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General Information (Program Outcomes Assessment)
Standing Requirements

**Mission Statement**

Industrial automation is the use of control systems, predominately computer based, to control industrial machinery and processes. Automation has and will continue to play an increasingly important role in the global economy as well as our daily experiences. The automation and control engineering technology program provides the knowledge and management skills needed to pursue a rewarding career in the field of automation.

**Outcomes Library**

### BS in Automat&Control Engineer Tech Outcome Set

<table>
<thead>
<tr>
<th>Program Objective A.: Mastery of knowledge and tools</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>an appropriate mastery of the knowledge, techniques, skills, and modern tools</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Mapping</th>
</tr>
</thead>
<tbody>
<tr>
<td>SLO A.1: Use CAD, programming languages, HMI and IT</td>
<td>No Mapping</td>
</tr>
<tr>
<td>Students will use CAD, programming languages, HMI and IT.</td>
<td></td>
</tr>
<tr>
<td>SLO A.2: Use electronics design and analysis tools</td>
<td>No Mapping</td>
</tr>
<tr>
<td>Students will use electronics design and analysis tools.</td>
<td></td>
</tr>
<tr>
<td>SLO A.3: Apply science and engineering tools</td>
<td>No Mapping</td>
</tr>
<tr>
<td>Students will apply science and engineering tools.</td>
<td></td>
</tr>
<tr>
<td>SLO A.4: Apply PLC’s, DCS’s, and control system equipment</td>
<td>No Mapping</td>
</tr>
<tr>
<td>Students will apply PLC’s, DCS’s, and control system equipment.</td>
<td></td>
</tr>
<tr>
<td>SLO A.5: Use manufacturing processes</td>
<td>No Mapping</td>
</tr>
<tr>
<td>Students will use fluid power, engineering materials and manufacturing processes.</td>
<td></td>
</tr>
<tr>
<td>SLO A.6: Manage automated systems</td>
<td>No Mapping</td>
</tr>
<tr>
<td>Students will manage automated systems.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Program Objective B: Apply technical knowledge</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>an ability to apply current knowledge and adapt to emerging applications of mathematics, science, engineering, and technology</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Mapping</th>
</tr>
</thead>
<tbody>
<tr>
<td>SLO B.1: Use mathematics in design</td>
<td>No Mapping</td>
</tr>
<tr>
<td>Students will use mathematics in design.</td>
<td></td>
</tr>
<tr>
<td>SLO B.2: Modeling for analysis</td>
<td>No Mapping</td>
</tr>
<tr>
<td>model electrical, mechanical, and process systems for design and analysis</td>
<td></td>
</tr>
<tr>
<td>SLO B.3: System design</td>
<td>No Mapping</td>
</tr>
<tr>
<td>Design electrical, mechanical, and IT systems</td>
<td></td>
</tr>
</tbody>
</table>
### Program Objective C: Experiment and apply results
an ability to conduct, analyze and interpret experiments, and apply experimental results to improve processes

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Mapping</th>
</tr>
</thead>
<tbody>
<tr>
<td>SLO C.1: Experimental validation</td>
<td>No Mapping</td>
</tr>
<tr>
<td>develop and execute experiments to validate designs</td>
<td></td>
</tr>
<tr>
<td>SLO C.2: Lab exercises</td>
<td>No Mapping</td>
</tr>
<tr>
<td>use electrical lab experiences as learning tools</td>
<td></td>
</tr>
<tr>
<td>SLO C.3: Test plans</td>
<td>No Mapping</td>
</tr>
<tr>
<td>design and execute test plans as part of system commissioning</td>
<td></td>
</tr>
</tbody>
</table>

### Program Objective D: creativity in design and application
an ability to apply creativity in the design of systems, components, or processes appropriate to the MET program educational objectives

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Mapping</th>
</tr>
</thead>
<tbody>
<tr>
<td>SLO D.1: Mechanical design</td>
<td>No Mapping</td>
</tr>
<tr>
<td>develop mechanical designs using CAD and analysis tools</td>
<td></td>
</tr>
<tr>
<td>SLO D.2: Circuit design</td>
<td>No Mapping</td>
</tr>
<tr>
<td>design circuits and electrical interfacing</td>
<td></td>
</tr>
<tr>
<td>SLO D.3: Software and program development</td>
<td>No Mapping</td>
</tr>
<tr>
<td>develop machine control logic, HMI applications and data handling software</td>
<td></td>
</tr>
</tbody>
</table>

### Program Objective E: Function in team environment
an ability to function effectively on teams

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Mapping</th>
</tr>
</thead>
<tbody>
<tr>
<td>SLO E.1: Effective team member</td>
<td>No Mapping</td>
</tr>
<tr>
<td>functions as an effective team member</td>
<td></td>
</tr>
<tr>
<td>SLO E.2: Understands the purpose of teams</td>
<td>No Mapping</td>
</tr>
<tr>
<td>assumes responsibility as a team member, respects chain of command and understands why teams exist</td>
<td></td>
</tr>
<tr>
<td>SLO E.3: Works and communicates in the team setting</td>
<td>No Mapping</td>
</tr>
<tr>
<td>recognizes the need for good interpersonal skills and practices quality in communication in the team setting</td>
<td></td>
</tr>
</tbody>
</table>

### Program Objective F: Effective problem solving
an ability to identify, analyze and solve technical problems

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Mapping</th>
</tr>
</thead>
<tbody>
<tr>
<td>SLO F.1: Effectively use problem solving methods</td>
<td>Foundational Studies: 2. Critically evaluate the ideas of others.</td>
</tr>
<tr>
<td>understands and uses traditional and contemporary problem solving techniques and processes</td>
<td></td>
</tr>
<tr>
<td>SLO F.2: Use electrical troubleshooting tools properly</td>
<td>No Mapping</td>
</tr>
<tr>
<td>able to troubleshoot electrical circuits using typical tools and equipment</td>
<td></td>
</tr>
<tr>
<td>SLO F.3: Debugs logic and software applications</td>
<td>No Mapping</td>
</tr>
<tr>
<td>exhibits the ability to logically approach and solve machine control logic programs and custom software applications</td>
<td></td>
</tr>
</tbody>
</table>

### Program Objective G: Effective communication
an ability to communicate effectively through engineering drawings, written reports, or oral presentations

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Mapping</th>
</tr>
</thead>
<tbody>
<tr>
<td>SLO G.1: Exhibits good verbal communications</td>
<td>Foundational Studies: 10. Express themselves effectively, professionally, and persuasively both orally and in writing.</td>
</tr>
<tr>
<td>can verbally present and describe technical information and issues in a clear manner</td>
<td></td>
</tr>
<tr>
<td>SLO G.2: Possesses good written communication skills</td>
<td>Foundational Studies: 10. Express themselves effectively, professionally, and persuasively both orally and in writing.</td>
</tr>
<tr>
<td>can develop well-written e-mails, letters, technical documents, test plans and PowerPoint presentations</td>
<td></td>
</tr>
<tr>
<td>SLO G.3: Formality and respect in communications</td>
<td>Foundational Studies: 10. Express themselves effectively, professionally, and persuasively both orally and in writing.</td>
</tr>
<tr>
<td>differentiates between formal, semi-formal, and informal situations involving verbal and written protocols, including meeting</td>
<td></td>
</tr>
</tbody>
</table>

Program Objective H: Embrace learning

a recognition of the need for, and an ability to engage in lifelong learning

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Mapping</th>
</tr>
</thead>
<tbody>
<tr>
<td>SLO H.1: Demonstrates a desire to learn</td>
<td>No Mapping</td>
</tr>
<tr>
<td>demonstrates the desire to learn and respects those who possess knowledge</td>
<td></td>
</tr>
</tbody>
</table>

Program Objective I: Professional responsibilities

an ability to understand professional, ethical and social responsibilities

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Mapping</th>
</tr>
</thead>
<tbody>
<tr>
<td>SLO I.1: Demonstrates professionalism</td>
<td>No Mapping</td>
</tr>
<tr>
<td>understands the role of the professional and aspires to become a respected member of an organization</td>
<td></td>
</tr>
<tr>
<td>SLO I.2: Understands and exhibits ethics</td>
<td>No Mapping</td>
</tr>
<tr>
<td>is knowledgeable on issues involving social and ethical responsibilities</td>
<td></td>
</tr>
<tr>
<td>SLO I.3: Understands the role of professional societies</td>
<td>No Mapping</td>
</tr>
<tr>
<td>understands the role of professional societies play in technical professions, including automation engineering technology</td>
<td></td>
</tr>
</tbody>
</table>

Program Objective J: Diversity and contemporary issues

a respect for diversity and a knowledge of contemporary professional, societal and global issues

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Mapping</th>
</tr>
</thead>
<tbody>
<tr>
<td>SLO J.1: Automated control system marketplace</td>
<td>No Mapping</td>
</tr>
<tr>
<td>exhibits some knowledge of global nature of automation system use</td>
<td></td>
</tr>
<tr>
<td>SLO J.2: Social and safe design responsibility</td>
<td>No Mapping</td>
</tr>
<tr>
<td>understands the importance of the social issues involved with manufacturing and safety</td>
<td></td>
</tr>
<tr>
<td>SLO J.3: Safe design practices and operations</td>
<td>No Mapping</td>
</tr>
<tr>
<td>understands the responsibility of safe design practices and operations.</td>
<td></td>
</tr>
</tbody>
</table>

Program Objective K: Quality and continuous improvement

a commitment to quality, timeliness, and continuous improvement

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Mapping</th>
</tr>
</thead>
<tbody>
<tr>
<td>SLO K.1: Understands the breadth of quality concerns</td>
<td>No Mapping</td>
</tr>
</tbody>
</table>
understand how quality intersects all aspects of automation engineering technology

SLO K.2: Understands the importance of quality
understands the importance of quality in all aspects of automation engineering technology

SLO K.3: Timeliness and continuous improvement
exhibits a sense of urgency in all aspects of his/her work and tends to not accept complacency

Curriculum Map

Active Curriculum Maps

- BS in Automat & Control Engineering (See appendix)
  Alignment Set: BS in Automat&Control Engineer Tech Outcome Set
  Created: 04/19/2012 1:17:37 pm CST
  Last Modified: 04/19/2012 2:09:54 pm CST

Communication of Outcomes

File Attachments:

1. ACET Assessment_CommunicationofOutcomes_043013.docx (See appendix)
Archive (This area is to be used for archiving pre-TaskStream assessment data and for current documents.)

File Attachments:

1. Automation and Control Engineering Technology (See appendix)
   Automation and Control Engineering Technology Assessment Plan

.................................................................
## 2010-2011 Assessment Cycle

### Assessment Plan

#### Outcomes and Measures

**BS in Automat & Control Engineer Tech Outcome Set**

**Program Objective A.: Mastery of knowledge and tools**
an appropriate mastery of the knowledge, techniques, skills, and modern tools

<table>
<thead>
<tr>
<th>SLO A.1: Use CAD, programming languages, HMI and IT</th>
<th><strong>Measure:</strong> Evaluation of inclass project per rubric Direct - Student Artifact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students will use CAD, programming languages, HMI and IT.</td>
<td><strong>Details/Description:</strong> Source of Assessment: ECT 381 Target: jea - example ..... level of accomplishment per rubric, ex 3 or better Implementation Plan (timeline): First Assessment Fall 2010 (3 year cycle) Responsible Individual(s): ACET Program Champion</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SLO A.2: Use electronics design and analysis tools</th>
<th><strong>Measure:</strong> Evaluation of performance per semester project rubric Direct - Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students will use electronics design and analysis tools.</td>
<td><strong>Details/Description:</strong> Source of Assessment: ECT 480 Target: Implementation Plan (timeline): First Assessment Spring 2011 (3 year cycle) Responsible Individual(s): ACET Program Champion</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SLO A.3: Apply science and engineering tools</th>
<th><strong>Measure:</strong> Evaluation of performance per semester project rubric Direct - Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students will apply science and engineering tools.</td>
<td><strong>Details/Description:</strong> Source of Assessment: ECT 480 Target: Implementation Plan (timeline): First Assessment Spring 2011 (3 year cycle) Responsible Individual(s): ACET Program Champion</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SLO A.4: Apply PLC's, DCS's, and control system equipment</th>
<th><strong>Measure:</strong> Evaluation of inclass project per rubric Direct - Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students will apply PLC's, DCS's, and control system equipment.</td>
<td><strong>Details/Description:</strong> Source of Assessment: ECT 381 Target: Implementation Plan (timeline): First Assessment Fall 2010 (3 year cycle) Responsible Individual(s): ACET Program Champion</td>
</tr>
</tbody>
</table>
SLO A.5: Use manufacturing processes
Students will use fluid power, engineering materials and manufacturing processes.

**Measure:** Evaluation of performance per semester project rubric
Direct - Other

**Details/Description:** Source of Assessment: ECT 480

**Target:**

Implementation Plan (timeline): First Assessment Spring 2011 (3 year cycle)

**Responsible Individual(s):** ACET Program Champion

SLO A.6: Manage automated systems
Students will manage automated systems.

**Measure:** Evaluation of inclass project per rubric
Direct - Other

**Details/Description:** Source of Assessment: ECT 480

**Target:**

Implementation Plan (timeline): First Assessment Spring 2011 (3 year cycle)

**Responsible Individual(s):** ACET Program Champion

Program Objective B: Apply technical knowledge
an ability to apply current knowledge and adapt to emerging applications of mathematics, science, engineering, and technology

SLO B.1: Use mathematics in design
Students will use mathematics in design.

**Measure:** Evaluation of performance per semester project rubric
Direct - Other

**Details/Description:** Source of Assessment: ECT 480

**Target:**

Implementation Plan (timeline): First Assessment Spring 2011 (3 year cycle)

**Responsible Individual(s):** ACET Program Champion

SLO B.2: Modeling for analysis
model electrical, mechanical, and process systems for design and analysis

**Measure:** Evaluation of inclass project per rubric
Direct - Other

**Details/Description:** Source of Assessment: MET 203

**Target:**

Implementation Plan (timeline): First Assessment Fall 2010 (3 year cycle)

**Responsible Individual(s):** ACET Program Champion

SLO B.3: System design
Design electrical, mechanical, and IT systems

**Measure:** Evaluation of performance per semester project rubric
Direct - Other

**Details/Description:** Source of Assessment: ECT 480

**Target:**

Implementation Plan (timeline): First Assessment Spring 2011 (3 year cycle)

**Responsible Individual(s):** ACET Program Champion

Program Objective C: Experiment and apply results
an ability to conduct, analyze and interpret experiments, and apply experimental results to improve processes
| SLO C.1: Experimental validation | Measure: Evaluation of lab work in class per rubric  
Direct - Other | Details/Description: Source of Assessment: ECT 381  
Target:  
Implementation Plan (timeline): First Assessment Fall 2010 (3 year cycle)  
Responsible Individual(s): ACET Program Champion |
<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>Program Objective E: Function in team environment</td>
<td></td>
<td></td>
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<tr>
<td>--------------------------------------------------</td>
<td>---</td>
<td></td>
</tr>
<tr>
<td><strong>SLO E.1: Effective team member</strong></td>
<td><strong>Measure:</strong> Evaluation of inclass project per rubric</td>
<td></td>
</tr>
<tr>
<td>functions as an effective team member</td>
<td>Direct - Other</td>
<td></td>
</tr>
<tr>
<td><strong>Details/Description:</strong> Source of Assessment: ECT 437</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Target:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>First Assessment Spring 2011 (3 year cycle)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Responsible Individual(s):</strong> ACET Program Champion</td>
<td></td>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Program Objective F: Effective problem solving</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SLO F.1: Effectively use problem solving methods</strong></td>
<td><strong>Measure:</strong> Evaluation of lab work in class per rubric</td>
</tr>
<tr>
<td>understands and uses traditional and contemporary problem solving techniques and processes</td>
<td>Direct - Other</td>
</tr>
<tr>
<td><strong>Details/Description:</strong> Source of Assessment: ECT 381</td>
<td></td>
</tr>
<tr>
<td><strong>Target:</strong></td>
<td></td>
</tr>
<tr>
<td>First Assessment Fall 2010 (3 year cycle)</td>
<td></td>
</tr>
<tr>
<td><strong>Responsible Individual(s):</strong> ACET Program Champion</td>
<td></td>
</tr>
</tbody>
</table>

| **SLO F.2: Use electrical troubleshooting tools properly** | **Measure:** Evaluation of lab work in class per rubric |
| able to troubleshoot | Direct - Other |
Program Outcomes Assessment
BS in Automat

### SLO F.3: Debugs logic and software applications
exhibits the ability to logically approach and solve machine control logic programs and custom software applications

<table>
<thead>
<tr>
<th>Details/Description:</th>
<th>Source of Assessment: ECT 480</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Target:</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Implementation Plan (timeline):</strong></td>
<td>First Assessment Fall 2010 (3 year cycle)</td>
</tr>
<tr>
<td><strong>Responsible Individual(s):</strong></td>
<td>ACET Program Champion</td>
</tr>
</tbody>
</table>

**Measure:** Evaluation of lab work in class per rubric
- Direct - Other

<table>
<thead>
<tr>
<th>Details/Description:</th>
<th>Source of Assessment: ECT 444</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Target:</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Implementation Plan (timeline):</strong></td>
<td>First Assessment Spring 2011 (3 year cycle)</td>
</tr>
<tr>
<td><strong>Responsible Individual(s):</strong></td>
<td>ACET Program Champion</td>
</tr>
</tbody>
</table>

### Program Objective G: Effective communication
an ability to communicate effectively through engineering drawings, written reports, or oral presentations

<table>
<thead>
<tr>
<th>SLO G.1: Exhibits good verbal communications</th>
<th>can verbally present and describe technical information and issues in a clear manner</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Measure:</strong> Evaluation of inclass project per rubric</td>
<td>Direct - Other</td>
</tr>
<tr>
<td><strong>Details/Description:</strong> Source of Assessment: ECT 437</td>
<td></td>
</tr>
<tr>
<td><strong>Target:</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Implementation Plan (timeline):</strong></td>
<td>First Assessment Spring 2011 (3 year cycle)</td>
</tr>
<tr>
<td><strong>Responsible Individual(s):</strong></td>
<td>ACET Program Champion</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SLO G.2: Possesses good written communication skills</th>
<th>can develop well-written e-mails, letters, technical documents, test plans and PowerPoint presentations</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Measure:</strong> Evaluation of inclass project per rubric</td>
<td>Direct - Other</td>
</tr>
<tr>
<td><strong>Details/Description:</strong> Source of Assessment: ECT 437</td>
<td></td>
</tr>
<tr>
<td><strong>Target:</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Implementation Plan (timeline):</strong></td>
<td>First Assessment Spring 2011 (3 year cycle)</td>
</tr>
<tr>
<td><strong>Responsible Individual(s):</strong></td>
<td>ACET Program Champion</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SLO G.3: Formality and respect in communications</th>
<th>differentiates between formal, semi-formal, and informal situations involving verbal and written protocols, including meeting</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Measure:</strong> Evaluation of inclass project per rubric</td>
<td>Direct - Other</td>
</tr>
<tr>
<td><strong>Details/Description:</strong> Source of Assessment: ECT 437</td>
<td></td>
</tr>
<tr>
<td><strong>Target:</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Implementation Plan (timeline):</strong></td>
<td>First Assessment Spring 2011 (3 year cycle)</td>
</tr>
<tr>
<td><strong>Responsible Individual(s):</strong></td>
<td>ACET Program Champion</td>
</tr>
</tbody>
</table>
learn and respects those who possess knowledge

**Program Objective I: Professional responsibilities**

**SLO I.1: Demonstrates professionalism**
understands the role of the professional and aspires to become a respected member of an organization

\[\textbf{Measure: Evaluation of inclass project per rubric} \]
\[\text{Direct - Other} \]

**Details/Description:** Source of Assessment: ECT 480
**Target:**
**Implementation Plan (timeline):** First Assessment Spring 2011 (3 year cycle)
**Responsible Individual(s):** ACET Program Champion

**SLO I.2: Understands and exhibits ethics**
is knowledgeable on issues involving social and ethical responsibilities

\[\textbf{Measure: Evaluation of inclass project per rubric} \]
\[\text{Direct - Other} \]

**Details/Description:** Source of Assessment: TMGT 478
**Target:**
**Implementation Plan (timeline):** First Assessment Spring 2011 (3 year cycle)
**Responsible Individual(s):** ACET Program Champion

**SLO I.3: Understands the role of professional societies**
understands the role of professional societies play in technical professions, including automation engineering technology

\[\textbf{Measure: Evaluation of inclass project per rubric} \]
\[\text{Direct - Other} \]

**Details/Description:** Source of Assessment: ECT 437
**Target:**
**Implementation Plan (timeline):** First Assessment Spring 2011 (3 year cycle)
**Responsible Individual(s):** ACET Program Champion

**Program Objective J: Diversity and contemporary issues**
a respect for diversity and a knowledge of contemporary professional, societal and global issues

**SLO J.1: Automated control system marketplace**

exhibits some knowledge of global nature of automation system use

\[\textbf{Measure: Evaluation of performance per semester project rubric} \]
\[\text{Direct - Other} \]

**Details/Description:** Source of Assessment: ECT 480
**Target:**
**Implementation Plan (timeline):** First Assessment Spring 2011 (3 year cycle)
**Responsible Individual(s):** ACET Program Champion

**SLO J.2: Social and safe design responsibility**
understands the

\[\textbf{Measure: Evaluation of performance per semester project rubric} \]
\[\text{Direct - Other} \]
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<td>SLO K.2: Understands the importance of quality</td>
<td>Measure: Evaluation of performance per semester project rubric Direct - Other</td>
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<tr>
<td>SLO K.3: Timeliness and continuous improvement</td>
<td>Measure: Evaluation of performance per semester project rubric Direct - Other</td>
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**Assessment Findings**

**Finding per Measure**

- **BS in Automat&Control Engineer Tech Outcome Set**
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### SLO A.1: Use CAD, programming languages, HMI and IT

**Measure:** Evaluation of inclass project per rubric  
Direct - Student Artifact  

**Details/Description:** Source of Assessment: ECT 381  
**Target:** Jea - example ...... level of accomplishment per rubric, ex 3 or better  
**Implementation Plan (timeline):** First Assessment Fall 2010 (3 year cycle)  
**Responsible Individual(s):** ACET Program Champion  

**Findings for Evaluation of inclass project per rubric**  
No Findings Added

### SLO A.2: Use electronics design and analysis tools

**Measure:** Evaluation of performance per semester project rubric  
Direct - Other  

**Details/Description:** Source of Assessment: ECT 480  
**Target:**  
**Implementation Plan (timeline):** First Assessment Spring 2011 (3 year cycle)  
**Responsible Individual(s):** ACET Program Champion  

**Findings for Evaluation of performance per semester project rubric**  
No Findings Added

### SLO A.3: Apply science and engineering tools

**Measure:** Evaluation of performance per semester project rubric  
Direct - Other  

**Details/Description:** Source of Assessment: ECT 480  
**Target:**  
**Implementation Plan (timeline):** First Assessment Spring 2011 (3 year cycle)  
**Responsible Individual(s):** ACET Program Champion  

**Findings for Evaluation of performance per semester project rubric**  
No Findings Added

### SLO A.4: Apply PLC's, DCS's, and control system equipment

**Measure:** Evaluation of inclass project per rubric  
Direct - Other  

**Details/Description:** Source of Assessment: ECT 381  
**Target:**  
**Implementation Plan (timeline):** First Assessment Fall 2010 (3 year cycle)  
**Responsible Individual(s):** ACET Program Champion  

**Findings for Evaluation of inclass project per rubric**  
No Findings Added
### Findings for Evaluation of inclass project per rubric

**No Findings Added**

---

**SLO A.5: Use manufacturing processes**

Students will use fluid power, engineering materials and manufacturing processes.

- **Measure:** Evaluation of performance per semester project rubric
  Direct - Other

- **Details/Description:** Source of Assessment: ECT 480
- **Target:**
  - Implementation Plan (timeline): First Assessment Spring 2011 (3 year cycle)
  - Responsible Individual(s): ACET Program Champion

**Findings for Evaluation of performance per semester project rubric**

**No Findings Added**

---

**SLO A.6: Manage automated systems**

Students will manage automated systems.

- **Measure:** Evaluation of inclass project per rubric
  Direct - Other

- **Details/Description:** Source of Assessment: ECT 480
- **Target:**
  - Implementation Plan (timeline): First Assessment Spring 2011 (3 year cycle)
  - Responsible Individual(s): ACET Program Champion

**Findings for Evaluation of inclass project per rubric**

**No Findings Added**

---

**Program Objective B: Apply technical knowledge**

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

**SLO B.1: Use mathematics in design**

Students will use mathematics in design.

- **Measure:** Evaluation of performance per semester project rubric
  Direct - Other

- **Details/Description:** Source of Assessment: ECT 480
- **Target:**
  - Implementation Plan (timeline): First Assessment Spring 2011 (3 year cycle)
  - Responsible Individual(s): ACET Program Champion

**Findings for Evaluation of performance per semester project rubric**

**No Findings Added**

---

**SLO B.2: Modeling for analysis**

Model electrical, mechanical, and process

- **Measure:** Evaluation of inclass project per rubric
  Direct - Other

---
**Details/Description:** Source of Assessment: MET 203
**Target:**
**Implementation Plan (timeline):** First Assessment Fall 2010 (3 year cycle)
**Responsible Individual(s):** ACET Program Champion

**Findings** for Evaluation of inclass project per rubric

---

**SLO B.3: System design**
Design electrical, mechanical, and IT systems

**Measure:** Evaluation of performance per semester project rubric
Direct - Other

**Details/Description:** Source of Assessment: ECT 480
**Target:**
**Implementation Plan (timeline):** First Assessment Spring 2011 (3 year cycle)
**Responsible Individual(s):** ACET Program Champion

**Findings** for Evaluation of performance per semester project rubric

---

**Program Objective C: Experiment and apply results**
an ability to conduct, analyze and interpret experiments, and apply experimental results to improve processes

**SLO C.1: Experimental validation**
develop and execute experiments to validate designs

**Measure:** Evaluation of lab work in class per rubric
Direct - Other

**Details/Description:** Source of Assessment: ECT 381
**Target:**
**Implementation Plan (timeline):** First Assessment Fall 2010 (3 year cycle)
**Responsible Individual(s):** ACET Program Champion

**Findings** for Evaluation of lab work in class per rubric

---

**SLO C.2: Lab exercises**
use electrical lab experiences as learning tools

**Measure:** Evaluation of lab work in class per rubric
Direct - Other

**Details/Description:** Source of Assessment: ECT 281
**Target:**
**Implementation Plan (timeline):** First Assessment Fall 2010 (3 year cycle)
**Responsible Individual(s):** ACET Program Champion

**Findings** for Evaluation of lab work in class per rubric

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No Findings Added
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<thead>
<tr>
<th>SLO C.3: Test plans</th>
<th>Measure: Evaluation of performance per semester project rubric</th>
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</thead>
<tbody>
<tr>
<td>design and execute test plans as part of system commissioning</td>
<td>Direct - Other</td>
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<th>Program Objective D: creativity in design and application</th>
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<td>an ability to apply creativity in the design of systems, components, or processes appropriate to the MET program educational objectives</td>
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<table>
<thead>
<tr>
<th>SLO D.1: Mechanical design</th>
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</thead>
<tbody>
<tr>
<td>develop mechanical designs using CAD and analysis tools</td>
<td>Direct - Other</td>
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<tr>
<td>design circuits and electrical interfacing</td>
<td>Direct - Other</td>
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<tr>
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<tr>
<td>develop machine control logic, HMI applications and data handling software</td>
<td>Direct - Other</td>
</tr>
<tr>
<td>Details/Description: Source of Assessment: ECT 444</td>
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Program Objectives Assessment
BS in Automat

**Responsible Individual(s):** ACET Program Champion

**Findings** for Evaluation of performance per semester project rubric

No Findings Added

**Program Objective E: Function in team environment**
an ability to function effectively on teams

**SLO E.1: Effective team member**
facts as an effective team member

**Measure:** Evaluation of inclass project per rubric
  Direct - Other

**Details/Description:** Source of Assessment: ECT 437
**Target:**
**Implementation Plan (timeline):** First Assessment Spring 2011 (3 year cycle)
**Responsible Individual(s):** ACET Program Champion

**Findings** for Evaluation of inclass project per rubric

No Findings Added

**SLO E.2: Understands the purpose of teams**
assumes responsibility as a team member, respects chain of command and understands why teams exist

**Measure:** Evaluation of inclass project per rubric
  Direct - Other

**Details/Description:** Source of Assessment: ECT 437
**Target:**
**Implementation Plan (timeline):** First Assessment Spring 2011 (3 year cycle)
**Responsible Individual(s):** ACET Program Champion

**Findings** for Evaluation of inclass project per rubric

No Findings Added

**SLOE.3: Works and communicates in the team setting**
recognizes the need for good interpersonal skills and practices quality in communication in the team setting

**Measure:** Evaluation of inclass project per rubric
  Direct - Other

**Details/Description:** Source of Assessment: ECT 437
**Target:**
**Implementation Plan (timeline):** First Assessment Spring 2011 (3 year cycle)
**Responsible Individual(s):** ACET Program Champion

**Findings** for Evaluation of inclass project per rubric

No Findings Added

**Program Objective F: Effective problem solving**
an ability to identify, analyze and solve technical problems
**SLO F.1: Effectively use problem solving methods**
understands and uses traditional and contemporary problem solving techniques and processes

**Measure:** Evaluation of lab work in class per rubric
Direct - Other

**Details/Description:** Source of Assessment: ECT 381
**Target:**  
**Implementation Plan (timeline):** First Assessment Fall 2010 (3 year cycle)  
**Responsible Individual(s):** ACET Program Champion

**Findings** for Evaluation of lab work in class per rubric

*No Findings Added*

---

**SLO F.2: Use electrical troubleshooting tools properly**
able to troubleshoot electrical circuits using typical tools and equipment

**Measure:** Evaluation of lab work in class per rubric
Direct - Other

**Details/Description:** Source of Assessment: ECT 480
**Target:**  
**Implementation Plan (timeline):** First Assessment Fall 2010 (3 year cycle)  
**Responsible Individual(s):** ACET Program Champion

**Findings** for Evaluation of lab work in class per rubric

*No Findings Added*

---

**SLO F.3: Debugs logic and software applications**
exhibits the ability to logically approach and solve machine control logic programs and custom software applications

**Measure:** Evaluation of lab work in class per rubric
Direct - Other

**Details/Description:** Source of Assessment: ECT 444
**Target:**  
**Implementation Plan (timeline):** First Assessment Spring 2011 (3 year cycle)  
**Responsible Individual(s):** ACET Program Champion

**Findings** for Evaluation of lab work in class per rubric

*No Findings Added*

---

**Program Objective G: Effective communication**
an ability to communicate effectively through engineering drawings, written reports, or oral presentations

**SLO G.1: Exhibits good verbal communications**
can verbally present and describe technical information and issues in a clear manner

**Measure:** Evaluation of inclass project per rubric
Direct - Other

**Details/Description:** Source of Assessment: ECT 437
**Target:**  
**Implementation Plan (timeline):** First Assessment Spring 2011 (3 year cycle)  
**Responsible Individual(s):** ACET Program Champion
**Findings** for Evaluation of inclass project per rubric

*No Findings Added*

**SLO G.2: Possesses good written communication skills**

- **Measure:** Evaluation of inclass project per rubric
  - Direct - Other

  **Details/Description:** Source of Assessment: ECT 437

  **Implementation Plan (timeline):** First Assessment Spring 2011 (3 year cycle)

  **Responsible Individual(s):** ACET Program Champion

*No Findings Added*

**SLO G.3: Formality and respect in communications**

- **Measure:** Evaluation of inclass project per rubric
  - Direct - Other

  **Details/Description:** Source of Assessment: ECT 437

  **Implementation Plan (timeline):** First Assessment Spring 2011 (3 year cycle)

  **Responsible Individual(s):** ACET Program Champion

*No Findings Added*

**Program Objective H: Embrace learning**

- A recognition of the need for, and an ability to engage in lifelong learning

**SLO H.1: Demonstrates a desire to learn**

- **Measure:** Evaluation of performance per semester project rubric
  - Direct - Other

  **Details/Description:** Source of Assessment: ECT 480

  **Implementation Plan (timeline):** First Assessment Spring 2011 (3 year cycle)

  **Responsible Individual(s):** ACET Program Champion

*No Findings Added*

**Program Objective I: Professional responsibilities**

- An ability to understand professional, ethical and social responsibilities
**SLO 1.1: Demonstrates professionalism**
understands the role of the professional and aspires to become a respected member of an organization

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**SLO 1.2: Understands and exhibits ethics**
is knowledgeable on issues involving social and ethical responsibilities

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**SLO J.2: Social and safe design responsibility**

understands the importance of the social issues involved with manufacturing and safety

**Measure:** Evaluation of performance per semester project rubric  
Direct - Other

**Details/Description:** Source of Assessment: ECT 480  
**Target:**  
**Implementation Plan (timeline):** First Assessment Spring 2011 (3 year cycle)  
**Responsible Individual(s):** ACET Program Champion

**Findings** for Evaluation of performance per semester project rubric

---

**SLO J.3: Safe design practices and operations**

understands the responsibility of safe design practices and operations.

