AC 2009-1308: THE ELECTRICAL ENGINEERING TECHNOLOGY PROGRAM
OUTCOMES ASSESSMENT PROCESS: CLOSING THE LOOP

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The Electrical Engineering Technology Program Outcomes Assessment Process – Closing the Loop!

Abstract
The Electrical Engineering Technology program developed a Program Outcomes (POs) assessment process in response to Accreditation Board of Engineering Technology (ABET) requirements. The EET Program Outcomes capture the desired attributes that the EET program aspires to impart on its students through the curriculum and the academic experience. More precisely, what do we expect our graduates to know upon graduation. This paper details the assessment process developed by the program, as well as the implementation process that took place in the academic year 2007-2008. An interim report submitted to ABET resulted in the resolution of the institutional weakness regarding ABET criterion 3 (Assessment and Evaluation).1

The program outcomes are identified in line with ABET’s Technology Accreditation Commission (TAC). For each Program Outcome, a combination of direct and indirect assessment tools has been identified in addition to the assessment criteria of each assessment tool. Assessment tools include end-of-semester course assessment, student rating of instruction, senior exit exam, senior project evaluation, and senior exit survey. This paper will discuss the program outcomes, both direct and indirect assessment tools, how these tools are used in the program outcomes assessment process, how frequently data is collected for each assessment tool, who is responsible for data collection, analysis, and how data is used for continuous improvements. The end-of-semester course assessment, student rating of instruction, senior exit exam, and senior exit survey are assessed every semester, while the senior project evaluation is assessed annually.

The average results for each Program Outcome were obtained by using several assessment tools. The results revealed no major shortcomings in the EET students’ achievement, i.e. the overall averaged results were above the targeted achievement levels. However, assessment process did identify areas which might benefit from improvement. Based on this assessment, recommendations are made for the purpose of continuous improvement. This paper provides information on the Program Outcomes assessment process issues and challenges and will be of benefit to engineering technology programs seeking accreditation or re-accreditation.

1. Introduction
The curriculum of the Electrical Engineering Technology program covers a broad-based educational experience emphasizing practical, hands-on laboratory work, closely coordinated with theoretical classroom discussion. Students receive a solid foundation of coursework in electric circuits, digital electronics, solid-state electronics, communications, power and electrical machinery.

The Electrical Engineering Technology program has developed a Program Outcomes (POs) assessment process to fulfill ABET accreditation requirements. It is an outcome-based assessment in which the POs should meet the needs of the program constituents. Program Outcomes (POs) capture the desired attributes that the EET program at the School of Technology aspires to impart to its students through the curriculum and academic experience. According to ABET’s definition
of POs, “Program Outcomes are narrower statements that describe what students are expected to know and be able to do by the time of graduation”\(^1\). A set of assessment tools with performance criteria has been identified for each PO. Data has been regularly collected, assessed and evaluated against the performance criteria to ensure that each PO has been assessed and goals have been met. Results of assessment process are then utilized in continuous improvement actions.

2. EET Program Outcomes

The EET Program Outcomes capture the desired attributes that the EET program at the School of Technology (SoT) aspires to impart to its students through both the curriculum and academic experience. The desired outcomes of the EET program were adopted from ABET’s (a) through (k) outcomes shown in Table 1 as Outcomes 1 through 11 as well as ABET’s Electrical/Electronics Engineering Technology Program Criteria Outcomes\(^1\) shown in Table 1 as Outcomes 12 through 16.

