Program Outcomes Assessment

BS in Computer Engineering Technology

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General Information (Program Outcomes Assessment)
Standing Requirements

Mission Statement
The mission of the Department of Electronics, Computer, and Mechanical Engineering Technology at Indiana State University is to prepare students for careers as technical professionals in an environment that involves applications in design, manufacture, control and integration of electromechanical products or systems, and requires a practical problem solving approach that emphasizes hands-on skill with modern productivity tools (e.g. design, analysis, control, diagnostic, and project management tools).

Outcomes Library

<table>
<thead>
<tr>
<th>BS in Computer Engineering Technlgy Outcome Set</th>
</tr>
</thead>
</table>

OBJ 1: Problem solving skills
Students will learn problems solving skills.

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Mapping</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outcome 1.1: Computer systems and networks</td>
<td>Foundational Studies: IIIa. Quantitative Literacy</td>
</tr>
<tr>
<td>Students will apply algebra, discrete math, and basic law of physics to build, test, and operate electric circuits, computer systems and networks.</td>
<td></td>
</tr>
<tr>
<td>Outcome 1.2: Computer languages</td>
<td>No Mapping</td>
</tr>
<tr>
<td>Students will program in low/high-level computer languages to build microcontroller based applications and digital logic circuits.</td>
<td></td>
</tr>
<tr>
<td>Outcome 1.3: Technical data management</td>
<td>No Mapping</td>
</tr>
<tr>
<td>Students will understand database principles and working mechanisms for technical data management.</td>
<td></td>
</tr>
</tbody>
</table>

OBJ 2: Commanding contemporary tools
Students will learn how to command contemporary tools.

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Mapping</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outcome 2.1: Apply stimulation tools</td>
<td>No Mapping</td>
</tr>
<tr>
<td>Students will apply simulation tools to verify theoretical design or troubleshoot potential system problems.</td>
<td></td>
</tr>
<tr>
<td>Outcome 2.2: Analyze lab data</td>
<td>No Mapping</td>
</tr>
<tr>
<td>Students will analyze lab data using statistical tools.</td>
<td></td>
</tr>
</tbody>
</table>

OBJ 3: Design skills
Student will learn design skills.

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Mapping</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outcome 3.1: Control circuitry</td>
<td>No Mapping</td>
</tr>
<tr>
<td>Students will design microcontroller based control circuitry.</td>
<td></td>
</tr>
</tbody>
</table>
# Program Outcomes Assessment

**BS in Computer Engineering Technology**

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Mapping</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Outcome 3.2: Digital logic circuitry</strong></td>
<td>No Mapping</td>
</tr>
<tr>
<td>Students will develop digital logic circuitry using FPGA and HDL.</td>
<td></td>
</tr>
<tr>
<td><strong>Outcome 3.3: Design and implement LAN</strong></td>
<td>No Mapping</td>
</tr>
<tr>
<td>Students will design and implement LAN for small business environments.</td>
<td></td>
</tr>
</tbody>
</table>

## OBJ 4: Lab skills

Students will learn lab skills.

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Mapping</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Outcome 4.1: Plan experiments</strong></td>
<td>No Mapping</td>
</tr>
<tr>
<td>Students will plan experiments to collect desired data or observations.</td>
<td></td>
</tr>
<tr>
<td><strong>Outcome 4.2: Conduct experiments</strong></td>
<td>No Mapping</td>
</tr>
<tr>
<td>Students will conduct experiments to truthfully record results following manual or proposed steps.</td>
<td></td>
</tr>
<tr>
<td><strong>Outcome 4.3: Follow safety procedures</strong></td>
<td>No Mapping</td>
</tr>
<tr>
<td>Students will follow safety procedure and lab protocols, handle equipments with care.</td>
<td></td>
</tr>
<tr>
<td><strong>Outcome 4.4: Examine lab results</strong></td>
<td>Foundational Studies: IIIa. Quantitative literacy</td>
</tr>
<tr>
<td>Students will examine and interpret lab results to draw conclusions.</td>
<td></td>
</tr>
</tbody>
</table>

## OBJ 5: Managerial skills

Students will learn managerial skills.

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Mapping</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Outcome 5.1: Develop work plans</strong></td>
<td>No Mapping</td>
</tr>
<tr>
<td>Students will develop work plans with clearly defined phased goals and timeline.</td>
<td></td>
</tr>
<tr>
<td><strong>Outcome 5.2: Follow work plan</strong></td>
<td>No Mapping</td>
</tr>
<tr>
<td>Students will follow work plan by observing time line and reporting progress.</td>
<td></td>
</tr>
<tr>
<td><strong>Outcome 5.3: Modify schedule</strong></td>
<td>No Mapping</td>
</tr>
<tr>
<td>Students will modify schedules based on progress.</td>
<td></td>
</tr>
</tbody>
</table>

## OBJ 6: Ethics awareness

Students will learn ethics awareness.

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Mapping</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Outcome 6.1: Analyze ethics</strong></td>
<td>No Mapping</td>
</tr>
<tr>
<td>Students will analyze ethics issues based on professional ethics codes.</td>
<td></td>
</tr>
<tr>
<td><strong>Outcome 6.2: Technology impact on society</strong></td>
<td>No Mapping</td>
</tr>
<tr>
<td>Students will understand technology impact on society.</td>
<td></td>
</tr>
</tbody>
</table>

## OBJ 7: Lifelong learning

Students will learn lifelong learning.

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Mapping</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Outcome 7.1: Professional societies</strong></td>
<td>No Mapping</td>
</tr>
<tr>
<td>Students will get involved with professional societies.</td>
<td></td>
</tr>
<tr>
<td><strong>Outcome 7.2: Technological trends</strong></td>
<td>No Mapping</td>
</tr>
<tr>
<td></td>
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</tr>
</tbody>
</table>
Students will research the latest technological trends in a specific area.

**OBJ 8: Teamwork skills**
Students will learn teamwork skills.

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Mapping</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outcome 8.1: Individual role and shared duties</td>
<td>No Mapping</td>
</tr>
</tbody>
</table>
Students will understand individual role and shared duties. |
| Outcome 8.2: Respect different opinions | No Mapping |
Students will listen to others; cooperate with teammates; respect different opinions. |

**OBJ 9: Communication skills**
Students will learn communication skills.

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Mapping</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outcome 9.1: Produce technical documents</td>
<td><strong>Foundational Studies</strong>: 10. Express themselves effectively, professionally, and persuasively both orally and in writing.</td>
</tr>
</tbody>
</table>
Students will produce a technical document that is factually correct, and with good logical structure, proper format, citation, and references. |
| Outcome 9.2: Technical document with minimum errors | **Foundational Studies**: 10. Express themselves effectively, professionally, and persuasively both orally and in writing. |
Students will produce a technical document with a minimum of errors in spelling, punctuation, grammar and usage. |
| Outcome 9.3: Communicate in a professional manner | **Foundational Studies**: 10. Express themselves effectively, professionally, and persuasively both orally and in writing. |
Students will communicate in a professional manner, and respond to questions in language that is both concise and commensurate with audience’s background. |

**Curriculum Map**

**Active Curriculum Maps**

**CET Curriculum Maps** (See appendix)
- **Alignment Set**: BS in Computer Engineering Technlgy Outcome Set
- **Created**: 11/22/2011 12:41:45 pm CST
- **Last Modified**: 12/15/2011 3:36:51 pm CST

**Communication of Outcomes**

**File Attachments:**
1. **Industrial Advisory Survey on Program Educational Objectives** (See appendix)

**Web Links:**
1. **ISU Online Undergraduate Catalog**
Archive (This area is to be used for archiving pre-TaskStream assessment data and for current documents.)

File Attachments:

1. **Computer Engineering Technology Standards** (See appendix)
   Compliance with Standards

2. **Self-Study Report- March 2010** (See appendix)
   Accreditation Self-Study Report (Sections I-III). Responses to ATMAE Standards.
## Assessment Plan

### Outcomes and Measures

### BS in Computer Engineering Technlgy Outcome Set

#### OBJ 1: Problem solving skills

Students will learn problems solving skills.

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<td><strong>Target</strong></td>
<td>Graduating seniors</td>
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<tr>
<td><strong>Implementation Plan (timeline)</strong></td>
<td>Every semester</td>
</tr>
<tr>
<td><strong>Responsible Individual(s)</strong></td>
<td>CET faculty</td>
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<table>
<thead>
<tr>
<th>Measure: Senior Exit Survey</th>
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<tbody>
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<td>Indirect - Survey</td>
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<tr>
<th>Measure: Senior Project</th>
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<td>Direct - Portfolio</td>
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#### OBJ 2: Computer languages

Students will program in low/high-level computer languages to build microcontroller based applications and digital logic circuits.

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to the program faculty in an open Q & A session at the end of the semester.

**Target:** Seniors.

**Implementation Plan (timeline):** Yearly

**Responsible Individual(s):** CET faculty

---

**Outcome 1.3:** Technical data management

Students will understand database principles and working mechanisms for technical data management.

**Measure:** Senior Exit Survey

**Indirect - Survey**

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

**Target:** Graduating seniors

**Implementation Plan (timeline):** Every semester

**Responsible Individual(s):** CET faculty

---

**OBJ 2:** Commanding contemporary tools

Students will learn how to command contemporary tools.

---

**Outcome 2.1:** Apply stimulation tools

Students will apply simulation tools to verify theoretical design or trouble-shoot potential system problems.

**Measure:** Senior Exit Survey

**Indirect - Survey**

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

**Target:** Graduating seniors

**Implementation Plan (timeline):** Every semester

**Responsible Individual(s):** CET faculty

---

**Measure:** Senior Project

**Direct - Portfolio**

**Details/Description:** Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group member. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.

**Target:** Seniors.

**Implementation Plan (timeline):** Yearly

**Responsible Individual(s):** CET faculty
## Outcome 2.2: Analyze lab data

**Measure:** Senior Exit Survey

*Indirect - Survey*

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

**Target:** Graduating seniors

**Implementation Plan (timeline):** Every semester

**Responsible Individual(s):** CET faculty

## OBJ 3: Design skills

Student will learn design skills.

### Outcome 3.1: Control circuitry

Students will design microcontroller based control circuitry.

**Measure:** Senior Exit Survey

*Indirect - Survey*

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

**Target:** Graduating seniors

**Implementation Plan (timeline):** Every semester

**Responsible Individual(s):** CET faculty

**Measure:** Senior Project

*Direct - Portfolio*

**Details/Description:** Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group member. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.

**Target:** Seniors.

**Implementation Plan (timeline):** Yearly

**Responsible Individual(s):** CET faculty

### Outcome 3.2: Digital logic circuitry

Students will develop digital logic circuitry using FPGA and HDL.

**Measure:** Senior Exit Survey

*Indirect - Survey*

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

**Target:** Graduating seniors
Implementation Plan (timeline): Every semester
Responsible Individual(s): CET faculty

Measure: Senior Project
Direct - Portfolio

Details/Description: Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group member. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.
Target: Seniors.
Implementation Plan (timeline): Yearly
Responsible Individual(s): CET faculty

Outcome 3.3: Design and implement LAN
Students will design and implement LAN for small business environments.

Measure: Senior Exit Survey
Indirect - Survey

Details/Description: The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.
Target: Graduating seniors
Implementation Plan (timeline): Every semester
Responsible Individual(s): CET faculty

Measure: Senior Project
Direct - Portfolio

Details/Description: Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group member. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.
Target: Seniors.
Implementation Plan (timeline): Yearly
Responsible Individual(s): CET faculty

OBJ 4: Lab skills
Students will learn lab skills.

Outcome 4.1: Plan experiments
Students will plan experiments to collect desired data or observations.

Measure: Senior Exit Survey
Indirect - Survey

Details/Description: The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.
Target: Graduating seniors
Implementation Plan (timeline): Every semester
Responsible Individual(s): CET faculty

Measure: Senior Project
Direct - Portfolio
<table>
<thead>
<tr>
<th><strong>Outcome 4.2: Conduct experiments</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Details/Description:</strong> Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group member. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q &amp; A session at the end of the semester.</td>
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</tr>
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<td><strong>Target:</strong> Seniors.</td>
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<tr>
<td><strong>Implementation Plan (timeline):</strong> Yearly</td>
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<tr>
<td><strong>Responsible Individual(s):</strong> CET faculty</td>
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<td><strong>Measure:</strong> Senior Exit Survey</td>
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<td><strong>Details/Description:</strong> The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.</td>
<td></td>
</tr>
<tr>
<td><strong>Target:</strong> Graduating seniors</td>
<td></td>
</tr>
<tr>
<td><strong>Implementation Plan (timeline):</strong> Every semester</td>
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<tr>
<td><strong>Responsible Individual(s):</strong> CET faculty</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Outcome 4.3: Follow safety procedures</strong></th>
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<tbody>
<tr>
<td><strong>Details/Description:</strong> Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group member. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q &amp; A session at the end of the semester.</td>
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<tr>
<td><strong>Target:</strong> Seniors.</td>
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<td><strong>Implementation Plan (timeline):</strong> Yearly</td>
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<tr>
<td><strong>Responsible Individual(s):</strong> CET faculty</td>
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<tr>
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<td><strong>Implementation Plan (timeline):</strong> Every semester</td>
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<td><strong>Target:</strong> Seniors.</td>
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<td><strong>Implementation Plan (timeline):</strong> Yearly</td>
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<tr>
<td><strong>Responsible Individual(s):</strong> CET faculty</td>
<td></td>
</tr>
</tbody>
</table>
**Outcome 4.4: Examine lab results**

Students will examine and interpret lab results to draw conclusions.

- **Measure:** Senior Exit Survey
  - Indirect - Survey
  - **Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.
  - **Target:** Graduating seniors
  - **Implementation Plan (timeline):** Every semester
  - **Responsible Individual(s):** CET faculty

**OBJ 5: Managerial skills**

Students will learn managerial skills.

- **Outcome 5.1: Develop work plans**
  - Students will develop work plans with clearly defined phased goals and timeline.
  - **Measure:** Senior Exit Survey
    - Indirect - Survey
    - **Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.
    - **Target:** Graduating seniors
    - **Implementation Plan (timeline):** Every semester
    - **Responsible Individual(s):** CET faculty
  - **Measure:** Senior Project
    - Direct - Portfolio
    - **Details/Description:** Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group member. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.
    - **Target:** Seniors.
    - **Implementation Plan (timeline):** Yearly
    - **Responsible Individual(s):** CET faculty

- **Outcome 5.2: Follow work plan**
  - Students will follow work plan by observing timeline and reporting progress.
  - **Measure:** Senior Exit Survey
    - Indirect - Survey
    - **Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.
    - **Target:** Graduating seniors
### Implementation Plan (timeline): Every semester
**Responsible Individual(s):** CET faculty

**Measure:** Senior Project
**Details/Description:** Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group member. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.
**Target:** Seniors.

**Implementation Plan (timeline):** Yearly
**Responsible Individual(s):** CET faculty

### Outcome 5.3: Modify schedule
Students will modify schedules based on progress.

**Measure:** Senior Exit Survey
**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.
**Target:** Graduating seniors
**Implementation Plan (timeline):** Every semester
**Responsible Individual(s):** CET faculty

### OBJ 6: Ethics awareness
Students will learn ethics awareness.

**Outcome 6.1: Analyze ethics**
Students will analyze ethics issues based on professional ethics codes.

**Measure:** Senior Exit Survey
**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.
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**Target:** Seniors.

**Implementation Plan (timeline):** Yearly
**Responsible Individual(s):** CET faculty
**Details/Description:** Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group memeber. They will investigate, evlauate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.

**Target:** Seniors.

**Implementation Plan (timeline):** Yearly

**Responsible Individual(s):** CET faculty

---

**Outcome 6.2:** Technology impact on society

Students will understand technology impact on society.

**Measure:** Senior Exit Survey

- Indirect - Survey

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

**Target:** Graduating seniors

**Implementation Plan (timeline):** Every semester

**Responsible Individual(s):** CET faculty

---

**Measure:** Senior Porject

- Direct - Portfolio

**Details/Description:** Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group memeber. They will investigate, evlauate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.

**Target:** Seniors.

**Implementation Plan (timeline):** Yearly

**Responsible Individual(s):** CET faculty

---

**OBJ 7:** Lifelong learning

Students will learn lifelong learning.

**Outcome 7.1:** Professional societies

Students will get involved with professional societies.

**Measure:** Senior Exit Survey

- Indirect - Survey

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

**Target:** Graduating seniors

**Implementation Plan (timeline):** Every semester

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**Measure:** Senior Porject

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**Target:** Seniors.

**Implementation Plan (timeline):** Yearly
### Outcome 7.2: Technological trends

**Students will research the latest technological trends in a specific area.**

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**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

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**Implementation Plan (timeline):** Every semester

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**Target:** Seniors.

**Implementation Plan (timeline):** Yearly

**Responsible Individual(s):** CET faculty

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### OBJ 8: Teamwork skills

**Students will learn teamwork skills.**

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**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

**Target:** Graduating seniors

**Implementation Plan (timeline):** Every semester

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**Target:** Seniors.

**Implementation Plan (timeline):** Yearly

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### Outcome 8.2: Respect different opinions

**Students will listen to others; cooperate with**

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teammates; respect different opinions.

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.
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**Target:** Seniors.
**Implementation Plan (timeline):** Yearly
**Responsible Individual(s):** CET faculty

**OBJ 9: Communication skills**
Students will learn communication skills.

**Outcome 9.1: Produce technical documents**
Students will produce a technical document that is factually correct, and with good logical structure, proper format, citation, and references.

**Measure:** Senior Exit Survey
Indirect - Survey

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.
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**Target:** Seniors.
**Implementation Plan (timeline):** Yearly
**Responsible Individual(s):** CET faculty

**Outcome 9.2: Technical document with minimum errors**
Students will produce a technical document with a minimum of errors in spelling, punctuation, grammar and usage.

**Measure:** Senior Exit Survey
Indirect - Survey

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.
**Target:** Graduating seniors
**Implementation Plan (timeline):** Every semester
**Responsible Individual(s):** CET faculty
**Measure:** Senior Project  
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**Target:** Seniors.

**Implementation Plan (timeline):** Yearly

**Responsible Individual(s):** CET faculty

---

**Outcome 9.3:** Communicate in a professional manner

**Measure:** Senior Exit Survey  
Indirect - Survey

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

**Target:** Graduating seniors

**Implementation Plan (timeline):** Every semester

**Responsible Individual(s):** CET faculty

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**Measure:** Senior Project  
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**Target:** Seniors.

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**Responsible Individual(s):** CET faculty

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**Action Plan**

**Actions**

**Status Report**

**Action Statuses**

**Status Summary**

*No text specified*

**Summary of Next Steps**

*No text specified*
## 2011-2012 Assessment Cycle

### Assessment Plan

#### Outcomes and Measures

<table>
<thead>
<tr>
<th>BS in Computer Engineering Technlgy Outcome Set</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>OBJ 1: Problem solving skills</strong></td>
</tr>
<tr>
<td>Students will learn problems solving skills.</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Outcome 1.1: Computer systems and networks</th>
<th>Measure: Senior Exit Survey</th>
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<tbody>
<tr>
<td>Students will apply algebra, discrete math, and basic law of physics to build, test, and operate electric circuits, computer systems and networks.</td>
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| Target: Seniors. |
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<tr>
<th>Outcome 1.2: Computer languages</th>
<th>Measure: Senior Exit Survey</th>
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<tr>
<td>Students will program in low/high-level computer languages to build microcontroller based applications and digital logic circuits.</td>
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### Outcome 1.3: Technical data management

Students will understand database principles and working mechanisms for technical data management.

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### OBJ 2: Commanding contemporary tools

Students will learn how to command contemporary tools.