**Measure:** Evaluation of performance per semester project rubric  
Direct - Other

**Details/Description:** Source of Assessment: ECT 480  
**Target:**  
**Implementation Plan (timeline):** First Assessment Spring 2011 (3 year cycle)  
**Responsible Individual(s):** ACET Program Champion

**Findings** for Evaluation of performance per semester project rubric

---

**Program Objective K: Quality and continuous improvement**

a commitment to quality, timeliness, and continuous improvement

**SLO K.1: Understands the breadth of quality concerns**

understand how quality intersects all aspects of automation engineering technology

**Measure:** Evaluation of performance per semester project rubric  
Direct - Other

**Details/Description:** Source of Assessment: ECT 480  
**Target:**  
**Implementation Plan (timeline):** First Assessment Spring 2011 (3 year cycle)  
**Responsible Individual(s):** ACET Program Champion

**Findings** for Evaluation of performance per semester project rubric

---

**SLO K.2: Understands the importance of quality**

understands the
**Details/Description:** Source of Assessment: ECT 480

**Target:**

**Implementation Plan (timeline):** First Assessment Spring 2011 (3 year cycle)

**Responsible Individual(s):** ACET Program Champion

---

**Measure:** Evaluation of performance per semester project rubric

Direct - Other

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**Details/Description:** Source of Assessment: ECT 480

**Target:**

**Implementation Plan (timeline):** First Assessment Spring 2011 (3 year cycle)

**Responsible Individual(s):** ACET Program Champion

---

**Findings** for Evaluation of performance per semester project rubric

*No Findings Added*

---

**Overall Recommendations**

*No text specified*

---

**Overall Reflection**

*No text specified*

---

**Action Plan**

**Actions**

---

**BS in Automat&Control Engineer Tech Outcome Set**

**Program Objective A.: Mastery of knowledge and tools**

an appropriate mastery of the knowledge, techniques, skills, and modern tools

---

**SLO A.1: Use CAD, programming languages, HMI and IT**

*No actions specified*

---

**Status Report**

**Action Statuses**
BS in Automation & Control Engineer Tech Outcome Set

**Program Objective A.: Mastery of knowledge and tools**  
an appropriate mastery of the knowledge, techniques, skills, and modern tools

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<td>Students will use CAD, programming languages, HMI and IT.</td>
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**Status Summary**

*No text specified*

**Summary of Next Steps**

*No text specified*
2011-2012 Assessment Cycle

Assessment Plan

Outcomes and Measures

BS in Automat & Control Engineer Tech Outcome Set

Program Objective A.: Mastery of knowledge and tools
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<th>SLO A.4: Apply PLC's, DCS's, and control system equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Measure:</strong> Evaluation of inclass project per rubric</td>
</tr>
<tr>
<td>Direct - Other</td>
</tr>
<tr>
<td><strong>Details/Description:</strong> Source of Assessment: ECT 381</td>
</tr>
<tr>
<td><strong>Target:</strong></td>
</tr>
<tr>
<td><strong>Implementation Plan (timeline):</strong> Annual - course offered once per school year</td>
</tr>
<tr>
<td><strong>Responsible Individual(s):</strong> ACET Program Champion</td>
</tr>
<tr>
<td>Students will apply PLC's, DCS's, and control system equipment.</td>
</tr>
</tbody>
</table>
| SLO A.5: Use manufacturing processes | **Measure:** Evaluation of performance per semester project rubric  
Direct - Other |
|-------------------------------|-------------------------------------------------------------|
| **Details/Description:** Source of Assessment: ECT 480  
**Target:**  
**Implementation Plan (timeline):** First Assessment Spring 2011 (3 year cycle)  
**Responsible Individual(s):** ACET Program Champion |

| SLO A.6: Manage automated systems | **Measure:** Evaluation of inclass project per rubric  
Direct - Other |
|-------------------------------|-------------------------------------------------------------|
| **Details/Description:** Source of Assessment: ECT 406  
**Target:**  
**Implementation Plan (timeline):** Annual - course offered once per school year  
**Responsible Individual(s):** ACET Program Champion |

| Program Objective B: Apply technical knowledge | **Measure:** Evaluation of performance per semester project rubric  
Direct - Other |
<table>
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</thead>
<tbody>
<tr>
<td>an ability to apply current knowledge and adapt to emerging applications of mathematics, science, engineering, and technology</td>
<td></td>
</tr>
</tbody>
</table>

| SLO B.1: Use mathematics in design | **Measure:** Evaluation of inclass project per rubric  
Direct - Other |
|-------------------------------|-------------------------------------------------------------|
| **Details/Description:** Source of Assessment: ECT 406  
**Target:**  
**Implementation Plan (timeline):** Annual - course offered once per school year  
**Responsible Individual(s):** ACET Program Champion |

| SLO B.2: Modeling for analysis | **Measure:** Evaluation of inclass project per rubric  
Direct - Other |
<table>
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<tbody>
<tr>
<td>model electrical, mechanical, and process systems for design and analysis</td>
<td></td>
</tr>
</tbody>
</table>

| SLO B.3: System design | **Measure:** Evaluation of performance per semester project rubric  
Direct - Other |
<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Design electrical, mechanical, and IT systems</td>
<td></td>
</tr>
</tbody>
</table>

Program Objective C: Experiment and apply results  
an ability to conduct, analyze and interpret experiments, and apply experimental results to improve processes
| SLO C.1: Experimental validation | **Measure:** Certified Automation Professional Exit Exam  
Direct - Exam  
Details/Description: Source of Assessment: ECT 406  
Target:  
Implementation Plan (timeline): Annual - course offered once per school year  
Responsible Individual(s): ACET Program Champion |
|---------------------------------|----------------------------------------------------------------------------------------------------------|
| SLO C.2: Lab exercises          | **Measure:** Evaluation of lab work in class per rubric  
Direct - Other  
Details/Description: Source of Assessment: ECT 381  
Target:  
Implementation Plan (timeline): Annual - course offered once per school year  
Responsible Individual(s): ACET Program Champion |
| SLO C.3: Test plans             | **Measure:** Certified Automation Professional Exit Exam  
Direct - Exam  
Details/Description: Source of Assessment: ECT 406  
Target:  
Implementation Plan (timeline): Annual - course offered once per school year  
Responsible Individual(s): ACET Program Champion |

Program Objective D: creativity in design and application
an ability to apply creativity in the design of systems, components, or processes appropriate to the MET program educational objectives

| SLO D.1: Mechanical design      | **Measure:** Evaluation of lab work in class per rubric  
Direct - Other  
Details/Description: Source of Assessment: ECT 381  
Target:  
Implementation Plan (timeline): Annual - course offered once per school year  
Responsible Individual(s): ACET Program Champion |
|---------------------------------|----------------------------------------------------------------------------------------------------------|
| SLO D.2: Circuit design         | **Measure:** Evaluation of lab work in class per rubric  
Direct - Other  
Details/Description: Source of Assessment: ECT 381  
Target:  
Implementation Plan (timeline): Annual - course offered once per school year  
Responsible Individual(s): ACET Program Champion |
| SLO D.3: Software and program development | **Measure:** Evaluation of performance per semester project rubric  
Direct - Other |
<table>
<thead>
<tr>
<th>Program Objective E: Function in team environment</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>an ability to function effectively on teams</td>
<td></td>
</tr>
</tbody>
</table>

**SLO E.1: Effective team member**
functions as an effective team member

- **Measure:** Evaluation of inclass project per rubric
  - Direct - Other

**Details/Description:** Source of Assessment: ECT 406
**Target:**
**Implementation Plan (timeline):** Annual - course offered once per school year
**Responsible Individual(s):** ACET Program Champion

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**SLO E.2: Understands the purpose of teams**
avoid assumptions responsibility as a team member, respects chain of command and understands why teams exist

- **Measure:** Evaluation of inclass project per rubric
  - Direct - Other

**Details/Description:** Source of Assessment: ECT 406
**Target:**
**Implementation Plan (timeline):** Annual - course offered once per school year
**Responsible Individual(s):** ACET Program Champion

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**SLOE.3: Works and communicates in the team setting**
recognizes the need for good interpersonal skills and practices quality in communication in the team setting

- **Measure:** Evaluation of inclass project per rubric
  - Direct - Other

**Details/Description:** Source of Assessment: ECT 381
**Target:**
**Implementation Plan (timeline):** Annual - course offered once per school year
**Responsible Individual(s):** ACET Program Champion

---

**Program Objective F: Effective problem solving**
an ability to identify, analyze and solve technical problems

**SLO F.1: Effectively use problem solving methods**
understands and uses traditional and contemporary problem solving techniques and processes

- **Measure:** Certified Automation Professional Exit Exam
  - Direct - Exam

**Details/Description:** Source of Assessment: ECT 406
**Target:**
**Implementation Plan (timeline):** Annual - course offered once per school year
**Responsible Individual(s):** ACET Program Champion

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**SLO F.2: Use electrical troubleshooting tools properly**
able to troubleshoot

- **Measure:** Evaluation of lab work in class per rubric
  - Direct - Other
### Program Outcomes Assessment

**BS in Automation**

<table>
<thead>
<tr>
<th>SLO</th>
<th>Details/Description</th>
<th>Target</th>
<th>Implementation Plan (timeline)</th>
<th>Responsible Individual(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SLO F.3:</strong> Debugs logic and software applications</td>
<td>exhibits the ability to logically approach and solve machine control logic programs and custom software applications</td>
<td><strong>Measure:</strong> Evaluation of lab work in class per rubric</td>
<td></td>
<td>ACET Program Champion</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SLO</th>
<th>Details/Description</th>
<th>Target</th>
<th>Implementation Plan (timeline)</th>
<th>Responsible Individual(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Program Objective G: Effective communication</strong></td>
<td>an ability to communicate effectively through engineering drawings, written reports, or oral presentations</td>
<td>Evaluation of inclass project per rubric</td>
<td></td>
<td>ACET Program Champion</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SLO</th>
<th>Details/Description</th>
<th>Target</th>
<th>Implementation Plan (timeline)</th>
<th>Responsible Individual(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SLO G.1: Exhibits good verbal communications</strong></td>
<td>can verbally present and describe technical information and issues in a clear manner</td>
<td></td>
<td></td>
<td>ACET Program Champion</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>SLO</th>
<th>Details/Description</th>
<th>Target</th>
<th>Implementation Plan (timeline)</th>
<th>Responsible Individual(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SLO G.2: Possesses good written communication skills</strong></td>
<td>can develop well-written e-mails, letters, technical documents, test plans and PowerPoint presentations</td>
<td></td>
<td></td>
<td>ACET Program Champion</td>
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</tbody>
</table>

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<tr>
<th>SLO</th>
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<th>Responsible Individual(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SLO G.3: Formality and respect in communications</strong></td>
<td>differentiates between formal, semi-formal, and informal situations involving verbal and written protocols, including meeting</td>
<td></td>
<td></td>
<td>ACET Program Champion</td>
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</table>

<table>
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<tr>
<th>SLO</th>
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<th>Implementation Plan (timeline)</th>
<th>Responsible Individual(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Program Objective H: Embrace learning</strong></td>
<td>a recognition of the need for, and an ability to engage in lifelong learning</td>
<td><strong>Measure:</strong> Certified Automation Professional Exit Exam</td>
<td></td>
<td>ACET Program Champion</td>
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<tr>
<th>SLO</th>
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<th>Implementation Plan (timeline)</th>
<th>Responsible Individual(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SLO H.1: Demonstrates a desire to learn</strong></td>
<td>demonstrates the desire to</td>
<td><strong>Measure:</strong> Certified Automation Professional Exit Exam</td>
<td></td>
<td>ACET Program Champion</td>
</tr>
</tbody>
</table>
**Program Objective I: Professional responsibilities**
an ability to understand professional, ethical and social responsibilities

| SLO I.1: Demonstrates professionalism | **Measure:** Certified Automation Professional Exit Exam  
Direct - Exam | Details/Description: Source of Assessment: ECT 406  
Target:  
Implementation Plan (timeline): Annual - course offered once per school year  
Responsible Individual(s): ACET Program Champion |
|---------------------------------------|--------------------------------------------------|--------------------------------------------------|
| SLO I.2: Understands and exhibits ethics | **Measure:** Certified Automation Professional Exit Exam  
Direct - Exam | Details/Description: Source of Assessment: ECT 406  
Target:  
Implementation Plan (timeline): Annual - course offered once per school year  
Responsible Individual(s): ACET Program Champion |
| SLO I.3: Understands the role of professional societies | **Measure:** Certified Automation Professional Exit Exam  
Direct - Exam | Details/Description: Source of Assessment: ECT 406  
Target:  
Implementation Plan (timeline): Annual - course offered once per school year  
Responsible Individual(s): ACET Program Champion |

**Program Objective J: Diversity and contemporary issues**
a respect for diversity and a knowledge of contemporary professional, societal and global issues

| SLO J.1: Automated control system marketplace | **Measure:** Certified Automation Professional Exit Exam  
Direct - Exam | Details/Description: Source of Assessment: ECT 406  
Target:  
Implementation Plan (timeline): Annual - course offered once per school year  
Responsible Individual(s): ACET Program Champion |
|---------------------------------------------|--------------------------------------------------|--------------------------------------------------|
| SLO J.2: Social and safe design responsibility | **Measure:** Certified Automation Professional Exit Exam  
Direct - Exam | Details/Description: Source of Assessment: ECT 406  
Target:  
Implementation Plan (timeline): Annual - course offered once per school year  
Responsible Individual(s): ACET Program Champion |
<table>
<thead>
<tr>
<th>Importance of the Social Issues Involved with Manufacturing and Safety</th>
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</thead>
<tbody>
<tr>
<td><strong>Details/Description:</strong> Source of Assessment: ECT 406</td>
</tr>
<tr>
<td><strong>Target:</strong></td>
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<table>
<thead>
<tr>
<th>SLO J.3: Safe Design Practices and Operations</th>
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<tbody>
<tr>
<td><strong>Measure:</strong> Certified Automation Professional Exit Exam</td>
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<tr>
<td><strong>Direct - Exam</strong></td>
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<table>
<thead>
<tr>
<th>Program Objective K: Quality and Continuous Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Measure:</strong> Certified Automation Professional Exit Exam</td>
</tr>
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<td><strong>Direct - Exam</strong></td>
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<td><strong>Details/Description:</strong> Source of Assessment: ECT 406</td>
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<td><strong>Responsible Individual(s):</strong> ACET Program Champion</td>
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<table>
<thead>
<tr>
<th>SLO K.1: Understands the Breadth of Quality Concerns</th>
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</thead>
<tbody>
<tr>
<td><strong>Measure:</strong> Certified Automation Professional Exit Exam</td>
</tr>
<tr>
<td><strong>Direct - Exam</strong></td>
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<td><strong>Details/Description:</strong> Source of Assessment: ECT 406</td>
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<td><strong>Responsible Individual(s):</strong> ACET Program Champion</td>
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<table>
<thead>
<tr>
<th>SLO K.2: Understands the Importance of Quality</th>
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<tbody>
<tr>
<td><strong>Measure:</strong> Certified Automation Professional Exit Exam</td>
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<tr>
<td><strong>Direct - Exam</strong></td>
</tr>
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<td><strong>Details/Description:</strong> Source of Assessment: ECT 406</td>
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<td><strong>Responsible Individual(s):</strong> ACET Program Champion</td>
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</table>

<table>
<thead>
<tr>
<th>SLO K.3: Timeliness and Continuous Improvement</th>
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</thead>
<tbody>
<tr>
<td><strong>Measure:</strong> Certified Automation Professional Exit Exam</td>
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<tr>
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<td><strong>Responsible Individual(s):</strong> ACET Program Champion</td>
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</table>

### Assessment Findings

#### Finding per Measure

| BS in Automat&Control Engineer Tech Outcome Set |
Program Objective A.: Mastery of knowledge and tools
an appropriate mastery of the knowledge, techniques, skills, and modern tools

**SLO A.1: Use CAD, programming languages, HMI and IT**
Students will use CAD, programming languages, HMI and IT.

**Measure:** Evaluation of inclass project per rubric
Direct - Student Artifact

**Details/Description:** Source of Assessment: ECT 381
**Target:** jea - example ..... level of accomplishment per rubric, ex 3 or better
**Implementation Plan (timeline):** Annual - course offered once per semester
**Responsible Individual(s):** ACET Program Champion

**Findings** for Evaluation of inclass project per rubric

**Summary of Findings:** The students worked on 2-3 person teams on the Duplo System integration project. Overall the students exhibited an acceptable understanding of the CAD, programming, HMI and IT issues involved in this project work.
**Results:** Target Achievement: Met
**Recommendations:** More organized lectures on these specific topics is needed in the class. The student coming into ECT381 are not all at a uniform level on understanding of all the required concepts.
**Reflections/Notes:** The fall 2012 ECT381 will have a revised syllabus.

**SLO A.2: Use electronics design and analysis tools**
Students will use electronics design and analysis tools.

**Measure:** Evaluation of performance per semester project rubric
Direct - Other

**Details/Description:** Source of Assessment: ECT 480
**Target:**
**Implementation Plan (timeline):** Annual - course offered once per school year
**Responsible Individual(s):** ACET Program Champion

**Findings** for Evaluation of performance per semester project rubric

**Summary of Findings:** The students continued work on the Duplo system from the ECT381 course the previous semester. In the content of use of design and analysis tools, the students well but some were slow in using the tools.. Much of this ability comes from lower level lab oriented electronics courses.
**Results:** Target Achievement: Met
**Recommendations:** Maintain and improve the the lab experiences in ECT165 & ECT167.
**Reflections/Notes:**

**SLO A.3: Apply science and engineering tools**
Students will apply science and engineering tools.

**Measure:** Evaluation of performance per semester project rubric
Direct - Other

**Details/Description:** Source of Assessment: ECT 480
**Target:**
**Implementation Plan (timeline):** Annual - course offered once per school year
**Responsible Individual(s):** ACET Program Champion
Findings for Evaluation of performance per semester project rubric

Summary of Findings: The students applied high level technical concepts well in the coursework.
Results: Target Achievement: Exceeded
Recommendations: Continue.
Reflections/Notes:

SLO A.4: Apply PLC’s, DCS’s, and control system equipment

Measure: Evaluation of inclass project per rubric
Direct - Other

Details/Description: Source of Assessment: ECT 381
Target:
Implementation Plan (timeline): Annual - course offered once per school year
Responsible Individual(s): ACET Program Champion

Findings for Evaluation of inclass project per rubric

Summary of Findings: The students understood and performed control system implementation concepts well.
Results: Target Achievement: Exceeded
Recommendations: Continue.
Reflections/Notes:

SLO A.5: Use manufacturing processes

Measure: Evaluation of performance per semester project rubric
Direct - Other

Details/Description: Source of Assessment: ECT 480
Target:
Implementation Plan (timeline): First Assessment Spring 2011 (3 year cycle)
Responsible Individual(s): ACET Program Champion

Findings for Evaluation of performance per semester project rubric

Summary of Findings: The students understood the automation principles and how they related to manufacturing.
Results: Target Achievement: Met
Recommendations: No change - continue.
Reflections/Notes:

SLO A.6: Manage automated systems

Measure: Evaluation of inclass project per rubric
Direct - Other

Details/Description: Source of Assessment: ECT 381
Target:
Implementation Plan (timeline): Annual - course offered once per school year
Responsible Individual(s): ACET Program Champion

Findings for Evaluation of inclass project per rubric

Summary of Findings: The students understood and performed control system implementation concepts well.
Results: Target Achievement: Exceeded
Recommendations: Continue.
Reflections/Notes:
### Program Objective B: Apply technical knowledge

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

#### SLO B.1: Use mathematics in design

Students will use mathematics in design.

<table>
<thead>
<tr>
<th>Measure: Evaluation of performance per semester project rubric</th>
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<tbody>
<tr>
<td>Direct - Other</td>
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</tbody>
</table>

**Details/Description:** Source of Assessment: ECT 406

**Target:**

**Implementation Plan (timeline):** Annual - course offered once per school year

**Responsible Individual(s):** ACET Program Champion

---

**Findings** for Evaluation of inclass project per rubric

**Summary of Findings:** This course ECT406 was not typical for the ACET major and was not applicable.

**Results:** Target Achievement: Not Met

**Recommendations**: This evaluation will be moved to an exam format for ACET majors.

**Reflections/Notes:**

---

#### SLO B.2: Modeling for analysis

model electrical, mechanical, and process systems for design and analysis

<table>
<thead>
<tr>
<th>Measure: Evaluation of inclass project per rubric</th>
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<tbody>
<tr>
<td>Direct - Other</td>
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</table>

**Details/Description:** Source of Assessment: ECT 406

**Target:**

**Implementation Plan (timeline):** Annual - course offered once per school year

**Responsible Individual(s):** ACET Program Champion

---

**Findings** for Evaluation of inclass project per rubric

**Summary of Findings:** This course ECT406 was not typical for the ACET major and was not applicable.

**Results:** Target Achievement: Not Met

**Recommendations**: This evaluation will be moved to an exam format for ACET majors.

**Reflections/Notes:**
**Recommendations**: Move evaluation to a senior ACET major exam format.

**Reflections/Notes**:

---

**SLO B.3: System design**  
Design electrical, mechanical, and IT systems

**Measure**: Evaluation of performance per semester project rubric  
Direct - Other

**Details/Description**: Source of Assessment: ECT 406

**Target**:

**Implementation Plan (timeline)**: Annual - course offered once per school year

**Responsible Individual(s)**: ACET Program Champion

---

**Findings** for Evaluation of performance per semester project rubric

**Summary of Findings**: This course ECT406 was not typical for the ACET major and was not applicable.

**Results**: Target Achievement: Not Met

**Recommendations**: Move evaluation to an ACET major senior exam format.

**Reflections/Notes**:

---

**Program Objective C: Experiment and apply results**  
an ability to conduct, analyze and interpret experiments, and apply experimental results to improve processes

**SLO C.1: Experimental validation**  
develop and execute experiments to validate designs

**Measure**: Certified Automation Professional Exit Exam  
Direct - Exam

**Details/Description**: Source of Assessment: ECT 406

**Target**:

**Implementation Plan (timeline)**: Annual - course offered once per school year

**Responsible Individual(s)**: ACET Program Champion

---

**Findings** for Certified Automation Professional Exit Exam

**Summary of Findings**: This course ECT406 was not typical for the ACET major and was not applicable.

**Results**: Target Achievement: Not Met

**Recommendations**: The exam is under development - a component of the CAP.

**Reflections/Notes**:

---

**SLO C.2: Lab exercises**  
use electrical lab experiences as learning tools

**Measure**: Evaluation of lab work in class per rubric  
Direct - Other

**Details/Description**: Source of Assessment: ECT 381

**Target**:

**Implementation Plan (timeline)**: Annual - course offered once per school year
Responsible Individual(s): ACET Program Champion

Findings for Evaluation of lab work in class per rubric

Summary of Findings: Each student did well in the ECT381 in terms of working in the lab environment.
Results: Target Achievement: Exceeded
Recommendations: No change.
Reflections/Notes:

SLO C.3: Test plans
design and execute test plans as part of system commissioning

Measure: Certified Automation Professional Exit Exam
Direct - Exam

Details/Description: Source of Assessment: ECT 406
Target:
Implementation Plan (timeline): Annual - course offered once per school year
Responsible Individual(s): ACET Program Champion

Findings for Certified Automation Professional Exit Exam

Summary of Findings: This evaluation was moved to ECT381. In the Duplo project work each student team developed a test plan for their work.
Results: Target Achievement: Met
Recommendations: No change.
Reflections/Notes:

Program Objective D: creativity in design and application
an ability to apply creativity in the design of systems, components, or processes appropriate to the MET program educational objectives

SLO D.1: Mechanical design
develop mechanical designs using CAD and analysis tools

Measure: Evaluation of lab work in class per rubric
Direct - Other

Details/Description: Source of Assessment: ECT 381
Target:
Implementation Plan (timeline): Annual - course offered once per school year
Responsible Individual(s): ACET Program Champion

Findings for Evaluation of lab work in class per rubric

Summary of Findings: The students exhibited a good grasp of the mechanical and mechanical design concepts in the Duplo Project.
Results: Target Achievement: Exceeded
Recommendations: No change.
Reflections/Notes:
SLO D.2: Circuit design  
design circuits and electrical interfacing

**Measure:** Evaluation of lab work in class per rubric  
Direct - Other

**Details/Description:** Source of Assessment: ECT 381  
Target:
**Implementation Plan (timeline):** Annual - course offered once per school year  
**Responsible Individual(s):** ACET Program Champion

**Findings** for Evaluation of lab work in class per rubric

**Summary of Findings:** The students who worked on electronics issues in the course performed well.  
**Results:** Target Achievement: Met  
**Recommendations:** This evaluation should be moved to an electrons course.  
**Reflections/Notes:**

---

SLO D.3: Software and program development  
develop machine control logic, HMI applications and data handling software

**Measure:** Evaluation of performance per semester project rubric  
Direct - Other

**Details/Description:** Source of Assessment: ECT 381  
Target:
**Implementation Plan (timeline):** Annual - course offered once per school year  
**Responsible Individual(s):** ACET Program Champion

**Findings** for Evaluation of performance per semester project rubric

**Summary of Findings:** IN ECT381 the students developed PLC, robot and HMI code. Since ControlLogix PLC programming was required, more lectures on the specifics is required. Otherwise the student did well.  
**Results:** Target Achievement: Not Met  
**Recommendations:** Add ControlLogix programming lectures to course.  
**Reflections/Notes:**

---

Program Objective E: Function in team environment  
an ability to function effectively on teams

SLO E.1: Effective team member  
functions as an effective team member

**Measure:** Evaluation of inclass project per rubric  
Direct - Other

**Details/Description:** Source of Assessment: ECT 406  
Target:
**Implementation Plan (timeline):** Annual - course offered once per school year  
**Responsible Individual(s):** ACET Program Champion
### Findings for Evaluation of inclass project per rubric

**Summary of Findings:** ECT406 is not a appropriate evaluation course for ACET majors. The evaluation was performed in ECT480. With exceptions, the students embraced the team concept and did well.