<table>
<thead>
<tr>
<th>Outcome 1</th>
<th>An appropriate mastery of the knowledge, techniques, skills and modern tools of the discipline (ABET 2.a)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outcome 2</td>
<td>An ability to apply current knowledge and adapt emerging applications of mathematics, science, engineering and technology (ABET 2.b)</td>
</tr>
<tr>
<td>Outcome 3</td>
<td>An ability to conduct, analyze and interpret experiments and apply experimental results to improve processes (ABET 2.c)</td>
</tr>
<tr>
<td>Outcome 4</td>
<td>An ability to apply creativity in the design of systems, components or processes appropriate to the program objectives (ABET 2.d)</td>
</tr>
<tr>
<td>Outcome 5</td>
<td>An ability to function effectively on teams (ABET 2.e)</td>
</tr>
<tr>
<td>Outcome 6</td>
<td>An ability to identify, analyze and solve technical problems (ABET 2.f)</td>
</tr>
<tr>
<td>Outcome 7</td>
<td>An ability to communicate effectively (ABET 2.g)</td>
</tr>
<tr>
<td>Outcome 8</td>
<td>A recognition of the need for and ability to engage in lifelong learning (ABET 2.h)</td>
</tr>
<tr>
<td>Outcome 9</td>
<td>An ability to understand professional, ethical and social responsibilities (ABET 2.i)</td>
</tr>
<tr>
<td>Outcome 10</td>
<td>A respect for diversity and a knowledge of contemporary professional, societal and global issues (ABET 2.j)</td>
</tr>
<tr>
<td>Outcome 11</td>
<td>A commitment to quality, timeliness and continuous improvement (ABET 2.k)</td>
</tr>
<tr>
<td>Outcome 12</td>
<td>The application of circuit analysis and design, computer programming, associated software, analog and digital electronics, and microcomputers to the building, testing, operation and maintenance of electrical/electronic(s) systems. (ABET 8.a)</td>
</tr>
<tr>
<td>Outcome 13</td>
<td>The application of physics or chemistry to electrical/electronic(s) circuits in a rigorous mathematical environment at or above the level of algebra and trigonometry. (ABET 8.b)</td>
</tr>
<tr>
<td>Outcome 14</td>
<td>The ability to analyze, design and implement control systems, instrumentation systems, communication systems or power systems. (ABET 8.c)</td>
</tr>
<tr>
<td>Outcome 15</td>
<td>The ability to apply project management techniques to electrical/electronic(s) systems. (ABET 8.d)</td>
</tr>
<tr>
<td>Outcome 16</td>
<td>The ability to utilize statistics/ probability, transform methods, discrete mathematics, or applied differential equations in support of electrical/electronic(s) systems. (ABET 8.e)</td>
</tr>
</tbody>
</table>

Table 1 Electrical Engineering Technology Program Outcomes\(^1\)
3. Program Outcomes Assessment Tools and Timelines

The EET program developed a set of assessment tools to measure the POs defined in Table 1, in response to ABET Criterion 3 (Assessment and Evaluation). The EET program POs assessment tools include a combination of direct and indirect measures\(^2,3,4\) of the EET Program. Examples of direct measures are the Senior Project Evaluation, the End of Semester Course Assessment and the Senior Exit Exam. The Senior Exit Survey represents an indirect measure. Table 2 summarizes the various tools used to collect data in order to assess our Program Outcomes. The table also identifies the person responsible for collecting and analyzing the data as well as the frequency of the assessment tool. Setting a timeline will help simplify the tasks associated with the assessment process. Not every assessment tool needs to be implemented every semester, so it is important to have a process in place detailing the timelines for data collection of each assessment tools, the person who is responsible for the collection, analysis, and evaluation of the assessment data. A brief description of each tool is provided below.