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### Outcome 2.2: Analyze lab data
Students will analyze lab data using statistical tools.

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**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

**Target:** Graduating seniors

**Implementation Plan (timeline):** Every semester

**Responsible Individual(s):** CET faculty

### OBJ 3: Design skills
Student will learn design skills.

<table>
<thead>
<tr>
<th><strong>Outcome 3.1: Control circuitry</strong></th>
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<td>Students will design microcontroller based control circuitry.</td>
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**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

**Target:** Graduating seniors

**Implementation Plan (timeline):** Every semester

**Responsible Individual(s):** CET faculty

### Outcome 3.2: Digital logic circuitry
Students will develop digital logic circuitry using FPGA and HDL.

<table>
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**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

**Target:** Graduating seniors
| **Outcome 3.3: Design and implement LAN** | **Measure:** Senior Exit Survey |
| Students will design and implement LAN for small business environments. | Indirect - Survey |
| **Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum. | |
| **Target:** Graduating seniors | |
| **Implementation Plan (timeline):** Every semester | |
| **Responsible Individual(s):** CET faculty | |

| **OBJ 4: Lab skills** | **Measure:** Senior Exit Survey |
| Students will learn lab skills. | Indirect - Survey |
| **Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum. | |
| **Target:** Graduating seniors | |
| **Implementation Plan (timeline):** Every semester | |
| **Responsible Individual(s):** CET faculty | |
### Outcome 4.2: Conduct experiments

Students will conduct experiments to truthfully record results following manual or proposed steps.

**Measure:** Senior Exit Survey  
Indirect - Survey

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

**Target:** Graduating seniors  
**Implementation Plan (timeline):** Every semester  
**Responsible Individual(s):** CET faculty

### Outcome 4.3: Follow safety procedures

Students will follow safety procedure and lab protocols, handle equipments with care.

**Measure:** Senior Exit Survey  
Indirect - Survey

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

**Target:** Graduating seniors  
**Implementation Plan (timeline):** Every semester  
**Responsible Individual(s):** CET faculty

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**Details/Description:** Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group memeber. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.

**Target:** Seniors.

**Implementation Plan (timeline):** Yearly  
**Responsible Individual(s):** CET faculty
**Outcome 4.4: Examine lab results**

*Measure:* Senior Exit Survey  
Indirect - Survey

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.  
**Target:** Graduating seniors  
**Implementation Plan (timeline):** Every semester  
**Responsible Individual(s):** CET faculty

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**Measure:** Senior Project  
Direct - Portfolio

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**Target:** Seniors.  
**Implementation Plan (timeline):** Yearly  
**Responsible Individual(s):** CET faculty

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**OBJ 5: Managerial skills**

Students will learn managerial skills.

**Outcome 5.1: Develop work plans**

*Measure:* Senior Exit Survey  
Indirect - Survey

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.  
**Target:** Graduating seniors  
**Implementation Plan (timeline):** Every semester  
**Responsible Individual(s):** CET faculty

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*Measure:* Senior Project  
Direct - Portfolio

**Details/Description:** Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group member. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.  
**Target:** Seniors.  
**Implementation Plan (timeline):** Yearly  
**Responsible Individual(s):** CET faculty

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**Outcome 5.2: Follow work plan**

*Measure:* Senior Exit Survey  
Indirect - Survey

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.  
**Target:** Graduating seniors
Implementation Plan (timeline): Every semester  
Responsible Individual(s): CET faculty

Measure: Senior Project  
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Target: Seniors.  
Implementation Plan (timeline): Yearly  
Responsible Individual(s): CET faculty

Outcome 5.3: Modify schedule  
Students will modify schedules based on progress.

Measure: Senior Exit Survey  
Indirect - Survey

Details/Description: The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.  
Target: Graduating seniors  
Implementation Plan (timeline): Every semester  
Responsible Individual(s): CET faculty

Measure: Senior Exit Survey  
Indirect - Survey

Details/Description: The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.  
Target: Graduating seniors  
Implementation Plan (timeline): Every semester  
Responsible Individual(s): CET faculty

OBJ 6: Ethics awareness  
Students will learn ethics awareness.

Outcome 6.1: Analyze ethics  
Students will analyze ethics issues based on professional ethics codes.

Measure: Senior Exit Survey  
Indirect - Survey

Details/Description: The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.  
Target: Graduating seniors  
Implementation Plan (timeline): Every semester  
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**Target:** Seniors.

**Implementation Plan (timeline):** Yearly

**Responsible Individual(s):** CET faculty

## Outcome 6.2: Technology impact on society

Students will understand technology impact on society.

**Measure:** Senior Exit Survey

- Indirect - Survey

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

**Target:** Graduating seniors

**Implementation Plan (timeline):** Every semester

**Responsible Individual(s):** CET faculty

**Measure:** Senior Project

- Direct - Portfolio

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**Target:** Seniors.

**Implementation Plan (timeline):** Yearly

**Responsible Individual(s):** CET faculty

## OBJ 7: Lifelong learning

Students will learn lifelong learning.

## Outcome 7.1: Professional societies

Students will get involved with professional societies.

**Measure:** Senior Exit Survey

- Indirect - Survey

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

**Target:** Graduating seniors

**Implementation Plan (timeline):** Every semester

**Responsible Individual(s):** CET faculty

**Measure:** Senior Project

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**Target:** Seniors.

**Implementation Plan (timeline):** Yearly

**Responsible Individual(s):** CET faculty
**Outcome 7.2: Technological trends**

Students will research the latest technological trends in a specific area.

**Measure:** Senior Exit Survey  
Indirect - Survey

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

**Target:** Graduating seniors

**Implementation Plan (timeline):** Every semester

**Responsible Individual(s):** CET faculty

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**Target:** Seniors.

**Implementation Plan (timeline):** Yearly

**Responsible Individual(s):** CET faculty

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**OBJ 8: Teamwork skills**

Students will learn teamwork skills.

**Outcome 8.1: Individual role and shared duties**

Students will understand individual role and shared duties.

**Measure:** Senior Exit Survey  
Indirect - Survey

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

**Target:** Graduating seniors

**Implementation Plan (timeline):** Every semester

**Responsible Individual(s):** CET faculty

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Target: Graduating seniors
Implementation Plan (timeline): Every semester
Responsible Individual(s): CET faculty

**Measure:** Senior Project
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Target: Seniors.
Implementation Plan (timeline): Yearly
Responsible Individual(s): CET faculty

**OBJ 9: Communication skills**
Students will learn communication skills.

**Outcome 9.1: Produce technical documents**
Students will produce a technical document that is factually correct, and with good logical structure, proper format, citation, and references.

Details/Description: The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.
Target: Graduating seniors
Implementation Plan (timeline): Every semester
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Implementation Plan (timeline): Every semester
Responsible Individual(s): CET faculty

**Outcome 9.2: Technical document with minimum errors**
Students will produce a technical document with a minimum of errors in spelling, punctuation, grammar and usage.

Details/Description: The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.
Target: Graduating seniors
Implementation Plan (timeline): Every semester
Responsible Individual(s): CET faculty

**Measure:** Senior Exit Survey
Indirect - Survey

Details/Description: Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group member. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.
Target: Seniors.
Implementation Plan (timeline): Yearly
Responsible Individual(s): CET faculty

**Measure:** Senior Project
Direct - Portfolio
Measure: Senior Project
Direct - Portfolio

Details/Description: Source of assessment: ECT 406. The course is offered once a year. The students work in a group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group member. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.
Target: Seniors.
Implementation Plan (timeline): Yearly
Responsible Individual(s): CET faculty

Outcome 9.3: Communicate in a professional manner
Students will communicate in a professional manner, and respond to questions in language that is both concise and commensurate with audience's background.

Measure: Senior Exit Survey
Indirect - Survey

Details/Description: The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.
Target: Graduating seniors
Implementation Plan (timeline): Every semester
Responsible Individual(s): CET faculty

Measure: Senior Project
Direct - Portfolio

Details/Description: Source of assessment: ECT 406. The course is offered once a year. The students work in a group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group member. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.
Target: Seniors.
Implementation Plan (timeline): Yearly
Responsible Individual(s): CET faculty

Assessment Findings
Finding per Measure

BS in Computer Engineering Technlgy Outcome Set

OBJ 1: Problem solving skills
Students will learn problems solving skills.

Outcome 1.1: Computer systems and networks
Students will apply algebra, discrete math, and basic law of physics to build, test, and operate electric circuits, computer systems and networks.

Measure: Senior Exit Survey
Indirect - Survey

Details/Description: The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.
Target: Graduating seniors
Implementation Plan (timeline): Every semester
Responsible Individual(s): CET faculty
Findings for Senior Exit Survey

Summary of Findings: Students overwhelmingly chose “Strongly agree” or “agree” when asked about whether the program curriculum prepared them to demonstrate technical and non-technical abilities.

Recommendations:

Reflections/Notes: 100% of the respondents already had a job offer. Students rated highly of the advising they received from the faculty (100% of the respondents chose either “excellent” or “very good”).

These Findings are associated with the following Actions:

Implement a system-level course  
(Action Plan; 2011-2012 Assessment Cycle)

Introduce business operation and business culture  
(Action Plan; 2011-2012 Assessment Cycle)

Push the student involvement in student organizations  
(Action Plan; 2011-2012 Assessment Cycle)

Measure: Senior Project
Direct - Portfolio

Details/Description: Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group member. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.

Target: Seniors.

Implementation Plan (timeline): Yearly

Responsible Individual(s): CET faculty

Findings for Senior Project

Summary of Findings: All projects required programming in high-level languages, predominantly C language. Most of the groups demonstrated solid understanding of procedural language structure, syntax and semantics of C language, and fluency in using software development environment. However due to the scale of the undertakings, most of the projects didn’t invoke complex algorithms.

Recommendations:

Reflections/Notes:

These Findings are associated with the following Actions:

Implement a system-level course  
(Action Plan; 2011-2012 Assessment Cycle)

Introduce business operation and business culture  
(Action Plan; 2011-2012 Assessment Cycle)

Push the student involvement in student organizations  
(Action Plan; 2011-2012 Assessment Cycle)

Outcome 1.2: Computer languages

Students will program in low/high-level computer languages to build microcontroller based applications and digital
**Target:** Graduating seniors

**Implementation Plan (timeline):** Every semester

**Responsible Individual(s):** CET faculty

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**Measure:** Senior Exit Survey

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

**Target:** Graduating seniors

**Implementation Plan (timeline):** Every semester

**Responsible Individual(s):** CET faculty

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**Findings for Senior Exit Survey**

**Summary of Findings:** Students overwhelmingly chose "Strongly agree" or "agree" when asked about whether the program curriculum prepared them to demonstrate technical and non-technical abilities.

**Recommendations:**

**Reflections/Notes:** 100% of the respondents already had a job offer.

Students rated highly of the advising they received from the faculty (100% of the respondents chose either "excellent" or "very good").
### OBJ 2: Commanding contemporary tools

Students will learn how to command contemporary tools.

**Outcome 2.1: Apply stimulation tools**

Students will apply simulation tools to verify theoretical design or trouble-shoot potential system problems.

#### Measure: Senior Exit Survey

**Indirect - Survey**

- **Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.
- **Target:** Graduating seniors
- **Implementation Plan (timeline):** Every semester
- **Responsible Individual(s):** CET faculty

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**Findings for Senior Exit Survey**

**Summary of Findings:** Students overwhelmingly chose "Strongly agree" or "agree" when asked about whether the program curriculum prepared them to demonstrate technical and non-technical abilities.

**Recommendations:**

**Reflections/Notes:** 100% of the respondents already had a job offer.

Students rated highly of the advising they received from the faculty (100% of the respondents chose either "excellent" or "very good").

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#### Measure: Senior Project

**Direct - Portfolio**

- **Details/Description:** Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group member. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.
- **Target:** Seniors.
- **Implementation Plan (timeline):** Yearly
- **Responsible Individual(s):** CET faculty
**Findings for Senior Project**

**Summary of Findings:** All teams truthfully reported the problems that they encountered. There was not sufficient data available to assess students’ mastery of simulation tools except the network communication simulator employed in one project. Most of the students showed they can troubleshoot the wiring problems if the hardware did not yield expected response. Yet as pointed out early they were unable to figure out more system-level problems given the lack of knowledge on signal conditioning. All projects involved intensive lab work. Though students worked outside the department lab rooms and did not offer advisor/faculty direct observation of their day-to-day lab routine, the state of their equipment at the time of final presentation indicated that the students were handling hardware with necessary precautions and care.

**Recommendations:**

**Reflections/Notes:**

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**Outcome 2.2: Analyze lab data**

Students will analyze lab data using statistical tools.

**Measure:** Senior Exit Survey

**Indirect - Survey**

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

**Target:** Graduating seniors

**Implementation Plan (timeline):** Every semester

**Responsible Individual(s):** CET faculty

**Findings for Senior Exit Survey**

**Summary of Findings:** Students overwhelmingly chose “Strongly agree” or “agree” when asked about whether the program curriculum prepared them to demonstrate technical and non-technical abilities.

**Recommendations:**

**Reflections/Notes:** 100% of the respondents already had a job offer.

Students rated highly of the advising they received from the faculty (100% of the respondents chose either “excellent” or “very good”).

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**Measure:** Senior Project

**Direct - Portfolio**

**Details/Description:** Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group member. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.

**Target:** Seniors.

**Implementation Plan (timeline):** Yearly

**Responsible Individual(s):** CET faculty

**Findings for Senior Project**
**Summary of Findings:** All teams truthfully reported the problems that they encountered.

There was not sufficient data available to assess students’ mastery of simulation tools except the network communication simulator employed in one project.

Most of the students showed they can troubleshoot the wiring problems if the hardware did not yield expected response. Yet as pointed out early they were unable to figure out more system-level problems given the lack of knowledge on signal conditioning.

All projects involved intensive lab work. Though students worked outside the department lab rooms and did not offer advisor/faculty direct observation of their day-to-day lab routine, the state of their equipment at the time of final presentation indicated that the students were handling hardware with necessary precautions and care.

**Recommendations:**

**Reflections/Notes:**

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**OBJ 3: Design skills**

Student will learn design skills.

### Outcome 3.1: Control circuitry

Students will design microcontroller based control circuitry.

#### Measure: Senior Exit Survey

**Indirect - Survey**

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

**Target:** Graduating seniors

**Implementation Plan (timeline):** Every semester

**Responsible Individual(s):** CET faculty

**Findings for Senior Exit Survey**

**Summary of Findings:** Students overwhelmingly chose “Strongly agree” or “agree” when asked about whether the program curriculum prepared them to demonstrate technical and non-technical abilities.

**Recommendations:**

**Reflections/Notes:** 100% of the respondents already had a job offer.

Students rated highly of the advising they received from the faculty (100% of the respondents chose either “excellent” or “very good”).

#### Measure: Senior Project

**Direct - Portfolio**

**Details/Description:** Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group memeber. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.

**Target:** Seniors.

**Implementation Plan (timeline):** Yearly

**Responsible Individual(s):** CET faculty

**Findings for Senior Project**
**Summary of Findings:** All groups chose to work on microcontroller-based home automation, robotics, or control projects. The students either infused new elements into existing technologies or products to address what they perceived as weaknesses, or formed a fresh idea of solving specific technical issues. Though the prospect of translating the project deliverables into commercial products is limited, they did demonstrate students’ creative thinking of various degrees.

Every group used commercial microcontroller boards and showed they were capable of interfacing the boards with external circuitry if necessary. A few groups needed guidance from the advisor on getting valuable information from the product (both board and chip) manuals. The biggest challenge for a majority of the students was interfacing the sensing and actuating unit with microcontroller. The concept of signal conditioning was not established in any of the major courses, which explained why students were unable to get microcontroller to read sensor inputs, or to drive motors though its I/O pins, even though individual parts were working properly.

**Recommendations:**

**Reflections/Notes:** We were unable to assess students’ mastery of this specific knowledge base due to the fact no project utilized FPGA.

A few groups designed and implemented simple communication protocol (on the logic link layer level). They demonstrated solid understanding of the data frame structure and were able to set up simple solutions based on the hardware resource for the needed bi-directional communication.

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**Outcome 3.2: Digital logic circuitry**

Students will develop digital logic circuitry using FPGA and HDL.

**Measure:** Senior Exit Survey

Indirect - Survey

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

**Target:** Graduating seniors

**Implementation Plan (timeline):** Every semester

**Responsible Individual(s):** CET faculty

**Findings for Senior Exit Survey**

**Summary of Findings:** Students overwhelmingly chose "Strongly agree" or "agree" when asked about whether the program curriculum prepared them to demonstrate technical and non-technical abilities.

**Recommendations :**

**Reflections/Notes:** 100% of the respondents already had a job offer.

Students rated highly of the advising they received from the faculty (100% of the respondents chose either "excellent" or "very good").

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**Measure:** Senior Project

Direct - Portfolio

**Details/Description:** Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group member. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.

**Target:** Seniors.

**Implementation Plan (timeline):** Yearly

**Responsible Individual(s):** CET faculty

**Findings for Senior Project**
**Summary of Findings:** All groups chose to work on microcontroller-based home automation, robotics, or control projects. The students either infused new elements into existing technologies or products to address what they perceived as weaknesses, or formed a fresh idea of solving specific technical issues. Though the prospect of translating the project deliverables into commercial products is limited, they did demonstrate students’ creative thinking of various degrees.

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**Recommendations:**

**Reflections/Notes:** We were unable to assess students’ mastery of this specific knowledge base due to the fact no project utilized FPGA.

A few groups designed and implemented simple communication protocol (on the logic link layer level). They demonstrated solid understanding of the data frame structure and were able to set up simple solutions based on the hardware resource for the needed bi-directional communication.

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**Outcome 3.3: Design and implement LAN**

Students will design and implement LAN for small business environments.

**Measure:** Senior Exit Survey

**Indirect - Survey**

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

**Target:** Graduating seniors

**Implementation Plan (timeline):** Every semester

**Responsible Individual(s):** CET faculty

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**Findings for Senior Exit Survey**

**Summary of Findings:** Students overwhelming chose “Strongly agree” or “agree” when asked about whether the program curriculum prepared them to demonstrate technical and non-technical abilities.

**Recommendations:**

**Reflections/Notes:** 100% of the respondents already had a job offer.

Students rated highly of the advising they received from the faculty (100% of the respondents chose either “excellent” or “very good”).

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**Measure:** Senior Project

**Direct - Portfolio**

**Details/Description:** Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group member. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.

**Target:** Seniors.

**Implementation Plan (timeline):** Yearly

**Responsible Individual(s):** CET faculty
Findings for Senior Project

Summary of Findings: All groups chose to work on microcontroller-based home automation, robotics, or control projects. The students either infused new elements into existing technologies or products to address what they perceived as weaknesses, or formed a fresh idea of solving specific technical issues. Though the prospect of translating the project deliverables into commercial products is limited, they did demonstrate students’ creative thinking of various degrees.

Every group used commercial microcontroller boards and showed they were capable of interfacing the boards with external circuitry if necessary. A few groups needed guidance from the advisor on getting valuable information from the product (both board and chip) manuals. The biggest challenge for a majority of the students was interfacing the sensing and actuating unit with microcontroller. The concept of signal conditioning was not established in any of the major courses, which explained why students were unable to get microcontroller to read sensor inputs, or to drive motors though its I/O pins, even though individual parts were working properly.

Recommendations:

Reflections/Notes: We were unable to assess students’ mastery of this specific knowledge base due to the fact no project utilized FPGA.

A few groups designed and implemented simple communication protocol (on the logic link layer level). They demonstrated solid understanding of the data frame structure and were able to set up simple solutions based on the hardware resource for the needed bi-directional communication.

OBJ 4: Lab skills
Students will learn lab skills.