**Results:** Target Achievement: Met

**Recommendations:** No change.

**Reflections/Notes:**

---

<table>
<thead>
<tr>
<th>SLO E.2: Understands the purpose of teams</th>
</tr>
</thead>
<tbody>
<tr>
<td>assumes responsibility as a team member, respects chain of command and understands why teams exist</td>
</tr>
</tbody>
</table>

**Measure:** Evaluation of inclass project per rubric

<table>
<thead>
<tr>
<th>Direct - Other</th>
</tr>
</thead>
</table>

**Details/Description:** Source of Assessment: ECT 406

**Target:**

**Implementation Plan (Timeline):** Annual - course offered once per school year

**Responsible Individual(s):** ACET Program Champion

**Findings for Evaluation of inclass project per rubric**

**Summary of Findings:** Used ECT381. Teaming was understood.

**Results:** Target Achievement: Met

**Recommendations:** Continue.

**Reflections/Notes:**

---

<table>
<thead>
<tr>
<th>SLOE.3: Works and communicates in the team setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>recognizes the need for good interpersonal skills and practices quality in communication in the team setting</td>
</tr>
</tbody>
</table>

**Measure:** Evaluation of inclass project per rubric

<table>
<thead>
<tr>
<th>Direct - Other</th>
</tr>
</thead>
</table>

**Details/Description:** Source of Assessment: ECT 381

**Target:**

**Implementation Plan (Timeline):** Annual - course offered once per school year

**Responsible Individual(s):** ACET Program Champion

**Findings for Evaluation of inclass project per rubric**

**Summary of Findings:** ECT381 was used. Results were acceptable.

**Results:** Target Achievement: Met

**Recommendations:** Use EDT381 or ECT480.

**Reflections/Notes:**

---

**Program Objective F: Effective problem solving**

an ability to identify, analyze and solve technical problems
### SLO F.1: Effectively use problem solving methods
understands and uses traditional and contemporary problem solving techniques and processes

**Measure:** Certified Automation Professional Exit Exam
- Direct - Exam

**Details/Description:** Source of Assessment: ECT 406

**Target:**

**Implementation Plan (timeline):** Annual - course offered once per school year

**Responsible Individual(s):** ACET Program Champion

**Findings** for Certified Automation Professional Exit Exam

**Summary of Findings:** Used ECT381. The students were faced with a variety of technical problems. All were solved.

**Results:** Target Achievement: Met

**Recommendations:** Continue.

**Reflections/Notes:**

---

### SLO F.2: Use electrical troubleshooting tools properly
able to troubleshoot electrical circuits using typical tools and equipment

**Measure:** Evaluation of lab work in class per rubric
- Direct - Other

**Details/Description:** Source of Assessment: ECT 406

**Target:**

**Implementation Plan (timeline):** Annual - course offered once per school year

**Responsible Individual(s):** ACET Program Champion

**Findings** for Evaluation of lab work in class per rubric

**Summary of Findings:** Electrical troubleshooting was performed in the ECT381 integration course. The students were generally successful.

**Results:** Target Achievement: Met

**Recommendations:** Reinforce electronics tools use in ECT165 & ECT167.

**Reflections/Notes:**

---

### SLO F.3: Debugs logic and software applications
exhibits the ability to logically approach and solve machine control logic programs and custom software applications

**Measure:** Evaluation of lab work in class per rubric
- Direct - Other

**Details/Description:** Source of Assessment: ECT 381

**Target:**

**Implementation Plan (timeline):** Annual - course offered once per school year

**Responsible Individual(s):** ACET Program Champion

**Findings** for Evaluation of lab work in class per rubric

**Summary of Findings:** The debugging working work in ECT381 was well performed by the students.

**Results:** Target Achievement: Met
### Program Objective G: Effective communication

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

#### SLO G.1: Exhibits good verbal communications

| Measure: Evaluation of inclass project per rubric |
| Direct - Other |

#### Details/Description:
- Source of Assessment: ECT 381
- Target:
  - Implementation Plan (timeline): Annual - course offered once per school year
  - Responsible Individual(s): ACET Program Champion

#### Findings for Evaluation of inclass project per rubric

- **Summary of Findings:** The students communicated with instructors and team members. The quality was acceptable.
- **Results:** Target Achievement: Met
- **Recommendations:** Continue.
- **Reflections/Notes:**

#### SLO G.2: Possesses good written communication skills

| Measure: Evaluation of inclass project per rubric |
| Direct - Other |

#### Details/Description:
- Source of Assessment: ECT 381
- Target:
  - Implementation Plan (timeline): Annual - course offered once per school year
  - Responsible Individual(s): ACET Program Champion

#### Findings for Evaluation of inclass project per rubric

- **Summary of Findings:** The written reports requirements were minimal in ECT381.
- **Results:** Target Achievement: Not Met
- **Recommendations:** Change course to be evaluated.
- **Reflections/Notes:**

#### SLO G.3: Formality and respect in communications

| Measure: Evaluation of inclass project per rubric |
| Direct - Other |

#### Details/Description:
- Source of Assessment: ECT 406
- Target:
  - Implementation Plan (timeline): Annual - course offered once per school year
  - Responsible Individual(s): ACET Program Champion

**Recommendations:** Continue.

**Reflections/Notes:**

**Findings** for Evaluation of inclass project per rubric

Summary of Findings: ECT381 was used. The results were acceptable.
Results: Target Achievement: Met
Recommendations: Change evaluation course to ECT381.
Reflections/Notes:

---

**Program Objective H: Embrace learning**

a recognition of the need for, and an ability to engage in lifelong learning

**SLO H.1: Demonstrates a desire to learn**
demonstrates the desire to learn and respects those who possess knowledge

**Measure:** Certified Automation Professional Exit Exam
Direct - Exam

**Details/Description:** Source of Assessment: ECT 406
Target:
Implementation Plan (timeline): Annual - course offered once per school year
Responsible Individual(s): ACET Program Champion

**Findings** for Certified Automation Professional Exit Exam

Summary of Findings: ECT381 was used. The students were actively engaged in the course project.
Results: Target Achievement: Met
Recommendations: Change to ECT381. Continue.
Reflections/Notes:

---

**Program Objective I: Professional responsibilities**
an ability to understand professional, ethical and social responsibilities

**SLO I.1: Demonstrates professionalism**
understands the role of the professional and aspires to become a respected member of an organization

**Measure:** Certified Automation Professional Exit Exam
Direct - Exam

**Details/Description:** Source of Assessment: ECT 406
Target:
Implementation Plan (timeline): Annual - course offered once per school year
Responsible Individual(s): ACET Program Champion

**Findings** for Certified Automation Professional Exit Exam

Summary of Findings: The exam was not in place for this cycle.
Results: Target Achievement: Not Met
Recommendations:
Reflections/Notes:
**SLO I.2: Understands and exhibits ethics**

- **Measure:** Certified Automation Professional Exit Exam
  - Direct - Exam

- **Details/Description:** Source of Assessment: ECT 406
- **Target:**
- **Implementation Plan (timeline):** Annual - course offered once per school year
- **Responsible Individual(s):** ACET Program Champion

**Findings for Certified Automation Professional Exit Exam**

- **Summary of Findings:** The exam was not in place for this cycle.
- **Results:** Target Achievement: Not Met
- **Recommendations:**
- **Reflections/Notes:**

**SLO I.3: Understands the role of professional societies**

- **Measure:** Certified Automation Professional Exit Exam
  - Direct - Exam

- **Details/Description:** Source of Assessment: ECT 406
- **Target:**
- **Implementation Plan (timeline):** Annual - course offered once per school year
- **Responsible Individual(s):** ACET Program Champion

**Findings for Certified Automation Professional Exit Exam**

- **Summary of Findings:** The exam was not in place for this cycle.
- **Results:** Target Achievement: Not Met
- **Recommendations:**
- **Reflections/Notes:**

**Program Objective J: Diversity and contemporary issues**

- **a respect for diversity and a knowledge of contemporary professional, societal and global issues**

**SLO J.1: Automated control system marketplace**

- **Measure:** Certified Automation Professional Exit Exam
  - Direct - Exam

- **Details/Description:** Source of Assessment: ECT 406
- **Target:**
- **Implementation Plan (timeline):** Annual - course offered once per school year
- **Responsible Individual(s):** ACET Program Champion

**Findings for Certified Automation Professional Exit Exam**

- **Summary of Findings:**
- **Results:**
- **Recommendations:**
- **Reflections/Notes:**
**Summary of Findings:** This issue was covered in ECT381. The students did well in understanding this concept.

**Results:** Target Achievement: Met

**Recommendations:** Change to ECT381. No change.

**Reflections/Notes:**

---

**SLO J.2: Social and safe design responsibility**  
understands the importance of the social issues involved with manufacturing and safety

**Measure:** Certified Automation Professional Exit Exam  
Direct - Exam

**Details/Description:** Source of Assessment: ECT 406

**Target:**

**Implementation Plan (timeline):** Annual - course offered once per school year

**Responsible Individual(s):** ACET Program Champion

---

**Findings for Certified Automation Professional Exit Exam**

**Summary of Findings:** This assessment should be moved. It was evaluated in ECT381. Safety was discussed and the students responded with due concerns during the course using automated equipment.

**Results:** Target Achievement: Met

**Recommendations:** Move to ECT381.

**Reflections/Notes:**

---

**SLO J.3: Safe design practices and operations**  
understands the responsibility of safe design practices and operations.

**Measure:** Certified Automation Professional Exit Exam  
Direct - Exam

**Details/Description:** Source of Assessment: ECT 406

**Target:**

**Implementation Plan (timeline):** Annual - course offered once per school year

**Responsible Individual(s):** ACET Program Champion

---

**Findings for Certified Automation Professional Exit Exam**

**Summary of Findings:** This assessment moved to ECT381. The students demonstrated safe design practices.

**Results:** Target Achievement: Met

**Recommendations:** Move to ECT381.

**Reflections/Notes:**

---

**Program Objective K: Quality and continuous improvement**  
a commitment to quality, timeliness, and continuous improvement

**SLO K.1: Understands the breadth of quality concerns**

**Measure:** Certified Automation Professional Exit Exam  
Direct - Exam
**SLO K.2: Understands the importance of quality**
understands the importance of quality in all aspects of automation engineering technology

**Measure:** Certified Automation Professional Exit Exam
Direct - Exam

**Details/Description:** Source of Assessment: ECT 406
**Target:**
**Implementation Plan (timeline):** Annual - course offered once per school year
**Responsible Individual(s):** ACET Program Champion

**Findings for Certified Automation Professional Exit Exam**

**Summary of Findings:** This assessment to be moved, wrong course.
**Results:** Target Achievement: Not Met
**Recommendations:** Move to ACET CAP exam.
**Reflections/Notes:**

---

**SLO K.3: Timeliness and continuous improvement**
exhibits a sense of urgency in all aspects of his/her work and tends to not accept complacency

**Measure:** Certified Automation Professional Exit Exam
Direct - Exam

**Details/Description:** Source of Assessment: ECT 406
**Target:**
**Implementation Plan (timeline):** Annual - course offered once per school year
**Responsible Individual(s):** ACET Program Champion

**Findings for Certified Automation Professional Exit Exam**

**Summary of Findings:** Wrong course.
**Results:** Target Achievement: Not Met
**Recommendations:** Include in ACET CAP exam.
**Reflections/Notes:**
Overall Recommendations

Several assessment course location changes will be implemented in the next cycle.
1) The ATMAE Certified Technical Professional and Certified Manufacturing Specialist exams will be integrated into the ACET assessment plan. These exams will be given each spring to ACET major who will graduate in May of that year or August or December of that year.
2) A set of questions taken from the ISA Certified Automation Professional (CAP) exam will be integrated into the assessment plan. This exam will be given during the ECT480 course.

Overall Reflection

None.

Action Plan

BS in Automat&Control Engineer Tech Outcome Set

Program Objective A.: Mastery of knowledge and tools
an appropriate mastery of the knowledge, techniques, skills, and modern tools

SLO A.1: Use CAD, programming languages, HMI and IT
Students will use CAD, programming languages, HMI and IT.

Action: Change

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

Action Details: Additional lectures are needed on ControlLogix programming, Adept robot programming and HMI RSView programming.

Implementation Plan (timeline):

Key/Responsible Personnel:

Measures:

Resource Allocations:

Priority:

SLO 1.2: Use electronics design and analysis tools
Students will use electronics design and analysis tools.

Action: Changes

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

Action Details: Improves lab experiences in ECT165 and ECT167.

Implementation Plan (timeline):

Key/Responsible Personnel:

Measures:

Resource Allocations:

Priority:
<table>
<thead>
<tr>
<th>SLO #</th>
<th>Description</th>
<th>Action</th>
<th>Finding Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>SLO 1.3</td>
<td>Apply science and engineering tools</td>
<td>No change</td>
<td>This Action is associated with the following Findings: No supporting Findings have been linked to this Action.</td>
</tr>
<tr>
<td>SLO 1.4</td>
<td>Apply PLC's, DCS's, and control system equipment</td>
<td>No change</td>
<td>This Action is associated with the following Findings: No supporting Findings have been linked to this Action.</td>
</tr>
<tr>
<td>SLO 1.5</td>
<td>Use manufacturing processes</td>
<td>No change</td>
<td>This Action is associated with the following Findings: No supporting Findings have been linked to this Action.</td>
</tr>
<tr>
<td>SLO 1.6</td>
<td>Manage automated systems</td>
<td>Change</td>
<td></td>
</tr>
</tbody>
</table>
Students will manage automated systems.

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

Action Details: Use the CAP exam total score percentage to assess.

Implementation Plan (timeline):

Key/Responsible Personnel:

Measures:

Resource Allocations:

Priority:

Program Objective B: Apply technical knowledge
an ability to apply current knowledge and adapt to emerging applications of mathematics, science, engineering, and technology

SLO 2.1: Use mathematics in design
Students will use mathematics in design.

Action: Change

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

Action Details: Use total score from CAP exam.

Implementation Plan (timeline):

Key/Responsible Personnel:

Measures:

Resource Allocations:

Priority:

SLO 2.2: Modeling for analysis

Action: Change

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

Action Details: Use CAP exam.

Implementation Plan (timeline):

Key/Responsible Personnel:

Measures:

Resource Allocations:

Priority:

SLO 2.3: System design

Action: Change

This Action is associated with the following Findings
No supporting Findings have been linked to this Action.
<table>
<thead>
<tr>
<th>Program Objective C: Experiment and apply results</th>
</tr>
</thead>
<tbody>
<tr>
<td>an ability to conduct, analyze and interpret experiments, and apply experimental results to improve processes</td>
</tr>
</tbody>
</table>

### SLO 3.1: Experimental validation

**Action:** Change

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

**Action Details:** Use Certified Technical Professional exam score

**Implementation Plan (timeline):**

**Key/Responsible Personnel:**

**Measures:**

**Resource Allocations:**

**Priority:**

### SLO 3.2: Lab exercises

**Action:** Change

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

**Action Details:** Use Certified Technical Professional exam.

**Implementation Plan (timeline):**

**Key/Responsible Personnel:**

**Measures:**

**Resource Allocations:**

**Priority:**

### SLO 3.3: Test plans

**Action:** Change

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

**Action Details:** Use Certified Technical Professional exam.
### Program Objective D: creativity in design and application

an ability to apply creativity in the design of systems, components, or processes appropriate to the MET program educational objectives

<table>
<thead>
<tr>
<th>SLO 4.1: Mechanical design</th>
<th><strong>Action:</strong> No change</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>This Action is associated with the following Findings</strong></td>
<td>No supporting Findings have been linked to this Action.</td>
</tr>
<tr>
<td><strong>Action Details:</strong></td>
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<tr>
<td><strong>Implementation Plan (timeline):</strong></td>
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<td><strong>Key/Responsible Personnel:</strong></td>
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<td><strong>Measures:</strong></td>
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<td><strong>Resource Allocations:</strong></td>
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<tr>
<td><strong>Priority:</strong></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>SLO 4.2: Circuit design</th>
<th><strong>Action:</strong> No change</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>This Action is associated with the following Findings</strong></td>
<td>No supporting Findings have been linked to this Action.</td>
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<tr>
<td><strong>Action Details:</strong></td>
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<td><strong>Implementation Plan (timeline):</strong></td>
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<td><strong>Priority:</strong></td>
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</table>

<table>
<thead>
<tr>
<th>SLO 4.3: Software and program development</th>
<th><strong>Action:</strong> No change</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>This Action is associated with the following Findings</strong></td>
<td>No supporting Findings have been linked to this Action.</td>
</tr>
<tr>
<td><strong>Action Details:</strong></td>
<td></td>
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<tr>
<td><strong>Implementation Plan (timeline):</strong></td>
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</tbody>
</table>
### Program Objective E: Function in team environment
an ability to function effectively on teams

<table>
<thead>
<tr>
<th>SLO 5.1: Effective team member</th>
<th>Action: Change</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>This Action is associated with the following Findings</strong></td>
<td>No supporting Findings have been linked to this Action.</td>
</tr>
<tr>
<td><strong>Action Details:</strong></td>
<td>Use Certified Technical Professional exam.</td>
</tr>
<tr>
<td><strong>Implementation Plan (timeline):</strong></td>
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<tr>
<td><strong>Key/Responsible Personnel:</strong></td>
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<td><strong>Measures:</strong></td>
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<td><strong>Resource Allocations:</strong></td>
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<tr>
<td><strong>Priority:</strong></td>
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</table>

<table>
<thead>
<tr>
<th>SLO 5.2: Understands the purpose of teams</th>
<th>Action: Change</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>This Action is associated with the following Findings</strong></td>
<td>No supporting Findings have been linked to this Action.</td>
</tr>
<tr>
<td><strong>Action Details:</strong></td>
<td>Use Certified Technical Professional exam.</td>
</tr>
<tr>
<td><strong>Implementation Plan (timeline):</strong></td>
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<tr>
<td><strong>Priority:</strong></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>SLO 5.3: Works and communicates in the team setting</th>
<th>Action: Change</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>This Action is associated with the following Findings</strong></td>
<td>No supporting Findings have been linked to this Action.</td>
</tr>
<tr>
<td><strong>Action Details:</strong></td>
<td>Use Certified Technical Professional exam.</td>
</tr>
<tr>
<td><strong>Implementation Plan (timeline):</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Key/Responsible Personnel:</strong></td>
<td></td>
</tr>
</tbody>
</table>
Program Objective F: Effective problem solving
an ability to identify, analyze and solve technical problems

SLO 6.1: Effectively use problem solving methods
Students will effectively use problem solving methods.

Action: Change

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

Action Details: Use CAP exam

Implementation Plan (timeline):

Key/Responsible Personnel:

Measures:

Resource Allocations:

Priority:

SLO 6.2: Use electrical troubleshooting tools properly
Students will use electrical troubleshooting tools properly.

Action: Change

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

Action Details: Evaluate in ECT381.

Implementation Plan (timeline):

Key/Responsible Personnel:

Measures:

Resource Allocations:

Priority:

SLO 6.3: Debugs logic and software applications
Students will debug logic and software applications successfully.

Action: Change

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

Action Details: Evaluate in ECT381

Implementation Plan (timeline):

Key/Responsible Personnel:

Measures:
## Program Objective G: Effective communication

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

<table>
<thead>
<tr>
<th>SLO 7.1: Exhibits good verbal communications</th>
<th>Action: No change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students will exhibit good verbal communication.</td>
<td><strong>This Action is associated with the following Findings</strong></td>
</tr>
<tr>
<td></td>
<td>No supporting Findings have been linked to this Action.</td>
</tr>
<tr>
<td></td>
<td><strong>Action Details:</strong></td>
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<tr>
<td></td>
<td><strong>Implementation Plan (timeline):</strong></td>
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<tr>
<td></td>
<td><strong>Priority:</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SLO 7.2: Possesses good written communication skills</th>
<th>Action: Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students will possess good written communication skills.</td>
<td><strong>This Action is associated with the following Findings</strong></td>
</tr>
<tr>
<td></td>
<td>No supporting Findings have been linked to this Action.</td>
</tr>
<tr>
<td></td>
<td><strong>Action Details:</strong> Evaluate projects in ECT437</td>
</tr>
<tr>
<td></td>
<td><strong>Implementation Plan (timeline):</strong></td>
</tr>
<tr>
<td></td>
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<td><strong>Priority:</strong></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>SLO 7.3: Formality and respect</th>
<th>Action: Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students will understand the need for formality and respect in communication.</td>
<td><strong>This Action is associated with the following Findings</strong></td>
</tr>
<tr>
<td></td>
<td>No supporting Findings have been linked to this Action.</td>
</tr>
<tr>
<td></td>
<td><strong>Action Details:</strong> Evaluate in ECT381</td>
</tr>
<tr>
<td></td>
<td><strong>Implementation Plan (timeline):</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Key/Responsible Personnel:</strong></td>
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<tr>
<td></td>
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</tr>
</tbody>
</table>
Program Objective H: Embrace learning
a recognition of the need for, and an ability to engage in lifelong learning

SLO 8.1: Demonstrates a desire to learn
\[ \text{Action: Change} \]
This Action is associated with the following Findings
No supporting Findings have been linked to this Action.

\begin{itemize}
  \item Action Details: Use CAP exam
  \item Implementation Plan (timeline):
  \item Key/Responsible Personnel:
  \item Measures:
  \item Resource Allocations:
\end{itemize}

Program Objective I: Professional responsibilities
an ability to understand professional, ethical and social responsibilities

SLO 9.1: Demonstrates professionalism
Students will demonstrate professionalism.

\[ \text{Action: Change} \]
This Action is associated with the following Findings
No supporting Findings have been linked to this Action.

\begin{itemize}
  \item Action Details: Use CAP exam
  \item Implementation Plan (timeline):
  \item Key/Responsible Personnel:
  \item Measures:
  \item Resource Allocations:
\end{itemize}

SLO 9.2: Understands and exhibits ethics
Students will understand and exhibit ethics.

\[ \text{Action: Change} \]
This Action is associated with the following Findings
No supporting Findings have been linked to this Action.

\begin{itemize}
  \item Action Details: Use Certified Technical Professional exam
  \item Implementation Plan (timeline):
  \item Key/Responsible Personnel:
  \item Measures:
  \item Resource Allocations:
\end{itemize}
**SLO 9.3: Understands the role of professional societies**
Students will understand the role of professional societies.

**Action:** Change

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

**Action Details:** Use CAP exam

**Implementation Plan (timeline):**

**Key/Responsible Personnel:**

**Measures:**

**Resource Allocations:**

**Priority:**

---

**Program Objective J: Diversity and contemporary issues**
a respect for diversity and a knowledge of contemporary professional, societal and global issues

**SLO 10.1: Automated control system marketplace**
Students will understand the automated control system marketplace.

**Action:** Change

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

**Action Details:** Use CAP exam

**Implementation Plan (timeline):**

**Key/Responsible Personnel:**

**Measures:**

**Resource Allocations:**

**Priority:**

---

**SLO 10.2: Understands social responsibility**
Students will understand social responsibility.

**Action:** Change

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

**Action Details:** Use CAP exam

**Implementation Plan (timeline):**

**Key/Responsible Personnel:**

**Measures:**

**Resource Allocations:**

**Priority:**
SLO 10.3: Safe design practices and operations
Students will understand the responsibility of safe design practices and operations.

**Action:** Change

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

**Action Details:** Use CAP exam

**Implementation Plan (timeline):**

**Key/Responsible Personnel:**

**Measures:**

**Resource Allocations:**

**Priority:**

---

Program Objective K: Quality and continuous improvement
a commitment to quality, timeliness, and continuous improvement

SLO 11.1: Understands the breadth of quality concerns
Students will understand the breadth of quality concerns.

**Action:** Change

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

**Action Details:** Use Certified Technical Professional exam

**Implementation Plan (timeline):**

**Key/Responsible Personnel:**

**Measures:**

**Resource Allocations:**

**Priority:**

---

SLO 11.2: Understands the importance of quality
Students will understand the importance of quality.

**Action:** Change

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

**Action Details:** Use Certified Technical Professional exam

**Implementation Plan (timeline):**

**Key/Responsible Personnel:**

**Measures:**

**Resource Allocations:**

**Priority:**
### SLO 1.3: Timeliness and continuous improvement

**Students will understand timeliness and continuous improvement.**

**Action:** Change

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

**Action Details:** Use Certified Technical Professional exam

**Implementation Plan (timeline):**

**Key/Responsible Personnel:**

**Measures:**

**Resource Allocations:**

**Priority:**

---

### Status Report

#### Action Statuses

**BS in Automat & Control Engineer Tech Outcome Set**

**Program Objective A.: Mastery of knowledge and tools**

an appropriate mastery of the knowledge, techniques, skills, and modern tools

#### SLO A.1: Use CAD, programming languages, HMI and IT

**Students will use CAD, programming languages, HMI and IT.**

**Action:** Change

**Action Details:** Additional lectures are needed on ControlLogix programming, Adept robot programming and HMI RSView programming.

**Implementation Plan (timeline):**

**Key/Responsible Personnel:**

**Measures:**

**Resource Allocations:**

**Priority:**

**Status** for Change

**Current Status:** Completed

**Resource Allocation(s) Status:** Course changes were made.

**Next Steps/Additional Information:**

---

#### SLO 1.2: Use electronics design and analysis tools

**Students will use electronics design and analysis tools.**

**Action:** Changes

**Action Details:** Improves lab experiences in ECT165 and ECT167.

**Implementation Plan (timeline):**
Key/Responsible Personnel:

Measures:

Resource Allocations:

Priority:

Status for Changes

Current Status: In Progress

Resource Allocation(s) Status: We have reduced the size of the ECT165 and ECT167 classes to hopefully improve the quality of lab work. The results will take 3 years to measure.

Next Steps/Additional Information:

SLO 1.3: Apply science and engineering tools

Students will apply science and engineering tools.

Action: No change

Action Details:

Implementation Plan (timeline):

Key/Responsible Personnel:

Measures:

Resource Allocations:

Priority:

Status for No change

Current Status: Completed

Resource Allocation(s) Status:

Next Steps/Additional Information:

SLO 1.4: Apply PLC's, DCS's, and control system equipment

Students will apply PLC's, DCS's, and control system equipment.

Action: No change

Action Details:

Implementation Plan (timeline):

Key/Responsible Personnel:

Measures:

Resource Allocations:

Priority:
**SLO 1.5: Use manufacturing processes**
Students will use fluid power, engineering materials and manufacturing processes.

