g'.

Source of Evidence: Academic direct measure of learning - other

Target:
80% of students receive a score of 70 (out of 100) or better on assessments supporting ABET General Criteria 'g'.

Findings (2011-2012) - Target: Met
90% (159 of 177) of student work samples (projects, exams, quizzes, papers) were scored 70 (out of 100) or better on all assessments supporting ABET General Criteria 'g'
FA11: F-F = 100% (6 of 6); ONL = 88% (84 of 95);
SP12: F-F = 0% (0 of 0); ONL = 91% (69 of 76);

Related Action Plans (by Established cycle, then alpha):
For full information, see the Details of Action Plans section of this report.

AEC 390 Engineering Economics
Established in Cycle: 2010-2011
Some of the IET and BCT students missed at least 1 or 2 quizzes and 1 assignments because either they didn't see the quiz posted...

IET 406 Industrial Automation
Established in Cycle: 2010-2011
Action necessary for Project (2): Instructor make sure students understand the requirement, due date & desired content for...

M 14:M7.2 -- ABET-GCg -- Exit/Alumni Survey Results
M7.2: (ABET-GCg) Exit and Alumni Survey results for ABET General Criteria 'g'.

Source of Evidence: Academic indirect indicator of learning - other

Target:
80% of scores on the evaluation category supporting ABET General Criteria 'g' will have a minimum rating of “satisfactory” (3 or higher out of 5).

Findings (2011-2012) - Target: Not Reported This Cycle

SLO 8:OBJ08 -- ABET General Criteria h
IET students will have an understanding of the need for and an ability to engage in self-directed continuing professional development. (ABET General Criteria 'h')
Related Measures:

**M 15:M8.1 -- ABET-GCh -- Assessment Aggregates**

M8.1: (ABET-GCh) Aggregate of assessments for ABET General Criteria 'h'.

Source of Evidence: Academic direct measure of learning - other

**Target:**
80% of students receive a score of 70 (out of 100) or better on assessments supporting ABET General Criteria 'h'.

**Findings (2011-2012) - Target: Met**
84% (255 of 302) of student work samples (projects, exams, quizzes, papers) were scored 70 (out of 100) or better on all assessments supporting ABET General Criteria 'h'.
- FA11: F-F = 100% (7 of 7); ONL = 82% (123 of 150);
- SP12: F-F = 78% (14 of 18); ONL = 87% (111 of 127);

**M 16:M8.2 -- ABET-GCh -- Exit/Alumni Survey Results**

M8.2: (ABET-GCh) Exit and Alumni Survey results for ABET General Criteria 'h'.

Source of Evidence: Academic indirect indicator of learning - other

**Target:**
80% of scores on the evaluation category supporting ABET General Criteria 'h' will have a minimum rating of "satisfactory" (3 or higher out of 5).

**Findings (2011-2012) - Target: Not Reported This Cycle**

**SLO 9:OBJ09 -- ABET General Criteria i**
IET students will have an understanding of and a commitment to address professional and ethical responsibilities including a respect for diversity. (ABET General Criteria 'i')

Related Measures:

**M 17:M9.1 -- ABET-GCi -- Assessment Aggregates**

M9.1: (ABET-GCi) Aggregate of assessments for ABET General Criteria 'i'.

Source of Evidence: Academic direct measure of learning - other

**Target:**
80% of students receive a score of 70 (out of 100) or better on assessments supporting ABET General Criteria 'i'.

**Findings (2011-2012) - Target: Met**
86% (75 of 87) of student work samples (projects, exams, quizzes, papers) were scored 70 (out of 100) or better on all assessments supporting ABET General Criteria 'i'.
- FA11: F-F = 100% (6 of 6); ONL = 71% (15 of 21);
- SP12: F-F = 0% (0 of 0); ONL = 90% (54 of 60);

**Related Action Plans (by Established cycle, then alpha):**
For full information, see the Details of Action Plans section of this report.
IET 406 Industrial Automation
Established in Cycle: 2010-2011

Action necessary for Project (2): Instructor make sure students understand the requirement, due date & desired content for...

