Learning Outcome(s)

**Learning outcome 2:**
Our graduates are prepared to succeed in managerial and leadership positions.

**Competencies:** They are able to:
(2.a) Demonstrate project management skills by applying time value of money, select and implement cost-effective solutions and understand cost-accounting and effective scheduling principles;
(2.b) Develop, motivate, direct, and assist teams in applying critical thinking concepts to solve technology and engineering problems;
(2.c) Identify customer project goals, financial needs, timeline constraints, and other customer service based efforts.

**Aligns with University Learning**

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<th>Findings</th>
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<tr>
<td><strong>Direct Measure</strong> (a) Collect samples of student work for each course, e.g., student assignments, course projects, and examinations. (b) Collect student portfolios. (c) Acquire online course evaluations. These same measures apply to all learning outcomes.</td>
<td><strong>Direct Benchmarks</strong> The Industrial Technology program is using the Association of Technology, Management, and Applied Engineering (ATMAE) Certified Technology Management (CTM) examination as a direct assessment tool of graduating seniors.</td>
<td><strong>Direct Findings</strong> Reviewed samples of student work, portfolios and capstone projects indicate that the students are achieving the stated learning outcomes and competencies. The online course evaluations demonstrate high level of satisfaction of our students with the quality of offered courses and with the performance of the program instructors.</td>
<td>Continue to collect data and review the implementation of the program learning outcomes and competencies on an annual review process. Continue to collect samples of student course work, conduct exit interviews with graduates and surveys with employers and alumni. Collect input from the program Advisory Board, students, peers, and industrial clients and partners. Work through the curriculum proposed changes with the Curriculum Committee to align the number of program credit hours with the ATMAE requirements. Make arrangements for students and instructors to take the CTM examination.</td>
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<td><strong>Indirect Measure</strong> (a) Collect feedback from employer survey. (b) Obtain input from the program Advisory Board. (c) Conduct alumni survey.</td>
<td><strong>Indirect Benchmarks</strong> The results from interviews and surveys demonstrate that the overall satisfaction with the program meeting the stated learning outcomes is on average at least 'very good'.</td>
<td><strong>Indirect Findings</strong> The feedback from the surveys of the employers of our graduates and from the program alumni conducted in May-June 2016 indicate predominantly positive opinions of the Industrial Technology program and an adequate level of competence in</td>
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<td><strong>Face-to-Face Measures</strong> (a) Conduct exit interviews with graduating students. (b) Collect inputs from students’ direct feedback and comments, discussions with</td>
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**Outcome(s):**
Learn and Integrate

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**Learning outcome 1:**
Our graduates are prepared to design, implement and improve processes and systems in the manufacturing, research and development, service or government sectors.

**Competencies:** They are able to:
(1.a) Apply theories and principles from mathematics, physical science, and computer applications and information technology to solve practical technology problems;
(1.b) Apply quality, safety, and industrial technology skills in a professional work environment within real world constraints;
(1.c) Demonstrate proficiency in the use of robotics and manufacturing equipment to solve practical technology and engineering problems;

meeting the program goals. The input from the Advisory Board has been very positive. The document that we prepared for the 2-year report to be submitted to ATMAE was reviewed by the Advisory Board before the submission, and it was evaluated as excellent and thorough.

**Face-to-Face Findings**
The exit interviews indicate that the graduate seniors obtain an appropriate level of technical skills and competencies that is aligned with the program learning outcomes and competencies as defined by the Advisory Board. The graduates stated that the obtained educational experience in achieving the program outcomes was on average ‘very good’ to ‘excellent.’ The input from student correspondence,

Start a chapter of Epsilon Pi Tau Technology Honor Society to broaden opportunities for the programs students.
(1.d) Apply the principles of cognitive systems and human performance to perform task analyses and evaluate human-computer/machine interfaces;
(1.e) Interpret, describe, and implement information contained in typical project specifications.

Aligns with University Learning Outcome(s):
Learn and Integrate Clarify Purpose and Perspective

Learning outcome 4:
Our graduates are prepared to engage in today's evolving market place.
Competencies: They are able to:
(4.a) Analyze contemporary issues for pertinence and potential impacts;
(4.b) Describe and evaluate professional and ethical responsibilities;
(4.c) Demonstrate the ability to adapt emerging
technologies;
(4.d) Recognize and evaluate the impact of engineering decisions in a global and societal context;
(4.e) Put into practice the concepts of service learning.