**Action:** No change

**Action Details:**

**Implementation Plan (timeline):**

**Key/Responsible Personnel:**

**Measures:**

**Resource Allocations:**

**Priority:**

**Status for No change**

**Current Status:** Completed

**Resource Allocation(s) Status:**

**Next Steps/Additional Information:**

---

**SLO 1.6: Manage automated systems**
Students will manage automated systems.

**Action:** Change

**Action Details:** Use the CAP exam total score percentage to assess.

**Implementation Plan (timeline):**

**Key/Responsible Personnel:**

**Measures:**

**Resource Allocations:**

**Priority:**

**Status for Change**

**Current Status:** Completed

**Resource Allocation(s) Status:**

**Next Steps/Additional Information:**
# Program Objective B: Apply technical knowledge

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

<table>
<thead>
<tr>
<th>SLO 2.1: Use mathematics in design</th>
<th>Action: Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students will use mathematics in design.</td>
<td><strong>Action Details:</strong> Use total score from CAP exam.</td>
</tr>
<tr>
<td><strong>Implementation Plan (timeline):</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Key/Responsible Personnel:</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Measures:</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Resource Allocations:</strong></td>
<td></td>
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<tr>
<td><strong>Priority:</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Status</strong> for Change</td>
<td></td>
</tr>
<tr>
<td><strong>Current Status:</strong> Completed</td>
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</tr>
<tr>
<td><strong>Resource Allocation(s) Status:</strong> The CAP exam was implemented for the 2012-13 year.</td>
<td></td>
</tr>
<tr>
<td><strong>Next Steps/Additional Information:</strong></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SLO 2.2: Modeling for analysis</th>
<th>Action: Change</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Action Details:</strong> Use CAP exam.</td>
<td></td>
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<tr>
<td><strong>Implementation Plan (timeline):</strong></td>
<td></td>
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<tr>
<td><strong>Key/Responsible Personnel:</strong></td>
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<td><strong>Measures:</strong></td>
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<td><strong>Resource Allocations:</strong></td>
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<tr>
<td><strong>Resource Allocation(s) Status:</strong> The CAP exam was implemented for the 2012-13 year.</td>
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<tr>
<td><strong>Next Steps/Additional Information:</strong></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SLO 2.3: System design</th>
<th>Action: Change</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Action Details:</strong> Use CAP exam.</td>
<td></td>
</tr>
<tr>
<td><strong>Implementation Plan (timeline):</strong></td>
<td></td>
</tr>
</tbody>
</table>
Key/Responsible Personnel:

Measures:

Resource Allocations:

Priority:

**Status for Change**

**Current Status:** Completed

**Resource Allocation(s) Status:** The CAP exam was implemented for the 2012-13 year.

Next Steps/Additional Information:

---

**Program Objective C: Experiment and apply results**

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

**SLO 3.1: Experimental validation**

**Action:** Change

**Action Details:** Use Certified Technical Professional exam score

**Implementation Plan (timeline):**

**Key/Responsible Personnel:**

**Measures:**

**Resource Allocations:**

**Priority:**

**Status for Change**

**Current Status:** Completed

**Resource Allocation(s) Status:** The CTP exam was implemented

Next Steps/Additional Information:

---

**SLO 3.2: Lab exercises**

**Action:** Change

**Action Details:** Use Certified Technical Professional exam.

**Implementation Plan (timeline):**

**Key/Responsible Personnel:**

**Measures:**

**Resource Allocations:**
SLO 3.3: Test plans

➤ **Action:** Change

**Action Details:** Use Certified Technical Professional exam.

**Implementation Plan (timeline):**

**Key/Responsible Personnel:**

**Measures:**

**Resource Allocations:**

**Priority:**

---

**Status for Change**

**Current Status:** Completed

**Resource Allocation(s) Status:** The CTP exam was implemented.

**Next Steps/Additional Information:**

---

**Program Objective D:** creativity in design and application

An ability to apply creativity in the design of systems, components, or processes appropriate to the MET program educational objectives

---

SLO 4.1: Mechanical design

➤ **Action:** No change

**Action Details:**

**Implementation Plan (timeline):**

**Key/Responsible Personnel:**

**Measures:**

**Resource Allocations:**

**Priority:**

---

**Status for No change**
Current Status: Completed
Resource Allocation(s) Status:
Next Steps/Additional Information:

SLO 4.2: Circuit design
Action: No change
Action Details:
Implementation Plan (timeline):
Key/Responsible Personnel:
Measures:
Resource Allocations:
Priority:
Status for No change
Current Status: Completed
Resource Allocation(s) Status:
Next Steps/Additional Information:

SLO 4.3: Software and program development
Action: No change
Action Details:
Implementation Plan (timeline):
Key/Responsible Personnel:
Measures:
Resource Allocations:
Priority:
Status for No change
Current Status: Completed
Resource Allocation(s) Status:
Next Steps/Additional Information:

Program Objective E: Function in team environment
an ability to function effectively on teams
SLO 5.1: Effective team member

Action: Change

Action Details: Use Certified Technical Professional exam.

Implementation Plan (timeline):

Key/Responsible Personnel:

Measures:

Resource Allocations:

Priority:

Status for Change

Current Status: Completed

Resource Allocation(s) Status: The CTP exam was implemented

Next Steps/Additional Information:

SLO 5.2: Understands the purpose of teams

Students will understand the purpose of teams.

Action: Change

Action Details: Use Certified Technical Professional exam.

Implementation Plan (timeline):

Key/Responsible Personnel:

Measures:

Resource Allocations:

Priority:

Status for Change

Current Status: Completed

Resource Allocation(s) Status: The CTP exam was implemented

Next Steps/Additional Information:

SLO 5.3: Works and communicates in the team setting

Students will work and communicate well in the team setting.

Action: Change

Action Details: Use Certified Technical Professional exam.

Implementation Plan (timeline):

Key/Responsible Personnel:
Measures:
Resource Allocations:
Priority:

Status for Change

Current Status: Completed
Resource Allocation(s) Status: The CTP exam was implemented.
Next Steps/Additional Information:

Program Objective F: Effective problem solving
an ability to identify, analyze and solve technical problems

SLO 6.1: Effectively use problem solving methods
Students will effectively use problem solving methods.

Action: Change

Action Details: Use CAP exam

Implementation Plan (timeline):

Key/Responsible Personnel:

Measures:
Resource Allocations:
Priority:

Status for Change

Current Status: Completed
Resource Allocation(s) Status: The CAP exam was implemented.
Next Steps/Additional Information:

SLO 6.2: Use electrical troubleshooting tools properly
Students will use electrical troubleshooting tools properly.

Action: Change

Action Details: Evaluate in ECT381.

Implementation Plan (timeline):

Key/Responsible Personnel:

Measures:
Resource Allocations:
Priority:
**SLO 6.3: Debugs logic and software applications**
Students will debug logic and software applications successfully.

**Action:** Change

**Action Details:** Evaluate in ECT381

**Implementation Plan (timeline):**

**Key/Responsible Personnel:**

**Measures:**

**Resource Allocations:**

**Priority:**

**Status for Change**

**Current Status:** Completed

**Resource Allocation(s) Status:** The evaluation was performed in ECT381.

**Next Steps/Additional Information:**

---

**Program Objective G: Effective communication**

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

**SLO 7.1: Exhibits good verbal communications**
Students will exhibit good verbal communication.

**Action:** No change

**Action Details:**

**Implementation Plan (timeline):**

**Key/Responsible Personnel:**

**Measures:**

**Resource Allocations:**

**Priority:**

**Status for No change**

**Current Status:** Completed

**Resource Allocation(s) Status:**
### Next Steps/Additional Information:

<table>
<thead>
<tr>
<th>SLO 7.2: Possesses good written communication skills</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Students will possess good written communication skills.</strong></td>
</tr>
<tr>
<td><strong>Action:</strong> Change</td>
</tr>
<tr>
<td><strong>Action Details:</strong> Evaluate projects in ECT437</td>
</tr>
<tr>
<td><strong>Implementation Plan (timeline):</strong></td>
</tr>
<tr>
<td><strong>Key/Responsible Personnel:</strong></td>
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<td><strong>Measures:</strong></td>
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<td><strong>Resource Allocations:</strong></td>
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<td><strong>Priority:</strong></td>
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<td><strong>Status for Change</strong></td>
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<td><strong>Next Steps/Additional Information:</strong></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>SLO 7.3: Formality and respect</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Students will understand the need for formality and respect in communication.</strong></td>
</tr>
<tr>
<td><strong>Action:</strong> Change</td>
</tr>
<tr>
<td><strong>Action Details:</strong> Evaluate in ECT381</td>
</tr>
<tr>
<td><strong>Implementation Plan (timeline):</strong></td>
</tr>
<tr>
<td><strong>Key/Responsible Personnel:</strong></td>
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<tr>
<td><strong>Measures:</strong></td>
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<tr>
<td><strong>Resource Allocations:</strong></td>
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<tr>
<td><strong>Priority:</strong></td>
</tr>
<tr>
<td><strong>Status for Change</strong></td>
</tr>
<tr>
<td><strong>Current Status:</strong> Completed</td>
</tr>
<tr>
<td><strong>Resource Allocation(s) Status:</strong> The evaluation was performed in ECT381.</td>
</tr>
<tr>
<td><strong>Next Steps/Additional Information:</strong></td>
</tr>
</tbody>
</table>

### Program Objective H: Embrace learning

*a recognition of the need for, and an ability to engage in lifelong learning*

<table>
<thead>
<tr>
<th>SLO 8.1: Demonstrates a desire</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Action:</strong> Change</td>
</tr>
</tbody>
</table>

---

66
to learn

**Action Details:** Use CAP exam

**Implementation Plan (timeline):**

**Key/Responsible Personnel:**

**Measures:**

**Resource Allocations:**

**Priority:**

---

**Status** for Change

**Current Status:** Completed

**Resource Allocation(s) Status:** The CAP exam was implemented.

**Next Steps/Additional Information:**

---

**Program Objective I: Professional responsibilities**

*An ability to understand professional, ethical and social responsibilities*

---

**SLO 9.1: Demonstrates professionalism**

*Students will demonstrate professionalism.*

**Action:** Change

**Action Details:** Use CAP exam

**Implementation Plan (timeline):**

**Key/Responsible Personnel:**

**Measures:**

**Resource Allocations:**

**Priority:**

---

**Status** for Change

**Current Status:** Completed

**Resource Allocation(s) Status:** The CAP exam was implemented.

**Next Steps/Additional Information:**

---

**SLO 9.2: Understands and exhibits ethics**

*Students will understand and exhibit ethics.*

**Action:** Change

**Action Details:** Use Certified Technical Professional exam

**Implementation Plan (timeline):**

**Key/Responsible Personnel:**
Program Outcomes Assessment
BS in Automation

SLO 9.3: Understands the role of professional societies
Students will understand the role of professional societies.

Program Objective J: Diversity and contemporary issues
a respect for diversity and a knowledge of contemporary professional, societal and global issues

SLO 10.1: Automated control system marketplace
Students will understand the automated control system marketplace.
**SLO 10.2: Understands social responsibility**
Students will understand social responsibility.

**Action:** Change

**Action Details:** Use CAP exam

**Implementation Plan (timeline):**

**Key/Responsible Personnel:**

**Measures:**

**Resource Allocations:**

**Priority:**

**Status for Change**

**Current Status:** Completed

**Resource Allocation(s) Status:** The CAP exam was implemented.

**Next Steps/Additional Information:**

---

**SLO 10.3: Safe design practices and operations**
Students will understand the responsibility of safe design practices and operations.

**Action:** Change

**Action Details:** Use CAP exam

**Implementation Plan (timeline):**

**Key/Responsible Personnel:**

**Measures:**

**Resource Allocations:**

**Priority:**

**Status for Change**

**Current Status:** Completed

**Resource Allocation(s) Status:** The CAP exam was implemented.

**Next Steps/Additional Information:**
Program Objective K: Quality and continuous improvement

a commitment to quality, timeliness, and continuous improvement

**SLO 11.1:**
Understands the breadth of quality concerns
Students will understand the breadth of quality concerns.

**Action:** Change

**Action Details:** Use Certified Technical Professional exam

**Implementation Plan (timeline):**

**Key/Responsible Personnel:**

**Measures:**

**Resource Allocations:**

**Priority:**

---

**Status for Change**

**Current Status:** Completed

**Resource Allocation(s) Status:** The CTP exam was implemented.

**Next Steps/Additional Information:**

---

**SLO 11.2:**
Understands the importance of quality
Students will understand the importance of quality.

**Action:** Change

**Action Details:** Use Certified Technical Professional exam

**Implementation Plan (timeline):**

**Key/Responsible Personnel:**

**Measures:**

**Resource Allocations:**

**Priority:**

---

**Status for Change**

**Current Status:** Completed

**Resource Allocation(s) Status:** The CTP exam was implemented.

**Next Steps/Additional Information:**

---

**SLO 11.3:**
Timeliness and continuous improvement
Students will understand timeliness and continuous improvement.

**Action:** Change

**Action Details:** Use Certified Technical Professional exam

**Implementation Plan (timeline):**
**Key/Responsible Personnel:**

**Measures:**

**Resource Allocations:**

**Priority:**

**Status for Change**

**Current Status:** Completed

**Resource Allocation(s) Status:** The CTP exam was implemented.

**Next Steps/Additional Information:**

### Status Summary

*No text specified*

### Summary of Next Steps

The changes will be evaluated in the 2012-13 cycle.
# 2012-2013 Assessment Cycle

## Assessment Plan

### Outcomes and Measures

#### BS in Automat & Control Engineer Tech Outcome Set

**Program Objective A.: Mastery of knowledge and tools**

an appropriate mastery of the knowledge, techniques, skills, and modern tools

<table>
<thead>
<tr>
<th>SLO A.1: Use CAD, programming languages, HMI and IT</th>
<th>Measure: Evaluation of inclass project Direct - Student Artifact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students will use CAD, programming languages, HMI and IT.</td>
<td>Details/Description: Source of Assessment: ECT 381</td>
</tr>
<tr>
<td></td>
<td>Target: 85% grade on selected assignment</td>
</tr>
<tr>
<td></td>
<td>Implementation Plan (timeline): Annual - spring semester Jr yr</td>
</tr>
<tr>
<td></td>
<td>Responsible Individual(s): ACET Program Champion &amp; team</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SLO A.2: Use electronics design and analysis tools</th>
<th>Measure: Evaluation of performance per semester project Direct - Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students will use electronics design and analysis tools.</td>
<td>Details/Description: Source of Assessment: ECT 480</td>
</tr>
<tr>
<td></td>
<td>Target: 85% grade on selected assignment</td>
</tr>
<tr>
<td></td>
<td>Implementation Plan (timeline): Annual - course offered Fall Sr year</td>
</tr>
<tr>
<td></td>
<td>Responsible Individual(s): ACET Program Champion &amp; team</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SLO A.3: Apply science and engineering tools</th>
<th>Measure: Evaluation of performance per semester project Direct - Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students will apply science and engineering tools.</td>
<td>Details/Description: Source of Assessment: ECT 480</td>
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<td></td>
<td>Target: 85% grade on selected assignment</td>
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<td>Implementation Plan (timeline): Annual - course offered Fall Sr year</td>
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<tr>
<td></td>
<td>Responsible Individual(s): ACET Program Champion &amp; Team</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SLO A.4: Apply PLC's, DCS's, and control system equipment</th>
<th>Measure: Evaluation of inclass project Direct - Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students will apply PLC's, DCS's, and control system equipment.</td>
<td>Details/Description: Source of Assessment: ECT 381</td>
</tr>
<tr>
<td></td>
<td>Target: 85% grade on selected assignment</td>
</tr>
<tr>
<td></td>
<td>Implementation Plan (timeline): Annual - course offered Spring Jr yr</td>
</tr>
<tr>
<td></td>
<td>Responsible Individual(s): ACET Program Champion &amp; Team</td>
</tr>
</tbody>
</table>
### SLO A.5: Use manufacturing processes
Students will use fluid power, engineering materials and manufacturing processes.

<table>
<thead>
<tr>
<th><strong>Measure:</strong> Evaluation of performance per semester project</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct - Other</td>
</tr>
</tbody>
</table>

**Details/Description:** Source of Assessment: ECT 480  
**Target:** 85% grade on selected assignment  
**Implementation Plan (timeline):** Annual Fall semester Sr year  
**Responsible Individual(s):** ACET Program Champion & Team

### SLO A.6: Manage automated systems
Students will manage automated systems.

<table>
<thead>
<tr>
<th><strong>Measure:</strong> Evaluation of inclass project</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct - Other</td>
</tr>
</tbody>
</table>

**Details/Description:** Source of Assessment: ECT 480  
**Target:** 85% grade on selected assignment  
**Implementation Plan (timeline):** Annual - course offered Fall Sr year  
**Responsible Individual(s):** ACET Program Champion & Team

### Program Objective B: Apply technical knowledge
an ability to apply current knowledge and adapt to emerging applications of mathematics, science, engineering, and technology

#### SLO B.1: Use mathematics in design
Students will use mathematics in design.

<table>
<thead>
<tr>
<th><strong>Measure:</strong> Evaluation of performance per semester project</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct - Exam</td>
</tr>
</tbody>
</table>

**Details/Description:** Source of Assessment: ECT 381 midterm  
**Target:** 85% grade on selected questions  
**Implementation Plan (timeline):** Annual - course offered Sp Jr year  
**Responsible Individual(s):** ACET Program Champion & Team

#### SLO B.2: Modeling for analysis
model electrical, mechanical, and process systems for design and analysis

<table>
<thead>
<tr>
<th><strong>Measure:</strong> Evaluation of inclass project</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct - Exam</td>
</tr>
</tbody>
</table>

**Details/Description:** Source of Assessment: ECT 381  
**Target:** 85% grade on selected problems  
**Implementation Plan (timeline):** Annual - course offered Sp Jr yr  
**Responsible Individual(s):** ACET Program Champion & Team

#### SLO B.3: System design
Design electrical, mechanical, and IT systems

<table>
<thead>
<tr>
<th><strong>Measure:</strong> Evaluation of performance per semester project</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct - Student Artifact</td>
</tr>
</tbody>
</table>

**Details/Description:** Source of Assessment: ECT 381  
**Target:** 85% grade on selected assignment  
**Implementation Plan (timeline):** Annual - course Sp Jr year  
**Responsible Individual(s):** ACET Program Champion & Team

### Program Objective C: Experiment and apply results
an ability to conduct, analyze and interpret experiments, and apply experimental results to improve processes
| SLO C.1: Experimental validation | **Measure:** Excerpts from Certified Automation Professional Exam  
Direct - Exam |
|---------------------------------|---------------------------------------------------------------|
| **Details/Description:** Source of Assessment: ECT 480  
**Target:** 85% grade on selected assignment  
**Implementation Plan (timeline):** Annual - course offered Fall Sr year  
**Responsible Individual(s):** ACET Program Champion & Team |

| SLO C.2: Lab exercises | **Measure:** Evaluation of lab work in class  
Direct - Exam |
|------------------------|---------------------------------------------------------------------------------------------------------------|
| **Details/Description:** Source of Assessment: ECT 381 midterm exam  
**Target:** 85% grade on selected assignment  
**Implementation Plan (timeline):** Annual - course offered Sp Jr yr  
**Responsible Individual(s):** ACET Program Champion & Team |

| SLO C.3: Test plans | **Measure:** Excerpts from Certified Automation Professional Exam  
Direct - Student Artifact |
|---------------------|-----------------------------------------------------------------------------------------------------------------|
| **Details/Description:** Source of Assessment: ECT 480  
**Target:** 85% grade on selected assignment  
**Implementation Plan (timeline):** Annual - course offered Fall Sr year  
**Responsible Individual(s):** ACET Program Champion & Team |

| Program Objective D: creativity in design and application | an ability to apply creativity in the design of systems, components, or processes appropriate to the MET program educational objectives |

| SLO D.1: Mechanical design | **Measure:** Evaluation of lab work in class  
Direct - Student Artifact |
|-----------------------------|-----------------------------------------------------------------------------------------------------------------|
| **Details/Description:** Source of Assessment: MET403  
**Target:** 85% grade on selected assignment  
**Implementation Plan (timeline):** Annual - course offered Spring Jr or Sr year  
**Responsible Individual(s):** ACET Program Champion & MET403 instructor |

| SLO D.2: Circuit design | **Measure:** Evaluation of lab work in class  
Direct - Exam |
|------------------------|-----------------------------------------------------------------------------------------------------------------|
| **Details/Description:** Source of Assessment: ECT 381 midterm  
**Target:** 85% grade on selected assignment  
**Implementation Plan (timeline):** Annual - course offered Sp Jr year  
**Responsible Individual(s):** ACET Program Champion & Team |

| SLO D.3: Software and program development | **Measure:** Evaluation of performance per semester project  
Direct - Other |
|-------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| **Details/Description:** Source of Assessment: ECT 381 midterm  
**Target:** 85% grade on selected assignment  
**Implementation Plan (timeline):** Annual - course offered Sp Jr year  
**Responsible Individual(s):** ACET Program Champion & Team |
<table>
<thead>
<tr>
<th>Program Objective E: Function in team environment</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SLO E.1: Effective team member</strong></td>
<td><strong>Measure</strong>: Evaluation of inclass project&lt;br&gt;Direct - Other</td>
</tr>
<tr>
<td>functions as an effective team member</td>
<td><strong>Details/Description</strong>: Source of Assessment: ECT 437&lt;br&gt;Target: 85% grade on project assignment/team effectiveness&lt;br&gt;Implementation Plan (timeline): Annual - course completed Jr or Sr year&lt;br&gt;Responsible Individual(s): ACET Program Champion &amp; ECT437 Instructor(s)</td>
</tr>
<tr>
<td><strong>SLO E.2: Understands the purpose of teams</strong></td>
<td><strong>Measure</strong>: Evaluation of inclass project per rubric&lt;br&gt;Direct - Other</td>
</tr>
<tr>
<td>assumes responsibility as a team member, respects chain of command and understands why teams exist</td>
<td><strong>Details/Description</strong>: Source of Assessment: ECT 437&lt;br&gt;Target: 85% grade on team project assignment&lt;br&gt;Implementation Plan (timeline): Annual - course completed Jr or Sr year&lt;br&gt;Responsible Individual(s): ACET Program Champion &amp; ECT437 Instructor(s)</td>
</tr>
<tr>
<td><strong>SLO E.3: Works and communicates in the team setting</strong></td>
<td><strong>Measure</strong>: Evaluation of inclass project&lt;br&gt;Direct - Other</td>
</tr>
<tr>
<td>recognizes the need for good interpersonal skills and practices quality in communication in the team setting</td>
<td><strong>Details/Description</strong>: Source of Assessment: ECT 437&lt;br&gt;Target: 85% grade on team project&lt;br&gt;Implementation Plan (timeline): Annual - course completed Jr or Sr year&lt;br&gt;Responsible Individual(s): ACET Program Champion &amp; ECT437 Instructor(s)</td>
</tr>
<tr>
<td>Program Objective F: Effective problem solving</td>
<td></td>
</tr>
<tr>
<td><strong>SLO F.1: Effectively use problem solving methods</strong></td>
<td><strong>Measure</strong>: Troubleshooting&lt;br&gt;Direct - Other</td>
</tr>
<tr>
<td>understands and uses traditional and contemporary problem solving techniques and processes</td>
<td><strong>Details/Description</strong>: Source of Assessment: ECT 480&lt;br&gt;Target: 85% accuracy on completing troubleshooting activity&lt;br&gt;Implementation Plan (timeline): Annual - course offered Fall Sr year&lt;br&gt;Responsible Individual(s): ACET Program Champion &amp; Team</td>
</tr>
<tr>
<td><strong>SLO F.2: Use electrical troubleshooting tools properly</strong></td>
<td><strong>Measure</strong>: Evaluation of lab work in class&lt;br&gt;Direct - Other</td>
</tr>
<tr>
<td>SLO F.3: Debugs logic and software applications</td>
<td>Measure: Evaluation of lab work in class</td>
</tr>
<tr>
<td>-----------------------------------------------</td>
<td>----------------------------------------</td>
</tr>
<tr>
<td>exhibits the ability to logically approach and solve machine control logic programs and custom software applications</td>
<td>Direct - Other</td>
</tr>
<tr>
<td>Details/Description: Source of Assessment: ECT 381</td>
<td>Details/Description: Source of Assessment: ECT 381</td>
</tr>
<tr>
<td>Target: 85% grade on selected assignment</td>
<td>Target: 85% grade on selected assignment</td>
</tr>
<tr>
<td>Responsible Individual(s): ACET Program Champion &amp; Team</td>
<td>Responsible Individual(s): ACET Program Champion &amp; Team</td>
</tr>
</tbody>
</table>

**Program Objective G: Effective communication**

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

<table>
<thead>
<tr>
<th>SLO G.1: Exhibits good verbal communications</th>
<th>Measure: Evaluation of inclass project</th>
</tr>
</thead>
<tbody>
<tr>
<td>can verbally present and describe technical information and issues in a clear manner</td>
<td>Direct - Other</td>
</tr>
<tr>
<td>Details/Description: Source of Assessment: ECT 437</td>
<td>Details/Description: Source of Assessment: ECT 437</td>
</tr>
<tr>
<td>Target: 85% grade on team project</td>
<td>Target: 85% grade on individual part of team project</td>
</tr>
<tr>
<td>Implementation Plan (timeline): Annual - course competed Jr or Sr year</td>
<td>Implementation Plan (timeline): Annual - course competed Jr or Sr year</td>
</tr>
<tr>
<td>Responsible Individual(s): ACET Program Champion &amp; ECT437 Instructor(s)</td>
<td>Responsible Individual(s): ACET Program Champion &amp; ECT437 Instructor(s)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SLO G.2: Possesses good written communication skills</th>
<th>Measure: Evaluation of inclass project</th>
</tr>
</thead>
<tbody>
<tr>
<td>can develop well-written e-mails, letters, technical documents, test plans and PowerPoint presentations</td>
<td>Direct - Other</td>
</tr>
<tr>
<td>Details/Description: Source of Assessment: ECT 437</td>
<td>Details/Description: Source of Assessment: ECT 437</td>
</tr>
<tr>
<td>Target: 85% grade on individual part of team project</td>
<td>Target: 85% grade on team project evaluation</td>
</tr>
<tr>
<td>Implementation Plan (timeline): Annual - course completed Jr or Sr year</td>
<td>Implementation Plan (timeline): Annual - course completed Jr or Sr year</td>
</tr>
<tr>
<td>Responsible Individual(s): ACET Program Champion &amp; ECT437 Instructor(s)</td>
<td>Responsible Individual(s): ACET Program Champion &amp; ECT437 Instructor(s)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SLO G.3: Formality and respect in communications</th>
<th>Measure: Evaluation of inclass project</th>
</tr>
</thead>
<tbody>
<tr>
<td>differentiates between formal, semi-formal, and informal situations involving verbal and written protocols, including meeting</td>
<td>Direct - Other</td>
</tr>
<tr>
<td>Details/Description: Source of Assessment: ECT 437 project team evaluation</td>
<td>Details/Description: Source of Assessment: ECT 437 project team evaluation</td>
</tr>
<tr>
<td>Target: 85% grade on team member evaluation</td>
<td>Target: 85% grade on team member evaluation</td>
</tr>
<tr>
<td>Implementation Plan (timeline): Annual - course completed Jr or Sr year</td>
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<tr>
<td>Responsible Individual(s): ACET Program Champion &amp; ECT437 Instructor(s)</td>
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</table>

**Program Objective H: Embrace learning**
a recognition of the need for, and an ability to engage in lifelong learning

<table>
<thead>
<tr>
<th>SLO H.1: Demonstrates a desire to learn</th>
<th>Measure: Excerpts from Certified Automation Professional Exam</th>
</tr>
</thead>
<tbody>
<tr>
<td>demonstrates the desire to</td>
<td>Direct - Exam</td>
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**Program Outcomes Assessment**

**BS in Automat**
Program Objectives:

**Program Objective I: Professional responsibilities**

- **SLO I.1: Demonstrates professionalism**
  - **Measure:** Excerpts from Certified Automation Professional Exam
  - **Details/Description:** Source of Assessment: ECT 480
  - **Target:** 85% grade on exam
  - **Implementation Plan (timeline):** Annual - course offered Fall Sr year
  - **Responsible Individual(s):** ACET Program Champion & Team

- **SLO I.2: Understands and exhibits ethics**
  - **Measure:** Excerpts from Certified Automation Professional Exam
  - **Details/Description:** Source of Assessment: ECT 480
  - **Target:** 85% score on exam
  - **Implementation Plan (timeline):** Annual - course offered Fall Sr year
  - **Responsible Individual(s):** ACET Program Champion & Team

- **SLO I.3: Understands the role of professional societies**
  - **Measure:** Excerpts from Certified Automation Professional Exam
  - **Details/Description:** Source of Assessment: ECT 480
  - **Target:** 85% score on exam
  - **Implementation Plan (timeline):** Annual - course offered Fall Sr year
  - **Responsible Individual(s):** ACET Program Champion & Team

**Program Objective J: Diversity and contemporary issues**

- **SLO J.1: Automated control system marketplace**
  - **Measure:** Excerpts from Certified Automation Professional Exam
  - **Details/Description:** Source of Assessment: ECT 480
  - **Target:** 85% score on exam
  - **Implementation Plan (timeline):** Annual - course offered Fall Sr yr
  - **Responsible Individual(s):** ACET Program Champion & Team

- **SLO J.2: Social and safe design responsibility**
  - **Measure:** Excerpts from Certified Automation Professional Exam
  - **Details/Description:** Source of Assessment: ECT 480
**SLO J.3: Safe design practices and operations**
understands the responsibility of safe design practices and operations.