Outcome 4.1: Plan experiments
Students will plan experiments to collect desired data or observations.

Measure: Senior Exit Survey
Indirect - Survey

Details/Description: The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

Target: Graduating seniors

Implementation Plan (timeline): Every semester

Responsible Individual(s): CET faculty

Findings for Senior Exit Survey

Summary of Findings: Students overwhelmingly chose “Strongly agree” or “agree” when asked about whether the program curriculum prepared them to demonstrate technical and non-technical abilities.

Recommendations:

Reflections/Notes: 100% of the respondents already had a job offer.

Students rated highly of the advising they received from the faculty (100% of the respondents chose either “excellent” or “very good”).

Measure: Senior Project
Direct - Portfolio

Details/Description: Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group memeber. They will investigate, evaulate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.
**Target:** Seniors.

**Implementation Plan (timeline):** Yearly

**Responsible Individual(s):** CET faculty

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**Findings for Senior Project**

**No Findings Added**

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**Outcome 4.2: Conduct experiments**

Students will conduct experiments to truthfully record results following manual or proposed steps.

**Measure:** Senior Exit Survey

**Indirect - Survey**

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

**Target:** Graduating seniors

**Implementation Plan (timeline):** Every semester

**Responsible Individual(s):** CET faculty

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**Findings for Senior Exit Survey**

**Summary of Findings:** Students overwhelmingly chose "Strongly agree" or "agree" when asked about whether the program curriculum prepared them to demonstrate technical and non-technical abilities.

**Recommendations:**

**Reflections/Notes:** 100% of the respondents already had a job offer.

Students rated highly of the advising they received from the faculty (100% of the respondents chose either "excellent" or "very good").

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**Measure:** Senior Project

**Direct - Portfolio**

**Details/Description:** Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group member. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.

**Target:** Seniors.

**Implementation Plan (timeline):** Yearly

**Responsible Individual(s):** CET faculty

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**Findings for Senior Project**

**No Findings Added**

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**Outcome 4.3: Follow safety procedures**

Students will follow safety procedure and lab protocols, handle equipments with care.

**Measure:** Senior Exit Survey

**Indirect - Survey**

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.
**Target:** Graduating seniors  
**Implementation Plan (timeline):** Every semester  
**Responsible Individual(s):** CET faculty

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**Findings for Senior Exit Survey**

**Summary of Findings:** Students overwhelmingly chose "Strongly agree" or "agree" when asked about whether the program curriculum prepared them to demonstrate technical and non-technical abilities.

**Recommendations:**

**Reflections/Notes:** 100% of the respondents already had a job offer.

Students rated highly of the advising they received from the faculty (100% of the respondents chose either "excellent" or "very good").

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**Measure:** Senior Project  
Direct - Portfolio

**Details/Description:** Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group member. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.

**Target:** Seniors.  
**Implementation Plan (timeline):** Yearly  
**Responsible Individual(s):** CET faculty

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**Findings for Senior Project**

No Findings Added

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**Outcome 4.4: Examine lab results**

Students will examine and interpret lab results to draw conclusions.

**Measure:** Senior Exit Survey  
Indirect - Survey

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

**Target:** Graduating seniors  
**Implementation Plan (timeline):** Every semester  
**Responsible Individual(s):** CET faculty

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**Findings for Senior Exit Survey**

**Summary of Findings:** Students overwhelmingly chose "Strongly agree" or "agree" when asked about whether the program curriculum prepared them to demonstrate technical and non-technical abilities.

**Recommendations:**

**Reflections/Notes:** 100% of the respondents already had a job offer.

Students rated highly of the advising they received from the faculty (100% of the respondents chose either "excellent" or "very good").
**Objective 5: Managerial Skills**

Students will learn managerial skills.

**Outcome 5.1: Develop work plans**

Students will develop work plans with clearly defined phased goals and timeline.

**Measure:** Senior Exit Survey

*Indirect - Survey*

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

**Target:** Graduating seniors

**Implementation Plan (timeline):** Every semester

**Responsible Individual(s):** CET faculty

**Findings for Senior Exit Survey**

**Summary of Findings:** Students overwhelmingly chose “Strongly agree” or “agree” when asked about whether the program curriculum prepared them to demonstrate technical and non-technical abilities.

**Recommendations:** 100% of the respondents already had a job offer.

**Reflections/Notes:** 100% of the respondents already had a job offer.

Students rated highly of the advising they received from the faculty (100% of the respondents chose either “excellent” or “very good”).

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**Measure:** Senior Project

*Direct - Portfolio*

**Details/Description:** Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group member. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.

**Target:** Seniors.

**Implementation Plan (timeline):** Yearly

**Responsible Individual(s):** CET faculty
Findings for Senior Project

Summary of Findings: Most of the teams demonstrated the ability to work with the advisor to develop a feasible plan and time-line.

Recommendations:

Reflections/Notes: A few teams were unable to follow the time-line, which resulted in falling behind schedule and being forced to present incomplete deliverables.

Outcome 5.2: Follow work plan

Measure: Senior Exit Survey
Indirect - Survey

Details/Description: The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

Target: Graduating seniors

Implementation Plan (timeline): Every semester

Responsible Individual(s): CET faculty

Findings for Senior Exit Survey

Summary of Findings: Students overwhelmingly chose "Strongly agree" or "agree" when asked about whether the program curriculum prepared them to demonstrate technical and non-technical abilities.

Recommendations:

Reflections/Notes: 100% of the respondents already had a job offer.

Students rated highly of the advising they received from the faculty (100% of the respondents chose either "excellent" or "very good").

Measure: Senior Project
Direct - Portfolio

Details/Description: Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group membeer. They will investigate, evaulate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.

Target: Seniors.

Implementation Plan (timeline): Yearly

Responsible Individual(s): CET faculty

Findings for Senior Project

No Findings Added
**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

**Target:** Graduating seniors

**Implementation Plan (timeline):** Every semester

**Responsible Individual(s):** CET faculty

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**Findings for Senior Exit Survey**

**Summary of Findings:** Students overwhelmingly chose “Strongly agree” or “agree” when asked about whether the program curriculum prepared them to demonstrate technical and non-technical abilities.

**Recommendations:**

**Reflections/Notes:** 100% of the respondents already had a job offer.

Students rated highly of the advising they received from the faculty (100% of the respondents chose either “excellent” or “very good”).

**These Findings are associated with the following Actions:**

**Push the student involvement in student organizations**

(Action Plan; 2011-2012 Assessment Cycle)

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**Measure:** Senior Project

Direct - Portfolio

**Details/Description:** Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group member. They will investigate, evaulate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.

**Target:** Seniors.

**Implementation Plan (timeline):** Yearly

**Responsible Individual(s):** CET faculty

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**Findings for Senior Project**

**No Findings Added**

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**OBJ 6: Ethics awareness**

Students will learn ethics awareness.

**Outcome 6.1: Analyze ethics**

Students will analyze ethics issues based on professional ethics codes.

**Measure:** Senior Exit Survey

Indirect - Survey

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

**Target:** Graduating seniors

**Implementation Plan (timeline):** Every semester

**Responsible Individual(s):** CET faculty

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**Findings for Senior Exit Survey**
Summary of Findings: Students overwhelmingly chose “Strongly agree” or “agree” when asked about whether the program curriculum prepared them to demonstrate technical and non-technical abilities.

Recommendations:

Reflections/Notes: 100% of the respondents already had a job offer.

Students rated highly of the advising they received from the faculty (100% of the respondents chose either “excellent” or “very good”).

Measure: Senior Project
Direct - Portfolio

Details/Description: Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group member. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.

Target: Seniors.

Implementation Plan (timeline): Yearly

Responsible Individual(s): CET faculty

Findings for Senior Project

Summary of Findings: Students demonstrated awareness of the ethic codes for engineering and technology profession, and were able to apply the codes to analyze real or imaginary cases.

Students demonstrated the understanding that every technology brings both positives and negatives to the society and environment. An engineer or technologist’s responsibility is to “create that which has never been”, acknowledge every invention’s imperfection, and try to maximize technology’s benefits while reduce its pitfalls.

Recommendations:

Reflections/Notes:

Outcome 6.2: Technology impact on society
Students will understand technology impact on society.

Measure: Senior Exit Survey
Indirect - Survey

Details/Description: The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

Target: Graduating seniors

Implementation Plan (timeline): Every semester

Responsible Individual(s): CET faculty

Findings for Senior Exit Survey

Summary of Findings: Students overwhelmingly chose “Strongly agree” or “agree” when asked about whether the program curriculum prepared them to demonstrate technical and non-technical abilities.

Recommendations:

Reflections/Notes: 100% of the respondents already had a job offer.

Students rated highly of the advising they received from the faculty (100% of the respondents...
chose either “excellent” or “very good”).

**Measure:** Senior Project  
Direct - Portfolio

**Details/Description:** Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group member. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.

**Target:** Seniors.

**Implementation Plan (timeline):** Yearly

**Responsible Individual(s):** CET faculty

**Findings for Senior Project**

**Summary of Findings:** Students demonstrated awareness of the ethic codes for engineering and technology profession, and were able to apply the codes to analyze real or imaginary cases.

Students demonstrated the understanding that every technology brings both positives and negatives to the society and environment. An engineer or technologist’s responsibility is to “create that which has never been”, acknowledge every invention’s imperfection, and try to maximize technology’s benefits while reduce its pitfalls.

**Recommendations:**

**Reflections/Notes:**

**OBJ 7: Lifelong learning**

Students will learn lifelong learning.

**Outcome 7.1: Professional societies**

Students will get involved with professional societies.

**Measure:** Senior Exit Survey  
Indirect - Survey

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

**Target:** Graduating seniors

**Implementation Plan (timeline):** Every semester

**Responsible Individual(s):** CET faculty

**Findings for Senior Exit Survey**

**Summary of Findings:** Students overwhelmingly chose “Strongly agree” or “agree” when asked about whether the program curriculum prepared them to demonstrate technical and non-technical abilities.

**Recommendations:**

**Reflections/Notes:** 100% of the respondents already had a job offer.

Students rated highly of the advising they received from the faculty (100% of the respondents chose either “excellent” or “very good”).
Measure: Senior Project
Direct - Portfolio

Details/Description: Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group member. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.

Target: Seniors.

Implementation Plan (timeline): Yearly

Responsible Individual(s): CET faculty

Findings for Senior Project

Summary of Findings: Both the students and graduates do not seem to actively involve in professional societies. This is an area that we hope to improve since organizations like IEEE, ISA, and ASME have various programs to help members stay connected with peers, and more importantly, the latest technology trends.

Students demonstrated the ability to use reputable sources, such as vendors’ product manuals/developer’s online forum and discussion board etc, to seek potential solutions to technical difficulties. However peer-reviewed literature was barely researched and studied by all teams. Due to the scope and scale of their projects, it makes sense that getting insights from manuals and blogspere suffices. Nevertheless we see the need to train students to conduct more rigorous reviews.

Recommendations :

Reflections/Notes :

Outcome 7.2: Technological trends
Students will research the latest technological trends in a specific area.

Measure: Senior Exit Survey
Indirect - Survey

Details/Description: The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

Target: Graduating seniors

Implementation Plan (timeline): Every semester

Responsible Individual(s): CET faculty

Findings for Senior Exit Survey

Summary of Findings: Students overwhelmingly chose “Strongly agree” or “agree” when asked about whether the program curriculum prepared them to demonstrate technical and non-technical abilities.

Recommendations :

Reflections/Notes : 100% of the respondents already had a job offer.

Students rated highly of the advising they received from the faculty (100% of the respondents chose either “excellent” or “very good”).

Measure: Senior Project
Direct - Portfolio

Details/Description: Source of assessment: ECT 406. The course is offered once a year. The
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**Target:** Seniors.

**Implementation Plan (timeline):** Yearly

**Responsible Individual(s):** CET faculty

---

**Findings** for Senior Project

**Summary of Findings:** Both the students and graduates do not seem to actively involve in professional societies. This is an area that we hope to improve since organizations like IEEE, ISA, and ASME have various programs to help members stay connected with peers, and more importantly, the latest technology trends.

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**Recommendations:**

**Reflections/Notes:**

---

**OBJ 8: Teamwork skills**

Students will learn teamwork skills.

**Outcome 8.1: Individual role and shared duties**

Students will understand individual role and shared duties.

**Measure:** Senior Exit Survey

**Indirect - Survey**

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

**Target:** Graduating seniors

**Implementation Plan (timeline):** Every semester

**Responsible Individual(s):** CET faculty

---

**Findings** for Senior Exit Survey

**Summary of Findings:** Students overwhelmingly chose “Strongly agree” or “agree” when asked about whether the program curriculum prepared them to demonstrate technical and non-technical abilities.

**Recommendations:**

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**Measure:** Senior Project

**Direct - Portfolio**

**Details/Description:** Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the
instructor. Each group needs to develop a working plan, and detail assignment for each group member. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.

**Target:** Seniors.

**Implementation Plan (timeline):** Yearly

**Responsible Individual(s):** CET faculty

---

### Findings for Senior Project

**Summary of Findings:** Most of the groups had clear assignment of duties. Though it was common that one member took the lead and the share of responsibility was not equal, it was obvious that every student contributed serious effort to the endeavor.

Among the six teams two were composed of students with different ethnicities. We observe the students respected each other, collaborate closely, and were able to find common grounds via civil and professional exchange of ideas.

**Recommendations:**

**Reflections/Notes:**

---

### Outcome 8.2: Respect different opinions

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

**Target:** Graduating seniors

**Implementation Plan (timeline):** Every semester

**Responsible Individual(s):** CET faculty

---

### Findings for Senior Exit Survey

**Summary of Findings:** Students overwhelmingly chose “Strongly agree” or “agree” when asked about whether the program curriculum prepared them to demonstrate technical and non-technical abilities.

**Recommendations:**

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Students rated highly of the advising they received from the faculty (100% of the respondents chose either “excellent” or “very good”).

---

### Measure: Senior Project

**Details/Description:** Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group member. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.

**Target:** Seniors.

**Implementation Plan (timeline):** Yearly

**Responsible Individual(s):** CET faculty
Findings for Senior Project

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Among the six teams two were composed of students with different ethnicities. We observe the students respected each other, collaborate closely, and were able to find common grounds via civil and professional exchange of ideas.

Recommendations:

Reflections/Notes:

OBJ 9: Communication skills
Students will learn communication skills.

Outcome 9.1: Produce technical documents
Students will produce a technical document that is factually correct, and with good logical structure, proper format, citation, and references.

Measure: Senior Exit Survey
Indirect - Survey

Details/Description: The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

Target: Graduating seniors

Implementation Plan (timeline): Every semester

Responsible Individual(s): CET faculty

Findings for Senior Exit Survey

Summary of Findings: Students overwhelmingly chose “Strongly agree” or “agree” when asked about whether the program curriculum prepared them to demonstrate technical and non-technical abilities.

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Measure: Senior Project
Direct - Portfolio

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Target: Seniors.

Implementation Plan (timeline): Yearly

Responsible Individual(s): CET faculty

Findings for Senior Project

Summary of Findings: In general every group was able to follow the format requirement and show understanding of technical report structure. The reference and citation were the two areas
whose significance was constantly overlooked. Most of the students were not familiar with the proper use of back matter including appendix and bibliography. The most common mis-handling was including source code in the main text portion.

The overall quality of the project write-up was good, though there existed areas of improvement in grammar, consistency, and common technical writing practice in practically every report.

A majority of the students can communicate well with audience and were able to answer questions with confidence and honesty. However a lot of students needed improvement on presentation mannerism.

**Recommendations:**
**Reflections/Notes:**

---

### Outcome 9.2: Technical document with minimum errors

Students will produce a technical document with a minimum of errors in spelling, punctuation, grammar and usage.

---

#### Measure: Senior Exit Survey

**Indirect - Survey**

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

**Target:** Graduating seniors

**Implementation Plan (timeline):** Every semester

**Responsible Individual(s):** CET faculty

**Findings for Senior Exit Survey**

**Summary of Findings:** Students overwhelmingly chose "Strongly agree" or "agree" when asked about whether the program curriculum prepared them to demonstrate technical and non-technical abilities.

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**Target:** Seniors.

**Implementation Plan (timeline):** Yearly

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A majority of the students can communicate well with audience and were able to answer questions with confidence and honesty. However a lot of students needed improvement on presentation mannerism.

**Recommendations:**

**Reflections/Notes:**

---

**Outcome 9.3: Communicate in a professional manner**

Students will communicate in a professional manner, and respond to questions in language that is both concise and commensurate with audience’s background.

**Measure:** Senior Exit Survey

Indirect - Survey

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

**Target:** Graduating seniors

**Implementation Plan (timeline):** Every semester

**Responsible Individual(s):** CET faculty

---

**Findings for Senior Exit Survey**

**Summary of Findings:** Students overwhelmingly chose “Strongly agree” or “agree” when asked about whether the program curriculum prepared them to demonstrate technical and non-technical abilities.

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with confidence and honesty. However a lot of students needed improvement on presentation mannerism.

**Recommendations:**

**Reflections/Notes:**

**Overall Recommendations**

No text specified

**Overall Reflection**

No text specified

**Action Plan**

**Actions**

**BS in Computer Engineering Technlg Outcome Set**

**OBJ 1: Problem solving skills**

Students will learn problems solving skills.

**Outcome 1.1: Computer systems and networks**

Students will apply algebra, discrete math, and basic law of physics to build, test, and operate electric circuits, computer systems and networks.

**Action:** Implement a system-level course

**This Action is associated with the following Findings**

**Findings for Senior Exit Survey**

(Assessment Plan and Assessment Findings; 2011-2012 Assessment Cycle)

**Summary of Findings:** Students overwhelmingly chose "Strongly agree" or "agree" when asked about whether the program curriculum prepared them to demonstrate technical and non-technical abilities.

**Findings for Senior Project**

(Assessment Plan and Assessment Findings; 2011-2012 Assessment Cycle)

**Summary of Findings:** All projects required programming in high-level languages, predominantly C language. Most of the groups demonstrated solid understanding of procedural language structure, syntax and semantics of C language, and fluency in using software development environment. However due to the scale of the undertakings, most of the projects didn't invoke complex algorithms.

**Action Details:** Implement a system-level course that has been called for by the IAB: Vetting the feasibility of re-activating the undergraduate section of the process control course that is currently only available to graduate students. The course can be used as the nexus between component-, device-, and system-level coverage.

This action applies to all outcomes.

**Implementation Plan (timeline):**

**Key/Responsible Personnel:**

**Measures:**

**Resource Allocations:**

**Priority:**
**Action:** Introduce business operation and business culture

**This Action is associated with the following Findings**

**Findings for Senior Exit Survey**
(Assessment Plan and Assessment Findings; 2011-2012 Assessment Cycle)

**Summary of Findings:** Students overwhelmingly chose "Strongly agree" or "agree" when asked about whether the program curriculum prepared them to demonstrate technical and non-technical abilities.

**Findings for Senior Project**
(Assessment Plan and Assessment Findings; 2011-2012 Assessment Cycle)

**Summary of Findings:** All projects required programming in high-level languages, predominantly C language. Most of the groups demonstrated solid understanding of procedural language structure, syntax and semantics of C language, and fluency in using software development environment. However due to the scale of the undertakings, most of the projects didn't invoke complex algorithms.

**Action Details:** Use ECT 437 to introduce business operation and business culture, with a focus on managing individual project rather than a team.

This action applies to all outcomes.

**Implementation Plan (timeline):**

**Key/Responsible Personnel:**

**Measures:**

**Resource Allocations:**

**Priority:**

---

**Action:** Push the student involvement in student organizations

**This Action is associated with the following Findings**

**Findings for Senior Exit Survey**
(Assessment Plan and Assessment Findings; 2011-2012 Assessment Cycle)

**Summary of Findings:** Students overwhelmingly chose "Strongly agree" or "agree" when asked about whether the program curriculum prepared them to demonstrate technical and non-technical abilities.