Aligns with University Learning Outcome(s):
Think and Create Practice Citizenship

Learning outcome 3:
Our graduates are prepared to communicate with team members, work in teams, customers, and suppliers in the global environment.

Competencies: They are able to:
(3.a) Demonstrate good written and oral communication skills and use current multimedia tools to convey information;
(3.b) Draw conclusions from and explain information synthesized from several sources;
(3.c) Manage dispute resolution to mutually
beneficial accord.

Aligns with
University Learning
Outcome(s):
Communicate
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| **Learning outcome 1:** Our graduates are prepared to design, implement and improve processes and systems in the manufacturing, research and development, service or government sectors. | **Direct Measure**
(a) Student work, i.e., student projects and examinations. (b) Student portfolio | **Direct Benchmarks** | **Direct Findings** | **Face-to-Face Findings** |
| **Competencies:** They are able to: (1.a) Apply theories and principles from mathematics, physical science, and computer applications and information technology to solve practical technology problems; (1.b) Apply quality, safety, and industrial technology skills in a professional work environment within real world constraints; (1.c) Demonstrate proficiency in the use of robotics and manufacturing equipment to solve practical technology and engineering problems. | **Indirect Measure**
(a) Feedback from industry and advisory groups | **Indirect Benchmarks** | **Indirect Findings** | **Face-to-Face Findings** |
problems;
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Aligns with University Learning Outcome(s):
Learn and Integrate
Clarify Purpose and Perspective
## Learning Outcome(s)

### Learning outcome 2:
Our graduates are prepared to succeed in managerial and leadership positions.  

**Competencies:** They are able to:

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### Assessment Tools and Procedures

- **Direct Measure**
  - (a) Student work, i.e., student projects and examinations.
  - (b) Student portfolio
- **Indirect Measure**
  - (a) Feedback from industry and advisory groups
- **Face-to-Face Measures**
  - (a) Discussions with industry, peers, and instructors

### Benchmarks

- **Direct Benchmarks**
  - There are three certifications that are appropriate benchmarks for this program depending on the student’s focus. They are: Certified Safety Professional (CSP); Certified Hazardous Material Manager (CHMM); Certified Manufacturing Technologist (CMT).
  - At the undergraduate level the benchmark shall be 70% of the students will have the ability to pass the examinations for the CSP or the CHMM. 90% of the students who take the appropriate coursework should pass the CMT examination.

### Findings

- **Direct Findings**

- **Indirect Findings**

- **Face-to-Face Findings**

### Curricular and Co-Curricular Changes to be Made

Aligns with University Learning Outcome(s):
Learning Outcome(s) | Assessment Tools and Procedures | Benchmarks | Findings | Curricular and Co-Curricular Changes to be Made
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**Aligns with University Learning Outcome(s):**  
Think and Create  
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### Learning Outcome(s)

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**Aligns with University Learning Outcome(s):**
Communicate

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Close the Loop Questions

Discuss your progress on the actions identified in your Assessment plan for 2014-15.

We have prepared a two-year report for the Association of Technology, Management, and Applied Engineering (ATMAE) and submitted the report in August 2016. The Industrial Technology program was accredited by the Board of Accreditation of ATMAE in November 2014, with a requirement to submit a two-year report by November 2016. We have addressed several questions indicated by ATMAE as partially compliant in achieving the program learning outcomes and competencies: (1) To measure the congruency of the stated competencies with the established learning outcomes in 2016 we conducted exit interviews of INDT graduates, employer survey, and alumni survey. (2) To provide additional assessment measures of identified competencies, 2 recent graduates from the INDT program and one of the program instructors took and passed the AMTAE Certified Technology Manager (CTM) exam in May 2016. (3) To address the concern expressed by ATMAE regarding the program requirement of 57 technical credit hours which exceed the ATME requirement by 21 credit hours, we revised our curriculum and we are going to submit requests for curriculum changes to the University Curriculum Committee in Fall 2016. (4) We updated our syllabus template by including a section listing the learning outcomes and competencies for a particular course, based on a chart that maps the program courses to the learning outcomes and competencies.

In what ways were the changes you made in 2014-15 effective in improving your program?

The changes made in 2014-15 helped us in assessing the value of the educational experience provided to our students. The exit interview and the employer and alumni surveys reinforced our beliefs that the program is well positioned for meeting the set educational goals. Passing the CTM examination by our students and instructor indicated that the quality of our program is at the level of the ATMAE organization. The update of our syllabus helped in matching the individual course objectives with the stated learning outcomes and competencies.

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