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<thead>
<tr>
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<tr>
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<td>85% score on exam</td>
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<tr>
<td><strong>Implementation Plan (timeline):</strong></td>
<td>Annual - course offered Fall Sr year</td>
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<td>ACET Program Champion &amp; team</td>
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<td>Exam</td>
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</table>

**Program Objective K: Quality and continuous improvement**
a commitment to quality, timeliness, and continuous improvement

<table>
<thead>
<tr>
<th>SLO K.1: Understands the breadth of quality concerns</th>
</tr>
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<tbody>
<tr>
<td>understand how quality intersects all aspects of automation engineering technology</td>
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<td>Annual - course offered Fall Sr year</td>
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<tr>
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<td>Exam</td>
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</table>

<table>
<thead>
<tr>
<th>SLO K.2: Understands the importance of quality</th>
</tr>
</thead>
<tbody>
<tr>
<td>understands the importance of quality in all aspects of automation engineering technology</td>
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<tr>
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<tr>
<td><strong>Implementation Plan (timeline):</strong></td>
<td>Annual - course offered Fall Sr year</td>
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<td>ACET Program Champion &amp; Team</td>
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<td>Exam</td>
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<table>
<thead>
<tr>
<th>SLO K.3: Timeliness and continuous improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>exhibits a sense of urgency in all aspects of his/her work and tends to not accept complacency</td>
</tr>
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<thead>
<tr>
<th>Details/Description:</th>
<th>Source of Assessment: ECT 480</th>
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<tbody>
<tr>
<td><strong>Target:</strong></td>
<td>85% score</td>
</tr>
<tr>
<td><strong>Implementation Plan (timeline):</strong></td>
<td>Annual - course offered Fall Sr year</td>
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**Assessment Findings**

<table>
<thead>
<tr>
<th><strong>Finding per Measure</strong></th>
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<tbody>
<tr>
<td>BS in Automat&amp;Control Engineer Tech Outcome Set</td>
</tr>
</tbody>
</table>
# Program Objective A.: Mastery of knowledge and tools

**an appropriate mastery of the knowledge, techniques, skills, and modern tools**

| SLO A.1: Use CAD, programming languages, HMI and IT | **Measure:** Evaluation of inclass project  
Direct - Student Artifact |
|---------------------------------------------------|----------------------------------------------------------------------------------|
| Students will use CAD, programming languages, HMI and IT. | **Details/Description:** Source of Assessment: ECT 381  
Target: 85% grade on selected assignment  
Implementation Plan (timeline): Annual - spring semester Jr yr  
Responsible Individual(s): ACET Program Champion & team |
| **Findings** for Evaluation of inclass project | **Summary of Findings:** Exhibits assessed at 89%  
**Results:** Target Achievement: Met  
**Recommendations:**  
**Reflections/Notes:** |

| SLO A.2: Use electronics design and analysis tools | **Measure:** Evaluation of performance per semester project  
Direct - Other |
|-------------------------------------------------|----------------------------------------------------------------------------------|
| Students will use electronics design and analysis tools. | **Details/Description:** Source of Assessment: ECT 480  
Target: 85% grade on selected assignment  
Implementation Plan (timeline): Annual - course offered Fall Sr year  
Responsible Individual(s): ACET Program Champion & team |
| **Findings** for Evaluation of performance per semester project | **Summary of Findings:** Design tool use just at 85%  
**Results:** Target Achievement: Met  
**Recommendations:**  
**Reflections/Notes:** |

| SLO A.3: Apply science and engineering tools | **Measure:** Evaluation of performance per semester project  
Direct - Other |
|-------------------------------------------------|----------------------------------------------------------------------------------|
| Students will apply science and engineering tools. | **Details/Description:** Source of Assessment: ECT 480  
Target: 85% grade on selected assignment  
Implementation Plan (timeline): Annual - course offered Fall Sr year  
Responsible Individual(s): ACET Program Champion & Team |
<p>| <strong>Findings</strong> for Evaluation of performance per semester project | <strong>Summary of Findings:</strong> Good results. |</p>
<table>
<thead>
<tr>
<th>SLO A.4: Apply PLC's, DCS's, and control system equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Measure:</strong> Evaluation of inclass project</td>
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<tr>
<td>Direct - Other</td>
</tr>
<tr>
<td><strong>Details/Description:</strong> Source of Assessment: ECT 381</td>
</tr>
<tr>
<td>Target: 85% grade on selected assignment</td>
</tr>
<tr>
<td>Implementation Plan (timeline): Annual - course offered Spring Jr yr</td>
</tr>
<tr>
<td>Responsible Individual(s): ACET Program Champion &amp; Team</td>
</tr>
<tr>
<td><strong>Findings</strong> for Evaluation of inclass project</td>
</tr>
<tr>
<td><strong>Summary of Findings:</strong> Very good performance overall.</td>
</tr>
<tr>
<td><strong>Results:</strong> Target Achievement: Exceeded</td>
</tr>
<tr>
<td><strong>Recommendations:</strong></td>
</tr>
<tr>
<td><strong>Reflections/Notes:</strong></td>
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<table>
<thead>
<tr>
<th>SLO A.5: Use manufacturing processes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Measure:</strong> Evaluation of performance per semester project</td>
</tr>
<tr>
<td>Direct - Other</td>
</tr>
<tr>
<td><strong>Details/Description:</strong> Source of Assessment: ECT 480</td>
</tr>
<tr>
<td>Target: 85% grade on selected assignment</td>
</tr>
<tr>
<td>Implementation Plan (timeline): Annual Fall semester Sr year</td>
</tr>
<tr>
<td>Responsible Individual(s): ACET Program Champion &amp; Team</td>
</tr>
<tr>
<td><strong>Findings</strong> for Evaluation of performance per semester project</td>
</tr>
<tr>
<td><strong>Summary of Findings:</strong> Excellent</td>
</tr>
<tr>
<td><strong>Results:</strong> Target Achievement: Exceeded</td>
</tr>
<tr>
<td><strong>Recommendations:</strong></td>
</tr>
<tr>
<td><strong>Reflections/Notes:</strong></td>
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<table>
<thead>
<tr>
<th>SLO A.6: Manage automated systems</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Measure:</strong> Evaluation of inclass project</td>
</tr>
<tr>
<td>Direct - Other</td>
</tr>
<tr>
<td><strong>Details/Description:</strong> Source of Assessment: ECT 480</td>
</tr>
<tr>
<td>Target: 85% grade on selected assignment</td>
</tr>
<tr>
<td>Implementation Plan (timeline): Annual - course offered Fall Sr year</td>
</tr>
<tr>
<td>Responsible Individual(s): ACET Program Champion &amp; Team</td>
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</tbody>
</table>
**Program Objective B: Apply technical knowledge**
an ability to apply current knowledge and adapt to emerging applications of mathematics, science, engineering, and technology

### SLO B.1: Use mathematics in design
Students will use mathematics in design.

**Measure:** Evaluation of performance per semester
Direct - Exam

**Details/Description:**
- Source of Assessment: ECT 381 midterm
- Target: 85% grade on selected questions
- Implementation Plan (timeline): Annual - course offered Sp Jr year
- Responsible Individual(s): ACET Program Champion & Team

**Findings for Evaluation of performance per semester**

**Summary of Findings:** Few good examples
**Results:** Target Achievement: Met
**Recommendations:** Need better project
**Reflections/Notes:**

### SLO B.2: Modeling for analysis
model electrical, mechanical, and process systems for design and analysis

**Measure:** Evaluation of inclass project
Direct - Exam

**Details/Description:**
- Source of Assessment: ECT 381
- Target: 85% grade on selected problems
- Implementation Plan (timeline): Annual - course offered Sp Jr yr
- Responsible Individual(s): ACET Program Champion & Team

**Findings for Evaluation of inclass project**

**Summary of Findings:** Few examples
**Results:** Target Achievement: Not Met
**Recommendations:** Need redesign of eval.
**Reflections/Notes:**

### SLO B.3: System design
Design electrical, mechanical, and IT

**Measure:** Evaluation of performance per semester project
Direct - Student Artifact
**Program Objective C: Experiment and apply results**

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

### SLO C.1: Experimental validation

*develop and execute experiments to validate designs*

<table>
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<tr>
<th><strong>Measure:</strong></th>
<th>Excerpts from Certified Automation Professional Exam</th>
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<tbody>
<tr>
<td><strong>Direct - Exam</strong></td>
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</tbody>
</table>

- **Details/Description:** Source of Assessment: ECT 480
- **Target:** 85% grade on selected assignment
- **Implementation Plan (timeline):** Annual - course offered Fall Sr year
- **Responsible Individual(s):** ACET Program Champion & Team

**Findings** for Excerpts from Certified Automation Professional Exam

- **Summary of Findings:** Met
- **Results:** Target Achievement: Met
- **Recommendations:**
- **Reflections/Notes:**

### SLO C.2: Lab exercises

*use electrical lab experiences as learning tools*

<table>
<thead>
<tr>
<th><strong>Measure:</strong></th>
<th>Evaluation of lab work in class</th>
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<tr>
<td><strong>Direct - Exam</strong></td>
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</tbody>
</table>

- **Details/Description:** Source of Assessment: ECT 381 midterm exam
- **Target:** 85% grade on selected assignment
- **Implementation Plan (timeline):** Annual - course offered Sp Jr yr
- **Responsible Individual(s):** ACET Program Champion & Team

**Findings** for Evaluation of lab work in class

- **Summary of Findings:** Met
- **Results:** Target Achievement: Met
- **Recommendations:**
- **Reflections/Notes:**
SLO C.3: Test plans
design and execute test plans as part of system commissioning

Measure: Excerpts from Certified Automation Professional Exam
Direct - Student Artifact

Details/Description: Source of Assessment: ECT 480
Target: 85% grade on selected assignment
Implementation Plan (timeline): Annual - course offered Fall Sr year
Responsible Individual(s): ACET Program Champion & Team

Findings for Excerpts from Certified Automation Professional Exam

Summary of Findings: Poor performance
Results: Target Achievement: Not Met
Recommendations:
Reflections/Notes:

Program Objective D: creativity in design and application
an ability to apply creativity in the design of systems, components, or processes appropriate to the MET program educational objectives

SLO D.1: Mechanical design
develop mechanical designs using CAD and analysis tools

Measure: Evaluation of lab work in class
Direct - Student Artifact

Details/Description: Source of Assessment: MET403
Target: 85% grade on selected assignment
Implementation Plan (timeline): Annual - course offered Spring Jr or Sr year
Responsible Individual(s): ACET Program Champion & MET403 instructor

Findings for Evaluation of lab work in class

Summary of Findings: Met. Good work.
Results: Target Achievement: Met
Recommendations:
Reflections/Notes:

SLO D.2: Circuit design
design circuits and electrical interfacing

Measure: Evaluation of lab work in class
Direct - Exam

Details/Description: Source of Assessment: ECT 381 midterm
Target: 85% grade on selected assignment
Implementation Plan (timeline): Annual - course offered Sp Jr year
Responsible Individual(s): ACET Program Champion & Team

Findings for Evaluation of lab work in class
Summary of Findings: Met
Results: Target Achievement: Met
Recommendations:
Reflections/Notes:

SLO D.3: Software and program development
develop machine control logic, HMI applications and data handling software

Measure: Evaluation of performance per semester project
Direct - Other

Details/Description:
Source of Assessment: ECT 480
Target: 85% grade on selected assignment
Implementation Plan (timeline): Annual - course offered Sp Jr year
Responsible Individual(s): ACET Program Champion & Team

Findings for Evaluation of performance per semester project

Summary of Findings: Met. Good.
Results: Target Achievement: Met
Recommendations:
Reflections/Notes:

Program Objective E: Function in team environment
an ability to function effectively on teams

SLO E.1: Effective team member
functions as an effective team member

Measure: Evaluation of inclass project
Direct - Other

Details/Description:
Source of Assessment: ECT 437
Target: 85% grade on project assignment/team effectiveness
Implementation Plan (timeline): Annual - course completed Jr or Sr year
Responsible Individual(s): ACET Program Champion & ECT437 Instructor(s)

Findings for Evaluation of inclass project

Summary of Findings: Just met.
Results: Target Achievement: Met
Recommendations:
Reflections/Notes:

SLO E.2: Understands the purpose of teams
assumes responsibility as a team member, respects chain of command and understands why teams

Measure: Evaluation of inclass project per rubric
Direct - Other

Details/Description:
Source of Assessment: ECT 437
SLOE.3: Works and communicates in the team setting
recognizes the need for good interpersonal skills and practices quality in communication in the team setting

**Measure:** Evaluation of inclass project
Direct - Other

**Details/Description:** Source of Assessment: ECT 437
**Target:** 85% grade on team project
**Implementation Plan (timeline):** Annual - course completed Jr or Sr year
**Responsible Individual(s):** ACET Program Champion & ECT437 Instructor(s)

**Findings** for Evaluation of inclass project per rubric

**Summary of Findings:** Met
**Results:** Target Achievement: Met
**Recommendations:**
**Reflections/Notes:**

Program Objective F: Effective problem solving
an ability to identify, analyze and solve technical problems

**SLO F.1: Effectively use problem solving methods**
understands and uses traditional and contemporary problem solving techniques and processes

**Measure:** Troubleshooting
Direct - Other

**Details/Description:** Source of Assessment: ECT 480
**Target:** 85% accuracy on completing troubleshooting activity
**Implementation Plan (timeline):** Annual - course offered Fall Sr year
**Responsible Individual(s):** ACET Program Champion & Team

**Findings** for Troubleshooting

**Summary of Findings:** Good.
**Results:** Target Achievement: Met
**Recommendations:**
**Reflections/Notes:**

Target: 85% grade on team project assignment

Implementation Plan (timeline): Annual - course completed Jr or Sr year
Responsible Individual(s): ACET Program Champion & ECT437 Instructor(s)

**Findings** for Evaluation of inclass project per rubric

**Summary of Findings:** Met
**Results:** Target Achievement: Met
**Recommendations:**
**Reflections/Notes:**
SLO F.2: Use electrical troubleshooting tools properly
able to troubleshoot electrical circuits using typical tools and equipment

**Measure:** Evaluation of lab work in class
Direct - Other

**Details/Description:** Source of Assessment: ECT 381
**Target:** 85% grade on selected assignment
**Implementation Plan (timeline):** Annual - course offered Sp Jr year
**Responsible Individual(s):** ACET Program Champion & Team

**Findings** for Evaluation of lab work in class

**Summary of Findings:** Completed assignments, 90% accuracy.
**Results:** Target Achievement: Met
**Recommendations :**
**Reflections/Notes :**

SLO F.3: Debugs logic and software applications
exhibits the ability to logically approach and solve machine control logic programs and custom software applications

**Measure:** Evaluation of lab work in class
Direct - Other

**Details/Description:** Source of Assessment: ECT 381
**Target:** 85% grade on selected assignment
**Implementation Plan (timeline):** Annual - course offered Sp Jr year
**Responsible Individual(s):** ACET Program Champion & Team

**Findings** for Evaluation of lab work in class

**Summary of Findings:** Under target @ 75%
**Results:** Target Achievement: Not Met
**Recommendations :**
**Reflections/Notes :**

Program Objective G: Effective communication
an ability to communicate effectively through engineering drawings, written reports, or oral presentations

SLO G.1: Exhibits good verbal communications
can verbally present and describe technical information and issues in a clear manner

**Measure:** Evaluation of inclass project
Direct - Other

**Details/Description:** Source of Assessment: ECT 437
**Target:** 85% grade on team project
**Implementation Plan (timeline):** Annual - course competed Jr or Sr year
**Responsible Individual(s):** ACET Program Champion & ECT437 Instructor(s)

**Findings** for Evaluation of inclass project

**Summary of Findings:** Met
Results: Target Achievement: Met

Recommendations:

Reflections/Notes:

---

**SLO G.2: Possesses good written communication skills**

can develop well-written emails, letters, technical documents, test plans and PowerPoint presentations

**Measure:** Evaluation of inclass project
Direct - Other

**Details/Description:** Source of Assessment: ECT 437
Target: 85% grade on individual part of team project
Implementation Plan (timeline): Annual - course completed Jr or Sr year
Responsible Individual(s): ACET Program Champion & ECT437 Instructor(s)

**Findings** for Evaluation of inclass project

Summary of Findings: 95%
Results: Target Achievement: Met
Recommendations:
Reflections/Notes:

---

**SLO G.3: Formality and respect in communications**
differentiates between formal, semi-formal, and informal situations involving verbal and written protocols, including meeting

**Measure:** Evaluation of inclass project
Direct - Other

**Details/Description:** Source of Assessment: ECT 437 project team evaluation
Target: 85% grade on team member evaluation
Implementation Plan (timeline): Annual - course completed Jr or Sr year
Responsible Individual(s): ACET Program Champion & ECT437 Instructor(s)

**Findings** for Evaluation of inclass project

Summary of Findings: OK
Results: Target Achievement: Met
Recommendations:
Reflections/Notes:

---

Program Objective H: Embrace learning

a recognition of the need for, and an ability to engage in lifelong learning

**SLO H.1: Demonstrates a desire to learn**
demonstrates the desire to learn and respects those who possess knowledge

**Measure:** Excerpts from Certified Automation Professional Exam
Direct - Exam

**Details/Description:** Source of Assessment: ECT 480
Target: 85% grade on exam
Implementation Plan (timeline): Annual - course offered Fall Sr year
Program Objective I: Professional responsibilities
an ability to understand professional, ethical and social responsibilities

<table>
<thead>
<tr>
<th>SLO I.1: Demonstrates professionalism</th>
<th>Measure: Excerpts from Certified Automation Professional Exam Direct - Exam</th>
</tr>
</thead>
<tbody>
<tr>
<td>understands the role of the professional and aspires to become a respected member of an organization</td>
<td>Details/Description: Source of Assessment: ECT 480</td>
</tr>
<tr>
<td></td>
<td>Target: 85% grade on exam</td>
</tr>
<tr>
<td></td>
<td>Implementation Plan (timeline): Annual - course offered Fall Sr year</td>
</tr>
<tr>
<td></td>
<td>Responsible Individual(s): ACET Program Champion &amp; Team</td>
</tr>
<tr>
<td></td>
<td>Findings for Excerpts from Certified Automation Professional Exam</td>
</tr>
<tr>
<td></td>
<td>Summary of Findings: Met</td>
</tr>
<tr>
<td></td>
<td>Results: Target Achievement: Met</td>
</tr>
<tr>
<td></td>
<td>Recommendations:</td>
</tr>
<tr>
<td></td>
<td>Reflections/Notes:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SLO I.2: Understands and exhibits ethics</th>
<th>Measure: Excerpts from Certified Automation Professional Exam Direct - Exam</th>
</tr>
</thead>
<tbody>
<tr>
<td>is knowledgeable on issues involving social and ethical responsibilities</td>
<td>Details/Description: Source of Assessment: ECT 480</td>
</tr>
<tr>
<td></td>
<td>Target: 85% score on exam</td>
</tr>
<tr>
<td></td>
<td>Implementation Plan (timeline): Annual - course offered Fall Sr year</td>
</tr>
<tr>
<td></td>
<td>Responsible Individual(s): ACET Program Champion &amp; Team</td>
</tr>
<tr>
<td></td>
<td>Findings for Excerpts from Certified Automation Professional Exam</td>
</tr>
<tr>
<td></td>
<td>Summary of Findings: Scored at 88%</td>
</tr>
<tr>
<td></td>
<td>Results: Target Achievement: Met</td>
</tr>
<tr>
<td></td>
<td>Recommendations:</td>
</tr>
<tr>
<td></td>
<td>Reflections/Notes:</td>
</tr>
</tbody>
</table>
SLO I.3: Understands the role of professional societies
understands the role of professional societies play in technical professions, including automation engineering technology

**Measure:** Excerpts from Certified Automation Professional Exam
Direct - Exam

**Details/Description:** Source of Assessment: ECT 480
**Target:** 85% score on exam
**Implementation Plan (timeline):** Annual - course offered Fall Sr year
**Responsible Individual(s):** ACET Program Champion & Team

**Findings** for Excerpts from Certified Automation Professional Exam

**Summary of Findings:** Scored at 91%
**Results:** Target Achievement: Met
**Recommendations:**
**Reflections/Notes:**

Program Objective J: Diversity and contemporary issues
a respect for diversity and a knowledge of contemporary professional, societal and global issues

SLO J.1: Automated control system marketplace
exhibits some knowledge of global nature of automation system use

**Measure:** Excerpts from Certified Automation Professional Exam
Direct - Exam

**Details/Description:** Source of Assessment: ECT 480
**Target:** 85% score on exam
**Implementation Plan (timeline):** Annual - course offered Fall Sr yr
**Responsible Individual(s):** ACET Program Champion & Team

**Findings** for Excerpts from Certified Automation Professional Exam

**Summary of Findings:** OK. Scored 90% on questions
**Results:** Target Achievement: Met
**Recommendations:**
**Reflections/Notes:**

SLO J.2: Social and safety design responsibility
understands the importance of the social issues involved with manufacturing and safety

**Measure:** Excerpts from Certified Automation Professional Exam
Direct - Exam

**Details/Description:** Source of Assessment: ECT 480
**Target:** 85% score on exam
**Implementation Plan (timeline):** Annual - course offered Fall Sr year
**Responsible Individual(s):** ACET Program Champion & team

**Findings** for Excerpts from Certified Automation Professional Exam

**Summary of Findings:** 87% score
**Results:** Target Achievement: Met
Recommendations:

Reflections/Notes:

**SLO 1.3: Safe design practices and operations**
understands the responsibility of safe design practices and operations.

- **Measure:** Excerpts from Certified Automation Professional Exam
  Direct - Exam

- **Details/Description:** Source of Assessment: ECT 480
  Target: 85% score on exam
  Implementation Plan (timeline): Annual - course offered Fall Sr year
  Responsible Individual(s): ACET Program Champion & Team

**Findings for Excerpts from Certified Automation Professional Exam**

- **Summary of Findings:** 98% score
- **Results:** Target Achievement: Met
- **Recommendations:**
- **Reflections/Notes:**

**Program Objective K: Quality and continuous improvement**
a commitment to quality, timeliness, and continuous improvement

**SLO K.1: Understands the breadth of quality concerns**
understand how quality intersects all aspects of automation engineering technology

- **Measure:** Excerpts from Certified Automation Professional Exam
  Direct - Exam

- **Details/Description:** Source of Assessment: ECT 480
  Target: 85% score on exam
  Implementation Plan (timeline): Annual - course offered Fall Sr year
  Responsible Individual(s): ACET Program Champion & Team

**Findings for Excerpts from Certified Automation Professional Exam**

- **Summary of Findings:** Scored at 94%
- **Results:** Target Achievement: Met
- **Recommendations:**
- **Reflections/Notes:**

**SLO K.2: Understands the importance of quality**
understands the importance of quality in all aspects of automation engineering technology

- **Measure:** Excerpts from Certified Automation Professional Exam
  Direct - Exam

- **Details/Description:** Source of Assessment: ECT 480
  Target: 85% score on exam
  Implementation Plan (timeline): Annual - course offered Fall Sr year
  Responsible Individual(s): ACET Program Champion & Team

**Findings for Excerpts from Certified Automation Professional Exam**

- **Summary of Findings:**
- **Results:**
- **Recommendations:**
- **Reflections/Notes:**
Findings for Excerpts from Certified Automation Professional Exam

Summary of Findings: 85% score.
Results: Target Achievement: Met
Recommendations:
Reflections/Notes:

SLO K.3: Timeliness and continuous improvement
exhibits a sense of urgency in all aspects of his/her work and tends to not accept complacency

Measure: Excerpts from Certified Automation Professional Exam
Direct - Exam

Details/Description: Source of Assessment: ECT 480
Target: 85% score
Implementation Plan (timeline): Annual - course offered Fall Sr year
Responsible Individual(s): ACET Program Champion & Team

Findings for Excerpts from Certified Automation Professional Exam

Summary of Findings: Scored at 91%
Results: Target Achievement: Met
Recommendations:
Reflections/Notes:

Overall Recommendations

SLO B.1 Use math in design – need better problems/exhibits for teaching and assessment.
SLO B.2 Modeling for analysis– need better problems/exhibits for teaching and assessment.
SLO C.3 Test plans – need better examples and exercises for teaching
SLO F.3 Debug logic and software applications – need more learning labs on debugging PLC and HMI software – more experience.
SLO H.1 Demonstrates a desire to learn – need better evaluation tool
Each of these items will be addressed in the 2013-14 cycle.

Overall Reflection

The overall assessment plan needs streamlined.

Action Plan

Actions

BS in Automat&Control Engineer Tech Outcome Set
Program Objective A.: Mastery of knowledge and tools
an appropriate mastery of the knowledge, techniques, skills, and modern tools

SLO A.1: Use CAD, programming languages, HMI and IT
Students will use CAD, programming languages, HMI and IT.
No actions specified

SLO 1.2: Use electronics design and analysis tools
Students will use electronics design and analysis tools.
No actions specified

SLO 1.3: Apply science and engineering tools
Students will apply science and engineering tools.
No actions specified

SLO 1.4: Apply PLC’s, DCS’s, and control system equipment
Students will apply PLC’s, DCS’s, and control system equipment.
No actions specified

SLO 1.5: Use manufacturing processes
Students will use fluid power, engineering materials and manufacturing processes.
No actions specified

SLO 1.6: Manage automated systems
Students will manage automated systems.
No actions specified

Program Objective B: Apply technical knowledge
an ability to apply current knowledge and adapt to emerging applications of mathematics, science, engineering, and technology

SLO 2.1: Use mathematics in design
Students will use mathematics in design.

Action: Change

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

Action Details: Develop better examples of mathematics applications in ECT381, particularly process control PID calculations. Then include in the ECT381 midterm study guide and exam questions that reflect such.

Implementation Plan (timeline): For next offering of ECT381.

Key/Responsible Personnel: ACET team and instructor of course.

Measures:

Resource Allocations:

Priority: Medium
SLO 2.2: Modeling for analysis

**Action:** Change

This Action is associated with the following Findings

No supporting Findings have been linked to this Action.

**Action Details:** Develop better examples of modeling applications in ECT381, particularly in process control. Then include in the ECT381 midterm study guide and exam questions that reflect such.

**Implementation Plan (timeline):** Next offering of ECT381

**Key/Responsible Personnel:** ACET Team and course instructor

**Measures:**

**Resource Allocations:**

**Priority:**

---

SLO 2.3: System design

*No actions specified*

---

**Program Objective C: Experiment and apply results**

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

SLO 3.1: Experimental validation

*No actions specified*

SLO 3.2: Lab exercises

*No actions specified*

SLO 3.3: Test plans

**Action:** Change

This Action is associated with the following Findings

No supporting Findings have been linked to this Action.

**Action Details:** Develop a learning module on the development of test plans as applied to automation.

**Implementation Plan (timeline):** For next offering of ECT480

**Key/Responsible Personnel:** ACET team and course instructor.

**Measures:**

**Resource Allocations:**

**Priority:**

---

**Program Objective D: creativity in design and application**

an ability to apply creativity in the design of systems, components, or processes appropriate to the MET program educational objectives

SLO 4.1: Mechanical design

*No actions specified*
<table>
<thead>
<tr>
<th>SLO 4.2: Circuit design</th>
<th>No actions specified</th>
</tr>
</thead>
<tbody>
<tr>
<td>SLO 4.3: Software and program development</td>
<td>No actions specified</td>
</tr>
<tr>
<td>Program Objective E: Function in team environment</td>
<td>an ability to function effectively on teams</td>
</tr>
<tr>
<td>SLO 5.1: Effective team member</td>
<td>No actions specified</td>
</tr>
<tr>
<td>SLO 5.2: Understands the purpose of teams</td>
<td>No actions specified</td>
</tr>
<tr>
<td>Students will understand the purpose of teams.</td>
<td></td>
</tr>
<tr>
<td>SLO 5.3: Works and communicates in the team setting</td>
<td>No actions specified</td>
</tr>
<tr>
<td>Students will work and communicate well in the team setting.</td>
<td></td>
</tr>
</tbody>
</table>

**Program Objective F: Effective problem solving**

| SLO 6.1: Effectively use problem solving methods | No actions specified |
| Students will effectively use problem solving methods. |
| SLO 6.2: Use electrical troubleshooting tools properly | No actions specified |
| Students will use electrical troubleshooting tools properly. |
| SLO 6.3: Debugs logic and software applications | Change |
| Students will debug logic and software applications successfully. |

**Action:** Change

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

**Action Details:** Add learning module and lab exercises specifically on PLC code debugging.

**Implementation Plan (timeline):** Next offering of ECT381

**Key/Responsible Personnel:** ACET Team and course instructor

**Measures:**

**Resource Allocations:**

**Priority:**

**Program Objective G: Effective communication**

<p>| an ability to communicate effectively through engineering drawings, written reports, or oral presentations |</p>
<table>
<thead>
<tr>
<th>SLO 7.1: Exhibits good verbal communications</th>
<th>No actions specified</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students will exhibit good verbal communication.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SLO 7.2: Possesses good written communication skills</th>
<th>No actions specified</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students will possess good written communication skills.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SLO 7.3: Formality and respect</th>
<th>No actions specified</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students will understand the need for formality and respect in communication.</td>
<td></td>
</tr>
</tbody>
</table>

**Program Objective H: Embrace learning** 
a recognition of the need for, and an ability to engage in lifelong learning

<table>
<thead>
<tr>
<th>SLO 8.1: Demonstrates a desire to learn</th>
<th>Action: Change</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>This Action is associated with the following Findings</td>
</tr>
<tr>
<td></td>
<td>No supporting Findings have been linked to this Action.</td>
</tr>
<tr>
<td></td>
<td>Action Details: Find better questions in the CAP exam or develop an additional question that focuses on learning and respect for knowledge</td>
</tr>
<tr>
<td></td>
<td>Implementation Plan (timeline): Next offering of ECT480</td>
</tr>
<tr>
<td></td>
<td>Key/Responsible Personnel: ACET team and course instructor</td>
</tr>
<tr>
<td></td>
<td>Measures:</td>
</tr>
<tr>
<td></td>
<td>Resource Allocations:</td>
</tr>
<tr>
<td></td>
<td>Priority:</td>
</tr>
</tbody>
</table>

**Program Objective I: Professional responsibilities**
an ability to understand professional, ethical and social responsibilities

<table>
<thead>
<tr>
<th>SLO 9.1: Demonstrates professionalism</th>
<th>No actions specified</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students will demonstrate professionalism.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SLO 9.2: Understands and exhibits ethics</th>
<th>No actions specified</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students will understand and exhibit ethics.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SLO 9.3: Understands the role of professional societies</th>
<th>No actions specified</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students will understand the role of professional societies.</td>
<td></td>
</tr>
</tbody>
</table>
**Program Objective J: Diversity and contemporary issues**

*a respect for diversity and a knowledge of contemporary professional, societal and global issues*

<table>
<thead>
<tr>
<th>SLO 10.1: Automated control system marketplace</th>
<th>No actions specified</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students will understand the automated control system marketplace.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SLO 10.2: Understands social responsibility</th>
<th>No actions specified</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students will understand social responsibility.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SLO 10.3: Safe design practices and operations</th>
<th>No actions specified</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students will understand the responsibility of safe design practices and operations.</td>
<td></td>
</tr>
</tbody>
</table>

**Program Objective K: Quality and continuous improvement**

*a commitment to quality, timeliness, and continuous improvement*

<table>
<thead>
<tr>
<th>SLO 11.1: Understands the breadth of quality concerns</th>
<th>No actions specified</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students will understand the breadth of quality concerns.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SLO 11.2: Understands the importance of quality</th>
<th>No actions specified</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students will understand the importance of quality.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SLO 11.3: Timeliness and continuous improvement</th>
<th>No actions specified</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students will understand timeliness and continuous improvement.</td>
<td></td>
</tr>
</tbody>
</table>

**Status Report**

**Action Statuses**

**BS in Automat&Control Engineer Tech Outcome Set**

**Program Objective A.: Mastery of knowledge and tools**

*a appropriate mastery of the knowledge, techniques, skills, and modern tools*

<table>
<thead>
<tr>
<th>SLO A.1: Use CAD, programming languages, HMI and IT</th>
<th>No actions specified</th>
</tr>
</thead>
</table>
Students will use CAD, programming languages, HMI and IT.