<table>
<thead>
<tr>
<th>Assessment Tool</th>
<th>Responsible for Data Collection/Analysis</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course Assessment</td>
<td>Faculty</td>
<td>Semester</td>
</tr>
<tr>
<td>Student Rating of Instruction</td>
<td>Center for Teaching, Learning, &amp; Faculty Development</td>
<td>Semester (All Courses)</td>
</tr>
<tr>
<td>Senior Exit Survey</td>
<td>SOT Staff</td>
<td>Semester</td>
</tr>
<tr>
<td>Senior Project Evaluation</td>
<td>Faculty</td>
<td>Annually</td>
</tr>
<tr>
<td>Senior Exit Exam</td>
<td>Faculty</td>
<td>Semester</td>
</tr>
</tbody>
</table>

Table 2: Summary of Assessment Tools

Course Assessment

All faculty members are required to conduct individual course assessments at the end of each semester. Data gathered during this process is used to make adjustments and improve the student learning experience. Each course objective is linked to POs, for each course objective, an assessment tool or set of assessment tools chosen by the faculty which can include assignments, labs, exams, quizzes, and performance projects. The achievement standard is that 70% of the students perform at a level of 70% or better for each of the course objectives which are linked to the program outcomes (ABET C.2 a-k, C.8 a-e). Based on the results of course assessment, a list of continuous improvements actions is compiled and recommended of the next time offering of the course.

Student Rating of Instruction

A standard university instrument administered by the Center for Teaching, Learning and Faculty Development is used to obtain student feedback regarding instructor performance in the classroom. There are twenty questions on the survey, the first eighteen questions are based on best practice and covers not only curriculum but also classroom and lab facilities. On the other hand, question 19 and 20 are intended to elicit students’ feedback on their overall assessment of the instruction, students are also encourage to
provide a written comments to help improvements of teaching practice. Each faculty member will also add extra questions to elicit responses from students on their overall assessment of achieving the declared course objectives which are linked to the program outcomes (ABET C.2 a-k, C.8 a-e).

**Senior Exit Exam**

The Senior Exit exam is administered to measure student competence in areas identified as critical to the EET Program. The exam consists of 50 multiple choice questions with five questions for each representative course. We anticipate use of a nationally normed assessment tool currently under development by Electrical and Computer Engineering Technology Department Head Association (ECETDHA) and supported by The Institute of Electrical and Electronics Engineers (IEEE), when it becomes available.

**Senior Project Evaluation**

The Senior Project Evaluation comprises the student performance on the senior capstone project as measured by an examiner. The examiner attends the project presentations at the end of the semester and assesses each student based on relevant criteria using a level ranking assigned to quantify the senior project examiner’s opinion. Each project was assessed by at least two examiners drawn from the Industrial Advisory Board and faculty members. A rubric is developed to help in assessing students’ performance on senior project.

**Senior Exit Survey**

The EET program has developed a written questionnaire for graduating students called the Senior Exit Survey which all graduating seniors are asked to complete. It was completed by 17 of 21 graduating seniors with almost 81% excellent response rate. The Students feedback data is used to help identify any emerging trends in either a positive or a negative direction. Appendix A shows the Senior Exit Survey.

**4. Program Outcomes Assessment Results - Data**

The Assessment Process used different tools for different Outcomes. Table 3 shows the assessment tools that were employed and the achievement standard for each of the program Outcomes (POs). The overall achievement results for the POs are evaluated. The raw data collected has been processed and the final results are presented here. The Assessment Process used different tools for different Program Outcomes. The average scores from each assessment tool utilized were compared to the performance criteria passing threshold. Results of data evaluation is used to effectively improve the EET program.
### Table 3: Assessed Program Outcomes