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**Action Details:** Push the student involvement in student organizations.

This action applies to all outcomes.

**Implementation Plan (timeline):**

**Key/Responsible Personnel:**

**Measures:**
**Resource Allocations:**

**Priority:**

---

## Status Report

### Action Statuses

### BS in Computer Engineering Technlgy Outcome Set

**OBJ 1: Problem solving skills**

Students will learn problems solving skills.

#### Outcome 1.1: Computer systems and networks

Students will apply algebra, discrete math, and basic law of physics to build, test, and operate electric circuits, computer systems and networks.

**Action:** Implement a system-level course

**Action Details:** Implement a system-level course that has been called for by the IAB: Vetting the feasibility of re-activating the undergraduate section of the process control course that is currently only available to graduate students. The course can be used as the nexus between component-, device-, and system-level coverage.

This action applies to all outcomes.

**Implementation Plan (timeline):**

**Key/Responsible Personnel:**

**Measures:**

**Resource Allocations:**

**Priority:**

**Status** for Implement a system-level course

**Current Status:** In Progress

**Resource Allocation(s) Status:**

**Next Steps/Additional Information:**

---

**Action:** Introduce business operation and business culture

**Action Details:** Use ECT 437 to introduce business operation and business culture, with a focus on managing individual project rather than a team.

This action applies to all outcomes.

**Implementation Plan (timeline):**

**Key/Responsible Personnel:**

**Measures:**

**Resource Allocations:**
Priority:

Status for Introduce business operation and business culture

Current Status: In Progress

Resource Allocation(s) Status:

Next Steps/Additional Information:

Action: Push the student involvement in student organizations

Action Details: Push the student involvement in student organizations.

This action applies to all outcomes.

Implementation Plan (timeline):

Key/Responsible Personnel:

Measures:

Resource Allocations:

Priority:

Status for Push the student involvement in student organizations

Current Status: In Progress

Resource Allocation(s) Status:

Next Steps/Additional Information:

Status Summary

No text specified

Summary of Next Steps

No text specified
# 2012-2013 Assessment Cycle

## Assessment Plan

### Outcomes and Measures

#### BS in Computer Engineering Technolg Outcome Set

**OBJ 1: Problem solving skills**

Students will learn problems solving skills.

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<thead>
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<th>Measure: Senior Exit Survey</th>
<th>Details/Description: The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.</th>
<th>Target: Graduating seniors</th>
<th>Implementation Plan (timeline): Every semester</th>
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#### Outcome 1.2: Computer languages

Students will program in low/high-level computer languages to build microcontroller based applications and digital logic circuits.

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to the program faculty in an open Q & A session at the end of the semester.

**Target:** Seniors.

**Implementation Plan (timeline):** Yearly

**Responsible Individual(s):** CET faculty

---

### Outcome 1.3: Technical data management

Students will understand database principles and working mechanisms for technical data management.

**Measure:** Senior Exit Survey

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

**Target:** Graduating seniors

**Implementation Plan (timeline):** Every semester

**Responsible Individual(s):** CET faculty

---

### OBJ 2: Commanding contemporary tools

Students will learn how to command contemporary tools.

**Measure:** Senior Project

**Details/Description:** Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group member. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.

**Target:** Seniors.

**Implementation Plan (timeline):** Yearly

**Responsible Individual(s):** CET faculty

---

### Outcome 2.1: Apply stimulation tools

Students will apply simulation tools to verify theoretical design or trouble-shoot potential system problems.

**Measure:** Senior Exit Survey

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

**Target:** Graduating seniors

**Implementation Plan (timeline):** Every semester

**Responsible Individual(s):** CET faculty

---

**Measure:** Senior Project

**Details/Description:** Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group member. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.

**Target:** Seniors.

**Implementation Plan (timeline):** Yearly

**Responsible Individual(s):** CET faculty
Outcome 2.2: Analyze lab data
Students will analyze lab data using statistical tools.

- **Measure:** Senior Exit Survey
  - Indirect - Survey

  **Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.
  **Target:** Graduating seniors
  **Implementation Plan (timeline):** Every semester
  **Responsible Individual(s):** CET faculty

OBJ 3: Design skills
Students will learn design skills.

Outcome 3.1: Control circuitry
Students will design microcontroller based control circuitry.

- **Measure:** Senior Exit Survey
  - Indirect - Survey

  **Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.
  **Target:** Graduating seniors
  **Implementation Plan (timeline):** Every semester
  **Responsible Individual(s):** CET faculty

- **Measure:** Senior Project
  - Direct - Portfolio

  **Details/Description:** Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group member. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.
  **Target:** Seniors.
  **Implementation Plan (timeline):** Yearly
  **Responsible Individual(s):** CET faculty

Outcome 3.2: Digital logic circuitry
Students will develop digital logic circuitry using FPGA and HDL.

- **Measure:** Senior Exit Survey
  - Indirect - Survey

  **Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.
  **Target:** Graduating seniors
**Implementation Plan (timeline):** Every semester  
**Responsible Individual(s):** CET faculty

**Measure:** Senior Project  
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**Target:** Seniors.  
**Implementation Plan (timeline):** Yearly  
**Responsible Individual(s):** CET faculty

---

**Outcome 3.3: Design and implement LAN**  
Students will design and implement LAN for small business environments.

**Measure:** Senior Exit Survey  
Indirect - Survey

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.  
**Target:** Graduating seniors  
**Implementation Plan (timeline):** Every semester  
**Responsible Individual(s):** CET faculty

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**Measure:** Senior Project  
Direct - Portfolio

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**Target:** Seniors.  
**Implementation Plan (timeline):** Yearly  
**Responsible Individual(s):** CET faculty

---

**OBJ 4: Lab skills**  
Students will learn lab skills.

**Outcome 4.1: Plan experiments**  
Students will plan experiments to collect desired data or observations.

**Measure:** Senior Exit Survey  
Indirect - Survey

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.  
**Target:** Graduating seniors  
**Implementation Plan (timeline):** Every semester  
**Responsible Individual(s):** CET faculty

---

**Measure:** Senior Project  
Direct - Portfolio
### Outcome 4.2: Conduct experiments

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**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

**Target:** Graduating seniors

**Implementation Plan (timeline):** Every semester

**Responsible Individual(s):** CET faculty

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### Outcome 4.3: Follow safety procedures

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**Target:** Graduating seniors

**Implementation Plan (timeline):** Every semester

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**Target:** Seniors.

**Implementation Plan (timeline):** Yearly

**Responsible Individual(s):** CET faculty
### Outcome 4.4: Examine lab results
Students will examine and interpret lab results to draw conclusions.

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**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

**Target:** Graduating seniors

**Implementation Plan (timeline):** Every semester

**Responsible Individual(s):** CET faculty

### OBJ 5: Managerial skills
Students will learn managerial skills.

### Outcome 5.1: Develop work plans
Students will develop work plans with clearly defined phased goals and timeline.

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**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

**Target:** Graduating seniors

**Implementation Plan (timeline):** Every semester

**Responsible Individual(s):** CET faculty

<table>
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**Details/Description:** Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group member. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.

**Target:** Seniors.

**Implementation Plan (timeline):** Yearly

**Responsible Individual(s):** CET faculty

### Outcome 5.2: Follow work plan
Students will follow work plan by observing time line and reporting progress.

<table>
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**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

**Target:** Graduating seniors
**Implementation Plan (timeline):** Every semester  
**Responsible Individual(s):** CET faculty

**Measure:** Senior Project  
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**Target:** Seniors.  
**Implementation Plan (timeline):** Yearly  
**Responsible Individual(s):** CET faculty

**Outcome 5.3: Modify schedule**  
Students will modify schedules based on progress.

**Measure:** Senior Exit Survey  
**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.  
**Target:** Graduating seniors  
**Implementation Plan (timeline):** Every semester  
**Responsible Individual(s):** CET faculty

**Measure:** Senior Project  
**Details/Description:** Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group member. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.  
**Target:** Seniors.  
**Implementation Plan (timeline):** Yearly  
**Responsible Individual(s):** CET faculty

**OBJ 6: Ethics awareness**  
Students will learn ethics awareness.

**Outcome 6.1: Analyze ethics**  
Students will analyze ethics issues based on professional ethics codes.

**Measure:** Senior Exit Survey  
**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.  
**Target:** Graduating seniors  
**Implementation Plan (timeline):** Every semester  
**Responsible Individual(s):** CET faculty

**Measure:** Senior Project  
**Details/Description:** Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group member. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.  
**Target:** Seniors.  
**Implementation Plan (timeline):** Yearly  
**Responsible Individual(s):** CET faculty
### Outcome 6.2: Technology impact on society
Students will understand technology impact on society.

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Details/Description: The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

### OBJ 7: Lifelong learning
Students will learn lifelong learning.

### Outcome 7.1: Professional societies
Students will get involved with professional societies.

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**Outcome 7.2: Technological trends**

Students will research the latest technological trends in a specific area.

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**Responsible Individual(s):** CET faculty

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**Target:** Seniors.

**Implementation Plan (timeline):** Yearly

**Responsible Individual(s):** CET faculty

**OBJ 8: Teamwork skills**

Students will learn teamwork skills.

**Outcome 8.1: Individual role and shared duties**

Students will understand individual role and shared duties.

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**Target:** Seniors.

**Implementation Plan (timeline):** Yearly

**Responsible Individual(s):** CET faculty

**Outcome 8.2: Respect different opinions**

Students will listen to others; cooperate with

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**Measure:** Senior Project  
Direct - Portfolio

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**Target:** Seniors.

**Implementation Plan (timeline):** Yearly

**Responsible Individual(s):** CET faculty

### OBJ 9: Communication skills

Students will learn communication skills.

#### Outcome 9.1: Produce technical documents

Students will produce a technical document that is factually correct, and with good logical structure, proper format, citation, and references.

**Measure:** Senior Exit Survey  
Indirect - Survey

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

**Target:** Graduating seniors

**Implementation Plan (timeline):** Every semester

**Responsible Individual(s):** CET faculty

**Measure:** Senior Project  
Direct - Portfolio

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**Target:** Seniors.

**Implementation Plan (timeline):** Yearly

**Responsible Individual(s):** CET faculty

#### Outcome 9.2: Technical document with minimum errors

Students will produce a technical document with a minimum of errors in spelling, punctuation, grammar and usage.

**Measure:** Senior Exit Survey  
Indirect - Survey

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

**Target:** Graduating seniors

**Implementation Plan (timeline):** Every semester

**Responsible Individual(s):** CET faculty
**Measure:** Senior Project  
Direct - Portfolio  

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**Target:** Seniors.  
**Implementation Plan (timeline):** Yearly  
**Responsible Individual(s):** CET faculty

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**Outcome 9.3:** Communicate in a professional manner  
Students will communicate in a professional manner, and respond to questions in language that is both concise and commensurate with audience’s background.

---

**Measure:** Senior Exit Survey  
Indirect - Survey  

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.  
**Target:** Graduating seniors  
**Implementation Plan (timeline):** Every semester  
**Responsible Individual(s):** CET faculty

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**Measure:** Senior Project  
Direct - Portfolio  

**Details/Description:** Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group member. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.  
**Target:** Seniors.  
**Implementation Plan (timeline):** Yearly  
**Responsible Individual(s):** CET faculty

---

**Assessment Findings**

**Finding per Measure**

---

**BS in Computer Engineering Technolgy Outcome Set**

**OBJ 1:** Problem solving skills  
Students will learn problems solving skills.

**Outcome 1.1:** Computer systems and networks  
Students will apply algebra, discrete math, and basic law of physics to build, test, and operate electric circuits, computer systems and networks.

**Measure:** Senior Exit Survey  
Indirect - Survey  

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.  
**Target:** Graduating seniors  
**Implementation Plan (timeline):** Every semester  
**Responsible Individual(s):** CET faculty
Findings for Senior Exit Survey

**Summary of Findings:** The entire population chose either "Strongly agree" or "agree" when asked if they thought the program prepared them for technical and non-technical job functions.

**Results:** Target Achievement: Met

**Recommendations:**

**Reflections/Notes:**

---

**Measure:** Senior Project  
Direct - Portfolio

**Details/Description:** Source of assessment: ECT 406. The course is offered once a year. The students work in groups on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group member. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.

**Target:** Seniors.

**Implementation Plan (timeline):** Yearly

**Responsible Individual(s):** CET faculty

---

Findings for Senior Project

**Summary of Findings:** Class projects required high-level programming languages, including C. Most students exhibited a solid understanding.

**Results:** Target Achievement: Met

**Recommendations:**

**Reflections/Notes:**

---

**Outcome 1.2: Computer languages**  
Students will program in low/high-level computer languages to build microcontroller based applications and digital logic circuits.

**Measure:** Senior Exit Survey  
Indirect - Survey

**Details/Description:** The graduating seniors will complete an online survey about their program and component's evaluations of the program curriculum.

**Target:** Graduating seniors

**Implementation Plan (timeline):** Every semester

**Responsible Individual(s):** CET faculty

---

Findings for Senior Exit Survey

**Summary of Findings:** The entire population chose either "Strongly agree" or "agree" when asked if they thought the program prepared them for technical and non-technical job functions.

**Results:** Target Achievement: Met

**Recommendations:**

**Reflections/Notes:**
### Measure: Senior Project
**Direct - Portfolio**

**Details/Description:** Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group member. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.

**Target:** Seniors.

**Implementation Plan (timeline):** Yearly

**Responsible Individual(s):** CET faculty

### Findings for Senior Project

**Summary of Findings:** The student projects were of overall good quality. Each included conceptual design, application of a CPU or logic element, programming, evaluation and demonstration.

**Results:** Target Achievement: Met

**Recommendations:**

**Reflections/Notes:**

---

### Outcome 1.3: Technical data management

**Measure:** Senior Exit Survey

**Indirect - Survey**

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

**Target:** Graduating seniors

**Implementation Plan (timeline):** Every semester

**Responsible Individual(s):** CET faculty

### Findings for Senior Exit Survey

**Summary of Findings:** The entire population chose either "Strongly agree" or "agree" when asked if they thought the data management component in the degree plan satisfied their needs.

**Results:** Target Achievement: Met

**Recommendations:**

**Reflections/Notes:**

---

### Measure: Senior Project

**Direct - Portfolio**

**Details/Description:** Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group member. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.

**Target:** Seniors.

**Implementation Plan (timeline):** Yearly

---
**Responsible Individual(s):** CET faculty

**Findings for Senior Project**

**Summary of Findings:** Three students implemented direct databases in their project efforts. All were successful.

**Results:** Target Achievement: Met

**Recommendations:**

**Reflections/Notes:**

---

**OBJ 2: Commanding contemporary tools**

Students will learn how to command contemporary tools.

**Outcome 2.1: Apply stimulation tools**

Students will apply simulation tools to verify theoretical design or trouble-shoot potential system problems.

**Measure:** Senior Exit Survey

**Indirect - Survey**

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

**Target:** Graduating seniors

**Implementation Plan (timeline):** Every semester

**Responsible Individual(s):** CET faculty

**Findings for Senior Exit Survey**

**Summary of Findings:** The entire population chose either "Strongly agree" or "agree" when asked if they thought the program prepared them for technical and non-technical job functions.

**Results:** Target Achievement: Met

**Recommendations:**

**Reflections/Notes:**

---

**Measure:** Senior Project

**Direct - Portfolio**

**Details/Description:** Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group member. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.

**Target:** Seniors.

**Implementation Plan (timeline):** Yearly

**Responsible Individual(s):** CET faculty

**Findings for Senior Project**

**Summary of Findings:** Every project involved prototyping or simulation and troubleshooting. All student were successful in this effort; some more efficiently than others.

**Results:** Target Achievement: Met
Outcome 2.2: Analyze lab data
Students will analyze lab data using statistical tools.

**Measure:** Senior Exit Survey
Indirect - Survey

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.
**Target:** Graduating seniors
**Implementation Plan (timeline):** Every semester
**Responsible Individual(s):** CET faculty

**Findings** for Senior Exit Survey

**Summary of Findings:** The entire population chose either "Strongly agree" or "agree" when asked if they thought the program prepared them with sufficient lab experiences.

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

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**Measure:** Senior Project
Direct - Portfolio

**Details/Description:** Source of assessment: ECT 406. The course is offered once a year. The students work in groups on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group memeber. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.
**Target:** Seniors.
**Implementation Plan (timeline):** Yearly
**Responsible Individual(s):** CET faculty

**Findings** for Senior Project

**Summary of Findings:** In each project there was a component of data analysis, most all on an observational level or measurement to reach a performance target.

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

---

**OBJ 3: Design skills**
Student will learn design skills.

**Outcome 3.1: Control circuitry**
Students will design microcontroller based
Details/Description: The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.
Target: Graduating seniors
Implementation Plan (timeline): Every semester
Responsible Individual(s): CET faculty

Findings for Senior Exit Survey

Summary of Findings: The entire population chose either "Strongly agree" or "agree" when asked if they thought the program prepared them for technical and non-technical job functions.
Results: Target Achievement: Met
Recommendations: 
Reflections/Notes:

Measure: Senior Project
Direct - Portfolio

Details/Description: Source of assessment: ECT 406. The course is offered once a year. The students work in groups on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group member. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.
Target: Seniors.
Implementation Plan (timeline): Yearly
Responsible Individual(s): CET faculty

Findings for Senior Project

Summary of Findings: Each project had some level of control circuitry. Each student was successful in completing that part of the project.
Results: Target Achievement: Met
Recommendations: 
Reflections/Notes:

Outcome 3.2: Digital logic circuitry

Students will develop digital logic circuitry using FPGA and HDL.

Measure: Senior Exit Survey
Indirect - Survey

Details/Description: The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.
Target: Graduating seniors
Implementation Plan (timeline): Every semester
Responsible Individual(s): CET faculty

Findings for Senior Exit Survey

Summary of Findings: The entire population chose either "Strongly agree" or "agree" when asked if they thought the program prepared them for technical job functions involving digital
logic.

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

\[ \text{Measure: Senior Project} \]
Direct - Portfolio

Details/Description: Source of assessment: ECT 406. The course is offered once a year. The students work in groups on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group member. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.

Target: Seniors.
Implementation Plan (timeline): Yearly
Responsible Individual(s): CET faculty

Findings for Senior Project

Summary of Findings: Approximately 1/3 of the project involved digital logic components, FPGAs specifically. Each was successful.
Results: Target Achievement: Met
Recommendations:
Reflections/Notes:

\[ \text{Outcome 3.3: Design and implement LAN} \]
Students will design and implement LAN for small business environments.

\[ \text{Measure: Senior Exit Survey} \]
Indirect - Survey

Details/Description: The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.
Target: Graduating seniors
Implementation Plan (timeline): Every semester
Responsible Individual(s): CET faculty

Findings for Senior Exit Survey

Summary of Findings: The entire population chose either "Strongly agree" or "agree" when asked if they thought the program prepared them for technical and non-technical job functions.
Results: Target Achievement: Met
Recommendations:
Reflections/Notes:
**Details/Description:** Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group member. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.

**Target:** Seniors.

**Implementation Plan (timeline):** Yearly

**Responsible Individual(s):** CET faculty

---

**Findings for Senior Project**

**Summary of Findings:** None of the projects involved LAN work specifically. All involved direct digital connections, which were successful.

**Results:** Target Achievement: Met

**Recommendations:**

**Reflections/Notes**:

---

**OBJ 4: Lab skills**

Students will learn lab skills.

**Outcome 4.1: Plan experiments**

Students will plan experiments to collect desired data or observations.