M 18:M9.2 -- ABET-GCi -- Exit/Alumni Survey Results
M9.2: (ABET-GCi) Exit and Alumni Survey results for ABET General Criteria 'i'.

Source of Evidence: Academic indirect indicator of learning - other

Target:
80% of scores on the evaluation category supporting ABET General Criteria 'i' will have a minimum rating of "satisfactory" (3 or higher out of 5).

Findings (2011-2012) - Target: Not Reported This Cycle

SLO 10:OBJ10 -- ABET General Criteria j
IET students will have a knowledge of the impact of engineering technology solutions in a societal and global context. (ABET General Criteria 'j')

Related Measures:

M 19:M10.1 -- ABET-GCj -- Assessment Aggregates
M10.1: (ABET-GCj) Aggregate of assessments for ABET General Criteria 'j'.

Source of Evidence: Academic direct measure of learning - other

Target:
80% of students receive a score of 70 (out of 100) or better on assessments supporting ABET General Criteria 'j'.

Findings (2011-2012) - Target: Met
87% (195 of 223) of student work samples (projects, exams, quizzes, papers) were scored 70 (out of 100) or better on all assessments supporting ABET General Criteria 'j'
FA11: F-F = 0% (0 of 0); ONL = 87% (160 of 183);
SP12: F-F = 0% (0 of 0); ONL = 88% (35 of 40);

M 20:M10.2 -- ABET-GCj -- Exit/Alumni Survey Results
M10.2: (ABET-GCj) Exit and Alumni Survey results for ABET General Criteria 'j'.

Source of Evidence: Academic indirect indicator of learning - other

Target:
80% of scores on the evaluation category supporting ABET General Criteria 'j' will have a minimum rating of "satisfactory" (3 or higher out of 5).

Findings (2011-2012) - Target: Not Reported This Cycle

SLO 11:OBJ11 -- ABET General Criteria k
IET students will have a commitment to quality, timeliness, and continuous improvement. (ABET General Criteria 'k')

Related Measures:
**M 21:M11.1 -- ABET-GCk -- Assessment Aggregates**

M11.1: (ABET-GCk) Aggregate of assessments for ABET General Criteria 'k'.

Source of Evidence: Academic direct measure of learning - other

**Target:**
80% of students receive a score of 70 (out of 100) or better on assessments supporting ABET General Criteria 'k'.

**Findings (2011-2012) - Target: Met**
84% (433 of 517) of student work samples (projects, exams, quizzes, papers) were scored 70 (out of 100) or better on all assessments supporting ABET General Criteria 'k'

FA11: F-F = 100% (33 of 33); ONL = 80% (196 of 244);
SP12: F-F = 0% (0 of 0); ONL = 85% (204 of 240);

**Related Action Plans (by Established cycle, then alpha):**
For full information, see the Details of Action Plans section of this report.

**IET 406 Industrial Automation**

*Established in Cycle: 2010-2011*

Action necessary for Project (2): Instructor make sure students understand the requirement, due date & desired content for...

**M 22:M11.2 -- ABET-GCk -- Exit/Alumni Survey Results**

M11.2: (ABET-GCk) Exit and Alumni Survey results for ABET General Criteria 'k'.

Source of Evidence: Academic indirect indicator of learning - other

**Target:**
80% of scores on the evaluation category supporting ABET General Criteria 'k' will have a minimum rating of "satisfactory" (3 or higher out of 5).

**Findings (2011-2012) - Target: Not Reported This Cycle**

**SLO 12:OBJ12 -- ABET Associate Criteria a**

IET graduates demonstrate the ability to accomplish the integration of systems using appropriate analytical, computational, and application practices and procedures. (ABET Associate Degree Program Specific Criteria 'a')

**Related Measures:**

**M 23:M12.1 -- ABET-ADa -- Assessment Aggregates**

M12.1: (ABET-ADa) Aggregate of assessments for ABET Associate Degree Program Specific Criteria 'a'.