<table>
<thead>
<tr>
<th>PROGRAM OUTCOME</th>
<th>Course Assessment</th>
<th>Senior Exit Survey</th>
<th>Senior Exit Exam</th>
<th>Senior Project Evaluation</th>
<th>Student Rating of Instruction</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PO1</strong> 2.(a) an appropriate mastery of the knowledge, techniques, skills and modern tools of their disciplines</td>
<td>The grand average for courses contributing to this objective was 90%.</td>
<td>Fall 07/Spring 08 Weighted average: 2.8</td>
<td>Spring07: 59.14% Spring07: 58.44% Spring08: 68%</td>
<td></td>
<td>Fall07:4.0, Spring08: 3.9</td>
</tr>
<tr>
<td><strong>PO2</strong> 2.(b) an ability to apply current knowledge and adapt to emerging applications of mathematics, science, engineering and technology</td>
<td>The grand average for courses contributing to this objective was 82%.</td>
<td>Fall 07/Spring 08 Weighted average: 2.95</td>
<td>Spring08: 72.28%</td>
<td></td>
<td>Fall07:4.0, Spring08: 3.9</td>
</tr>
<tr>
<td><strong>PO3</strong> 2.(c) an ability to conduct, analyze and interpret experiments and apply experimental results to improve processes</td>
<td>The grand average for courses contributing to this objective was 88%.</td>
<td>Fall 07/Spring 08 Weighted average: 2.875</td>
<td></td>
<td></td>
<td>Fall07:4.0, Spring08: 3.9</td>
</tr>
<tr>
<td><strong>PO4</strong> 2.(d) an ability to apply creativity in the design of systems, components or processes appropriate to program objectives</td>
<td>The grand average for courses contributing to this objective was 88%.</td>
<td>Fall 07/Spring 08 Weighted average: 2.8</td>
<td>91.6% of the students demonstrated mastery of the specified outcomes</td>
<td></td>
<td>Fall07:4.0, Spring08: 3.9</td>
</tr>
<tr>
<td><strong>PO5</strong> 2.(e) an ability to function effectively on teams</td>
<td>The grand average for courses contributing to this objective was 88%.</td>
<td>Fall 07/Spring 08 Weighted average: 2.9</td>
<td></td>
<td></td>
<td>Fall07:4.0, Spring08: 3.9</td>
</tr>
<tr>
<td><strong>PO6</strong> 2.(f) an ability to identify, analyze and solve technical problems</td>
<td>The grand average for courses contributing to this objective was 88%.</td>
<td>Fall 07/Spring 08 Weighted average: 3.125</td>
<td>Spring08: 69.49%</td>
<td></td>
<td>Fall07:4.0, Spring08: 3.9</td>
</tr>
<tr>
<td><strong>PO7</strong> 2.(g) an ability to communicate effectively</td>
<td>The grand average for courses contributing to this objective was 89%.</td>
<td>Fall 07/Spring 08 Weighted average: 2.875</td>
<td></td>
<td>The senior project written results show 66.6% The senior project oral</td>
<td>Fall07:4.0, Spring08: 3.9</td>
</tr>
</tbody>
</table>
PO8: 2.(h) a recognition of the need for, and an ability to engage in lifelong learning

The grand average for courses contributing to this objective was 94%.

Fall 07/Spring 08
Weighted average: 3.15

presentation results show 91.6%

Fall07:4.0, Spring08: 3.9

PO9: 2.(i) an ability to understand professional, ethical and social responsibilities

The grand average for courses contributing to this objective was 100%.

Fall 07/Spring 08
Weighted average: 3.175

88.8% of senior project teams earned marks of Excellent or Competent

Fall07:4.0, Spring08: 3.9

PO10: 2.(j) a respect for diversity and a knowledge of contemporary professional, societal and global issues

The grand average for courses contributing to this objective was 100%.

Fall 07/Spring 08
Weighted average: 3.05

Fall07:4.0, Spring08: 3.9

PO11: 2.(k) a commitment to quality, timeliness, and continuous improvement

The grand average for courses contributing to this objective was 91%.

Fall 07/Spring 08
Weighted average: 3.187

88% of senior project teams earned marks of Excellent or Competent

Fall07:4.0, Spring08: 3.9

PO12: 8.(a) The application of circuit analysis and design, computer programming, associated software, analog and digital electronics and microprocessors to the building, testing, operation and maintenance of electrical/electronic systems.

The grand average for courses contributing to this objective was 87%.

Spring08: 70.13%

Fall07:4.0, Spring08: 3.9

PO13: 8.(b) The application of physics or chemistry to electrical/electronic circuits in a rigorous mathematical environment at or above algebra and trigonometry

The grand average for courses contributing to this objective was 92%.