**Measure:** Senior Exit Survey

**Indirect - Survey**

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

**Target:** Graduating seniors

**Implementation Plan (timeline):** Every semester

**Responsible Individual(s):** CET faculty

---

**Findings for Senior Exit Survey**

**Summary of Findings:** The entire population chose either "Strongly agree" or "agree" when asked if they thought the program prepared them for technical and non-technical job functions.

**Results:** Target Achievement: Met

**Recommendations:**

**Reflections/Notes**:

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**Measure:** Senior Project

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**Target:** Seniors.

**Implementation Plan (timeline):** Yearly

**Responsible Individual(s):** CET faculty
### Findings for Senior Project

**Summary of Findings:** The troubleshooting of the project systems involve a level of planning. Generally the students logically developed an analysis of the performance of their system and implemented it.

**Results:** Target Achievement: Met

**Recommendations:**

**Reflections/Notes:**

### Outcome 4.2: Conduct experiments

Students will conduct experiments to truthfully record results following manual or proposed steps.

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| **Target:** Seniors.                    |
| **Implementation Plan (timeline):** Yearly |
| **Responsible Individual(s):** CET faculty |

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Outcome 4.3: Follow safety procedures

Students will follow safety procedure and lab protocols, handle equipments with care.

**Measure:** Senior Exit Survey
Indirect - Survey

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

**Target:** Graduating seniors

**Implementation Plan (timeline):** Every semester

**Responsible Individual(s):** CET faculty

**Findings for Senior Exit Survey**

**Summary of Findings:** The entire population chose either "Strongly agree" or "agree" when asked if the they thought the program prepared them for technical and non-technical job functions.

**Results:** Target Achievement: Met

**Recommendations:**

**Reflections/Notes:**

**Measure:** Senior Project
Direct - Portfolio

**Details/Description:** Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group memeber. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.

**Target:** Seniors.

**Implementation Plan (timeline):** Yearly

**Responsible Individual(s):** CET faculty

**Findings for Senior Project**

**Summary of Findings:** N/A this cycle.

**Results:** Target Achievement: Met

**Recommendations:**

**Reflections/Notes:**

Outcome 4.4: Examine lab results

Students will examine and interpret lab results to draw conclusions.

**Measure:** Senior Exit Survey
Indirect - Survey

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

**Target:** Graduating seniors

**Implementation Plan (timeline):** Every semester

**Responsible Individual(s):** CET faculty
**Findings for Senior Exit Survey**

**Summary of Findings:** The entire population chose either "Strongly agree" or "agree" when asked if they thought the program prepared them for technical job functions, including the ability to work in the field/lab environment.

**Results:** Target Achievement: Met

**Recommendations:**

**Reflections/Notes:**

---

**Measure:** Senior Project

Direct - Portfolio

**Details/Description:** Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group member. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.

**Target:** Seniors.

**Implementation Plan (timeline):** Yearly

**Responsible Individual(s):** CET faculty

**Findings for Senior Project**

**Summary of Findings:** The student's project reports detailed the results and analysis of the projects. All met the target.

**Results:** Target Achievement: Met

**Recommendations:**

**Reflections/Notes:**

---

**OBJ 5: Managerial skills**

Students will learn managerial skills.

**Outcome 5.1: Develop work plans**

Students will develop work plans with clearly defined phased goals and timeline.

**Measure:** Senior Exit Survey

Indirect - Survey

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

**Target:** Graduating seniors

**Implementation Plan (timeline):** Every semester

**Responsible Individual(s):** CET faculty

**Findings for Senior Exit Survey**

**Summary of Findings:** The entire population chose either "Strongly agree" or "agree" when asked if they thought the program prepared them for technical and non-technical job functions.

**Results:** Target Achievement: Met

**Recommendations:**

**Reflections/Notes:**
**Measure: Senior Project**  
Direct - Portfolio

**Details/Description:** Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group member. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.

**Target:** Seniors.

**Implementation Plan (timeline):** Yearly

**Responsible Individual(s):** CET faculty

---

**Findings for Senior Project**

**Summary of Findings:** The project process included a development and execution plan. All were of good quality.

**Results:** Target Achievement: Met

**Recommendations:**

**Reflections/Notes:**

---

**Outcome 5.2: Follow work plan**

Students will follow work plan by observing time line and reporting progress.

---

**Measure: Senior Exit Survey**  
Indirect - Survey

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

**Target:** Graduating seniors

**Implementation Plan (timeline):** Every semester

**Responsible Individual(s):** CET faculty

---

**Findings for Senior Exit Survey**

**Summary of Findings:** The entire population chose either "Strongly agree" or "agree" when asked if they thought the program prepared them for technical and non-technical job functions.

**Results:** Target Achievement: Met

**Recommendations:**

**Reflections/Notes:**

---

**Measure: Senior Project**  
Direct - Portfolio

**Details/Description:** Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group member. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.
**Target:** Seniors.

**Implementation Plan (timeline):** Yearly

**Responsible Individual(s):** CET faculty

---

**Findings** for Senior Project

**Summary of Findings:** The quality of the estimates of time required to complete the project was overall very poor. A lack of experience was at play here.

**Results:** Target Achievement: Not Met

**Recommendations:**

**Reflections/Notes:**

**These Findings are associated with the following Actions:**

*Project planning/scheduling/tracking*

(Action Plan; 2012-2013 Assessment Cycle)

---

**Outcome 5.3: Modify schedule**  
Students will modify schedules based on progress.

**Measure:** Senior Exit Survey

**Indirect - Survey**

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

**Target:** Graduating seniors

**Implementation Plan (timeline):** Every semester

**Responsible Individual(s):** CET faculty

---

**Findings** for Senior Exit Survey

**Summary of Findings:** The entire population chose either "Strongly agree" or "agree" when asked if they thought the program prepared them for technical and non-technical job functions.

**Results:** Target Achievement: Met

**Recommendations:**

**Reflections/Notes:**

---

**Measure:** Senior Project

**Direct - Portfolio**

**Details/Description:** Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group member. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.

**Target:** Seniors.

**Implementation Plan (timeline):** Yearly

**Responsible Individual(s):** CET faculty

---

**Findings** for Senior Project

**Summary of Findings:** This action was also not followed in an organized manner.
**OBJ 6: Ethics awareness**
Students will learn ethics awareness.

**Outcome 6.1: Analyze ethics**
Students will analyze ethics issues based on professional ethics codes.

**Measure:** Senior Exit Survey
Indirect - Survey

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

**Target:** Graduating seniors

**Implementation Plan (timeline):** Every semester

**Responsible Individual(s):** CET faculty

**Findings for Senior Exit Survey**

**Summary of Findings:** The entire population chose either "Strongly agree" or "agree" when asked if the they thought the program prepared them for technical and non-technical job functions.

**Results:** Target Achievement: Met

**Recommendations :**

**Reflections/Notes :**

---

**Measure:** Senior Porject
Direct - Portfolio

**Details/Description:** Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group member. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.

**Target:** Seniors.

**Implementation Plan (timeline):** Yearly

**Responsible Individual(s):** CET faculty

**Findings for Senior Porject**

**Summary of Findings:** N/A this cycle.

**Results:** Target Achievement: Met

**Recommendations :**

**Reflections/Notes :**

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**Results:** Target Achievement: Not Met

**Recommendations :**

**Reflections/Notes :**

**These Findings are associated with the following Actions:**

**Tracking project work**
(rg Action Plan; 2012-2013 Assessment Cycle)
**Outcome 6.2: Technology impact on society**

Students will understand technology impact on society.

**Measure:** Senior Exit Survey
Indirect - Survey

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

**Target:** Graduating seniors

**Implementation Plan (timeline):** Every semester

**Responsible Individual(s):** CET faculty

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**Findings for Senior Exit Survey**

**Summary of Findings:** The entire population chose either "Strongly agree" or "agree" when asked if they thought the program prepared them for technical and non-technical job functions.

**Results:** Target Achievement: Met

**Recommendations:**

**Reflections/Notes:**

---

**Measure:** Senior Project
Direct - Portfolio

**Details/Description:** Source of assessment: ECT 406. The course is offered once a year. The students work in groups on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group member. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.

**Target:** Seniors.

**Implementation Plan (timeline):** Yearly

**Responsible Individual(s):** CET faculty

---

**Findings for Senior Project**

**Summary of Findings:** During the oral project presentation the students were asked to comment on the impact their type of technology on society. Most commented thoughtfully.

**Results:** Target Achievement: Met

**Recommendations:**

**Reflections/Notes:**

---

**OBJ 7: Lifelong learning**

Students will learn lifelong learning.

**Outcome 7.1: Professional societies**

Students will get involved with professional societies.

**Measure:** Senior Exit Survey
Indirect - Survey

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

**Target:** Graduating seniors

**Implementation Plan (timeline):** Every semester
**Outcome 7.2: Technological trends**
Students will research the latest technological trends in a specific area.

**Measure:** Senior Exit Survey
Indirect - Survey

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

**Target:** Graduating seniors

**Implementation Plan (timeline):** Every semester

**Responsible Individual(s):** CET faculty

**Findings for Senior Exit Survey**

**Summary of Findings:** The entire population chose either "Strongly agree" or "agree" when asked if they thought the program prepared them for technical and non-technical job functions.

**Results:** Target Achievement: Met

**Recommendations:**

**Reflections/Notes:**
**Measure:** Senior Project

**Details/Description:** Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group memeber. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.

**Target:** Seniors.

**Implementation Plan (timeline):** Yearly

**Responsible Individual(s):** CET faculty

---

**Findings for Senior Project**

**Summary of Findings:** The project reflected latest technology or at least the consideration of such in most all of the projects.

**Results:** Target Achievement: Met

**Recommendations :**

**Reflections/Notes :**

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**OBJ 8: Teamwork skills**

Students will learn teamwork skills.

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**Outcome 8.1: Individual role and shared duties**

Students will understand individual role and shared duties.

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**Measure:** Senior Exit Survey

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

**Target:** Graduating seniors

**Implementation Plan (timeline):** Every semester

**Responsible Individual(s):** CET faculty

---

**Findings for Senior Exit Survey**

**Summary of Findings:** The entire population chose either "Strongly agree" or "agree" when asked if they thought the program prepared them for non-technical job functions which included teaming and individual work roles.

**Results:** Target Achievement: Met

**Recommendations :**

**Reflections/Notes :**

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**Measure:** Senior Project

**Details/Description:** Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group memeber. They will investigate, evaluate, and implement their design and present the final results
Outcome 8.2: Respect different opinions
Students will listen to others; cooperate with teammates; respect different opinions.

Measure: Senior Exit Survey
Indirect - Survey

Details/Description: The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.
Target: Graduating seniors
Implementation Plan (timeline): Every semester
Responsible Individual(s): CET faculty

Findings for Senior Exit Survey

Summary of Findings: The entire population chose either "Strongly agree" or "agree" when asked if they thought the program prepared them for technical and non-technical job functions.
Results: Target Achievement: Met
Recommendations:
Reflections/Notes:

Measure: Senior Project
Direct - Portfolio

Details/Description: Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group member. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.
Target: Seniors.
Implementation Plan (timeline): Yearly
Responsible Individual(s): CET faculty

Findings for Senior Project

Summary of Findings: The teams exhibited good respect for others, regardless of differences in opinions in some cases.
Results: Target Achievement: Met
Recommendations:

Reflections/Notes:

OBJ 9: Communication skills
Students will learn communication skills.

**Outcome 9.1: Produce technical documents**
Students will produce a technical document that is factually correct, with good logical structure, proper format, citation, and references.

**Measure:** Senior Exit Survey
Indirect - Survey

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

**Target:** Graduating seniors

**Implementation Plan (timeline):** Every semester

**Responsible Individual(s):** CET faculty

**Findings for Senior Exit Survey**

**Summary of Findings:** The entire population chose either "Strongly agree" or "agree" when asked if they thought the program prepared them for technical and non-technical job functions.

**Results:** Target Achievement: Met

**Recommendations:**
**Reflections/Notes:**

**Measure:** Senior Project
Direct - Portfolio

**Details/Description:** Source of assessment: ECT 406. The course is offered once a year. The students work in groups on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group member. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.

**Target:** Seniors.

**Implementation Plan (timeline):** Yearly

**Responsible Individual(s):** CET faculty

**Findings for Senior Project**

**Summary of Findings:** The quality of the project documents was good.

**Results:** Target Achievement: Met

**Recommendations:**
**Reflections/Notes:**

**Outcome 9.2: Technical document with minimum errors**
Students will produce a
Details/Description: The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

Target: Graduating seniors

Implementation Plan (timeline): Every semester

Responsible Individual(s): CET faculty

Findings for Senior Exit Survey

Summary of Findings: The entire population chose either "Strongly agree" or "agree" when asked if they thought the program prepared them for technical and non-technical job functions.

Results: Target Achievement: Met

Recommendations:

Reflections/Notes:

Measure: Senior Project

Details/Description: Source of assessment: ECT 406. The course is offered once a year. The students work in groups on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group member. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.

Target: Seniors.

Implementation Plan (timeline): Yearly

Responsible Individual(s): CET faculty

Findings for Senior Project

Summary of Findings: The quality of the documents produced in the project were generally very good.

Results: Target Achievement: Met

Recommendations:

Reflections/Notes:

Outcome 9.3: Communicate in a professional manner

Students will communicate in a professional manner, and respond to questions in language that is both concise and commensurate with audience’s background.

Measure: Senior Exit Survey

Details/Description: The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

Target: Graduating seniors

Implementation Plan (timeline): Every semester

Responsible Individual(s): CET faculty

Findings for Senior Exit Survey

Summary of Findings: The entire population chose either "Strongly agree" or "agree" when asked if they thought the program prepared them for technical and non-technical job
### Overall Recommendations

Work is required on developing quality work plans/schedules, keeping them updated and following them. This issue is addressed in ECT437 Project Management.

### Overall Reflection

Overall very good, 2 issues involving work planning.

### Action Plan

#### Actions

### BS in Computer Engineering Technology Outcome Set

#### OBJ 1: Problem solving skills

Students will learn problems solving skills.

#### Outcome 1.1: Computer systems and networks

Students will apply algebra, discrete math, and basic law of physics to build, test, and operate electric

No actions specified
circuit, computer systems and networks.

**OBJ 5: Managerial skills**
Students will learn managerial skills.

**Outcome 5.2: Follow work plan**
Students will follow work plan by observing timeline and reporting progress.

**Action:** Project planning/scheduling/ tracking

**This Action is associated with the following Findings**

**Findings for Senior Project**
(Assessment Plan and Assessment Findings; 2012-2013 Assessment Cycle)

**Summary of Findings:** The quality of the estimates of time required to complete the project was overall poor. A lack of experience was at play here.

**Action Details:** This topic is cover in ECT437. The CET team will ask the ECT437 instructor(s) to be sure to visit this issue. We should also address it in more detail in the project requirements discussion leading up to the project work in ECT406.

**Implementation Plan (timeline):** Next cycle.

**Key/Responsible Personnel:** ECT437 & ECT406 instructors & CET team.

**Measures:**

**Resource Allocations:**

**Priority:** Medium

**Outcome 5.3: Modify schedule**
Students will modify schedules based on progress.

**Action:** Tracking project work

**This Action is associated with the following Findings**

**Findings for Senior Project**
(Assessment Plan and Assessment Findings; 2012-2013 Assessment Cycle)

**Summary of Findings:** This action was also not followed in an organized manner.

**Action Details:** This topic is cover in ECT437. The CET team will ask the ECT437 instructor(s) to be sure to visit this issue. We should also address it in more detail in the project requirements discussion leading up to the project work in ECT406.

**Implementation Plan (timeline):** Next cycle

**Key/Responsible Personnel:** ECT437 & ECT406 instructors & CET team.

**Measures:**

**Resource Allocations:**

**Priority:** Medium

**Status Report**

**Action Statuses**

BS in Computer Engineering Technolgy Outcome Set
**OBJ 1: Problem solving skills**
Students will learn problems solving skills.

**Outcome 1.1: Computer systems and networks**
Students will apply algebra, discrete math, and basic law of physics to build, test, and operate electric circuits, computer systems and networks.

**OBJ 5: Managerial skills**
Students will learn managerial skills.

**Outcome 5.2: Follow work plan**
Students will follow work plan by observing time line and reporting progress.

**Action: Project planning/scheduling/tracking**

**Action Details:** This topic is cover in ECT437. The CET team will ask the ECT437 instructor(s) to be sure to visit this issue. We should also address it in more detail in the project requirements discussion leading up to the project work in ECT406.

**Implementation Plan (timeline):** Next cycle.

**Key/Responsible Personnel:** ECT437 & ECT406 instructors & CET team.

**Measures:**

**Resource Allocations:**

**Priority:** Medium

**Status for Project planning/scheduling/tracking**

**Current Status:** Completed

**Resource Allocation(s) Status:** The ECT437 instructors were notified and they agreed to add more focus on scheduling, Gantt charts and general schedule tracking. This subject matter was also included in the discussion of the ECT406 project process.

**Next Steps/Additional Information:** Monitor.

**Outcome 5.3: Modify schedule**
Students will modify schedules based on progress.

**Action: Tracking project work**

**Action Details:** This topic is cover in ECT437. The CET team will ask the ECT437 instructor(s) to be sure to visit this issue. We should also address it in more detail in the project requirements discussion leading up to the project work in ECT406.

**Implementation Plan (timeline):** Next cycle

**Key/Responsible Personnel:** ECT437 & ECT406 instructors & CET team.

**Measures:**

**Resource Allocations:**

**Priority:** Medium
### Status for Tracking project work

**Current Status:** Completed

**Resource Allocation(s) Status:** The ECT437 instructors were notified and they agreed to add more focus on scheduling, Gantt charts and general schedule tracking. This subject matter was also included in the discussion of the ECT406 project process.

**Next Steps/Additional Information:** Monitor.

### Status Summary

This issue involving project schedules was addressed and included in the 2013-14 cycle.

### Summary of Next Steps

Monitor progress on scheduling tracking in the 2013-14 cycle.
2013-2014 Assessment Cycle

Assessment Plan

Outcomes and Measures

BS in Computer Engineering Technolg Outcome Set

OBJ 1: Problem solving skills
Students will learn problems solving skills.

Outcome 1.1: Computer systems and networks
Students will apply algebra, discrete math, and basic law of physics to build, test, and operate electric circuits, computer systems and networks.

Measure: Senior Exit Survey
Indirect - Survey

Details/Description: The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.
Target: Graduating seniors
Implementation Plan (timeline): Every semester
Responsible Individual(s): CET faculty

Measure: Senior Project
Direct - Portfolio

Details/Description: Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group member. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.
Target: Seniors.
Implementation Plan (timeline): Yearly
Responsible Individual(s): CET faculty

Outcome 1.2: Computer languages
Students will program in low/high-level computer languages to build microcontroller based applications and digital logic circuits.

Measure: Senior Exit Survey
Indirect - Survey

Details/Description: The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.
Target: Graduating seniors
Implementation Plan (timeline): Every semester
Responsible Individual(s): CET faculty

Measure: Senior Project
Direct - Portfolio

Details/Description: Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group member. They will investigate, evaluate, and implement their design and present the final results
### Outcomes

#### Outcome 1.3: Technical data management
Students will understand database principles and working mechanisms for technical data management.

**Measure:** Senior Exit Survey
**Implementation Plan (timeline):** Yearly
**Responsible Individual(s):** CET faculty

#### OBJ 2: Commanding contemporary tools
Students will learn how to command contemporary tools.

**Measure:** Senior Exit Survey
**Implementation Plan (timeline):** Yearly
**Responsible Individual(s):** CET faculty

**Measure:** Senior Project
**Implementation Plan (timeline):** Yearly
**Responsible Individual(s):** CET faculty

---

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.
**Target:** Graduating seniors
**Implementation Plan (timeline):** Every semester
**Responsible Individual(s):** CET faculty

---

**Details/Description:** Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group member. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.
**Target:** Seniors.
### Outcome 2.2: Analyze lab data
Students will analyze lab data using statistical tools.