Source of Evidence: Academic direct measure of learning - other

**Target:**
80% of students receive a score of 70 (out of 100) or better on assessments supporting ABET Associate Degree Program Specific Criteria 'a'.

**Findings (2011-2012) - Target: Met**
85% (537 of 629) of student work samples (projects, exams, quizzes, papers) were scored 70 (out of 100) or better on all assessments supporting ABET Associate Degree Program Specific Criteria 'a'

FA11: F-F = 100% (34 of 34); ONL = 85% (313 of 367);
SP12: F-F = 78% (14 of 18); ONL = 84% (176 of 210);

**Related Action Plans (by Established cycle, then alpha):**
For full information, see the *Details of Action Plans* section of this report.

**AEC 390 Engineering Economics**
*Established in Cycle: 2010-2011*
Some of the IET and BCT students missed at least 1 or 2 quizzes and 1 assignments because either they didn't see the quiz posted...

**IET 406 Industrial Automation**
*Established in Cycle: 2010-2011*

Action necessary for Project (2): Instructor make sure students understand the requirement, due date & desired content for...

**M 24:M12.2 -- ABET-ADa -- Exit/Alumni Survey Results**
M12.2: (ABET-ADa) Exit and Alumni Survey results for ABET Associate Degree Program Specific Criteria 'a'.

Source of Evidence: Academic indirect indicator of learning - other

**Target:**
80% of scores on the evaluation category supporting ABET Associate Degree Program Specific Criteria 'a' will have a minimum rating of "satisfactory" (3 or higher out of 5).

**Findings (2011-2012) - Target: Not Reported This Cycle**

**SLO 13:OBJ13 -- ABET BS Criteria a**
IET graduates demonstrate the ability to apply knowledge of probability, statistics, engineering economic analysis and cost control, and other technical sciences and specialties necessary in the field of industrial engineering technology. (ABET Baccalaureate Degree Program Specific Criteria 'a')

**Related Measures:**

**M 25:M13.1 -- ABET-BSa -- Assessment Aggregates**
M13.1: (ABET-BSa) Aggregate of assessments for ABET Baccalaureate Degree Program Specific Criteria 'a'.

Source of Evidence: Academic direct measure of learning - other

**Target:**
80% of students receive a score of 70 (out of 100) or better on assessments supporting ABET Baccalaureate Degree Program Specific Criteria 'a'.

**Findings (2011-2012) - Target: Met**
87% (559 of 644) of student work samples (projects, exams, quizzes, papers) were scored 70 (out of 100) or better on all assessments supporting ABET Baccalaureate Degree Program Specific Criteria 'b'

FA11: F-F = 100% (34 of 34); ONL = 85% (260 of 305);
SP12: F-F = 78% (14 of 18); ONL = 87% (251 of 287);

**Related Action Plans (by Established cycle, then alpha):**
For full information, see the *Details of Action Plans* section of this report.

**AEC 390 Engineering Economics**
*Established in Cycle: 2010-2011*
Some of the IET and BCT students missed at least 1 or 2 quizzes and 1 assignments because either they didn't see the quiz posted...

**IET 406 Industrial Automation**  
*Established in Cycle:* 2010-2011  

Action necessary for Project (2): Instructor make sure students understand the requirement, due date & desired content for...

**M 26:M13.2 -- ABET-BSa -- Exit/Alumni Survey Results**  
M13.2: (ABET-BSa) Exit and Alumni Survey results for ABET BaccalaureateDegree Program Specific Criteria 'a'.  

Source of Evidence: Academic indirect indicator of learning - other  

**Target:**  
80% of scores on the evaluation category supporting ABET Baccalaureat Degree Program Specific Criteria 'a' will have a minimum rating of "satisfactory" (3 or higher out of 5).  