Fall07:4.0, Spring08: 3.9

PO14: 8.(c) The ability to analyze, design and implement control systems, instrumentation systems, communication systems, computer systems or power systems.

The grand average for courses contributing to this objective was 92%.

Spring08: 68.5%

Fall07:4.0, Spring08: 3.9

PO15: 8.(d) The ability to apply project management techniques to electrical/electronic(s) systems

The grand average for courses contributing to this objective was 93%.

Fall07:4.0, Spring08: 3.9

PO16: 8.(e) The ability to utilize statistics/probability, transform methods, discrete mathematics or applied differential equations in support of electrical/electronic(s) systems

The grand average for courses contributing to this objective was 100%.

Spring08: 68.04%

Fall07:4.0, Spring08: 3.9
5. Program Outcomes Assessment Results – Continuous Improvement

The Assessment Process used different tools for different Outcomes as shown in Table 5. The assessment method includes mapping specific course/exam/survey learning objectives to the EET Program Outcomes.

Senior Exit Exam:

The Exit Exam is administered to measure student competence in areas identified as critical to the EET Program. Figure 1 shows that five of the ten courses had scores of 70% or greater. The remaining five courses had scores ranging from 40% to 67%. The overall score for the Exit Exam was 67%. Measures have been taken to remedy this situation and positive changes are taking place. The Exit Exam was given for the first time in Spring 2007. It was observed that students did not do well in EET2120 Circuits II (score of 38%), especially on questions related to analysis methods of AC networks. The course was modified to put additional emphasis on topics related to methods of analysis and the Network Theorem of AC circuits. The average score on the EET2120 section of the exam for Spring 2008 has increased to 78%.

Another significant improvement in scores for EET2220 resulted after increasing the emphasis on transistor biasing circuits, both in the classroom and the laboratory, and designating more time towards covering the basics of operational amplifiers. The EET2220 spring 2008 result increased to 60% compared to 45% in spring 2007.

The continuous improvement process is now in place and fully functional, we are continuing to observe our processes and make appropriate changes to effectively improve the EET program.

![Exit Exam Assessment Results](image-url)
Course Assessment Tool

For continuous improvement, faculty members are required to conduct a course assessment at the end of each semester. Course assessments from the junior and senior years (3000/4000 level) are used to measure program outcomes. Figure 2 shows the course assessment results. All of the courses met the criteria of 70% of students will score 70% or better on the assessment metric for each of the course objectives that are correlated to the program outcomes.

![Figure 2: Results of Course Assessment Program Outcomes for 2007-08](image)

Assessment results in Table 3 showed that Program Outcome 7 “ability to communicate effectively” goal is not met, to remedy this situation and to improve the student’s written skills, the technical report writing skills will be emphasized in EET 4999, Professional Practices seminar, to be implemented Fall 2008.

6. Conclusion

This paper provides guidance on the Program Outcomes Assessment Process developed and implemented by the Electrical Engineering Technology Program to ensure compliance with ABET Criterion 3 (Assessment and Evaluation). The Program Outcomes are identified in line with ABET’s Technology Accreditation Commission (TAC) as a narrower statements that describe what students are expected to know and be able to do by the time of graduation. The Assessment tools for each individual group include a combination of direct and indirect measures of the EET Programs Outcomes. The overall average results for each PO revealed no major shortcomings in the EET students’ achievement; however, the results of the assessment tools identified some areas which might benefit from improvement. Based on this assessment, recommendations are made for the purpose of continuous improvement of the EET program.
References:


Appendix A: Senior Exit Survey

Electrical Engineering Technology
Program Outcomes Survey
- Current Graduates –

Please indicate the degree or degrees you recently earned from Michigan Tech:
[ ] BS, Electrical Engineering Technology
[ ] AAS, Electrical Engineering Technology
[ ] AAS, Electromechanical Engineering Technology