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**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

**Target:** Graduating seniors

**Implementation Plan (timeline):** Every semester

**Responsible Individual(s):** CET faculty

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**Details/Description:** Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group member. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.

**Target:** Seniors.

**Implementation Plan (timeline):** Yearly

**Responsible Individual(s):** CET faculty

---

### OBJ 3: Design skills
Student will learn design skills.

### Outcome 3.1: Control circuitry
Students will design microcontroller based control circuitry.

<table>
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**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

**Target:** Graduating seniors

**Implementation Plan (timeline):** Every semester

**Responsible Individual(s):** CET faculty

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**Details/Description:** Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group member. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.

**Target:** Seniors.

**Implementation Plan (timeline):** Yearly

**Responsible Individual(s):** CET faculty

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### Outcome 3.2: Digital logic circuitry
Students will develop digital logic circuitry using FPGA and HDL.

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</table>

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

**Target:** Graduating seniors
**Implementation Plan (timeline):** Every semester  
**Responsible Individual(s):** CET faculty

**Measure:** Senior Project  
**Details/Description:** Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group member. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.  
**Target:** Seniors.  
**Implementation Plan (timeline):** Yearly  
**Responsible Individual(s):** CET faculty

### Outcome 3.3: Design and implement LAN
Students will design and implement LAN for small business environments.

**Measure:** Senior Exit Survey  
**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.  
**Target:** Graduating seniors  
**Implementation Plan (timeline):** Every semester  
**Responsible Individual(s):** CET faculty

**Measure:** Senior Project  
**Details/Description:** Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group member. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.  
**Target:** Seniors.  
**Implementation Plan (timeline):** Yearly  
**Responsible Individual(s):** CET faculty

### OBJ 4: Lab skills
Students will learn lab skills.

**Measure:** Senior Exit Survey  
**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.  
**Target:** Graduating seniors  
**Implementation Plan (timeline):** Every semester  
**Responsible Individual(s):** CET faculty

**Measure:** Senior Project  
**Details/Description:** Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group member. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.  
**Target:** Seniors.  
**Implementation Plan (timeline):** Yearly  
**Responsible Individual(s):** CET faculty
Details/Description: Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group member. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.
Target: Seniors.
Implementation Plan (timeline): Yearly
Responsible Individual(s): CET faculty

Outcome 4.2: Conduct experiments
Students will conduct experiments to truthfully record results following manual or proposed steps.

Measure: Senior Exit Survey
Indirect - Survey

Details/Description: The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.
Target: Graduating seniors
Implementation Plan (timeline): Every semester
Responsible Individual(s): CET faculty

Measure: Senior Project
Direct - Portfolio

Details/Description: Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group member. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.
Target: Seniors.
Implementation Plan (timeline): Yearly
Responsible Individual(s): CET faculty

Outcome 4.3: Follow safety procedures
Students will follow safety procedure and lab protocols, handle equipments with care.

Measure: Senior Exit Survey
Indirect - Survey

Details/Description: The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.
Target: Graduating seniors
Implementation Plan (timeline): Every semester
Responsible Individual(s): CET faculty

Measure: Senior Project
Direct - Portfolio

Details/Description: Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group member. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.
Target: Seniors.
Implementation Plan (timeline): Yearly
Responsible Individual(s): CET faculty
Outcome 4.4: Examine lab results
Students will examine and interpret lab results to draw conclusions.

**Measure:** Senior Exit Survey
Indirect - Survey

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.
**Target:** Graduating seniors
**Implementation Plan (timeline):** Every semester
**Responsible Individual(s):** CET faculty

**Measure:** Senior Project
Direct - Portfolio

**Details/Description:** Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group member. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.
**Target:** Seniors.
**Implementation Plan (timeline):** Yearly
**Responsible Individual(s):** CET faculty

OBJ 5: Managerial skills
Students will learn managerial skills.

Outcome 5.1: Develop work plans
Students will develop work plans with clearly defined phased goals and timeline.

**Measure:** Senior Exit Survey
Indirect - Survey

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.
**Target:** Graduating seniors
**Implementation Plan (timeline):** Every semester
**Responsible Individual(s):** CET faculty

**Measure:** Senior Project
Direct - Portfolio

**Details/Description:** Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group member. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.
**Target:** Seniors.
**Implementation Plan (timeline):** Yearly
**Responsible Individual(s):** CET faculty

Outcome 5.2: Follow work plan
Students will follow work plan by observing time line and reporting progress.

**Measure:** Senior Exit Survey
Indirect - Survey

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.
**Target:** Graduating seniors
### Implementation Plan (timeline): Every semester
**Responsible Individual(s):** CET faculty

#### Measure: Senior Project
Direct - Portfolio

**Details/Description:** Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group member. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.

**Target:** Seniors.

**Implementation Plan (timeline):** Yearly
**Responsible Individual(s):** CET faculty

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**Outcome 5.3: Modify schedule**
Students will modify schedules based on progress.

#### Measure: Senior Exit Survey
Indirect - Survey

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

**Target:** Graduating seniors

**Implementation Plan (timeline):** Every semester
**Responsible Individual(s):** CET faculty

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#### Measure: Senior Project
Direct - Portfolio

**Details/Description:** Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group member. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.

**Target:** Seniors.

**Implementation Plan (timeline):** Yearly
**Responsible Individual(s):** CET faculty

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**OBJ 6: Ethics awareness**
Students will learn ethics awareness.

#### Measure: Senior Exit Survey
Indirect - Survey

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

**Target:** Graduating seniors

**Implementation Plan (timeline):** Every semester
**Responsible Individual(s):** CET faculty

#### Measure: Senior Project
Direct - Portfolio
**Outcome 6.2: Technology impact on society**

Students will understand technology impact on society.

**Measure:** Senior Exit Survey  
Indirect - Survey

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

**Target:** Graduating seniors  
**Implementation Plan (timeline):** Every semester  
**Responsible Individual(s):** CET faculty

**Measure:** Senior Project  
Direct - Portfolio

**Details/Description:** Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group member. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.

**Target:** Seniors.  
**Implementation Plan (timeline):** Yearly  
**Responsible Individual(s):** CET faculty

**OBJ 7: Lifelong learning**

Students will learn lifelong learning.

**Outcome 7.1: Professional societies**

Students will get involved with professional societies.

**Measure:** Senior Exit Survey  
Indirect - Survey

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

**Target:** Graduating seniors  
**Implementation Plan (timeline):** Every semester  
**Responsible Individual(s):** CET faculty

**Measure:** Senior Project  
Direct - Portfolio

**Details/Description:** Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group member. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.

**Target:** Seniors.  
**Implementation Plan (timeline):** Yearly
**Outcome 7.2: Technological trends**

Students will research the latest technological trends in a specific area.

**Measure:** Senior Exit Survey
Indirect - Survey

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

**Target:** Graduating seniors

**Implementation Plan (timeline):** Every semester

**Responsible Individual(s):** CET faculty

**Measure:** Senior Project
Direct - Portfolio

**Details/Description:** Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group member. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.

**Target:** Seniors.

**Implementation Plan (timeline):** Yearly

**Responsible Individual(s):** CET faculty

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**OBJ 8: Teamwork skills**

Students will learn teamwork skills.

**Outcome 8.1: Individual role and shared duties**

Students will understand individual role and shared duties.

**Measure:** Senior Exit Survey
Indirect - Survey

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

**Target:** Graduating seniors

**Implementation Plan (timeline):** Every semester

**Responsible Individual(s):** CET faculty

**Measure:** Senior Project
Direct - Portfolio

**Details/Description:** Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group member. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.

**Target:** Seniors.

**Implementation Plan (timeline):** Yearly

**Responsible Individual(s):** CET faculty

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**Outcome 8.2: Respect different opinions**

Students will listen to others; cooperate with
Details/Description: The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.
Target: Graduating seniors
Implementation Plan (timeline): Every semester
Responsible Individual(s): CET faculty

Measure: Senior Project
Direct - Portfolio

Details/Description: Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group memeber. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.
Target: Seniors.
Implementation Plan (timeline): Yearly
Responsible Individual(s): CET faculty

OBJ 9: Communication skills
Students will learn communication skills.

Outcome 9.1: Produce technical documents
Students will produce a technical document that is factually correct, and with good logical structure, proper format, citation, and references.

Measure: Senior Exit Survey
Indirect - Survey

Details/Description: The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.
Target: Graduating seniors
Implementation Plan (timeline): Every semester
Responsible Individual(s): CET faculty

Measure: Senior Project
Direct - Portfolio

Details/Description: Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group memeber. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.
Target: Seniors.
Implementation Plan (timeline): Yearly
Responsible Individual(s): CET faculty

Outcome 9.2: Technical document with minimum errors
Students will produce a technical document with a minimum of errors in spelling, punctuation, grammar and usage.

Measure: Senior Exit Survey
Indirect - Survey

Details/Description: The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.
Target: Graduating seniors
Implementation Plan (timeline): Every semester
Responsible Individual(s): CET faculty
**Measure:** Senior Project  
Direct - Portfolio

**Details/Description:** Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group membeer. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.

**Target:** Seniors.  
**Implementation Plan (timeline):** Yearly  
**Responsible Individual(s):** CET faculty

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### Outcome 9.3: Communicate in a professional manner

Students will communicate in a professional manner, and respond to questions in language that is both concise and commensurate with audience’s background.

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**Measure:** Senior Exit Survey  
Indirect - Survey

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

**Target:** Graduating seniors  
**Implementation Plan (timeline):** Every semester  
**Responsible Individual(s):** CET faculty

---

**Measure:** Senior Project  
Direct - Portfolio

**Details/Description:** Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group member. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.

**Target:** Seniors.  
**Implementation Plan (timeline):** Yearly  
**Responsible Individual(s):** CET faculty

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**Assessment Findings**

**Finding per Measure**

### BS in Computer Engineering Technology Outcome Set

**OBJ 1: Problem solving skills**

Students will learn problems solving skills.

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**Outcome 1.1: Computer systems and networks**

Students will apply algebra, discrete math, and basic law of physics to build, test, and operate electric circuits, computer systems and networks.

**Measure:** Senior Exit Survey  
Indirect - Survey

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

**Target:** Graduating seniors  
**Implementation Plan (timeline):** Every semester  
**Responsible Individual(s):** CET faculty
Findings for Senior Exit Survey

Summary of Findings: Our CET majors responded in the affirmative (agreed or strongly agreed) on all survey issues involving the content of the program.

Results: Target Achievement: Met

Recommendations:

Reflections/Notes:

Measure: Senior Project
Direct - Portfolio

Details/Description: Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group member. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.

Target: Seniors.

Implementation Plan (timeline): Yearly

Responsible Individual(s): CET faculty

Findings for Senior Project

Summary of Findings: All seniors in ECT406 were well qualified to perform basic design math, applying design principles and understanding networking and computer systems.

Results: Target Achievement: Met

Recommendations:

Reflections/Notes:

Outcome 1.2: Computer languages
Students will program in low/high-level computer languages to build microcontroller based applications and digital logic circuits.

Measure: Senior Exit Survey
Indirect - Survey

Details/Description: The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

Target: Graduating seniors

Implementation Plan (timeline): Every semester

Responsible Individual(s): CET faculty

Findings for Senior Exit Survey

Summary of Findings: Our CET majors responded in the affirmative (agreed or strongly agreed) on all survey issues involving the content of the program.

Results: Target Achievement: Met

Recommendations:

Reflections/Notes:
**Outcome 1.3: Technical data management**
Students will understand database principles and working mechanisms for technical data management.

<table>
<thead>
<tr>
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<th>Indirect - Survey</th>
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<td><strong>Details/Description:</strong> The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.</td>
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**Findings for Senior Exit Survey**

**Summary of Findings:** Our CET majors responded in the affirmative (agreed or strongly agreed) on all survey issues involving the content of the program.

**Results:** Target Achievement: Met

**Recommendations:**

**Reflections/Notes:**

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**Measure: Senior Project**
Direct - Portfolio

**Details/Description:** Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group member. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.

**Target:** Seniors.

**Implementation Plan (timeline):** Yearly

**Responsible Individual(s):** CET faculty

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**Measure: Senior Project**
Direct - Portfolio

**Details/Description:** Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group member. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.

**Target:** Seniors.

**Implementation Plan (timeline):** Yearly

**Responsible Individual(s):** CET faculty
Findings for Senior Project

**Summary of Findings:** The concept of the database was understood by all students in the class. Two active databases were employed in projects.

**Results:** Target Achievement: Met

**Recommendations:**

**Reflections/Notes:**

**OBJ 2: Commanding contemporary tools**

*Students will learn how to command contemporary tools.*

**Outcome 2.1: Apply stimulation tools**

*Students will apply simulation tools to verify theoretical design or trouble-shoot potential system problems.*

**Measure:** Senior Exit Survey

*Indirect - Survey*

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

**Target:** Graduating seniors

**Implementation Plan (timeline):** Every semester

**Responsible Individual(s):** CET faculty

Findings for Senior Exit Survey

**Summary of Findings:** Our CET majors responded in the affirmative (agreed or strongly agreed) on all survey issues involving the content of the program.

**Results:** Target Achievement: Met

**Recommendations:**

**Reflections/Notes:**

**Measure:** Senior Project

*Direct - Portfolio*

**Details/Description:** Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group memeber. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.

**Target:** Seniors.

**Implementation Plan (timeline):** Yearly

**Responsible Individual(s):** CET faculty

Findings for Senior Project

**Summary of Findings:** Simulation and/or troubleshooting was employed in each project. Most students were concise in their work. Other were less so but all were acceptable.

**Results:** Target Achievement: Met

**Recommendations:**

**Reflections/Notes:**
**Outcome 2.2: Analyze lab data**
Students will analyze lab data using statistical tools.

**Measure:** Senior Exit Survey
Indirect - Survey

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

**Target:** Graduating seniors

**Implementation Plan (timeline):** Every semester

**Responsible Individual(s):** CET faculty

**Findings for Senior Exit Survey**

**Summary of Findings:** Our CET majors responded in the affirmative (agreed or strongly agreed) on all survey issues involving the content of the program.

**Results:** Target Achievement: Met

**Recommendations:**

**Reflections/Notes:**

**Measure:** Senior Project
Direct - Portfolio

**Details/Description:** Source of assessment: ECT 406. The course is offered once a year. The students work in groups on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group member. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.

**Target:** Seniors.

**Implementation Plan (timeline):** Yearly

**Responsible Individual(s):** CET faculty

**Findings for Senior Project**

**Summary of Findings:** Data analysis was not used extensively in most projects. That used was acceptable.

**Results:** Target Achievement: Met

**Recommendations:**

**Reflections/Notes:**

**OBJ 3: Design skills**
Student will learn design skills.

**Outcome 3.1: Control circuitry**
Students will design microcontroller based control circuitry.

**Measure:** Senior Exit Survey
Indirect - Survey

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

**Target:** Graduating seniors
**Implementation Plan (timeline):** Every semester  
**Responsible Individual(s):** CET faculty

### Findings for Senior Exit Survey

**Summary of Findings:** Our CET majors responded in the affirmative (agreed or strongly agreed) on all survey issues involving the content of the program.  
**Results:** Target Achievement: Met  
**Recommendations:**  
**Reflections/Notes:**

### Measure: Senior Project  
**Details/Description:** Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group membeber. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.  
**Target:** Seniors.  
**Implementation Plan (timeline):** Yearly  
**Responsible Individual(s):** CET faculty

### Findings for Senior Project

**Summary of Findings:** Each project involved a considerable amount of control technology. All were appropriate for the course.  
**Results:** Target Achievement: Met  
**Recommendations:**  
**Reflections/Notes:**

### Outcome 3.2: Digital logic circuitry  
Students will develop digital logic circuitry using FPGA and HDL.

### Measure: Senior Exit Survey  
**Indirect - Survey**

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.  
**Target:** Graduating seniors  
**Implementation Plan (timeline):** Every semester  
**Responsible Individual(s):** CET faculty

### Findings for Senior Exit Survey

**Summary of Findings:** Our CET majors responded in the affirmative (agreed or strongly agreed) on all survey issues involving the content of the program.  
**Results:** Target Achievement: Met  
**Recommendations:**  
**Reflections/Notes:**
### Measure: Senior Project
Direct - Portfolio

**Details/Description:** Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group member. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.

**Target:** Seniors.

**Implementation Plan (timeline):** Yearly

**Responsible Individual(s):** CET faculty

---

### Findings for Senior Project

**Summary of Findings:** FPGAs were employed in a number of the projects along with some discrete logic components. All were successful and well implemented.

**Results:** Target Achievement: Met

**Recommendations:**

**Reflections/Notes:**

---

### Outcome 3.3: Design and implement LAN
Students will design and implement LAN for small business environments.

### Measure: Senior Exit Survey
Indirect - Survey

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

**Target:** Graduating seniors

**Implementation Plan (timeline):** Every semester

**Responsible Individual(s):** CET faculty

---

### Findings for Senior Exit Survey

**Summary of Findings:** Our CET majors responded in the affirmative (agreed or strongly agreed) on all survey issues involving the content of the program.

**Results:** Target Achievement: Met

**Recommendations:**

**Reflections/Notes:**

---

### Measure: Senior Project
Direct - Portfolio

**Details/Description:** Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group member. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.

**Target:** Seniors.
Implementation Plan (timeline): Yearly  
Responsible Individual(s): CET faculty

Findings for Senior Project

Summary of Findings: No LANs were specifically employed in projects. The concepts was covered in ECT306.  
Results: Target Achievement: Met  
Recommendations:  
Reflections/Notes:

OBJ 4: Lab skills
Students will learn lab skills.

Outcome 4.1: Plan experiments
Students will plan experiments to collect desired data or observations.

Measure: Senior Exit Survey  
Indirect - Survey

Details/Description: The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.  
Target: Graduating seniors  
Implementation Plan (timeline): Every semester  
Responsible Individual(s): CET faculty

Findings for Senior Exit Survey

Summary of Findings: Our CET majors responded in the affirmative (agreed or strongly agreed) on all survey issues involving the content of the program.  
Results: Target Achievement: Met  
Recommendations:  
Reflections/Notes:

Measure: Senior Project  
Direct - Portfolio

Details/Description: Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group member. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.  
Target: Seniors.  
Implementation Plan (timeline): Yearly  
Responsible Individual(s): CET faculty

Findings for Senior Project

Summary of Findings: The analysis of the project design implementation was detailed by each student via troubleshooting and/or checkout plan.  
Results: Target Achievement: Met
### Outcome 4.2: Conduct experiments
Students will conduct experiments to truthfully record results following manual or proposed steps.

**Measure:** Senior Exit Survey
**Indirect - Survey**

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

**Target:** Graduating seniors

**Implementation Plan (timeline):** Every semester

**Responsible Individual(s):** CET faculty

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### Measure: Senior Project
**Direct - Portfolio**

**Details/Description:** Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group member. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.

**Target:** Seniors.

**Implementation Plan (timeline):** Yearly

**Responsible Individual(s):** CET faculty

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<td><strong>Summary of Findings:</strong> The project check-outs were executed per the plans.</td>
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### Outcome 4.3: Follow safety procedures
Students will follow safety procedure and lab protocols, handle equipments with care.