<table>
<thead>
<tr>
<th>SLO 1.2: Use electronics design and analysis tools</th>
<th>No actions specified</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students will use electronics design and analysis tools.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SLO 1.3: Apply science and engineering tools</th>
<th>No actions specified</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students will apply science and engineering tools.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SLO 1.4: Apply PLC's, DCS's, and control system equipment</th>
<th>No actions specified</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students will apply PLC's, DCS's, and control system equipment.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SLO 1.5: Use manufacturing processes</th>
<th>No actions specified</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students will use fluid power, engineering materials and manufacturing processes.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SLO 1.6: Manage automated systems</th>
<th>No actions specified</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students will manage automated systems.</td>
<td></td>
</tr>
</tbody>
</table>

**Program Objective B: Apply technical knowledge**

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

<table>
<thead>
<tr>
<th>SLO 2.1: Use mathematics in design</th>
<th>Action: Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students will use mathematics in design.</td>
<td></td>
</tr>
</tbody>
</table>

**Action Details:** Develop better examples of mathematics applications in ECT381, particularly process control PID calculations. Then include in the ECT381 midterm study guide and exam questions that reflect such.

**Implementation Plan (timeline):** For next offering of ECT381.

**Key/Responsible Personnel:** ACET team and instructor of course.

**Measures:**

**Resource Allocations:**

**Priority:** Medium

**Status for Change**

**Current Status:** Completed

**Resource Allocation(s) Status:**
Next Steps/Additional Information:

**SLO 2.2: Modeling for analysis**

**Action:** Change

- **Action Details:** Develop better examples of modeling applications in ECT381, particularly in process control. Then include in the ECT381 midterm study guide and exam questions that reflect such.

- **Implementation Plan (timeline):** Next offering of ECT381

- **Key/Responsible Personnel:** ACET Team and course instructor

- **Measures:**

- **Resource Allocations:**

- **Priority:**

**Status** for Change

- **Current Status:** Completed

- **Resource Allocation(s) Status:**

- **Next Steps/Additional Information:**

**SLO 2.3: System design**

- **No actions specified**

**Program Objective C: Experiment and apply results**

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

**SLO 3.1: Experimental validation**

- **No actions specified**

**SLO 3.2: Lab exercises**

- **No actions specified**

**SLO 3.3: Test plans**

- **Action:** Change

- **Action Details:** Develop a learning module on the development of test plans as applied to automation.

- **Implementation Plan (timeline):** For next offering of ECT480

- **Key/Responsible Personnel:** ACET team and course instructor.

- **Measures:**

- **Resource Allocations:**

- **Priority:**

**Status** for Change
**Program Objective D: creativity in design and application**
an ability to apply creativity in the design of systems, components, or processes appropriate to the MET program educational objectives

<table>
<thead>
<tr>
<th>SLO 4.1: Mechanical design</th>
<th>No actions specified</th>
</tr>
</thead>
<tbody>
<tr>
<td>SLO 4.2: Circuit design</td>
<td>No actions specified</td>
</tr>
<tr>
<td>SLO 4.3: Software and program development</td>
<td>No actions specified</td>
</tr>
</tbody>
</table>

**Program Objective E: Function in team environment**
an ability to function effectively on teams

<table>
<thead>
<tr>
<th>SLO 5.1: Effective team member</th>
<th>No actions specified</th>
</tr>
</thead>
<tbody>
<tr>
<td>SLO 5.2: Understands the purpose of teams</td>
<td>No actions specified</td>
</tr>
<tr>
<td>Students will understand the purpose of teams.</td>
<td></td>
</tr>
<tr>
<td>SLO 5.3: Works and communicates in the team setting</td>
<td>No actions specified</td>
</tr>
<tr>
<td>Students will work and communicate well in the team setting.</td>
<td></td>
</tr>
</tbody>
</table>

**Program Objective F: Effective problem solving**
an ability to identify, analyze and solve technical problems

<table>
<thead>
<tr>
<th>SLO 6.1: Effectively use problem solving methods</th>
<th>No actions specified</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students will effectively use problem solving methods.</td>
<td></td>
</tr>
<tr>
<td>SLO 6.2: Use electrical troubleshooting tools properly</td>
<td>No actions specified</td>
</tr>
<tr>
<td>Students will use electrical troubleshooting tools properly.</td>
<td></td>
</tr>
<tr>
<td>SLO 6.3: Debugs logic and software applications</td>
<td><strong>Action:</strong> Change</td>
</tr>
<tr>
<td>Students will debug logic</td>
<td></td>
</tr>
<tr>
<td><strong>Action Details:</strong> Add learning module and lab exercises specifically on PLC code debugging.</td>
<td></td>
</tr>
</tbody>
</table>

**Current Status:** In Progress

**Resource Allocation(s) Status:**

**Next Steps/Additional Information:** Continue work on this issue - difficult.
Implementation Plan (timeline): Next offering of ECT381

Key/Responsible Personnel: ACET Team and course instructor

Measures:

Resource Allocations:

Priority:

---

Status for Change

Current Status: Completed

Resource Allocation(s) Status:

Next Steps/Additional Information:

---

Program Objective G: Effective communication
an ability to communicate effectively through engineering drawings, written reports, or oral presentations

<table>
<thead>
<tr>
<th>SLO 7.1: Exhibits good verbal communications</th>
<th>No actions specified</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students will exhibit good verbal communication.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SLO 7.2: Possesses good written communication skills</th>
<th>No actions specified</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students will possess good written communication skills.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SLO 7.3: Formality and respect</th>
<th>No actions specified</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students will understand the need for formality and respect in communication.</td>
<td></td>
</tr>
</tbody>
</table>

Program Objective H: Embrace learning
a recognition of the need for, and an ability to engage in lifelong learning

<table>
<thead>
<tr>
<th>SLO 8.1: Demonstrates a desire to learn</th>
<th>Action: Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Action Details: Find better questions in the CAP exam or develop an additional question that focuses on learning and respect for knowledge</td>
<td></td>
</tr>
</tbody>
</table>

Implementation Plan (timeline): Next offering of ECT480

Key/Responsible Personnel: ACET team and course instructor

Measures:

Resource Allocations:

Priority:
### Status for Change

**Current Status:** In Progress  
**Resource Allocation(s) Status:**  
**Next Steps/Additional Information:** Continuing work on this issue.

### Program Objective I: Professional responsibilities

*an ability to understand professional, ethical and social responsibilities*

<table>
<thead>
<tr>
<th>SLO 9.1: Demonstrates professionalism</th>
<th>No actions specified</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students will demonstrate professionalism.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SLO 9.2: Understands and exhibits ethics</th>
<th>No actions specified</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students will understand and exhibit ethics.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SLO 9.3: Understands the role of professional societies</th>
<th>No actions specified</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students will understand the role of professional societies.</td>
<td></td>
</tr>
</tbody>
</table>

### Program Objective J: Diversity and contemporary issues

*a respect for diversity and a knowledge of contemporary professional, societal and global issues*

<table>
<thead>
<tr>
<th>SLO 10.1: Automated control system marketplace</th>
<th>No actions specified</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students will understand the automated control system marketplace.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SLO 10.2: Understands social responsibility</th>
<th>No actions specified</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students will understand social responsibility.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SLO 10.3: Safe design practices and operations</th>
<th>No actions specified</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students will understand the responsibility of safe design practices and operations.</td>
<td></td>
</tr>
</tbody>
</table>

### Program Objective K: Quality and continuous improvement

*a commitment to quality, timeliness, and continuous improvement*

<table>
<thead>
<tr>
<th>SLO 11.1: Understands the breadth of quality concerns</th>
<th>No actions specified</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Students will understand the breadth of quality concerns.

**SLO 11.2: Understands the importance of quality**
Students will understand the importance of quality.

**SLO 11.3: Timeliness and continuous improvement**
Students will understand timeliness and continuous improvement.

**No actions specified**

**Status Summary**

Test plan and desire to lean learning objective work continues.

**Summary of Next Steps**

Per status.
# 2013-2014 Assessment Cycle

## Assessment Plan

### Outcomes and Measures

<table>
<thead>
<tr>
<th>BS in Automat &amp; Control Engineer Tech Outcome Set</th>
<th>Program Objective A.: Mastery of knowledge and tools</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students will use CAD, programming languages, HMI and IT.</td>
<td>an appropriate mastery of the knowledge, techniques, skills, and modern tools</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SLO A.1: Use CAD, programming languages, HMI and IT</th>
<th><strong>Measure:</strong> Evaluation of inclass project</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students will use CAD, programming languages, HMI and IT.</td>
<td>Direct - Student Artifact</td>
</tr>
</tbody>
</table>

**Details/Description:** Source of assessment: ECT381  
**Target:** 85% grade on selected assignment  
**Implementation Plan (timeline):** Annual - Sp Jr yr  
**Responsible Individual(s):** ACET team

<table>
<thead>
<tr>
<th>SLO A.2: Use electronics design and analysis tools</th>
<th><strong>Measure:</strong> Evaluation of performance per semester project</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students will use electronics design and analysis tools.</td>
<td>Direct - Other</td>
</tr>
</tbody>
</table>

**Details/Description:** Annual - course offered F SR yr  
**Target:** 85% grade on selected assignment  
**Implementation Plan (timeline):** Annual - course offered F Sr yr  
**Responsible Individual(s):** ACET team

<table>
<thead>
<tr>
<th>SLO A.3: Apply science and engineering tools</th>
<th><strong>Measure:</strong> Evaluation of performance per semester project</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students will apply science and engineering tools.</td>
<td>Direct - Other</td>
</tr>
</tbody>
</table>

**Details/Description:** Source of assessment: ECT480  
**Target:** 85% grade on selected assignment  
**Implementation Plan (timeline):** Annual - course F Sr yr  
**Responsible Individual(s):** ACET team

<table>
<thead>
<tr>
<th>SLO A.4: Apply PLC's, DCS's, and control system equipment</th>
<th><strong>Measure:</strong> Evaluation of inclass project</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students will apply PLC's, DCS's, and control system equipment.</td>
<td>Direct - Other</td>
</tr>
</tbody>
</table>

**Details/Description:** ECT381  
**Target:** 85% on selected assignment  
**Implementation Plan (timeline):** Annual Sp Jr yr  
**Responsible Individual(s):** ACET team
### SLO A.5: Use manufacturing processes
Students will use fluid power, engineering materials and manufacturing processes.

**Measure:** Evaluation of performance per semester project
- **Details/Description:** ECT480
- **Target:** 85% on assignment
- **Implementation Plan (timeline):** Annual F Sr yr
- **Responsible Individual(s):** ACET team

### SLO A.6: Manage automated systems
Students will manage automated systems.

**Measure:** Evaluation of inclass project
- **Details/Description:** ECT480
- **Target:** 85%
- **Implementation Plan (timeline):** Annual F Sr yr
- **Responsible Individual(s):** ACET team

### Program Objective B: Apply technical knowledge
An ability to apply current knowledge and adapt to emerging applications of mathematics, science, engineering, and technology

#### SLO B.1: Use mathematics in design
Students will use mathematics in design.

**Measure:** Exam
- **Details/Description:** ECT381 midterm
- **Target:** 85% on selected questions
- **Implementation Plan (timeline):** Annual Sp Jr Yr
- **Responsible Individual(s):** ACET team

#### SLO B.2: Modeling for analysis
Model electrical, mechanical, and process systems for design and analysis.

**Measure:** Exam
- **Details/Description:** ECT381 midterm
- **Target:** 85% on selected questions
- **Implementation Plan (timeline):** Annual Sp Jr yr
- **Responsible Individual(s):** ACET team

#### SLO B.3: System design
Design electrical, mechanical, and IT systems.

**Measure:** Evaluation of performance per semester project rubric
- **Details/Description:** ECT381
- **Target:** 85% on project
- **Implementation Plan (timeline):** Annual Sp Jr Yr
- **Responsible Individual(s):** ACET team

### Program Objective C: Experiment and apply results
An ability to conduct, analyze and interpret experiments, and apply experimental results to improve processes
### SLO C.1: Experimental validation
*Develop and execute experiments to validate designs*

**Measure:** Excerpts from Certified Automation Professional Exam
Direct - Exam

**Details/Description:** ECT480
**Target:** 85% on selected questions
**Implementation Plan (timeline):** Annual Fall Sr yr
**Responsible Individual(s):** ACET team

### SLO C.2: Lab exercises
*Use electrical lab experiences as learning tools*

**Measure:** Evaluation of lab work in class
Direct - Other

**Details/Description:** ECT381
**Target:** 85% on assignment
**Implementation Plan (timeline):** Annual Sp Jr yr
**Responsible Individual(s):** ACET team

### SLO C.3: Test plans
*Design and execute test plans as part of system commissioning*

**Measure:** Excerpts from Certified Automation Professional Exam
Direct - Exam

**Details/Description:** ECT480
**Target:** 85% on selected questions
**Implementation Plan (timeline):** Annual F Sr yr
**Responsible Individual(s):** ACET team

### Program Objective D: creativity in design and application
*An ability to apply creativity in the design of systems, components, or processes appropriate to the MET program educational objectives*

### SLO D.1: Mechanical design
*Develop mechanical designs using CAD and analysis tools*

**Measure:** Evaluation of lab work in class
Direct - Student Artifact

**Details/Description:** MET403
**Target:** 85% on selected assignment
**Implementation Plan (timeline):** Annual Sp & F
**Responsible Individual(s):** AECT team

### SLO D.2: Circuit design
*Design circuits and electrical interfacing*

**Measure:** Evaluation of lab work in class
Direct - Student Artifact

**Details/Description:** ECT381
**Target:** 85% on selected lab assignment
**Implementation Plan (timeline):** Annual Sp Jr yr
**Responsible Individual(s):** ACET team

### SLO D.3: Software and program development
*Develop machine control*

**Measure:** Evaluation of performance per semester project
Direct - Student Artifact
### Program Objective E: Function in team environment

Able to function effectively on teams

#### SLO E.1: Effective team member

Functions as an effective team member

**Details/Description:** ECT480  
**Target:** 85% on selected assignment  
**Implementation Plan (timeline):** Annual Fall Sr yr  
**Responsible Individual(s):** ACET team

**Measure:** Evaluation of inclass project  
Direct - Other

#### SLO E.2: Understands the purpose of teams

Assumes responsibility as a team member, respects chain of command and understands why teams exist

**Details/Description:** ECT437  
**Target:** 85% grade on team project  
**Implementation Plan (timeline):** Sp & F Jr or Sr year  
**Responsible Individual(s):** ACET team

**Measure:** Evaluation of performance per semester project  
Direct - Other

#### SLOE.3: Works and communicates in the team setting

Recognizes the need for good interpersonal skills and practices quality in communication in the team setting

**Details/Description:** ECT437  
**Target:** 85% on team project  
**Implementation Plan (timeline):** Sp & F, Jr or Sr yr  
**Responsible Individual(s):** ACET team

**Measure:** Evaluation of inclass project  
Direct - Other

### Program Objective F: Effective problem solving

Able to identify, analyze and solve technical problems

#### SLO F.1: Effectively use problem solving methods

Understands and uses traditional and contemporary problem solving techniques and processes

**Details/Description:** ECT480  
**Target:** 85% on troubleshooting lab activity  
**Implementation Plan (timeline):** Annual F Sr yr  
**Responsible Individual(s):** ACET team

**Measure:** Troubleshooting  
Direct - Other

#### SLO F.2: Use electrical troubleshooting tools properly

Able to troubleshoot

**Measure:** Evaluation of lab work in class  
Direct - Other
### Program Outcomes Assessment

**BS in Automat**

| SLO F.3: Debugs logic and software applications | Details/Description: ECT381  
Target: 85% on selected assignment  
Implementation Plan (timeline): Annual Sp Jr yr  
Responsible Individual(s): ACET team |
<table>
<thead>
<tr>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>exhibits the ability to logically approach and solve machine control logic programs and custom software applications</td>
</tr>
</tbody>
</table>
| **Measure:** Evaluation of lab work  
Direct - Other |

<table>
<thead>
<tr>
<th>Program Objective G: Effective communication</th>
</tr>
</thead>
<tbody>
<tr>
<td>an ability to communicate effectively through engineering drawings, written reports, or oral presentations</td>
</tr>
</tbody>
</table>

| SLO G.1: Exhibits good verbal communications | Details/Description: ECT437  
Target: 85% on team project  
Implementation Plan (timeline): Sp or F Jr or Sr yr  
Responsible Individual(s): ACET team |
<table>
<thead>
<tr>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>can verbally present and describe technical information and issues in a clear manner</td>
</tr>
</tbody>
</table>
| **Measure:** Evaluation of inclass project  
Direct - Other |

| SLO G.2: Possesses good written communication skills | Details/Description: ECT437  
Target: 85% onclass project  
Implementation Plan (timeline): Sp or F, Jr or Sr year  
Responsible Individual(s): ACET team |
<table>
<thead>
<tr>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>can develop well-written e-mails, letters, technical documents, test plans and PowerPoint presentations</td>
</tr>
</tbody>
</table>
| **Measure:** Evaluation of inclass project  
Direct - Other |

| SLO G.3: Formality and respect in communications | Details/Description: ECT437  
Target: 85% on team project  
Implementation Plan (timeline): Sp or F, Jr or Sr yr  
Responsible Individual(s): ACET team |
<table>
<thead>
<tr>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>differentiates between formal, semi-formal, and informal situations involving verbal and written protocols, including meeting</td>
</tr>
</tbody>
</table>
| **Measure:** Evaluation of inclass project  
Direct - Other |

### Program Objective H: Embrace learning

a recognition of the need for, and an ability to engage in lifelong learning

| SLO H.1: Demonstrates a desire to learn | Details/Description: Excerpts from Certified Automation Professional Exam  
Target: 85% on selected assignment  
Implementation Plan (timeline): Annual Sp Jr yr  
Responsible Individual(s): ACET team |
<table>
<thead>
<tr>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>demonstrates the desire to</td>
</tr>
</tbody>
</table>
| **Measure:** Excerpts from Certified Automation Professional Exam  
Direct - Exam |
learn and respects those who possess knowledge

<table>
<thead>
<tr>
<th>Program Objective I: Professional responsibilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>an ability to understand professional, ethical and social responsibilities</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SLO 1.1: Demonstrates professionalism</th>
<th>Measure: Excerpts from Certified Automation Professional Exam</th>
</tr>
</thead>
<tbody>
<tr>
<td>understands the role of the professional and aspires to become a respected member of an organization</td>
<td>Direct - Exam</td>
</tr>
<tr>
<td>Details/Description: ECT480</td>
<td>Target: 85% on selected questions</td>
</tr>
<tr>
<td>Implementation Plan (timeline): Annual F Sr yr</td>
<td>Responsible Individual(s): ACET team</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SLO 1.2: Understands and exhibits ethics</th>
<th>Measure: Excerpts from Certified Automation Professional Exam</th>
</tr>
</thead>
<tbody>
<tr>
<td>is knowledgeable on issues involving social and ethical responsibilities</td>
<td>Direct - Exam</td>
</tr>
<tr>
<td>Details/Description: ECT480</td>
<td>Target: 85% on exam selected questions</td>
</tr>
<tr>
<td>Implementation Plan (timeline): Annual F Sr yr</td>
<td>Responsible Individual(s): ACET team</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SLO 1.3: Understands the role of professional societies</th>
<th>Measure: Excerpts from Certified Automation Professional Exam</th>
</tr>
</thead>
<tbody>
<tr>
<td>understands the role of professional societies play in technical professions, including automation engineering technology</td>
<td>Direct - Exam</td>
</tr>
<tr>
<td>Details/Description: ECT480</td>
<td>Target: 85% on selected questions</td>
</tr>
<tr>
<td>Implementation Plan (timeline): Annual F Sr yr</td>
<td>Responsible Individual(s): ACET team</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Program Objective J: Diversity and contemporary issues</th>
</tr>
</thead>
<tbody>
<tr>
<td>a respect for diversity and a knowledge of contemporary professional, societal and global issues</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SLO J.1: Automated control system marketplace</th>
<th>Measure: Excerpts from Certified Automation Professional Exam</th>
</tr>
</thead>
<tbody>
<tr>
<td>exhibits some knowledge of global nature of automation system use</td>
<td>Direct - Exam</td>
</tr>
<tr>
<td>Details/Description: ECT480</td>
<td>Target: 85% on selected questions</td>
</tr>
<tr>
<td>Implementation Plan (timeline): Annual F Sr yr</td>
<td>Responsible Individual(s): ACET team</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SLO J.2: Social and safe design responsibility</th>
<th>Measure: Excerpts from Certified Automation Professional Exam</th>
</tr>
</thead>
<tbody>
<tr>
<td>understands the</td>
<td>Direct - Exam</td>
</tr>
</tbody>
</table>
Details/Description: ECT480  
Target: 85% on selected questions  
Implementation Plan (timeline): Annual F Sr yr  
Responsible Individual(s): ACET team

**Program Objective K: Quality and continuous improvement**

*a commitment to quality, timeliness, and continuous improvement*

**SLO K.1: Understands the breadth of quality concerns**

understand how quality intersects all aspects of automation engineering technology

Details/Description: ECT480  
Target: 85% on selected questions  
Implementation Plan (timeline): Annual F Sr yr  
Responsible Individual(s): ACET team

**SLO K.2: Understands the importance of quality**

understands the importance of quality in all aspects of automation engineering technology

Details/Description: ECT480  
Target: 85% on selected questions  
Implementation Plan (timeline): Annual F Sr yr  
Responsible Individual(s): ACET team

**SLO K.3: Timeliness and continuous improvement**

exhibits a sense of urgency in all aspects of his/her work and tends to not accept complacency

Details/Description: ECT480  
Target: 85% on selected questions  
Implementation Plan (timeline): Annual F Sr yr  
Responsible Individual(s): ACET team

**Assessment Findings**

**Finding per Measure**

BS in Automat&Control Engineer Tech Outcome Set
### Program Objective A.: Mastery of knowledge and tools

an appropriate mastery of the knowledge, techniques, skills, and modern tools

| SLO A.1: Use CAD, programming languages, HMI and IT | Measure: Evaluation of inclass project  
Direct - Student Artifact |
|--------------------------------------------------|----------------------------------------------------------------------------------|
| Students will use CAD, programming languages, HMI and IT. | **Details/Description:** Source of assessment: ECT381  
Target: 85% grade on selected assignment  
Implementation Plan (timeline): Annual - Sp Jr yr  
Responsible Individual(s): ACET team |
| **Findings** for Evaluation of inclass project | **Summary of Findings:** Drawing work good  
**Results:** Target Achievement: Met  
**Recommendations:**  
**Reflections/Notes:** |

| SLO A.2: Use electronics design and analysis tools | Measure: Evaluation of performance per semester project  
Direct - Other |
|-------------------------------------------------|----------------------------------------------------------------------------------|
| Students will use electronics design and analysis tools. | **Details/Description:** Annual - course offered F SR yr  
Target: 85% grade on selected assignment  
Implementation Plan (timeline): Annual - course offered F Sr yr  
Responsible Individual(s): ACET team |
| **Findings** for Evaluation of performance per semester project | **Summary of Findings:** Use of tool acceptable  
**Results:** Target Achievement: Met  
**Recommendations:**  
**Reflections/Notes:** |

| SLO A.3: Apply science and engineering tools | Measure: Evaluation of performance per semester project  
Direct - Other |
|---------------------------------------------|----------------------------------------------------------------------------------|
| Students will apply science and engineering tools. | **Details/Description:** Source of assessment: ECT480  
Target: 85% grade on selected assignment  
Implementation Plan (timeline): Annual - course F Sr yr  
Responsible Individual(s): ACET team |
| **Findings** for Evaluation of performance per semester project | **Summary of Findings:** Analysis of problem assignment good. |
Results: Target Achievement: Met
Recommendations:
Reflections/Notes:

SLO A.4: Apply PLC's, DCS's, and control system equipment
Measure: Evaluation of inclass project
Direct - Other
Details/Description: ECT381
Target: 85% on selected assignment
Implementation Plan (timeline): Annual Sp Jr yr
Responsible Individual(s): ACET team

Findings for Evaluation of inclass project

Summary of Findings: The use of control equipment good
Results: Target Achievement: Met
Recommendations:
Reflections/Notes:

SLO A.5: Use manufacturing processes
Measure: Evaluation of performance per semester project
Direct - Other
Details/Description: ECT480
Target: 85% on assignment
Implementation Plan (timeline): Annual F Sr yr
Responsible Individual(s): ACET team

Findings for Evaluation of performance per semester project

Summary of Findings: The student team work on the project involving pneumatics was completed at a 90% level
Results: Target Achievement: Met
Recommendations:
Reflections/Notes:

SLO A.6: Manage automated systems
Measure: Evaluation of inclass project
Details/Description: ECT480
Target: 85%
Implementation Plan (timeline): Annual F Sr yr
Responsible Individual(s): ACET team
Findings for Evaluation of inclass project

Summary of Findings: The work on managing the lab exercises was adequate
Results: Target Achievement: Met
Recommendations:
Reflections/Notes:

Program Objective B: Apply technical knowledge
an ability to apply current knowledge and adapt to emerging applications of mathematics, science, engineering, and technology

SLO B.1: Use mathematics in design
Students will use mathematics in design.