Have you accepted a job offer? [ ] Yes [ ] Offer(s) pending [ ] No offers made

If you have accepted a job offer, how closely related to your technology degree is the job you will be starting (or have already started)?
[ ] Directly related [ ] Somewhat related [ ] Not related

If you have accepted an offer for a job outside your field of study, is this by choice?
[ ] Yes [ ] No [ ] Not applicable

Name of employer (company name)
__________________________________________________________________________________

This company performs this kind of work…
__________________________________________________________________________________

Your job title and a brief job description
__________________________________________________________________________________

Employer’s mailing address
__________________________________________________________________________________

Are you currently pursuing an additional college degree?
[ ] Yes [ ] No
If yes, what degree in what major are you pursuing?

As a college student, did you ever take a co-op or intern position related to your major or work in a position related to your major either full-time or part-time?
[ ] Yes [ ] No
If yes, for which companies have you worked and for how many months?

Other than the senior project course, did you participate in any “Enterprise” or similar programs while in college?
[ ] Yes [ ] No
If yes, which Enterprise or other program?
Do you now or do you plan to subscribe to any industry-oriented magazines or periodicals?  
[ ] Yes      [ ] No  
If yes, which ones?

Do you expect to take continuing education courses, seminars, etc. throughout your career?  
[ ] Yes      [ ] No

Consider each ability listed below. Using the columns at the right, rate the quality of preparation to demonstrate each ability that you feel you received from your MTU education.

<table>
<thead>
<tr>
<th>Ability</th>
<th>Outstanding</th>
<th>Good, no weaknesses</th>
<th>Fair, minor weaknesses</th>
<th>Poor, major weaknesses</th>
<th>Completely unprepared</th>
</tr>
</thead>
<tbody>
<tr>
<td>Utilize modern hardware tools and instruments applicable to your field.</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Utilize modern software tools and techniques applicable to your field.</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Apply knowledge of mathematics to current real-world problems.</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Apply knowledge of physical sciences to current real-world problems.</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Apply knowledge of engineering and technology to current real-world problems.</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Design and conduct experiments to gather data.</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Statistically analyze and interpret experimental data and apply results to improve processes.</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Apply creativity in the design of systems, components, or processes to meet specified needs.</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Function effectively on teams.</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Identify and specify technical problems.</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Solve technical problems once they are specified.</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Write clearly and concisely about technical matters.</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Communicate articulately when presenting information verbally.</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Independently pursue additional knowledge or skills.</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Recognize a professional ethical dilemma.</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Respond to a professional ethical dilemma in accordance with current professional standards.</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Work and interact effectively with people of different cultural backgrounds.</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Understand the relationship between your work and professional, societal, and global issues.</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Partition a project into tasks and lay out a project plan.</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Execute a project to completion and produce the required deliverables on schedule.</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Identify opportunities for continuous improvement.</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>
Recognize and respond to quality issues affecting a product or service.  

| 4 | 3 | 2 | 1 | 0 |

Overall, I believe that my preparation to begin my first position is…  

| 4 | 3 | 2 | 1 | 0 |

Please mark the response that best matches your reaction to the statement: “I am satisfied with my education.”

[ ] Strongly agree  [ ] Mildly agree  [ ] Neutral  [ ] Mildly disagree  [ ] Strongly disagree

What college experiences helped you develop the most in the areas listed in the table on the previous page?

While you were a student at MTU, were you a member of any student or professional organizations? If so, please note the organization(s) and your level of participation in each:

What recommendations would you make to the faculty for ways to improve students’ experiences in the School of Technology?

All remaining questions are optional.

Your First Name  Your M.I.  Your Last Name

Your preferred mailing address (if different from that used for this mailing)

Your phone number  Your email address

Please use this space to provide suggestions for improving this survey:

Thank you for taking the time to answer our questions. Your feedback is tremendously valuable to us!