**Measure:** Senior Exit Survey
**Indirect - Survey**

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

**Target:** Graduating seniors
Implementation Plan (timeline): Every semester
Responsible Individual(s): CET faculty

Findings for Senior Exit Survey

Summary of Findings: Our CET majors responded in the affirmative (agreed or strongly agreed) on all survey issues involving the content of the program.
Results: Target Achievement: Met
Recommendations:
Reflections/Notes:

Measure: Senior Project
Direct - Portfolio

Details/Description: Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group member. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.
Target: Seniors.
Implementation Plan (timeline): Yearly
Responsible Individual(s): CET faculty

Findings for Senior Project

Summary of Findings: The students were required to address safety issues in the project plan and final documentation on end user issues.
Results: Target Achievement: Met
Recommendations:
Reflections/Notes:

Outcome 4.4: Examine lab results
Students will examine and interpret lab results to draw conclusions.

Measure: Senior Exit Survey
Indirect - Survey

Details/Description: The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.
Target: Graduating seniors
Implementation Plan (timeline): Every semester
Responsible Individual(s): CET faculty

Findings for Senior Exit Survey

Summary of Findings: Our CET majors responded in the affirmative (agreed or strongly agreed) on all survey issues involving the content of the program.
Results: Target Achievement: Met
Recommendations:
Reflections/Notes:
**Measure:** Senior Project  
Direct - Portfolio

**Details/Description:** Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group memeber. They will investigate, evaulate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.

**Target:** Seniors.

**Implementation Plan (timeline):** Yearly

**Responsible Individual(s):** CET faculty

---

**Findings for Senior Project**

**Summary of Findings:** Check-out was accomplished, performance measured and analysis completed.

**Results:** Target Achievement: Met

**Recommendations :**

**Reflections/Notes :**

---

**OBJ 5: Managerial skills**

Students will learn managerial skills.

---

**Outcome 5.1: Develop work plans**

Students will develop work plans with clearly defined phased goals and timeline.

---

**Measure:** Senior Exit Survey

Indirect - Survey

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

**Target:** Graduating seniors

**Implementation Plan (timeline):** Every semester

**Responsible Individual(s):** CET faculty

---

**Findings for Senior Exit Survey**

**Summary of Findings:** Our CET majors responded in the affirmative (agreed or strongly agreed) on all survey issues involving the content of the program.

**Results:** Target Achievement: Met

**Recommendations :**

**Reflections/Notes :**

---

**Measure:** Senior Project

Direct - Portfolio

**Details/Description:** Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group.
Outcome 5.2: Follow work plan
Students will follow work plan by observing time line and reporting progress.

\[\text{Measure: Senior Exit Survey} \]
\[\text{Indirect - Survey} \]
\[\text{Details/Description: The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.} \]
\[\text{Target: Graduating seniors} \]
\[\text{Implementation Plan (timeline): Every semester} \]
\[\text{Responsible Individual(s): CET faculty} \]

\[\text{Findings for Senior Exit Survey} \]
\[\text{Summary of Findings: Our CET majors responded in the affirmative (agreed or strongly agreed) on all survey issues involving the content of the program.} \]
\[\text{Results: Target Achievement: Met} \]
\[\text{Recommendations:} \]
\[\text{Reflections/Notes:} \]

\[\text{Measure: Senior Project} \]
\[\text{Direct - Portfolio} \]
\[\text{Details/Description: Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group memeber. They will investigate, evaulate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.} \]
\[\text{Target: Seniors.} \]
\[\text{Implementation Plan (timeline): Yearly} \]
\[\text{Responsible Individual(s): CET faculty} \]

\[\text{Findings for Senior Project} \]
\[\text{Summary of Findings: Based on deficiency on this item in the last cycle, the students were required to update their timelines during the project and report on their overall performance against the plan.} \]
**Results:** Target Achievement: Met

**Recommendations:**

**Reflections/Notes:** This issue appears to be resolved by covering it better in the project run-up and asking for tracking performance.

---

**Outcome 5.3: Modify schedule**

Students will modify schedules based on progress.

**Measure:** Senior Exit Survey  
Indirect - Survey

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

**Target:** Graduating seniors  
**Implementation Plan (timeline):** Every semester  
**Responsible Individual(s):** CET faculty

**Findings for Senior Exit Survey**

**Summary of Findings:** Our CET majors responded in the affirmative (agreed or strongly agreed) on all survey issues involving the content of the program.

**Results:** Target Achievement: Met

**Recommendations:**

**Reflections/Notes:**

---

**Measure:** Senior Project  
Direct - Portfolio

**Details/Description:** Source of assessment: ECT 406. The course is offered once a year. The students work in a group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group member. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.

**Target:** Seniors.

**Implementation Plan (timeline):** Yearly  
**Responsible Individual(s):** CET faculty

**Findings for Senior Project**

**Summary of Findings:** The schedule was modified per the requirement to track performance against the original schedule.

**Results:** Target Achievement: Met

**Recommendations:**

**Reflections/Notes:** This issue appears to be resolved by covering it better in the project run-up and asking for tracking performance.

---

**OBJ 6: Ethics awareness**

Students will learn ethics awareness.
**Outcome 6.1: Analyze ethics**
Students will analyze ethics issues based on professional ethics codes.

**Measure:** Senior Exit Survey
Indirect - Survey

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

**Target:** Graduating seniors

**Implementation Plan (timeline):** Every semester

**Responsible Individual(s):** CET faculty

**Findings for Senior Exit Survey**

**Summary of Findings:** Our CET majors responded in the affirmative (agreed or strongly agreed) on all survey issues involving the content of the program.

**Results:** Target Achievement: Met

**Recommendations:**

**Reflections/Notes:**

---

**Outcome 6.2: Technology impact on society**
Students will understand technology impact on society.

**Measure:** Senior Exit Survey
Indirect - Survey

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

**Target:** Graduating seniors

**Implementation Plan (timeline):** Every semester

**Responsible Individual(s):** CET faculty

**Findings for Senior Exit Survey**
Summary of Findings: This issue appears to be resolved by covering it better in the project run-up and asking for tracking performance.

Results: Target Achievement: Met

Recommendations:

Reflections/Notes:

Measure: Senior Project
Direct - Portfolio

Details/Description: Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group member. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.

Target: Seniors.

Implementation Plan (timeline): Yearly

Responsible Individual(s): CET faculty

Findings for Senior Project

Summary of Findings: The student were required to comment on how their project or the theme of it might impact society; they responded in positive ways.

Results: Target Achievement: Met

Recommendations:

Reflections/Notes:

OBJ 7: Lifelong learning
Students will learn lifelong learning.

Outcome 7.1: Professional societies
Students will get involved with professional societies.

Measure: Senior Exit Survey
Indirect - Survey

Details/Description: The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

Target: Graduating seniors

Implementation Plan (timeline): Every semester

Responsible Individual(s): CET faculty

Findings for Senior Exit Survey

Summary of Findings: The students responded in the affirmative to questions about the content of the program.

Results: Target Achievement: Met

Recommendations:

Reflections/Notes:
**Measure:** Senior Project  
Direct - Portfolio

**Details/Description:** Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group memeber. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.  
**Target:** Seniors.  
**Implementation Plan (timeline):** Yearly  
**Responsible Individual(s):** CET faculty

---

**Findings for Senior Project**

**Summary of Findings:** Our students overall are not involving themselves in professional society organization in the college.  
**Results:** Target Achievement: Not Met  
**Recommendations:**  
**Reflections/Notes:**  

**These Findings are associated with the following Actions:**  
Professional Society Participation  
(Action Plan; 2013-2014 Assessment Cycle)

---

**Outcome 7.2: Technological trends**  
Students will research the latest technological trends in a specific area.

**Measure:** Senior Exit Survey  
Indirect - Survey

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.  
**Target:** Graduating seniors  
**Implementation Plan (timeline):** Every semester  
**Responsible Individual(s):** CET faculty

---

**Findings for Senior Exit Survey**

**Summary of Findings:** Our CET majors responded in the affirmative (agreed or strongly agreed) on all survey issues involving the content of the program.  
**Results:** Target Achievement: Met  
**Recommendations:**  
**Reflections/Notes:**

---

**Measure:** Senior Project  
Direct - Portfolio

**Details/Description:** Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group memeber. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.  
**Target:** Seniors.
**Implementation Plan (timeline):** Yearly  
**Responsible Individual(s):** CET faculty

### Findings for Senior Project

**Summary of Findings:** The results of the project designs show that our students are working to remain current in their field.  
**Results:** Target Achievement: Met  
**Recommendations:**  
**Reflections/Notes:**

<table>
<thead>
<tr>
<th>OBJ 8: Teamwork skills</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Students will learn teamwork skills.</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Outcome 8.1: Individual role and shared duties</th>
</tr>
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<tr>
<td><strong>Students will understand individual role and shared duties.</strong></td>
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</table>

<table>
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<tr>
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**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.  
**Target:** Graduating seniors  
**Implementation Plan (timeline):** Every semester  
**Responsible Individual(s):** CET faculty

### Findings for Senior Exit Survey

**Summary of Findings:** Our CET majors responded in the affirmative (agreed or strongly agreed) on all survey issues involving the content of the program.  
**Results:** Target Achievement: Met  
**Recommendations:**  
**Reflections/Notes:**

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**Details/Description:** Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group member. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.  
**Target:** Seniors.  
**Implementation Plan (timeline):** Yearly  
**Responsible Individual(s):** CET faculty

### Findings for Senior Project

**Summary of Findings:** N/A this cycle  
**Results:** Target Achievement: Met  
**Recommendations:**
Outcome 8.2: Respect different opinions

Students will listen to others; cooperate with teammates; respect different opinions.

**Measure:** Senior Exit Survey
Indirect - Survey

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

**Target:** Graduating seniors

**Implementation Plan (timeline):** Every semester

**Responsible Individual(s):** CET faculty

**Findings for Senior Exit Survey**

**Summary of Findings:** Our CET majors responded in the affirmative (agreed or strongly agreed) on all survey issues involving the content of the program.

**Results:** Target Achievement: Met

**Recommendations:**

**Reflections/Notes:**

---

**Objective 9:** Communication skills

Students will learn communication skills.

Outcome 9.1: Produce technical documents

Students will produce a technical document that is

**Measure:** Senior Exit Survey
Indirect - Survey

**Details/Description:** Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group member. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.

**Target:** Seniors.

**Implementation Plan (timeline):** Yearly

**Responsible Individual(s):** CET faculty

**Findings for Senior Project**

**Summary of Findings:** The interaction between students in the class remained positive throughout the semester and the project process. Respect was exhibited.

**Results:** Target Achievement: Met

**Recommendations:**

**Reflections/Notes:**
Details/Description: The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.
Target: Graduating seniors
Implementation Plan (timeline): Every semester
Responsible Individual(s): CET faculty

Findings for Senior Exit Survey

Summary of Findings: Our CET majors responded in the affirmative (agreed or strongly agreed) on all survey issues involving the content of the program.
Results: Target Achievement: Met
Recommendations:
Reflections/Notes:

Measure: Senior Project
Direct - Portfolio

Details/Description: Source of assessment: ECT 406. The course is offered once a year. The students work in groups on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group member. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.
Target: Seniors.
Implementation Plan (timeline): Yearly
Responsible Individual(s): CET faculty

Findings for Senior Project

Summary of Findings: Written and oral communication was proper and professional throughout the semester in most all cases.
Results: Target Achievement: Met
Recommendations:
Reflections/Notes:

Outcome 9.2: Technical document with minimum errors
Students will produce a technical document with a minimum of errors in spelling, punctuation, grammar and usage.

Measure: Senior Exit Survey
Indirect - Survey

Details/Description: The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.
Target: Graduating seniors
Implementation Plan (timeline): Every semester
Responsible Individual(s): CET faculty

Findings for Senior Exit Survey

Summary of Findings: Our CET majors responded in the affirmative (agreed or strongly agreed) on all survey issues involving the content of the program.
Results: Target Achievement: Met
Recommendations: 
Reflections/Notes: 

Measure: Senior Project
Direct - Portfolio

Details/Description: Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group memeber. They will investigate, evaulate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.
Target: Seniors.
Implementation Plan (timeline): Yearly
Responsible Individual(s): CET faculty

Findings for Senior Project

Summary of Findings: This issue can be improved.
Results: Target Achievement: Not Met
Recommendations: 
Reflections/Notes: 

These Findings are associated with the following Actions:
Grammar, spelling, writing quality
(Action Plan; 2013-2014 Assessment Cycle)

Outcomes 9.3:
Communicate in a professional manner
Students will communicate in a professional manner, and respond to questions in language that is both concise and commensurate with audience’s background.

Measure: Senior Exit Survey
Indirect - Survey

Details/Description: The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.
Target: Graduating seniors
Implementation Plan (timeline): Every semester
Responsible Individual(s): CET faculty

Findings for Senior Exit Survey

Summary of Findings: Our CET majors responded in the affirmative (agreed or strongly agreed) on all survey issues involving the content of the program.
Results: Target Achievement: Met
Recommendations: 
Reflections/Notes: 

Measure: Senior Project
Direct - Portfolio
**Details/Description:** Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group member. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.

**Target:** Seniors.

**Implementation Plan (timeline):** Yearly

**Responsible Individual(s):** CET faculty

---

### Findings for Senior Project

**Summary of Findings:** Written and oral communication was professional.

**Results:** Target Achievement: Met

**Recommendations:**

**Reflections/Notes:**

---

### Overall Recommendations

Two issues require mitigation. Participation in on-campus professional societies by CET students is flagging. Also, the project documents lacked complete grammar and spelling corrections when submitted.

---

### Overall Reflection

Overall very good. Two issues.

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### Action Plan

#### Actions

---

**BS in Computer Engineering Technlg Outcome Set**

**OBJ 7: Lifelong learning**

Students will learn lifelong learning.

---

**Outcome 7.1: Professional societies**

Students will get involved with professional societies.

---

**Action:** Professional Society Participation

---

**This Action is associated with the following Findings**

**Findings for Senior Project**

(Assessment Plan and Assessment Findings; 2013-2014 Assessment Cycle)

**Summary of Findings:** Our students overall are not involving themselves in professional society organization in the college.

**Action Details:** This issue is difficult. The on-campus programming in professional organizations is the value-add that attracts participants. So long range planning is needed.

**Implementation Plan (timeline):** 2015-16 cycle

**Key/Responsible Personnel:** CET team and ECET department faculty

**Measures:**

**Resource Allocations:**
**Priority:** Medium

**OBJ 9: Communication skills**
Students will learn communication skills.

**Outcome 9.2: Technical document with minimum errors**
Students will produce a technical document with a minimum of errors in spelling, punctuation, grammar and usage.

**Action:** Grammar, spelling, writing quality

This Action is associated with the following Findings

**Findings for Senior Project**
(Assessment Plan and Assessment Findings; 2013-2014 Assessment Cycle)

**Summary of Findings:** This issue can be improved.

**Action Details:** The grading rubric needs to be visited to add weight to such errors.

**Implementation Plan (timeline):** 2015-16 cycle

**Key/Responsible Personnel:**

**Measures:**

**Resource Allocations:**

**Priority:** Medium

---

**Status Report**

**Action Statuses**

**BS in Computer Engineering Technlgy Outcome Set**

**OBJ 7: Lifelong learning**
Students will learn lifelong learning.

**Outcome 7.1: Professional societies**
Students will get involved with professional societies.

**Action:** Professional Society Participation

**Action Details:** This issue is difficult. The on-campus programming in professional organizations is the value-add that attracts participants. So long range planning is needed.

**Implementation Plan (timeline):** 2015-16 cycle

**Key/Responsible Personnel:** CET team and ECET department faculty

**Measures:**

**Resource Allocations:**

**Priority:** Medium

---

**Status for Professional Society Participation**

No Status Added
**OBJ 9: Communication skills**

Students will learn communication skills.

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<tr>
<th>Outcome 9.2: Technical document with minimum errors</th>
<th>Action: Grammar, spelling, writing quality</th>
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<td><strong>Resource Allocations:</strong></td>
</tr>
<tr>
<td><strong>Priority:</strong> Medium</td>
<td><strong>Status</strong> for Grammar, spelling, writing quality</td>
</tr>
</tbody>
</table>

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**Status Summary**

No text specified

**Summary of Next Steps**

No text specified
## 2014-2015 Assessment Cycle

### Assessment Plan

<table>
<thead>
<tr>
<th>Outcomes and Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>BS in Computer Engineering Technlgy Outcome Set</td>
</tr>
<tr>
<td><strong>OBJ 1: Problem solving skills</strong></td>
</tr>
<tr>
<td>Students will learn problems solving skills.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Outcome 1.1: Computer systems and networks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students will apply algebra, discrete math, and basic law of physics to build, test, and operate electric circuits, computer systems and networks.</td>
</tr>
<tr>
<td><strong>Measure:</strong> Senior Exit Survey</td>
</tr>
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<td><strong>Details/Description:</strong> The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.</td>
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<tr>
<td><strong>Implementation Plan (timeline):</strong> Every semester</td>
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<td><strong>Responsible Individual(s):</strong> CET faculty</td>
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<table>
<thead>
<tr>
<th>Outcome 1.2: Computer languages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students will program in low/high-level computer languages to build microcontroller based applications and digital logic circuits.</td>
</tr>
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| Measure: Senior Project |
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| **Details/Description:** Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group memeber. They will investigate, evulate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester. |
| **Target:** Seniors. |
| **Implementation Plan (timeline):** Yearly |
| **Responsible Individual(s):** CET faculty |
Outcome 1.3: Technical data management

Students will understand database principles and working mechanisms for technical data management.

<table>
<thead>
<tr>
<th>Measure:</th>
<th>Senior Exit Survey</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indirect - Survey</td>
<td></td>
</tr>
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</table>

**Details/Description**: The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

**Target**: Graduating seniors

**Implementation Plan (timeline)**: Every semester

**Responsible Individual(s)**: CET faculty

OBJ 2: Commanding contemporary tools

Students will learn how to command contemporary tools.

Outcome 2.1: Apply stimulation tools

Students will apply simulation tools to verify theoretical design or trouble-shoot potential system problems.

<table>
<thead>
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<th>Measure:</th>
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**Details/Description**: The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

**Target**: Graduating seniors

**Implementation Plan (timeline)**: Every semester

**Responsible Individual(s)**: CET faculty

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**Target**: Seniors.

**Implementation Plan (timeline)**: Yearly

**Responsible Individual(s)**: CET faculty
**Outcome 2.2: Analze lab data**
Students will analyze lab data using statistical tools.

- **Measure:** Senior Exit Survey
  - Indirect - Survey

  - **Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.
  - **Target:** Graduating seniors
  - **Implementation Plan (timeline):** Every semester
  - **Responsible Individual(s):** CET faculty

**Measure:** Senior Project
- **Direct - Portfolio**

  - **Details/Description:** Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group member. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.
  - **Target:** Seniors.
  - **Implementation Plan (timeline):** Yearly
  - **Responsible Individual(s):** CET faculty

**OBJ 3: Design skills**
Student will learn design skills.

**Outcome 3.1: Control circuitry**
Students will design microcontroller based control circuitry.

- **Measure:** Senior Exit Survey
  - Indirect - Survey

  - **Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.
  - **Target:** Graduating seniors
  - **Implementation Plan (timeline):** Every semester
  - **Responsible Individual(s):** CET faculty

- **Measure:** Senior Project
  - **Direct - Portfolio**

  - **Details/Description:** Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group member. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.
  - **Target:** Seniors.
  - **Implementation Plan (timeline):** Yearly
  - **Responsible Individual(s):** CET faculty

**Outcome 3.2: Digital logic circuitry**
Students will develop digital logic circuitry using FPGA and HDL.

- **Measure:** Senior Exit Survey
  - Indirect - Survey

  - **Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.
  - **Target:** Graduating seniors
Implementation Plan (timeline): Every semester  
Responsible Individual(s): CET faculty

**Measure:** Senior Project  
Direct - Portfolio

**Details/Description:** Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group member. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.  
**Target:** Seniors.  
**Implementation Plan (timeline):** Yearly  
**Responsible Individual(s):** CET faculty

Outcome 3.3: Design and implement LAN  
Students will design and implement LAN for small business environments.