- Measure: Exam
  Direct - Exam

Details/Description: ECT381 midterm
Target: 85% on selected questions
Implementation Plan (timeline): Annual Sp Jr Yr
Responsible Individual(s): ACET team

Findings for Exam

Summary of Findings: 87% average scores on selected questions
Results: Target Achievement: Met
Recommendations:
Reflections/Notes:

SLO B.2: Modeling for analysis
model electrical, mechanical, and process systems for design and analysis

- Measure: Exam
  Direct - Exam

Details/Description: ECT381 midterm
Target: 85% on selected questions
Implementation Plan (timeline): Annual Sp Jr yr
Responsible Individual(s): ACET team

Findings for Exam

Summary of Findings: Score were below 50%
Results: Target Achievement: Not Met
Recommendations: Additional work is needed.
Reflections/Notes:

SLO B.3: System design
Design electrical, mechanical, and IT

- Measure: Evaluation of performance per semester project rubric
  Direct - Student Artifact
Program Objective C: Experiment and apply results
an ability to conduct, analyze and interpret experiments, and apply experimental results to improve processes

SLO C.1: Experimental validation
develop and execute experiments to validate designs

Measure: Excerpts from Certified Automation Professional Exam
Direct - Exam

Details/Description: ECT480
Target: 85% on selected questions
Implementation Plan (timeline): Annual Fall Sr yr
Responsible Individual(s): ACET team

Findings for Excerpts from Certified Automation Professional Exam

Summary of Findings: 95% scores on work assigned
Results: Target Achievement: Met
Recommendations:
Reflections/Notes:

SLO C.2: Lab exercises
use electrical lab experiences as learning tools

Measure: Evaluation of lab work in class
Direct - Other

Details/Description: ECT381
Target: 85% on assignment
Implementation Plan (timeline): Annual Sp Jr yr
Responsible Individual(s): ACET team

Findings for Evaluation of lab work in class

Summary of Findings: Good work overall
Results: Target Achievement: Met
Recommendations:
Reflections/Notes:
SLO C.3: Test plans

design and execute test plans as part of system commissioning

Measure: Excerpts from Certified Automation Professional Exam
Direct - Exam

Details/Description: ECT480
Target: 85% on selected questions
Implementation Plan (timeline): Annual F Sr yr
Responsible Individual(s): ACET team

Findings for Excerpts from Certified Automation Professional Exam

Summary of Findings: Scores low - 65%
Results: Target Achievement: Not Met
Recommendations:
Reflections/Notes:

Program Objective D: creativity in design and application

an ability to apply creativity in the design of systems, components, or processes appropriate to the MET program educational objectives

SLO D.1: Mechanical design

develop mechanical designs using CAD and analysis tools

Measure: Evaluation of lab work in class
Direct - Student Artifact

Details/Description: MET403
Target: 85% on selected assignment
Implementation Plan (timeline): Annual Sp & F
Responsible Individual(s): AECD team

Findings for Evaluation of lab work in class

Summary of Findings: Met target
Results: Target Achievement: Met
Recommendations:
Reflections/Notes:

SLO D.2: Circuit design

design circuits and electrical interfacing

Measure: Evaluation of lab work in class
Direct - Student Artifact

Details/Description: ECT381
Target: 85% on selected lab assignment
Implementation Plan (timeline): Annual Sp Jr yr
Responsible Individual(s): ACET team

Findings for Evaluation of lab work in class
Summary of Findings: Work at 85% level
Results: Target Achievement: Met
Recommendations:
Reflections/Notes:

SLO D.3: Software and program development
develop machine control logic, HMI applications and data handling software

Measure: Evaluation of performance per semester project
Direct - Student Artifact

Details/Description: ECT480
Target: 85% on selected assignment
Implementation Plan (timeline): Annual Fall Sr yr
Responsible Individual(s): ACET team

Findings for Evaluation of performance per semester project

Summary of Findings: Good work
Results: Target Achievement: Met
Recommendations:
Reflections/Notes:

Program Objective E: Function in team environment
an ability to function effectively on teams

SLO E.1: Effective team member
functions as an effective team member

Measure: Evaluation of inclass project
Direct - Other

Details/Description: ECT437
Target: 85% grade on team project
Implementation Plan (timeline): Sp & F Jr or Sr year
Responsible Individual(s): ACET team

Findings for Evaluation of inclass project

Summary of Findings: Team scores 90%
Results: Target Achievement: Met
Recommendations:
Reflections/Notes:

SLO E.2: Understands the purpose of teams
assumes responsibility as a team member, respects chain of command and understands why teams

Measure: Evaluation of performance per semester project
Direct - Other

Details/Description: ECT437
<table>
<thead>
<tr>
<th>SLO.3: Works and communicates in the team setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>recognizes the need for good interpersonal skills and practices quality in communication in the team setting</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Measure:</th>
<th>Evaluation of inclass project</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct</td>
<td>Other</td>
</tr>
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<table>
<thead>
<tr>
<th>Details/Description:</th>
<th>ECT437</th>
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</table>

<table>
<thead>
<tr>
<th>Target:</th>
<th>85% on team project</th>
</tr>
</thead>
<tbody>
<tr>
<td>Implementation Plan (timeline):</td>
<td>Sp &amp; F, Jr or Sr yr</td>
</tr>
<tr>
<td>Responsible Individual(s):</td>
<td>ACET team</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Findings for Evaluation of inclass project</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Summary of Findings:</th>
<th>Good work - 90%</th>
</tr>
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<tbody>
<tr>
<td>Results:</td>
<td>Target Achievement: Met</td>
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<tr>
<td>Recommendations :</td>
<td></td>
</tr>
<tr>
<td>Reflections/Notes :</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Program Objective F: Effective problem solving</th>
</tr>
</thead>
<tbody>
<tr>
<td>an ability to identify, analyze and solve technical problems</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SLO F.1: Effectively use problem solving methods</th>
</tr>
</thead>
<tbody>
<tr>
<td>understands and uses traditional and contemporary problem solving techniques and processes</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Measure:</th>
<th>Troubleshooting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct</td>
<td>Other</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Details/Description:</th>
<th>ECT480</th>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Target:</th>
<th>85% on troubleshooting lab activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Implementation Plan (timeline):</td>
<td>Annual F Sr yr</td>
</tr>
<tr>
<td>Responsible Individual(s):</td>
<td>ACET team</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Findings for Troubleshooting</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Summary of Findings:</th>
<th>Good problem solving, 100% accurate at end</th>
</tr>
</thead>
<tbody>
<tr>
<td>Results:</td>
<td>Target Achievement: Met</td>
</tr>
<tr>
<td>Recommendations :</td>
<td></td>
</tr>
<tr>
<td>Reflections/Notes :</td>
<td></td>
</tr>
</tbody>
</table>
**SLO F.2: Use electrical troubleshooting tools properly**

**Measure:** Evaluation of lab work in class  
Direct - Other

**Details/Description:** ECT381  
**Target:** 85% on selected assignment  
**Implementation Plan (timeline):** Annual Sp Jr yr  
**Responsible Individual(s):** ACET team

**Findings** for Evaluation of lab work in class

**Summary of Findings:** Troubleshooting skills were exhibited as a satisfactory level

**Results:** Target Achievement: Met

**Recommendations:**

**Reflections/Notes:**

---

**SLO F.3: Debugs logic and software applications**

**Measure:** Evaluation of lab work  
Direct - Other

**Details/Description:** ECT381  
**Target:** 85% on selected lab assignment  
**Implementation Plan (timeline):** Annual Sp Jr yr  
**Responsible Individual(s):** ACET team

**Findings** for Evaluation of lab work

**Summary of Findings:** Very good work by teams

**Results:** Target Achievement: Met

**Recommendations:**

**Reflections/Notes:**

---

**Program Objective G: Effective communication**

**Measure:** Evaluation of inclass project  
Direct - Other

**Details/Description:** ECT437  
**Target:** 85% on team project  
**Implementation Plan (timeline):** Sp or F Jr or Sr yr  
**Responsible Individual(s):** ACET team

**Findings** for Evaluation of inclass project

**Summary of Findings:** 90% average on team scores
Results: Target Achievement: Met

Recommendations:

Reflections/Notes:

**SLO G.2: Possesses good written communication skills**
can develop well-written e-mails, letters, technical documents, test plans and PowerPoint presentations

- **Measure:** Evaluation of inclass project
  - Direct - Other

- **Details/Description:** ECT437
- **Target:** 85% onclass project
- **Implementation Plan (timeline):** Sp or F, Jr or Sr year
- **Responsible Individual(s):** ACET team

**Findings for Evaluation of inclass project**
No Findings Added

**SLO G.3: Formality and respect in communications**
differentiates between formal, semi-formal, and informal situations involving verbal and written protocols, including meeting

- **Measure:** Evaluation of inclass project
  - Direct - Other

- **Details/Description:** ECT437
- **Target:** 85% on team project
- **Implementation Plan (timeline):** Sp or F, Jr or Sr yr
- **Responsible Individual(s):** ACET team

**Findings for Evaluation of inclass project**

**Summary of Findings:** 90% score

Results: Target Achievement: Met

Recommendations:

Reflections/Notes:

**Program Objective H: Embrace learning**
a recognition of the need for, and an ability to engage in lifelong learning

**SLO H.1: Demonstrates a desire to learn**
demonstrates the desire to learn and respects those who possess knowledge

- **Measure:** Excerpts from Certified Automation Professional Exam
  - Direct - Exam

- **Details/Description:** Complete exam ECT480
- **Target:** 85% grade on exam total
- **Implementation Plan (timeline):** Annual F Sr yr
- **Responsible Individual(s):** ACET team

**Findings for Excerpts from Certified Automation Professional Exam**
Program Objective I: Professional responsibilities
an ability to understand professional, ethical and social responsibilities

SLO I.1: Demonstrates professionalism
understands the role of the professional and aspires to become a respected member of an organization

Measure: Excerpts from Certified Automation Professional Exam
Direct - Exam

Details/Description: ECT480
Target: 85% on selected questions
Implementation Plan (timeline): Annual F Sr yr
Responsible Individual(s): ACET team

Findings for Excerpts from Certified Automation Professional Exam

Summary of Findings: 97% average scores
Results: Target Achievement: Met
Recommendations:
Reflections/Notes:

SLO I.2: Understands and exhibits ethics
is knowledgeable on issues involving social and ethical responsibilities

Measure: Excerpts from Certified Automation Professional Exam
Direct - Exam

Details/Description: ECT480
Target: 85% on exam selected questions
Implementation Plan (timeline): Annual F Sr yr
Responsible Individual(s): ACET team

Findings for Excerpts from Certified Automation Professional Exam

Summary of Findings: 90%
Results: Target Achievement: Met
Recommendations:
Reflections/Notes:

SLO I.3: Understands the role of professional societies
understands the role of professional societies play in technical professions, including automation

Measure: Excerpts from Certified Automation Professional Exam
Direct - Exam

Details/Description: ECT480
Target: 85% on selected questions
Program Objective J: Diversity and contemporary issues
a respect for diversity and a knowledge of contemporary professional, societal and global issues

SLO J.1: Automated control system marketplace
exhibits some knowledge of global nature of automation system use

Measure: Excerpts from Certified Automation Professional Exam
Direct - Exam

Details/Description: ECT480
Target: 85% on selected questions
Implementation Plan (timeline): Annual F Sr yr
Responsible Individual(s): ACET team

Findings for Excerpts from Certified Automation Professional Exam

Summary of Findings: 98%
Results: Target Achievement: Met
Recommendations :
Reflections/Notes :

SLO J.2: Social and safe design responsibility
understands the importance of the social issues involved with manufacturing and safety

Measure: Excerpts from Certified Automation Professional Exam
Direct - Exam

Details/Description: ECT480
Target: 85% on selected questions
Implementation Plan (timeline): Annual F Sr yr
Responsible Individual(s): ACET team

Findings for Excerpts from Certified Automation Professional Exam

Summary of Findings: 100%
Results: Target Achievement: Met
Recommendations :
Reflections/Notes :
**SLO J.3: Safe design practices and operations**
understands the responsibility of safe design practices and operations.

**Measure:** Excerpts from Certified Automation Professional Exam

**Details/Description:** ECT480
**Target:** 85% on selected questions
**Implementation Plan (timeline):** Annual F Sr yr
**Responsible Individual(s):** ACET team

**Findings for Excerpts from Certified Automation Professional Exam**

**Summary of Findings:** 92%
**Results:** Target Achievement: Met
**Recommendations:**
**Reflections/Notes:**

**Program Objective K: Quality and continuous improvement**
a commitment to quality, timeliness, and continuous improvement

**SLO K.1: Understands the breadth of quality concerns**
understand how quality intersects all aspects of automation engineering technology

**Measure:** Excerpts from Certified Automation Professional Exam

**Details/Description:** ECT480
**Target:** 85% on selected questions
**Implementation Plan (timeline):** Annual F Sr yr
**Responsible Individual(s):** ACET team

**Findings for Excerpts from Certified Automation Professional Exam**

**Summary of Findings:** 100% score
**Results:** Target Achievement: Met
**Recommendations:**
**Reflections/Notes:**

**SLO K.2: Understands the importance of quality**
understands the importance of quality in all aspects of automation engineering technology

**Measure:** Excerpts from Certified Automation Professional Exam

**Details/Description:** ECT480
**Target:** 85% on selected questions
**Implementation Plan (timeline):** Annual F Sr yr
**Responsible Individual(s):** ACET team

**Findings for Excerpts from Certified Automation Professional Exam**

**Summary of Findings:** 98%
**Results:** Target Achievement: Met
## SLO K.3: Timeliness and continuous improvement

**Measure:** Excerpts from Certified Automation Professional Exam
**Details/Description:** ECT480
**Target:** 85% on selected questions
**Implementation Plan (timeline):** Annual F Sr yr
**Responsible Individual(s):** ACET team

### Findings for Excerpts from Certified Automation Professional Exam

**Summary of Findings:** 90% scores on questions
**Results:** Target Achievement: Met
**Recommendations:**
**Reflections/Notes:**

---

### Overall Recommendations

Additional work is needed on subject matter for Modeling for Analysis and test plan development.

### Overall Reflection

Overall good performance, more work on two items.

### Action Plan

#### Actions

**BS in Automat & Control Engineer Tech Outcome Set**

<table>
<thead>
<tr>
<th>Program Objective A.: Mastery of knowledge and tools</th>
<th>No actions specified</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SLO A.1: Use CAD, programming languages, HMI and IT</strong></td>
<td>Students will use CAD, programming languages, HMI and IT.</td>
</tr>
<tr>
<td><strong>SLO 1.2: Use electronics design and analysis tools</strong></td>
<td>Students will use electronics design and analysis tools.</td>
</tr>
<tr>
<td><strong>SLO A.1.1: Use CAD, programming languages, HMI and IT</strong></td>
<td>Students will use CAD, programming languages, HMI and IT.</td>
</tr>
<tr>
<td><strong>SLO 1.2.1: Use electronics design and analysis tools</strong></td>
<td>Students will use electronics design and analysis tools.</td>
</tr>
</tbody>
</table>
**SLO 1.3: Apply science and engineering tools**
No actions specified
Students will apply science and engineering tools.

**SLO 1.4: Apply PLC's, DCS's, and control system equipment**
No actions specified
Students will apply PLC's, DCS's, and control system equipment.

**SLO 1.5: Use manufacturing processes**
No actions specified
Students will use fluid power, engineering materials and manufacturing processes.

**SLO 1.6: Manage automated systems**
No actions specified
Students will manage automated systems.

**Program Objective B: Apply technical knowledge**
An ability to apply current knowledge and adapt to emerging applications of mathematics, science, engineering, and technology

**SLO 2.1: Use mathematics in design**
No actions specified
Students will use mathematics in design.

**SLO 2.2: Modeling for analysis**
\[ \text{Action: Change} \]

\textbf{This Action is associated with the following Findings}
No supporting Findings have been linked to this Action.

\textbf{Action Details:}
Develop better examples of modeling applications in ECT381, particularly in process control. Then include in the ECT381 midterm study guide and exam questions that reflect such. Need more work here and time complete such. Need to look at the item in the context of more courses, not just in ECT381.

\textbf{Implementation Plan (timeline):}
Plan to have revised assessment for the 2015-16 cycle.

\textbf{Key/Responsible Personnel:}
ACET Team and course instructor

\textbf{Measures:}

\textbf{Resource Allocations:}

\textbf{Priority:}

**SLO 2.3: System design**
No actions specified

**Program Objective C: Experiment and apply results**
An ability to conduct, analyze and interpret experiments, and apply experimental results to improve processes

**SLO 3.1: Experimental**
No actions specified
validation

SLO 3.2: Lab exercises  No actions specified

SLO 3.3: Test plans

<table>
<thead>
<tr>
<th>Action: Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>This Action is associated with the following Findings</td>
</tr>
<tr>
<td>No supporting Findings have been linked to this Action.</td>
</tr>
<tr>
<td>Action Details: Develop a learning module on the development of test plans as applied to automation. The new learning module was not effective. Need to take a broader look.</td>
</tr>
<tr>
<td>Implementation Plan (timeline): 2015-16 cycle for revised assessment</td>
</tr>
<tr>
<td>Key/Responsible Personnel: ACET team and course instructor.</td>
</tr>
<tr>
<td>Measures:</td>
</tr>
<tr>
<td>Resource Allocations:</td>
</tr>
<tr>
<td>Priority:</td>
</tr>
</tbody>
</table>

Program Objective D: creativity in design and application
an ability to apply creativity in the design of systems, components, or processes appropriate to the MET program educational objectives

SLO 4.1: Mechanical design  No actions specified

SLO 4.2: Circuit design  No actions specified

SLO 4.3: Software and program development  No actions specified

Program Objective E: Function in team environment
an ability to function effectively on teams

SLO 5.1: Effective team member  No actions specified

SLO 5.2: Understands the purpose of teams  No actions specified
Students will understand the purpose of teams.

SLO 5.3: Works and communicates in the team setting  No actions specified
Students will work and communicate well in the team setting.

Program Objective F: Effective problem solving
an ability to identify, analyze and solve technical problems

SLO 6.1: Effectively use problem solving  No actions specified
methods
Students will effectively use problem solving methods.

**SLO 6.2: Use electrical troubleshooting tools properly**
Students will use electrical troubleshooting tools properly.

**SLO 6.3: Debugs logic and software applications**
Students will debug logic and software applications successfully.

Program Objective G: Effective communication
an ability to communicate effectively through engineering drawings, written reports, or oral presentations

**SLO 7.1: Exhibits good verbal communications**
Students will exhibit good verbal communication.

**SLO 7.2: Possesses good written communication skills**
Students will possess good written communication skills.

**SLO 7.3: Formality and respect**
Students will understand the need for formality and respect in communication.

Program Objective H: Embrace learning
a recognition of the need for, and an ability to engage in lifelong learning

**SLO 8.1: Demonstrates a desire to learn**

Program Objective I: Professional responsibilities
an ability to understand professional, ethical and social responsibilities

**SLO 9.1: Demonstrates professionalism**
Students will demonstrate professionalism.

**SLO 9.2: Understands and exhibits ethics**
Students will understand and exhibit ethics.

**SLO 9.3: Understands**

No actions specified
the role of professional societies
Students will understand the role of professional societies.

Program Objective J: Diversity and contemporary issues
a respect for diversity and a knowledge of contemporary professional, societal and global issues

<table>
<thead>
<tr>
<th>SLO 10.1: Automated control system marketplace</th>
<th>No actions specified</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students will understand the automated control system marketplace.</td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>SLO 10.2: Understands social responsibility</th>
<th>No actions specified</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students will understand social responsibility.</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>SLO 10.3: Safe design practices and operations</th>
<th>No actions specified</th>
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</thead>
<tbody>
<tr>
<td>Students will understand the responsibility of safe design practices and operations.</td>
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</table>

Program Objective K: Quality and continuous improvement
a commitment to quality, timeliness, and continuous improvement

<table>
<thead>
<tr>
<th>SLO 11.1: Understands the breadth of quality concerns</th>
<th>No actions specified</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students will understand the breadth of quality concerns.</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>SLO 11.2: Understands the importance of quality</th>
<th>No actions specified</th>
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</thead>
<tbody>
<tr>
<td>Students will understand the importance of quality.</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>SLO 11.3: Timeliness and continuous improvement</th>
<th>No actions specified</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students will understand timeliness and continuous improvement.</td>
<td></td>
</tr>
</tbody>
</table>

Status Report

Action Statuses

BS in Automat&Control Engineer Tech Outcome Set

Program Objective A.: Mastery of knowledge and tools
an appropriate mastery of the knowledge, techniques, skills, and modern tools

<table>
<thead>
<tr>
<th>SLO</th>
<th>Description</th>
<th>Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>A.1</td>
<td>Use CAD, programming languages, HMI and IT</td>
<td>No actions specified</td>
</tr>
<tr>
<td>A.2</td>
<td>Use electronics design and analysis tools</td>
<td>No actions specified</td>
</tr>
<tr>
<td>A.3</td>
<td>Apply science and engineering tools</td>
<td>No actions specified</td>
</tr>
<tr>
<td>A.4</td>
<td>Apply PLC's, DCS's, and control system equipment</td>
<td>No actions specified</td>
</tr>
<tr>
<td>A.5</td>
<td>Use manufacturing processes</td>
<td>No actions specified</td>
</tr>
<tr>
<td>A.6</td>
<td>Manage automated systems</td>
<td>No actions specified</td>
</tr>
</tbody>
</table>

Program Objective B: Apply technical knowledge
an ability to apply current knowledge and adapt to emerging applications of mathematics, science, engineering, and technology

SLO 2.1: Use mathematics in design
Students will use mathematics in design.

SLO 2.2: Modeling for analysis

**Action:** Change

**Action Details:** Develop better examples of modeling applications in ECT381, particularly in process control. Then include in the ECT381 midterm study guide and exam questions that reflect such. Need to look at the item in the context of more courses, not just in ECT381.

**Implementation Plan (timeline):** Plan to have revised assessment for the 2015-16 cycle.

**Key/Responsible Personnel:** ACET Team and course instructor

**Measures:**

**Resource Allocations:**
Program Outcomes Assessment
BS in Automation

**Priority:**

| Status for Change |
| No Status Added |

**SLO 2.3: System design**

*No actions specified*

**Program Objective C: Experiment and apply results**

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

**SLO 3.1: Experimental validation**

*No actions specified*

**SLO 3.2: Lab exercises**

*No actions specified*

**SLO 3.3: Test plans**

*Action: Change*

**Action Details:** Develop a learning module on the development of test plans as applied to automation. The new learning module was not effective. Need to take a broader look.

**Implementation Plan (timeline):** 2015-16 cycle for revised assessment

**Key/Responsible Personnel:** ACET team and course instructor.

**Measures:**

**Resource Allocations:**

**Priority:**

| Status for Change |
| No Status Added |

**Program Objective D: creativity in design and application**

*an ability to apply creativity in the design of systems, components, or processes appropriate to the MET program educational objectives*

**SLO 4.1: Mechanical design**

*No actions specified*

**SLO 4.2: Circuit design**

*No actions specified*

**SLO 4.3: Software and program development**

*No actions specified*

**Program Objective E: Function in team environment**

*an ability to function effectively on teams*

**SLO 5.1: Effective**

*No actions specified*
### Program Outcomes Assessment

**BS in Automat**

<table>
<thead>
<tr>
<th>SLO 5.2: Understands the purpose of teams</th>
<th>No actions specified</th>
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</thead>
<tbody>
<tr>
<td>Students will understand the purpose of teams.</td>
<td></td>
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</tbody>
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<table>
<thead>
<tr>
<th>SLO 5.3: Works and communicates in the team setting</th>
<th>No actions specified</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students will work and communicate well in the team setting.</td>
<td></td>
</tr>
</tbody>
</table>

**Program Objective F: Effective problem solving**

an ability to identify, analyze and solve technical problems

<table>
<thead>
<tr>
<th>SLO 6.1: Effectively use problem solving methods</th>
<th>No actions specified</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students will effectively use problem solving methods.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SLO 6.2: Use electrical troubleshooting tools properly</th>
<th>No actions specified</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students will use electrical troubleshooting tools properly.</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>SLO 6.3: Debugs logic and software applications</th>
<th>No actions specified</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students will debug logic and software applications successfully.</td>
<td></td>
</tr>
</tbody>
</table>

**Program Objective G: Effective communication**

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

<table>
<thead>
<tr>
<th>SLO 7.1: Exhibits good verbal communications</th>
<th>No actions specified</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students will exhibit good verbal communication.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SLO 7.2: Possesses good written communication skills</th>
<th>No actions specified</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students will possess good written communication skills.</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>SLO 7.3: Formality and respect</th>
<th>No actions specified</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students will understand the need for formality and respect in communication.</td>
<td></td>
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</tbody>
</table>

**Program Objective H: Embrace learning**

a recognition of the need for, and an ability to engage in lifelong learning
<table>
<thead>
<tr>
<th>SLO 8.1: Demonstrates a desire to learn</th>
<th>No actions specified</th>
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</thead>
</table>

**Program Objective I: Professional responsibilities**
an ability to understand professional, ethical and social responsibilities

<table>
<thead>
<tr>
<th>SLO 9.1: Demonstrates professionalism</th>
<th>No actions specified</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students will demonstrate professionalism.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SLO 9.2: Understands and exhibits ethics</th>
<th>No actions specified</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students will understand and exhibit ethics.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SLO 9.3: Understands the role of professional societies</th>
<th>No actions specified</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students will understand the role of professional societies.</td>
<td></td>
</tr>
</tbody>
</table>

**Program Objective J: Diversity and contemporary issues**
a respect for diversity and a knowledge of contemporary professional, societal and global issues

<table>
<thead>
<tr>
<th>SLO 10.1: Automated control system marketplace</th>
<th>No actions specified</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students will understand the automated control system marketplace.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SLO 10.2: Understands social responsibility</th>
<th>No actions specified</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students will understand social responsibility.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SLO 10.3: Safe design practices and operations</th>
<th>No actions specified</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students will understand the responsibility of safe design practices and operations.</td>
<td></td>
</tr>
</tbody>
</table>

**Program Objective K: Quality and continuous improvement**
a commitment to quality, timeliness, and continuous improvement

<table>
<thead>
<tr>
<th>SLO 11.1: Understands the breadth of quality concerns</th>
<th>No actions specified</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students will understand the breadth of quality concerns.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SLO 11.2: Understands the</th>
<th>No actions specified</th>
</tr>
</thead>
</table>
importance of quality
Students will understand the importance of quality.

SLO 11.3: Timeliness and continuous improvement
Students will understand timeliness and continuous improvement.

No actions specified

Status Summary
The ACET team will look in detail at Modeling for Analysis and Test Plan Development. Both issues appear to require much more subject matter treatment that we are currently giving. Our target is a 2015-16 cycles assessment of the changes.

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

Assessment Plan

Outcomes and Measures

BS in Automat & Control Engineer Tech Outcome Set

Program Objective A.: Mastery of knowledge and tools
an appropriate mastery of the knowledge, techniques, skills, and modern tools

SLO A.1: Use CAD, programming languages, HMI and IT
Students will use CAD, programming languages, HMI and IT.

Measure: Evaluation of inclass project
Direct - Student Artifact

Details/Description: Source of assessment: ECT381
Target: 85% grade on selected assignment
Implementation Plan (timeline): Annual - Sp Jr yr
Responsible Individual(s): ACET team

SLO A.2: Use electronics design and analysis tools
Students will use electronics design and analysis tools.

Measure: Evaluation of performance per semester project
Direct - Other

Details/Description: Annual - course offered F Sr yr
Target: 85% grade on selected assignment
Implementation Plan (timeline): Annual - course offered F Sr yr
Responsible Individual(s): ACET team

SLO A.3: Apply science and engineering tools
Students will apply science and engineering tools.

Measure: Evaluation of performance per semester project
Direct - Other

Details/Description: Source of assessment: ECT480
Target: 85% grade on selected assignment
Implementation Plan (timeline): Annual - course F Sr yr
Responsible Individual(s): ACET team

SLO A.4: Apply PLC's, DCS's, and control system equipment
Students will apply PLC's, DCS's, and control system equipment.

Measure: Evaluation of inclass project
Direct - Other

Details/Description: ECT381
Target: 85% on selected assignment
Implementation Plan (timeline): Annual Sp Jr yr
Responsible Individual(s): ACET team
SLO A.5: Use manufacturing processes
Students will use fluid power, engineering materials and manufacturing processes.

- **Measure:** Evaluation of performance per semester project
  Direct - Other

  - **Details/Description:** ECT480
  - **Target:** 85% on assignment
  - **Implementation Plan (timeline):** Annual F Sr yr
  - **Responsible Individual(s):** ACET team

SLO A.6: Manage automated systems
Students will manage automated systems.

- **Measure:** Evaluation of inclass project

  - **Details/Description:** ECT480
  - **Target:** 85%
  - **Implementation Plan (timeline):** Annual F Sr yr
  - **Responsible Individual(s):** ACET team

Program Objective B: Apply technical knowledge
an ability to apply current knowledge and adapt to emerging applications of mathematics, science, engineering, and technology

SLO B.1: Use mathematics in design
Students will use mathematics in design.