**Findings (2011-2012) - Target: Not Reported This Cycle**  

**Details of Action Plans for This Cycle (by Established cycle, then alpha)**  

**AEC 390 Engineering Economics**  
Some of the IET and BCT students missed at least 1 or 2 quizzes and 1 assignments because either they didn’t see the quiz posted or missed the deadline.  

**Established in Cycle:** 2010-2011  
**Implementation Status:** In-Progress  
**Priority:** High  

**Relationships (Measure | Outcome/Objective):**  
- **Measure:** M1.1 -- ABET-GCa -- Assessment Aggregates | **Outcome/Objective:** OBJ01 -- ABET General Criteria a  
- **Measure:** M12.1 -- ABET-ADa -- Assessment Aggregates | **Outcome/Objective:** OBJ12 -- ABET Associate Criteria a  
- **Measure:** M13.1 -- ABET-BSa -- Assessment Aggregates | **Outcome/Objective:** OBJ13 -- ABET BS Criteria a  
- **Measure:** M2.1 -- ABET GCb -- Assessment Aggregates | **Outcome/Objective:** OBJ02 -- ABET General Criteria b  
- **Measure:** M4.1 -- ABET-GCd -- Assessment Aggregates | **Outcome/Objective:** OBJ04 -- ABET General Criteria d  
- **Measure:** M6.1 -- ABET-GCf -- Assessment Aggregates | **Outcome/Objective:** OBJ06 -- ABET General Criteria f  
- **Measure:** M7.1 -- ABET-GCg -- Assessment Aggregates | **Outcome/Objective:** OBJ07 -- ABET General Criteria g  

**Implementation Description:** A more rigorous reminder system should be introduced to increase the level of awareness of students.  
**Responsible Person/Group:** MD. Sarder  

**IET 406 Industrial Automation**  

Action necessary for Project (2): Instructor make sure students understand the requirement, due date & desired content for the project
Established in Cycle: 2010-2011
Implementation Status: In-Progress
Priority: High

Relationships (Measure | Outcome/Objective):

Measure: M1.1 -- ABET-GCa -- Assessment Aggregates | Outcome/Objective: OBJ01 -- ABET General Criteria a
Measure: M11.1 -- ABET-GCk -- Assessment Aggregates | Outcome/Objective: OBJ11 -- ABET General Criteria k
Measure: M12.1 -- ABET-ADa -- Assessment Aggregates | Outcome/Objective: OBJ12 -- ABET Associate Criteria a
Measure: M13.1 -- ABET-BSa -- Assessment Aggregates | Outcome/Objective: OBJ13 -- ABET BS Criteria a
Measure: M2.1 -- ABET-GCb -- Assessment Aggregates | Outcome/Objective: OBJ02 -- ABET General Criteria b
Measure: M4.1 -- ABET-GCd -- Assessment Aggregates | Outcome/Objective: OBJ04 -- ABET General Criteria d
Measure: M5.1 -- ABET-GCe -- Assessment Aggregates | Outcome/Objective: OBJ05 -- ABET General Criteria e
Measure: M6.1 -- ABET-GCf -- Assessment Aggregates | Outcome/Objective: OBJ06 -- ABET General Criteria f
Measure: M7.1 -- ABET-GCg -- Assessment Aggregates | Outcome/Objective: OBJ07 -- ABET General Criteria g
Measure: M9.1 -- ABET-GCi -- Assessment Aggregates | Outcome/Objective: OBJ09 -- ABET General Criteria i

Responsible Person/Group: Md. Rahman

Analysis Questions and Analysis Answers

What specifically did your assessments show regarding proven strengths or progress you made on outcomes/objectives?

The Architectural Engineering Technology (ACT), Construction Engineering Technology (BCT), Industrial Engineering Technology (IET) programs in the School of Construction have undergone a complete overhaul of the assessment plan for the 2010-2011 assessment cycle. The plan, described fully in the "Continuous Improvement Initiatives" and "Closing the Loop" sections of WeaveOnline, is closely tied to our external accreditation agency: Technology Accreditation Commission-Accreditation Board for Engineering and Technology (TAC-ABET). We believe this approach will provide the faculty with a much easier reporting mechanism yet more thorough and accurate picture of assessment at both the course level and the program level.

What specifically did your assessments show regarding any outcomes/objectives that will require continued attention?

At the program level, the performance targets for all objectives were met. The process we have developed allows micro- or macro-level views of the assessment outcomes. There are a few course level assessments that have been reported in WeaveOnline due to not meeting the performance target at the course-level.

Annual Report Section Responses

Program Summary

The Industrial Engineering Technology (IET) program is designed to provide the student with essential
education in the various areas of industrial engineering technology and logistics management. IET delivers student with fundamental interdisciplinary techniques of quantitative problem-solving methods, management science, economic analysis, and operations management of industrial engineering and supply chain domain. Furthermore, the IET program provides students with a broad-based education with an emphasis on critical thinking, technical problem-solving ability, and computer applications in addition to a background in industrial engineering technology. The IET program is committed to producing graduates who possess the necessary skills, critical thinking, discipline and work ethics to enter the industrial engineering and logistics industry fully capable of performing entry-level tasks at the office and in the field.

The IET initiative supports Southern Miss' emergence as the premier research University of the Gulf South through undergraduate and graduate research. For example, IET have been very productive in grant submission. In the past three years the faculty submitted at least 25 proposals to various agencies for more than $7 million. Students & faculty conducting undergraduate research (in the related IET and logistics field) are advancing the research vision of the University with state-of-the-art research.

The Program Educational Objective of the IET program is: "Graduates possess the necessary skills, critical thinking, discipline and work ethics to enter the industrial and logistics industry fully capable of performing entry-level tasks consistent with the expectations of employers." This fully supports the Mission of the Institution by cultivating intellectual development and creativity through the generation and application of knowledge. IET’s mission is consistent with the College of Science & Technology's Mission Statement as well as the University's Mission Statement.

Recent survey responses indicate our alumni in all program areas are more than satisfied with their degree in the areas of critical thinking, teamwork, communication skills, design process, ethics, modern techniques, professionalism, diversity, lifelong learning and preparation (TAC-ABET accreditation self-studies 2009). IET is responsive to IHL priorities in a number of ways: educating a reentering workforce and has taken innovative approaches to curriculum delivery such as developing a completely online curriculum. The IET program produces very competent graduates. 100% of our graduates get their discipline specific job within first year of graduation. Since its inception, the program is growing. High demand of IET graduates, competent faculty, and program quality make the program sustainable. The program lies squarely within the IHL STEM priorities for meaningful, successful careers. IET externally accredited by TAC-ABET. IET encourages 2+2 building agreements to provide seamless transitions to USM.

Continuous Improvement Initiatives

This program underwent a 6th year TAC-ABET accreditation visit in fall 2010. From that visit, it was apparent that the program objectives in WeaveOnline did not provide adequate resolution from program level to course level. The organization of supporting materials and student samples of work was also extremely difficult to collect and organize in a meaningful manner. It was decided then to reorganize the program learning outcomes to exactly map to the TAC-ABET general and program specific criteria with direct linkages from each course in the program that supported a particular criterion. This is the second year of this implementation. For the Industrial Engineering Technology program, these criteria are:

**General Criteria for all programs**

For baccalaureate degree programs, these student outcomes must include, but are not limited to, the following learned capabilities:

a. an ability to select and apply the knowledge, techniques, skills, and modern tools of their disciplines to broadly-defined engineering technology activities,

b. an ability to select and apply a knowledge of mathematics, science, engineering, and technology to engineering technology problems that require the application of principles and applied procedures or methodologies,

c. an ability to conduct standard tests and measurements; to conduct, analyze, and interpret experiments; and to apply experimental results to improve processes,
d. an ability to design systems, components, or processes for broadly-defined engineering technology problems appropriate to program educational objectives,