- **Measure:** Exam
  Direct - Exam

  - **Details/Description:** ECT381 midterm
  - **Target:** 85% on selected questions
  - **Implementation Plan (timeline):** Annual Sp Jr Yr
  - **Responsible Individual(s):** ACET team

SLO B.2: Modeling for analysis
model electrical, mechanical, and process systems for design and analysis

- **Measure:** Exam
  Direct - Exam

  - **Details/Description:** ECT381 midterm
  - **Target:** 85% on selected questions
  - **Implementation Plan (timeline):** Annual Sp Jr yr
  - **Responsible Individual(s):** ACET team

SLO B.3: System design
Design electrical, mechanical, and IT systems

- **Measure:** Evaluation of performance per semester project rubric
  Direct - Student Artifact

  - **Details/Description:** ECT381
  - **Target:** 85% on project
  - **Implementation Plan (timeline):** Annual Sp Jr Yr
  - **Responsible Individual(s):** ACET team

Program Objective C: Experiment and apply results
an ability to conduct, analyze and interpret experiments, and apply experimental results to improve processes
### SLO C.1: Experimental validation

**Measure:** Excerpts from Certified Automation Professional Exam

- **Details/Description:** ECT480
- **Target:** 85% on selected questions
- **Implementation Plan (timeline):** Annual Fall Sr yr
- **Responsible Individual(s):** ACET team

### SLO C.2: Lab exercises

**Measure:** Evaluation of lab work in class

- **Details/Description:** ECT381
- **Target:** 85% on assignment
- **Implementation Plan (timeline):** Annual Sp Jr yr
- **Responsible Individual(s):** ACET team

### SLO C.3: Test plans

**Measure:** Excerpts from Certified Automation Professional Exam

- **Details/Description:** ECT480
- **Target:** 85% on selected questions
- **Implementation Plan (timeline):** Annual F Sr yr
- **Responsible Individual(s):** ACET team

### Program Objective D: creativity in design and application

**Measure:**

- **Details/Description:**
- **Target:** 85% on selected assignment
- **Implementation Plan (timeline):** Annual Sp & F
- **Responsible Individual(s):** AECT team

### SLO D.1: Mechanical design

**Measure:** Evaluation of lab work in class

- **Details/Description:** MET403
- **Target:** 85% on selected assignment
- **Implementation Plan (timeline):** Annual Sp & F
- **Responsible Individual(s):** AECT team

### SLO D.2: Circuit design

**Measure:** Evaluation of lab work in class

- **Details/Description:** ECT381
- **Target:** 85% on selected lab assignment
- **Implementation Plan (timeline):** Annual Sp Jr yr
- **Responsible Individual(s):** ACET team

### SLO D.3: Software and program development

**Measure:** Evaluation of performance per semester project

- **Details/Description:**
- **Target:**
- **Implementation Plan (timeline):**
- **Responsible Individual(s):**
<table>
<thead>
<tr>
<th>Program Objective E: Function in team environment</th>
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</thead>
<tbody>
<tr>
<td>SLO E.1: Effective team member</td>
</tr>
<tr>
<td>Functions as an effective team member</td>
</tr>
<tr>
<td><strong>Details/Description:</strong> ECT480</td>
</tr>
<tr>
<td><strong>Target:</strong> 85% on selected assignment</td>
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<tr>
<td><strong>Implementation Plan (timeline):</strong> Annual Fall Sr yr</td>
</tr>
<tr>
<td><strong>Responsible Individual(s):</strong> ACET team</td>
</tr>
<tr>
<td><strong>Measure:</strong> Evaluation of inclass project</td>
</tr>
<tr>
<td>Direct - Other</td>
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</tbody>
</table>

| SLO E.2: Understands the purpose of teams          |
| Assumes responsibility as a team member, respects chain of command and understands why teams exist |
| **Details/Description:** ECT437                    |
| **Target:** 85% grade on team project              |
| **Implementation Plan (timeline):** Sp & F Jr or Sr year |
| **Responsible Individual(s):** ACET team          |
| **Measure:** Evaluation of performance per semester project |
| Direct - Other                                     |

| SLOE.3: Works and communicates in the team setting |
| Recognizes the need for good interpersonal skills and practices quality in communication in the team setting |
| **Details/Description:** ECT437                    |
| **Target:** 85% on team project                    |
| **Implementation Plan (timeline):** Sp & F, Jr or Sr year |
| **Responsible Individual(s):** ACET team          |
| **Measure:** Evaluation of inclass project        |
| Direct - Other                                     |

<table>
<thead>
<tr>
<th>Program Objective F: Effective problem solving</th>
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</thead>
<tbody>
<tr>
<td>SLO F.1: Effectively use problem solving methods</td>
</tr>
<tr>
<td>Understands and uses traditional and contemporary problem solving techniques and processes</td>
</tr>
<tr>
<td><strong>Details/Description:</strong> ECT480</td>
</tr>
<tr>
<td><strong>Target:</strong> 85% on troubleshooting lab activity</td>
</tr>
<tr>
<td><strong>Implementation Plan (timeline):</strong> Annual F Sr yr</td>
</tr>
<tr>
<td><strong>Responsible Individual(s):</strong> ACET team</td>
</tr>
<tr>
<td><strong>Measure:</strong> Troubleshooting</td>
</tr>
<tr>
<td>Direct - Other</td>
</tr>
</tbody>
</table>

| SLO F.2: Use electrical troubleshooting tools properly |
| Able to troubleshoot                                 |
| **Measure:** Evaluation of lab work in class        |
| Direct - Other                                     |
**SLO F.3: Debugs logic and software applications**
exhibits the ability to logically approach and solve machine control logic programs and custom software applications

<table>
<thead>
<tr>
<th>Measure:</th>
<th>Evaluation of lab work</th>
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<tbody>
<tr>
<td>Direct - Other</td>
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</table>

<table>
<thead>
<tr>
<th>Details/Description:</th>
<th>ECT381</th>
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</thead>
<tbody>
<tr>
<td>Target:</td>
<td>85% on selected assignment</td>
</tr>
<tr>
<td>Implementation Plan (timeline):</td>
<td>Annual Sp Jr yr</td>
</tr>
<tr>
<td>Responsible Individual(s):</td>
<td>ACET team</td>
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</table>

**Program Objective G: Effective communication**
an ability to communicate effectively through engineering drawings, written reports, or oral presentations

<table>
<thead>
<tr>
<th>Measure:</th>
<th>Evaluation of inclass project</th>
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<td>Direct - Other</td>
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</table>

<table>
<thead>
<tr>
<th>Details/Description:</th>
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</thead>
<tbody>
<tr>
<td>Target:</td>
<td>85% on team project</td>
</tr>
<tr>
<td>Implementation Plan (timeline):</td>
<td>Sp or F Jr or Sr yr</td>
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<tr>
<td>Responsible Individual(s):</td>
<td>ACET team</td>
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</table>

**SLO G.2: Possesses good written communication skills**
can develop well-written e-mails, letters, technical documents, test plans and PowerPoint presentations

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<thead>
<tr>
<th>Measure:</th>
<th>Evaluation of inclass project</th>
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<td>Direct - Other</td>
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<table>
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<tbody>
<tr>
<td>Target:</td>
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<td>Sp or F, Jr or Sr year</td>
</tr>
<tr>
<td>Responsible Individual(s):</td>
<td>ACET team</td>
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**SLO G.3: Formality and respect in communications**
differentiates between formal, semi-formal, and informal situations involving verbal and written protocols, including meeting

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<tr>
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<th>Evaluation of inclass project</th>
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<td>Direct - Other</td>
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</tr>
<tr>
<td>Responsible Individual(s):</td>
<td>ACET team</td>
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</table>

**Program Objective H: Embrace learning**
a recognition of the need for, and an ability to engage in lifelong learning

<table>
<thead>
<tr>
<th>Measure:</th>
<th>Excerpts from Certified Automation Professional Exam</th>
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<tbody>
<tr>
<td>Direct - Exam</td>
<td></td>
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</tbody>
</table>
Program Outcomes Assessment
BS in Automation

learn and respects those who possess knowledge

| Details/Description: Complete exam ECT480 |
| Target: 85% grade on exam total |
| Implementation Plan (timeline): Annual F Sr yr |
| Responsible Individual(s): ACET team |

Program Objective I: Professional responsibilities
an ability to understand professional, ethical and social responsibilities

| SLO I.1: Demonstrates professionalism |
| understands the role of the professional and aspires to become a respected member of an organization |
| Measure: Excerpts from Certified Automation Professional Exam |
| Direct - Exam |
| Details/Description: ECT480 |
| Target: 85% on selected questions |
| Implementation Plan (timeline): Annual F Sr yr |
| Responsible Individual(s): ACET team |

| SLO I.2: Understands and exhibits ethics |
| is knowledgeable on issues involving social and ethical responsibilities |
| Measure: Excerpts from Certified Automation Professional Exam |
| Direct - Exam |
| Details/Description: ECT480 |
| Target: 85% on exam selected questions |
| Implementation Plan (timeline): Annual F Sr yr |
| Responsible Individual(s): ACET team |

| SLO I.3: Understands the role of professional societies |
| understands the role of professional societies play in technical professions, including automation engineering technology |
| Measure: Excerpts from Certified Automation Professional Exam |
| Direct - Exam |
| Details/Description: ECT480 |
| Target: 85% on selected questions |
| Implementation Plan (timeline): Annual F Sr yr |
| Responsible Individual(s): ACET team |

Program Objective J: Diversity and contemporary issues
a respect for diversity and a knowledge of contemporary professional, societal and global issues

| SLO J.1: Automated control system marketplace |
| exhibits some knowledge of global nature of automation system use |
| Measure: Excerpts from Certified Automation Professional Exam |
| Direct - Exam |
| Details/Description: ECT480 |
| Target: 85% on selected questions |
| Implementation Plan (timeline): Annual F Sr yr |
| Responsible Individual(s): ACET team |

| SLO J.2: Social and safe design responsibility |
| understands the |
| Measure: Excerpts from Certified Automation Professional Exam |
| Direct - Exam |
importance of the social issues involved with manufacturing and safety

**Details/Description:** ECT480
**Target:** 85% on selected questions
**Implementation Plan (timeline):** Annual F Sr yr
**Responsible Individual(s):** ACET team

**SLO J.3: Safe design practices and operations**
understands the responsibility of safe design practices and operations.

**Measure:** Excerpts from Certified Automation Professional Exam
Direct - Exam

**Details/Description:** ECT480
**Target:** 85% on selected questions
**Implementation Plan (timeline):** Annual F Sr yr
**Responsible Individual(s):** ACET team

**Program Objective K: Quality and continuous improvement**
a commitment to quality, timeliness, and continuous improvement

**SLO K.1: Understands the breadth of quality concerns**
understand how quality intersects all aspects of automation engineering technology

**Measure:** Excerpts from Certified Automation Professional Exam
Direct - Exam

**Details/Description:** ECT480
**Target:** 85% on selected questions
**Implementation Plan (timeline):** Annual F Sr yr
**Responsible Individual(s):** ACET team

**SLO K.2: Understands the importance of quality**
understands the importance of quality in all aspects of automation engineering technology

**Measure:** Excerpts from Certified Automation Professional Exam
Direct - Exam

**Details/Description:** ECT480
**Target:** 85% on selected questions
**Implementation Plan (timeline):** Annual F Sr yr
**Responsible Individual(s):** ACET team

**SLO K.3: Timeliness and continuous improvement**
exhibits a sense of urgency in all aspects of his/her work and tends to not accept complacency

**Measure:** Excerpts from Certified Automation Professional Exam
Direct - Exam

**Details/Description:** ECT480
**Target:** 85% on selected questions
**Implementation Plan (timeline):** Annual F Sr yr
**Responsible Individual(s):** ACET team

**Assessment Findings**

### Finding per Measure

**BS in Automat&Control Engineer Tech Outcome Set**
Program Objective A.: Mastery of knowledge and tools
an appropriate mastery of the knowledge, techniques, skills, and modern tools

SLO A.1: Use CAD, programming languages, HMI and IT
Students will use CAD, programming languages, HMI and IT.

- **Measure**: Evaluation of inclass project
  - **Direct**: Student Artifact

- **Details/Description**: Source of assessment: ECT381
  - **Target**: 85% grade on selected assignment
  - **Implementation Plan (timeline)**: Annual - Sp Jr yr
  - **Responsible Individual(s)**: ACET team

- **Findings** for Evaluation of inclass project
  - No Findings Added

SLO A.2: Use electronics design and analysis tools
Students will use electronics design and analysis tools.

- **Measure**: Evaluation of performance per semester project
  - **Direct**: Other

- **Details/Description**: Annual - course offered F SR yr
  - **Target**: 85% grade on selected assignment
  - **Implementation Plan (timeline)**: Annual - course offered F Sr yr
  - **Responsible Individual(s)**: ACET team

- **Findings** for Evaluation of performance per semester project
  - No Findings Added

SLO A.3: Apply science and engineering tools
Students will apply science and engineering tools.

- **Measure**: Evaluation of performance per semester project
  - **Direct**: Other

- **Details/Description**: Source of assessment: ECT480
  - **Target**: 85% grade on selected assignment
  - **Implementation Plan (timeline)**: Annual - course F Sr yr
  - **Responsible Individual(s)**: ACET team

- **Findings** for Evaluation of performance per semester project
  - No Findings Added

SLO A.4: Apply PLC's, DCS's, and control system equipment
Students will apply PLC's, DCS's, and control system equipment.

- **Measure**: Evaluation of inclass project
  - **Direct**: Other

- **Details/Description**: ECT381
  - **Target**: 85% on selected assignment
  - **Implementation Plan (timeline)**: Annual Sp Jr yr
  - **Responsible Individual(s)**: ACET team
### Program Outcomes Assessment

**SLO A.5: Use manufacturing processes**

Students will use fluid power, engineering materials and manufacturing processes.

- **Measure:** Evaluation of performance per semester project
  - Direct - Other

  - **Details/Description:** ECT480
  - **Target:** 85% on assignment
  - **Implementation Plan (timeline):** Annual F Sr yr
  - **Responsible Individual(s):** ACET team

  - **Findings** for Evaluation of performance per semester project
    - No Findings Added

### SLO A.6: Manage automated systems

Students will manage automated systems.

- **Measure:** Evaluation of inclass project

  - **Details/Description:** ECT480
  - **Target:** 85%
  - **Implementation Plan (timeline):** Annual F Sr yr
  - **Responsible Individual(s):** ACET team

  - **Findings** for Evaluation of inclass project
    - No Findings Added

### Program Objective B: Apply technical knowledge

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

#### SLO B.1: Use mathematics in design

Students will use mathematics in design.

- **Measure:** Exam
  - Direct - Exam

  - **Details/Description:** ECT381 midterm
  - **Target:** 85% on selected questions
  - **Implementation Plan (timeline):** Annual Sp Jr Yr
  - **Responsible Individual(s):** ACET team

  - **Findings** for Exam
    - No Findings Added

#### SLO B.2: Modeling for analysis

model electrical, mechanical, and process systems for design and analysis

- **Measure:** Exam
  - Direct - Exam

  - **Details/Description:** ECT381 midterm
**Target:** 85% on selected questions
**Implementation Plan (timeline):** Annual Sp Jr yr
**Responsible Individual(s):** ACET team

**Findings** for Exam

No Findings Added

**SLO B.3: System design**
Design electrical, mechanical, and IT systems

**Measure:** Evaluation of performance per semester project rubric
**Direct - Student Artifact**

**Details/Description:** ECT81
**Target:** 85% on project
**Implementation Plan (timeline):** Annual Sp Jr Yr
**Responsible Individual(s):** ACET team

**Findings** for Evaluation of performance per semester project rubric

No Findings Added

**Program Objective C: Experiment and apply results**
an ability to conduct, analyze and interpret experiments, and apply experimental results to improve processes

**SLO C.1: Experimental validation**
develop and execute experiments to validate designs

**Measure:** Excerpts from Certified Automation Professional Exam
**Direct - Exam**

**Details/Description:** ECT480
**Target:** 85% on selected questions
**Implementation Plan (timeline):** Annual Fall Sr yr
**Responsible Individual(s):** ACET team

**Findings** for Excerpts from Certified Automation Professional Exam

No Findings Added

**SLO C.2: Lab exercises**
use electrical lab experiences as learning tools

**Measure:** Evaluation of lab work in class
**Direct - Other**

**Details/Description:** ECT381
**Target:** 85% on assignment
**Implementation Plan (timeline):** Annual Sp Jr yr
**Responsible Individual(s):** ACET team

**Findings** for Evaluation of lab work in class

No Findings Added
<table>
<thead>
<tr>
<th>SLO C.3: Test plans</th>
<th>Measure: Excerpts from Certified Automation Professional Exam</th>
<th>Details/Description: ECT480</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Direct - Exam</td>
<td>Target: 85% on selected questions</td>
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<td></td>
<td></td>
<td>Implementation Plan (timeline): Annual F Sr yr</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Responsible Individual(s): ACET team</td>
</tr>
<tr>
<td>Program Objective D:</td>
<td>Findings for Excerpts from Certified Automation Professional Exam</td>
<td></td>
</tr>
<tr>
<td>creativity in design and application</td>
<td>No Findings Added</td>
<td></td>
</tr>
<tr>
<td>an ability to apply creativity in the design of systems, components, or processes appropriate to the MET program educational objectives</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SLO D.1: Mechanical design</th>
<th>Measure: Evaluation of lab work in class</th>
<th>Details/Description: MET403</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Direct - Student Artifact</td>
<td>Target: 85% on selected assignment</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Implementation Plan (timeline): Annual Sp &amp; F</td>
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<tr>
<td></td>
<td></td>
<td>Responsible Individual(s): ACET team</td>
</tr>
<tr>
<td></td>
<td>Findings for Evaluation of lab work in class</td>
<td></td>
</tr>
<tr>
<td></td>
<td>No Findings Added</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SLO D.2: Circuit design</th>
<th>Measure: Evaluation of lab work in class</th>
<th>Details/Description: ECT381</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Direct - Student Artifact</td>
<td>Target: 85% on selected lab assignment</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Implementation Plan (timeline): Annual Sp Jr yr</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Responsible Individual(s): ACET team</td>
</tr>
<tr>
<td></td>
<td>Findings for Evaluation of lab work in class</td>
<td></td>
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<tr>
<td></td>
<td>No Findings Added</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SLO D.3: Software and program development</th>
<th>Measure: Evaluation of performance per semester project</th>
<th>Details/Description: ECT480</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Direct - Student Artifact</td>
<td>Target: 85% on selected assignment</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Implementation Plan (timeline): Annual Fall Sr yr</td>
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<tr>
<td></td>
<td></td>
<td>Responsible Individual(s): ACET team</td>
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</tbody>
</table>
## Findings for Evaluation of performance per semester project

No Findings Added

### Program Objective E: Function in team environment

**an ability to function effectively on teams**

<table>
<thead>
<tr>
<th>SLO E.1: Effective team member</th>
<th>Measure: Evaluation of inclass project</th>
</tr>
</thead>
<tbody>
<tr>
<td>functions as an effective team member</td>
<td>Direct - Other</td>
</tr>
<tr>
<td>Details/Description: ECT437</td>
<td>Target: 85% grade on team project</td>
</tr>
<tr>
<td>Implementation Plan (timeline): Sp &amp; F Jr or Sr year</td>
<td>Responsible Individual(s): ACET team</td>
</tr>
<tr>
<td>Findings for Evaluation of inclass project</td>
<td></td>
</tr>
<tr>
<td>No Findings Added</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SLO E.2: Understands the purpose of teams</th>
<th>Measure: Evaluation of performance per semester project</th>
</tr>
</thead>
<tbody>
<tr>
<td>assumes responsibility as a team member, respects chain of command and understands why teams exist</td>
<td>Direct - Other</td>
</tr>
<tr>
<td>Details/Description: ECT437</td>
<td>Target: 85% on team project</td>
</tr>
<tr>
<td>Implementation Plan (timeline): Sp, Jr or Sr yr</td>
<td>Responsible Individual(s): ACET team</td>
</tr>
<tr>
<td>Findings for Evaluation of performance per semester project</td>
<td></td>
</tr>
<tr>
<td>No Findings Added</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SLOE.3: Works and communicates in the team setting</th>
<th>Measure: Evaluation of inclass project</th>
</tr>
</thead>
<tbody>
<tr>
<td>recognizes the need for good interpersonal skills and practices quality in communication in the team setting</td>
<td>Direct - Other</td>
</tr>
<tr>
<td>Details/Description: ECT437</td>
<td>Target: 85% on team project</td>
</tr>
<tr>
<td>Implementation Plan (timeline): Sp &amp; F, Jr or Sr yr</td>
<td>Responsible Individual(s): ACET team</td>
</tr>
<tr>
<td>Findings for Evaluation of inclass project</td>
<td></td>
</tr>
<tr>
<td>No Findings Added</td>
<td></td>
</tr>
</tbody>
</table>

### Program Objective F: Effective problem solving

**an ability to identify, analyze and solve technical problems**

| Findings for Evaluation of inclass project | |
| No Findings Added | |
**SLO F.1: Effectively use problem solving methods**
understands and uses traditional and contemporary problem solving techniques and processes

- **Measure:** Troubleshooting
  - Direct - Other
  - **Details/Description:** ECT480
  - **Target:** 85% on troubleshooting lab activity
  - **Implementation Plan (timeline):** Annual F Sr yr
  - **Responsible Individual(s):** ACET team

  **Findings for Troubleshooting**

  No Findings Added

**SLO F.2: Use electrical troubleshooting tools properly**
able to troubleshoot electrical circuits using typical tools and equipment

- **Measure:** Evaluation of lab work in class
  - Direct - Other
  - **Details/Description:** ECT381
  - **Target:** 85% on selected assignment
  - **Implementation Plan (timeline):** Annual Sp Jr yr
  - **Responsible Individual(s):** ACET team

  **Findings for Evaluation of lab work in class**

  No Findings Added

**SLO F.3: Debugs logic and software applications**
exhibits the ability to logically approach and solve machine control logic programs and custom software applications

- **Measure:** Evaluation of lab work
  - Direct - Other
  - **Details/Description:** ECT381
  - **Target:** 85% on selected lab assignment
  - **Implementation Plan (timeline):** Annual Sp Jr yr
  - **Responsible Individual(s):** ACET team

  **Findings for Evaluation of lab work**

  No Findings Added

**Program Objective G: Effective communication**
an ability to communicate effectively through engineering drawings, written reports, or oral presentations

**SLO G.1: Exhibits good verbal communications**
can verbally present and describe technical information and issues in a clear manner

- **Measure:** Evaluation of inclass project
  - Direct - Other
  - **Details/Description:** ECT437
  - **Target:** 85% on team project
  - **Implementation Plan (timeline):** Sp or F Jr or Sr yr
  - **Responsible Individual(s):** ACET team
**Findings** for Evaluation of inclass project

*No Findings Added*

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**SLO G.2: Possesses good written communication skills**

- **Measure:** Evaluation of inclass project (Direct - Other)

  - **Details/Description:** ECT437
  - **Target:** 85% on class project
  - **Implementation Plan (timeline):** Sp or F, Jr or Sr year
  - **Responsible Individual(s):** ACET team

*Findings* for Evaluation of inclass project

*No Findings Added*

---

**SLO G.3: Formality and respect in communications**

- **Measure:** Evaluation of inclass project (Direct - Other)

  - **Details/Description:** ECT437
  - **Target:** 85% on team project
  - **Implementation Plan (timeline):** Sp or F, Jr or Sr yr
  - **Responsible Individual(s):** ACET team

*Findings* for Evaluation of inclass project

*No Findings Added*

---

**Program Objective H: Embrace learning**

- **Measure:** Excerpts from Certified Automation Professional Exam (Direct - Exam)

  - **Details/Description:** Complete exam ECT480
  - **Target:** 85% grade on exam total
  - **Implementation Plan (timeline):** Annual F Sr yr
  - **Responsible Individual(s):** ACET team

*Findings* for Excerpts from Certified Automation Professional Exam

*No Findings Added*

---

**Program Objective I: Professional responsibilities**

- **Measure:**

  - **Details/Description:**
    - **Target:**
    - **Implementation Plan (timeline):**
    - **Responsible Individual(s):**

*Findings* for Professional responsibilities

*No Findings Added*
### SLO 1.1: Demonstrates professionalism

**Measure:** Excerpts from Certified Automation Professional Exam Direct - Exam

- **Details/Description:** ECT480
- **Target:** 85% on selected questions
- **Implementation Plan (timeline):** Annual F Sr yr
- **Responsible Individual(s):** ACET team

**Findings** for Excerpts from Certified Automation Professional Exam

No Findings Added

### SLO 1.2: Understands and exhibits ethics

**Measure:** Excerpts from Certified Automation Professional Exam Direct - Exam

- **Details/Description:** ECT480
- **Target:** 85% on exam selected questions
- **Implementation Plan (timeline):** Annual F Sr yr
- **Responsible Individual(s):** ACET team

**Findings** for Excerpts from Certified Automation Professional Exam

No Findings Added

### SLO 1.3: Understands the role of professional societies

**Measure:** Excerpts from Certified Automation Professional Exam Direct - Exam

- **Details/Description:** ECT480
- **Target:** 85% on selected questions
- **Implementation Plan (timeline):** Annual F Sr yr
- **Responsible Individual(s):** ACET team

**Findings** for Excerpts from Certified Automation Professional Exam

No Findings Added

### Program Objective J: Diversity and contemporary issues

**Measure:** Excerpts from Certified Automation Professional Exam Direct - Exam

- **Details/Description:** ECT480
- **Target:** 85% on selected questions
- **Implementation Plan (timeline):** Annual F Sr yr
- **Responsible Individual(s):** ACET team

No Findings Added

### SLO J.1: Automated control system marketplace

**Measure:** Excerpts from Certified Automation Professional Exam Direct - Exam

- **Details/Description:** ECT480
- **Target:** 85% on selected questions
- **Implementation Plan (timeline):** Annual F Sr yr
- **Responsible Individual(s):** ACET team

No Findings Added
**Findings** for Excerpts from Certified Automation Professional Exam

*No Findings Added*

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**SLO J.2: Social and safe design responsibility**
understands the importance of the social issues involved with manufacturing and safety

**Measure:** Excerpts from Certified Automation Professional Exam
Direct - Exam

**Details/Description:** ECT480
**Target:** 85% on selected questions
**Implementation Plan (timeline):** Annual F Sr yr
**Responsible Individual(s):** ACET team

*Findings* for Excerpts from Certified Automation Professional Exam

*No Findings Added*

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**SLO J.3: Safe design practices and operations**
understands the responsibility of safe design practices and operations.

**Measure:** Excerpts from Certified Automation Professional Exam
Direct - Exam

**Details/Description:** ECT480
**Target:** 85% on selected questions
**Implementation Plan (timeline):** Annual F Sr yr
**Responsible Individual(s):** ACET team

*Findings* for Excerpts from Certified Automation Professional Exam

*No Findings Added*

---

**Program Objective K: Quality and continuous improvement**
a commitment to quality, timeliness, and continuous improvement

**SLO K.1: Understands the breadth of quality concerns**
understand how quality intersects all aspects of automation engineering technology

**Measure:** Excerpts from Certified Automation Professional Exam
Direct - Exam

**Details/Description:** ECT480
**Target:** 85% on selected questions
**Implementation Plan (timeline):** Annual F Sr yr
**Responsible Individual(s):** ACET team

*Findings* for Excerpts from Certified Automation Professional Exam

*No Findings Added*

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**SLO K.2: Understands the importance of quality**
understands the
Program Outcomes Assessment
BS in Automation

**SLO K.3: Timeliness and continuous improvement**

- **Details/Description:** ECT480
- **Target:** 85% on selected questions
- **Implementation Plan (timeline):** Annual F Sr yr
- **Responsible Individual(s):** ACET team

**Measure:** Excerpts from Certified Automation Professional Exam
Direct - Exam

**Findings** for Excerpts from Certified Automation Professional Exam

No Findings Added

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**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
2019-2020 Assessment Cycle

Assessment Plan

Assessment Findings
Appendix

A. **BS in Automat & Control Engineering** (Curriculum Map)
B. **ACET Assessment_CommunicationofOutcomes_043013.docx**
   (Word Document (Open XML))
C. **Automation and Control Engineering Technology** (Adobe Acrobat Document)
Learning Outcomes for the Automation and Control Engineering Technology (ACET) Program

Preliminary version March 27, 2008
JE Ashby ECMET Department, COT

Automation and Control Engineering Technology (ACET) program graduates will be responsible for the direction, definition, design, development/application, deployment, documentation, and support of systems, software, and equipment used in control systems, manufacturing information systems, systems integration, and operational consulting. These skills can be divided into six work performance domains, namely: (a) system feasibility, (b) system definition, (c) system design, (d) system development, (e) system deployment, and (f) system operation. The learning outcomes for the ACET program are documented *.

1. Within the domain of system feasibility, the student shall be able to:
   - define a preliminary project scope
   - determine the automation requirements
   - develop an automation strategy
   - conduct technical studies to define development needs and risks
   - perform a justification analysis
   - create a summary document to facilitate decision making.

2. Within the domain related to the system definition, the student shall be able to:
   - determine, document and communicate operational strategies and design requirements
   - analyze possible technical solutions in order to define best automation strategies
   - establish detailed requirements to form the basis for system designs through hardware and software system architectures, equipment data sheets, safety policies and vendor recommendations
   - generate a project cost estimate
   - create a basis-of-design document to summarize project requirements.

3. Within the domain related to system design, the student shall be able to:
   - perform safety analysis and identify compliance to standards and regulations
   - establish templates and guidelines in order to satisfy customer design criteria
   - create detailed equipment specifications and data sheets in order to purchase equipment and support system design
   - define data structures and flow models to provide specifications for hardware selection and software development
   - select the physical communication media, network architectures and protocols to support system design and development
   - develop functional specifications for control system solutions to guide development and programming
   - design a test plan to execute appropriate testing relative to functional requirements

* Learning outcomes for the ACET program are documented by the Automation and Control Engineering Technology (ACET) program.
• perform detailed design drawings, installation details and purchase requisitions in order to provide detailed information for development and deployment
• prepare construction work packages in order to release project for construction.

4. Within the domain related to **system development**, the student shall be able to:
• develop Human Machine Interface hardware and software designs
• develop database and reporting functions
• develop control configuration or programming in accordance with the design documentation
• implement data transfer methodology using communication protocols and specifications
• implement security methodology in accordance with stakeholder requirements
• review configuration and programming to establish compliance with functional requirements
• test the automation system using the test plan
• assemble required documentation and user manuals in order to transfer essential knowledge to customers and end users

5. Within the domain related to **system deployment**, the student shall be able to:
• perform receipt verification of all system devices to ensure that devices are as specified
• perform physical inspection of installed equipment against construction drawings
• load configuration and programs to system devices
• solve unforeseen problems identified during installation using troubleshooting skills
• test configuration and programming in accordance with the design by executing the test plan
• test communication systems and field devices in accordance with design specifications
• test all safety elements and systems by executing test plans
• test all security features
• provide initial training for facility personnel in system operation and maintenance through classroom and hands-on training
• execute system-level tests in accordance with the test plan
• troubleshoot problems identified during testing using a structured methodology
• make necessary adjustments using applicable tools and techniques in order to demonstrate system performance.

6. Within the domain related to **system operation and maintenance**, the student shall be able to:
• verify system performance and records using established procedures in order to ensure compliance with standards, regulations, and best practices
• provide technical support for facility personnel by applying system expertise
• perform training needs analysis periodically for facility personnel using skill assessments
• provide training for facility personnel by addressing identified objectives
• monitor performance using software and hardware diagnostic tools
• perform periodic inspections and tests in accordance with written standards and procedures in order to verify system performance
• perform continuous improvement
• document lessons learned
• maintain licenses, updates, and service contracts for software and equipment
• determine the need for spare parts
• provide a system management plan for performing preventive maintenance, implementing backups, and designing recovery plans
• follow a process for authorization and implementation of changes in accordance with established standards

* These learning outcomes are closely aligned with the The Instrumentation, Systems, and Automation Society (ISA) Certified Automation Professional (CAP) definitions of knowledge domains required for the automation professional. For additional information on the CAP program, see http://www.isa.org/Content/NavigationMenu/Products_and_Services/Certification3/Certification.htm.