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

f. an ability to identify, analyze, and solve broadly-defined engineering technology problems,

g. an ability to communicate effectively regarding broadly-defined engineering technology activities,

h. an understanding of the need for and an ability to engage in self-directed continuing professional development,

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

j. a knowledge of the impact of engineering technology solutions in a societal and global context, and

k. a commitment to quality, timeliness, and continuous improvement.

Criteria Specific to Industrial Engineering Technology

a. Graduates must demonstrate the ability to accomplish the integration of systems using appropriate analytical, computational, and application practices and procedures.

b. Graduates at the baccalaureate level must demonstrate the ability to apply knowledge of probability, statistics, engineering economic analysis and cost control, and other technical sciences and specialties necessary in the field of industrial engineering technology.

Faculty then mapped each of their course objectives to the TAC-ABET criteria using a listing of the tools/methods for assessing each objective/criteria. This provided evidence of which courses in the program inventory were supporting any given TAC-ABET criteria and also provided a simple index system for staff to organize supporting materials by criteria for inspection. And, while TAC-ABET only requires summative evidence, this approach easily provides for formative inspection of the curriculum.

WeaveOnline Objectives reflect the exact TAC-ABET criteria with two measures for each criteria: one direct and one indirect. The direct measures are the aggregated assessments for all student work samples (projects, exams, quizzes, papers) as determined by the faculty in their mapping exercise. The indirect measures will be the graduate exit surveys and alumni surveys rewritten to also reflect the TAC-ABET criteria; these have not yet been implemented for this cycle.

Faculty then reported their findings for each section of their courses for fall 2011 and spring 2012. At the course level, it was decided to begin this process using targets of 80% of students would achieve 70 (out of 100) on the assessments. The findings were separated by program area the course might serve; for example, a course might have Architectural Engineering Technology (ACT), Construction Engineering Technology (BCT), Industrial Engineering Technology (IET), or other (OTHER) students. These findings were organized in a master spreadsheet organized so that the findings for each criteria for each program by semester and by delivery type (online or face-to-face) could be summed. This provides the total number of student samples for each criteria meeting the performance target versus total number of students being assessed. The findings for each criteria were then entered in WeaveOnline as annual summation values as well as being reported by semester and by type of site or delivery method. This system allows the program faculty to see the impact of their courses as a whole and individually on each criteria.

Beyond the reporting system for SACS and TAC-ABET, the faculty also now have a systematic approach to evaluate each of their course objectives using the defined performance target levels to look at weaknesses in each course.
**Closing the Loop**

At the program level, all performance targets were met. In the Industrial Engineering Technology (IET) program, this is represented by 4,357 student work samples (out of 4,995) that were evaluated as better than or equal to 70 (out of 100). The percentage of samples better than or equal to 70 is 87% which exceeds our stated level of performance of 80%.

Since the data is driven from the ground up (that is, from the faculty), the value of this assessment approach is that all faculty are involved rather than a select few as previously. The faculty are able to review their course level findings with respect to either the TAC-ABET criteria or the course objectives (which are generally more important to them). Although we have met all performance targets at the annual program level, there are findings (also reported in WeaveOnline) where the semester based report for either face-to-face or online might not have met the performance target. It is a simple matter to drill back down to the course level and determine which assessment tools the students were having difficulty with.

When the faculty submitted their findings, they were asked to provide an assessment of any finding that went below the 80% threshold and develop action plans as needed. In some cases, the issue was too few students in a section; these sections did not require an action plan but would be monitored. Sections with significant student numbers that had assessments below targets were added to the action plan section in WeaveOnline.