**Measure:** Senior Exit Survey  
Indirect - Survey

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.  
**Target:** Graduating seniors  
**Implementation Plan (timeline):** Every semester  
**Responsible Individual(s):** CET faculty

**Measure:** Senior Project  
Direct - Portfolio

**Details/Description:** Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group member. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.  
**Target:** Seniors.  
**Implementation Plan (timeline):** Yearly  
**Responsible Individual(s):** CET faculty

OBJ 4: Lab skills  
Students will learn lab skills.

Outcome 4.1: Plan experiments  
Students will plan experiments to collect desired data or observations.

**Measure:** Senior Exit Survey  
Indirect - Survey

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.  
**Target:** Graduating seniors  
**Implementation Plan (timeline):** Every semester  
**Responsible Individual(s):** CET faculty

**Measure:** Senior Project  
Direct - Portfolio
**Outcome 4.2: Conduct experiments**

Students will conduct experiments to truthfully record results following manual or proposed steps.

- **Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.
- **Target:** Graduating seniors
- **Implementation Plan (timeline):** Every semester
- **Responsible Individual(s):** CET faculty

**Measure: Senior Exit Survey**

Indirect - Survey

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.
- **Target:** Graduating seniors
- **Implementation Plan (timeline):** Every semester
- **Responsible Individual(s):** CET faculty

**Measure: Senior Project**

Direct - Portfolio

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.
- **Target:** Graduating seniors
- **Implementation Plan (timeline):** Every semester
- **Responsible Individual(s):** CET faculty

**Outcome 4.3: Follow safety procedures**

Students will follow safety procedure and lab protocols, handle equipments with care.

- **Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.
- **Target:** Graduating seniors
- **Implementation Plan (timeline):** Every semester
- **Responsible Individual(s):** CET faculty

**Measure: Senior Exit Survey**

Indirect - Survey

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.
- **Target:** Graduating seniors
- **Implementation Plan (timeline):** Every semester
- **Responsible Individual(s):** CET faculty

**Measure: Senior Project**

Direct - Portfolio
**Outcome 4.4: Examine lab results**  
Students will examine and interpret lab results to draw conclusions.

| **Measure** | Senior Exit Survey  
Indirect - Survey |
|-------------|------------------|
| **Details/Description** | The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.  
**Target** | Graduating seniors  
**Implementation Plan (timeline)** | Every semester  
**Responsible Individual(s)** | CET faculty |

| **Measure** | Senior Project  
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**Target** | Seniors.  
**Implementation Plan (timeline)** | Yearly  
**Responsible Individual(s)** | CET faculty |

**OBJ 5: Managerial skills**  
Students will learn managerial skills.

| **Outcome 5.1: Develop work plans** | Senior Exit Survey  
Indirect - Survey |
|-----------------|------------------|
| **Details/Description** | The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.  
**Target** | Graduating seniors  
**Implementation Plan (timeline)** | Every semester  
**Responsible Individual(s)** | CET faculty |

| **Measure** | Senior Project  
Direct - Portfolio |
|-------------|------------------|
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**Target** | Seniors.  
**Implementation Plan (timeline)** | Yearly  
**Responsible Individual(s)** | CET faculty |

**Outcome 5.2: Follow work plan**  
Students will follow work plan by observing time line and reporting progress.

| **Measure** | Senior Exit Survey  
Indirect - Survey |
|-------------|------------------|
| **Details/Description** | The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.  
**Target** | Graduating seniors |
### Outcome 5.3: Modify schedule

Students will modify schedules based on progress.

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### OBJ 6: Ethics awareness

Students will learn ethics awareness.

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### Outcome 6.1: Analyze ethics

Students will analyze ethics issues based on professional ethics codes.

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Target: Seniors.
Implementation Plan (timeline): Yearly
Responsible Individual(s): CET faculty

Outcome 6.2: Technology impact on society
Students will understand technology impact on society.

Measure: Senior Exit Survey
Indirect - Survey

Details/Description: The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.
Target: Graduating seniors
Implementation Plan (timeline): Every semester
Responsible Individual(s): CET faculty

Measure: Senior Project
Direct - Portfolio

Details/Description: Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group member. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.
Target: Seniors.
Implementation Plan (timeline): Yearly
Responsible Individual(s): CET faculty

OBJ 7: Lifelong learning
Students will learn lifelong learning.

Outcome 7.1: Professional societies
Students will get involved with professional societies.

Measure: Senior Exit Survey
Indirect - Survey

Details/Description: The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.
Target: Graduating seniors
Implementation Plan (timeline): Every semester
Responsible Individual(s): CET faculty

Measure: Senior Project
Direct - Portfolio

Details/Description: Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group member. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.
Target: Seniors.
Implementation Plan (timeline): Yearly
### Outcome 7.2: Technological trends

**Students will research the latest technological trends in a specific area.**

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**Target:** Graduating seniors

**Implementation Plan (timeline):** Every semester

**Responsible Individual(s):** CET faculty

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**Target:** Seniors.

**Implementation Plan (timeline):** Yearly

**Responsible Individual(s):** CET faculty

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### OBJ 8: Teamwork skills

**Students will learn teamwork skills.**

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**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

**Target:** Graduating seniors

**Implementation Plan (timeline):** Every semester

**Responsible Individual(s):** CET faculty

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**Target:** Seniors.

**Implementation Plan (timeline):** Yearly

**Responsible Individual(s):** CET faculty

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### Outcome 8.2: Respect different opinions

**Students will listen to others; cooperate with**

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teammates; respect different opinions.

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

**Target:** Graduating seniors

**Implementation Plan (timeline):** Every semester

**Responsible Individual(s):** CET faculty

**Measure:** Senior Project

Direct - Portfolio

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**Target:** Seniors.

**Implementation Plan (timeline):** Yearly

**Responsible Individual(s):** CET faculty

**OBJ 9: Communication skills**

Students will learn communication skills.

**Outcome 9.1: Produce technical documents**

Students will produce a technical document that is factually correct, and with good logical structure, proper format, citation, and references.

**Measure:** Senior Exit Survey

Indirect - Survey

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

**Target:** Graduating seniors

**Implementation Plan (timeline):** Every semester

**Responsible Individual(s):** CET faculty

**Measure:** Senior Porject

Direct - Portfolio

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**Target:** Seniors.

**Implementation Plan (timeline):** Yearly

**Responsible Individual(s):** CET faculty

**Outcome 9.2: Technical document with minimum errors**

Students will produce a technical document with a minimum of errors in spelling, punctuation, grammar and usage.

**Measure:** Senior Exit Survey

Indirect - Survey

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

**Target:** Graduating seniors

**Implementation Plan (timeline):** Every semester

**Responsible Individual(s):** CET faculty
### Measure: Senior Project
**Direct - Portfolio**

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**Target:** Seniors.

**Implementation Plan (timeline):** Yearly

**Responsible Individual(s):** CET faculty

### Measure: Senior Exit Survey
**Indirect - Survey**

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

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**Implementation Plan (timeline):** Every semester

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**Target:** Seniors.

**Implementation Plan (timeline):** Yearly

**Responsible Individual(s):** CET faculty

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**Assessment Findings**

### Finding per Measure

**BS in Computer Engineering Technly Outcome Set**

**OBJ 1: Problem solving skills**

Students will learn problems solving skills.

**Outcome 1.1: Computer systems and networks**

Students will apply algebra, discrete math, and basic law of physics to build, test, and operate electric circuits, computer systems and networks.

**Measure:** Senior Exit Survey

**Indirect - Survey**

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

**Target:** Graduating seniors

**Implementation Plan (timeline):** Every semester

**Responsible Individual(s):** CET faculty
### Findings for Senior Exit Survey

No Findings Added

### Measure: Senior Project
**Direct - Portfolio**

**Details/Description:** Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group member. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.

**Target:** Seniors.

**Implementation Plan (timeline):** Yearly

**Responsible Individual(s):** CET faculty

### Findings for Senior Project

No Findings Added

### Outcome 1.2: Computer languages

Students will program in low/high-level computer languages to build microcontroller based applications and digital logic circuits.

### Measure: Senior Exit Survey
**Indirect - Survey**

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

**Target:** Graduating seniors

**Implementation Plan (timeline):** Every semester

**Responsible Individual(s):** CET faculty

### Findings for Senior Exit Survey

No Findings Added

### Measure: Senior Project
**Direct - Portfolio**

**Details/Description:** Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group member. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.

**Target:** Seniors.

**Implementation Plan (timeline):** Yearly

**Responsible Individual(s):** CET faculty

### Findings for Senior Project

No Findings Added
**Outcome 1.3: Technical data management**

Students will understand database principles and working mechanisms for technical data management.

**Measure: Senior Exit Survey**

Indirect - Survey

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

**Target:** Graduating seniors

**Implementation Plan (timeline):** Every semester

**Responsible Individual(s):** CET faculty

**Findings for Senior Exit Survey**

*No Findings Added*

**Measure: Senior Project**

Direct - Portfolio

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**Target:** Seniors.

**Implementation Plan (timeline):** Yearly

**Responsible Individual(s):** CET faculty

**Findings for Senior Project**

*No Findings Added*

**OBJ 2: Commanding contemporary tools**

Students will learn how to command contemporary tools.

**Outcome 2.1: Apply stimulation tools**

Students will apply simulation tools to verify theoretical design or trouble-shoot potential system problems.

**Measure: Senior Exit Survey**

Indirect - Survey

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

**Target:** Graduating seniors

**Implementation Plan (timeline):** Every semester

**Responsible Individual(s):** CET faculty

**Findings for Senior Exit Survey**

*No Findings Added*

**Measure: Senior Project**

Direct - Portfolio

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**Target:** Seniors.

**Implementation Plan (timeline):** Yearly

**Responsible Individual(s):** CET faculty

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**Outcome 2.2: Analyze lab data**

Students will analyze lab data using statistical tools.

**Measure:** Senior Exit Survey

**Indirect - Survey**

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

**Target:** Graduating seniors

**Implementation Plan (timeline):** Every semester

**Responsible Individual(s):** CET faculty

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**Findings for Senior Exit Survey**

*No Findings Added*

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**Measure:** Senior Project

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**Target:** Seniors.

**Implementation Plan (timeline):** Yearly

**Responsible Individual(s):** CET faculty

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**Findings for Senior Project**

*No Findings Added*

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**OBJ 3: Design skills**

Student will learn design skills.

**Outcome 3.1: Control circuitry**

Students will design microcontroller based control circuitry.

**Measure:** Senior Exit Survey

**Indirect - Survey**

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

**Target:** Graduating seniors

**Implementation Plan (timeline):** Every semester

**Responsible Individual(s):** CET faculty
### Findings for Senior Exit Survey

No Findings Added

#### Measure: Senior Project
Direct - Portfolio

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**Target:** Seniors.

**Implementation Plan (timeline):** Yearly

**Responsible Individual(s):** CET faculty

### Findings for Senior Project

No Findings Added

#### Outcome 3.2: Digital logic circuitry

Students will develop digital logic circuitry using FPGA and HDL.

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**Target:** Graduating seniors

**Implementation Plan (timeline):** Every semester

**Responsible Individual(s):** CET faculty

### Findings for Senior Exit Survey

No Findings Added

#### Measure: Senior Project
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**Target:** Seniors.

**Implementation Plan (timeline):** Yearly

**Responsible Individual(s):** CET faculty

### Findings for Senior Project

No Findings Added
**Outcome 3.3: Design and implement LAN**

**Measure:** Senior Exit Survey  
Indirect - Survey

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.  
**Target:** Graduating seniors  
**Implementation Plan (timeline):** Every semester  
**Responsible Individual(s):** CET faculty

**Findings for Senior Exit Survey**

No Findings Added

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**Measure:** Senior Project  
Direct - Portfolio

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**Target:** Seniors.  
**Implementation Plan (timeline):** Yearly  
**Responsible Individual(s):** CET faculty

**Findings for Senior Project**

No Findings Added

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**OBJ 4: Lab skills**  
Students will learn lab skills.

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**Outcome 4.1: Plan experiments**  
Students will plan experiments to collect desired data or observations.

**Measure:** Senior Exit Survey  
Indirect - Survey

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.  
**Target:** Graduating seniors  
**Implementation Plan (timeline):** Every semester  
**Responsible Individual(s):** CET faculty

**Findings for Senior Exit Survey**

No Findings Added

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Direct - Portfolio

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**Target:** Seniors.  
**Implementation Plan (timeline):** Yearly  
**Responsible Individual(s):** CET faculty

**Findings for Senior Project**

No Findings Added
Outcome 4.2: Conduct experiments
Students will conduct experiments to truthfully record results following manual or proposed steps.

**Measure:** Senior Exit Survey
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**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

**Target:** Graduating seniors
**Implementation Plan (timeline):** Every semester
**Responsible Individual(s):** CET faculty

**Findings for Senior Exit Survey**

No Findings Added

Outcome 4.3: Follow safety procedures
Students will follow safety procedure and lab protocols, handle equipments with care.

**Measure:** Senior Exit Survey
**Indirect - Survey**

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

**Target:** Graduating seniors
**Implementation Plan (timeline):** Every semester
**Responsible Individual(s):** CET faculty

**Findings for Senior Exit Survey**

No Findings Added
No Findings Added

**Measure:** Senior Project  
Direct - Portfolio

**Details/Description:** Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group member. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.

**Target:** Seniors.

**Implementation Plan (timeline):** Yearly

**Responsible Individual(s):** CET faculty

---

No Findings Added

**Measure:** Senior Project  
Indirect - Survey

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

**Target:** Graduating seniors

**Implementation Plan (timeline):** Every semester

**Responsible Individual(s):** CET faculty

---

No Findings Added

**Measure:** Senior Project  
Direct - Portfolio

**Details/Description:** Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group member. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.

**Target:** Seniors.

**Implementation Plan (timeline):** Yearly

**Responsible Individual(s):** CET faculty

---

No Findings Added

**Outcome 4.4: Examine lab results**

Students will examine and interpret lab results to draw conclusions.

---

**OBJ 5: Managerial skills**

Students will learn managerial skills.
Outcome 5.1: Develop work plans
Students will develop work plans with clearly defined phased goals and timeline.

**Measure:** Senior Exit Survey
Indirect - Survey

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

**Target:** Graduating seniors

**Implementation Plan (timeline):** Every semester

**Responsible Individual(s):** CET faculty

**Findings** for Senior Exit Survey

No Findings Added

**Measure:** Senior Project
Direct - Portfolio

**Details/Description:** Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group member. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.

**Target:** Seniors.

**Implementation Plan (timeline):** Yearly

**Responsible Individual(s):** CET faculty

**Findings** for Senior Project

No Findings Added

Outcome 5.2: Follow work plan
Students will follow work plan by observing time line and reporting progress.

**Measure:** Senior Exit Survey
Indirect - Survey

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

**Target:** Graduating seniors

**Implementation Plan (timeline):** Every semester

**Responsible Individual(s):** CET faculty

**Findings** for Senior Exit Survey

No Findings Added

**Measure:** Senior Project
Direct - Portfolio

**Details/Description:** Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group member. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.

**Target:** Seniors.
**Implementation Plan (timeline):** Yearly  
**Responsible Individual(s):** CET faculty

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<th>Findings for Senior Project</th>
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<tbody>
<tr>
<td>No Findings Added</td>
</tr>
</tbody>
</table>

**Outcome 5.3: Modify schedule**  
Students will modify schedules based on progress.

| Measure: Senior Exit Survey  
<table>
<thead>
<tr>
<th>Indirect - Survey</th>
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</thead>
</table>
| Details/Description: The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.  
| Target: Graduating seniors  
| Implementation Plan (timeline): Every semester  
| Responsible Individual(s): CET faculty |

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<td>No Findings Added</td>
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| Measure: Senior Project  
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| Target: Seniors.  
| Implementation Plan (timeline): Yearly  
| Responsible Individual(s): CET faculty |

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<tbody>
<tr>
<td>No Findings Added</td>
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</tbody>
</table>

**OBJ 6: Ethics awareness**  
Students will learn ethics awareness.

**Outcome 6.1: Analyze ethics**  
Students will analyze ethics issues based on professional ethics codes.

| Measure: Senior Exit Survey  
<table>
<thead>
<tr>
<th>Indirect - Survey</th>
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</thead>
</table>
| Details/Description: The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.  
| Target: Graduating seniors  
| Implementation Plan (timeline): Every semester  
| Responsible Individual(s): CET faculty |

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<tr>
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</tbody>
</table>
No Findings Added

**Measure:** Senior Project  
Direct - Portfolio

**Details/Description:** Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group member. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.

**Target:** Seniors.

**Implementation Plan (timeline):** Yearly

**Responsible Individual(s):** CET faculty

---

**Findings for Senior Project**

No Findings Added

---

**Outcome 6.2:** Technology impact on society

Students will understand technology impact on society.

---

**Measure:** Senior Exit Survey  
Indirect - Survey

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

**Target:** Graduating seniors

**Implementation Plan (timeline):** Every semester

**Responsible Individual(s):** CET faculty

---

**Findings for Senior Exit Survey**

No Findings Added

---

**Measure:** Senior Project  
Direct - Portfolio

**Details/Description:** Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group member. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.

**Target:** Seniors.

**Implementation Plan (timeline):** Yearly

**Responsible Individual(s):** CET faculty

---

**Findings for Senior Project**

No Findings Added

---

**OBJ 7: Lifelong learning**

Students will learn lifelong learning.
**Outcome 7.1: Professional societies**
Students will get involved with professional societies.

**Measure:** Senior Exit Survey
Indirect - Survey

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

**Target:** Graduating seniors

**Implementation Plan (timeline):** Every semester

**Responsible Individual(s):** CET faculty

**Findings for Senior Exit Survey**

No Findings Added

**Measure:** Senior Project
Direct - Portfolio

**Details/Description:** Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group member. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.

**Target:** Seniors.

**Implementation Plan (timeline):** Yearly

**Responsible Individual(s):** CET faculty

**Findings for Senior Project**

No Findings Added

**Outcome 7.2: Technological trends**
Students will research the latest technological trends in a specific area.

**Measure:** Senior Exit Survey
Indirect - Survey

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

**Target:** Graduating seniors

**Implementation Plan (timeline):** Every semester

**Responsible Individual(s):** CET faculty

**Findings for Senior Exit Survey**

No Findings Added

**Measure:** Senior Project
Direct - Portfolio

**Details/Description:** Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group member. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.

**Target:** Seniors.
Implementation Plan (timeline): Yearly
Responsible Individual(s): CET faculty

Findings for Senior Project

No Findings Added

OBJ 8: Teamwork skills
Students will learn teamwork skills.

Outcome 8.1: Individual role and shared duties
Students will understand individual role and shared duties.

Measure: Senior Exit Survey
Indirect - Survey

Details/Description: The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.
Target: Graduating seniors
Implementation Plan (timeline): Every semester
Responsible Individual(s): CET faculty

Findings for Senior Exit Survey

No Findings Added

Measure: Senior Project
Direct - Portfolio

Details/Description: Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group member. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.
Target: Seniors.
Implementation Plan (timeline): Yearly
Responsible Individual(s): CET faculty

Findings for Senior Project

No Findings Added

Outcome 8.2: Respect different opinions
Students will listen to others; cooperate with teammates; respect different opinions.

Measure: Senior Exit Survey
Indirect - Survey

Details/Description: The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.
Target: Graduating seniors
Implementation Plan (timeline): Every semester
Responsible Individual(s): CET faculty

Findings for Senior Exit Survey
No Findings Added

**Measure:** Senior Project  
**Direct - Portfolio**

**Details/Description:** Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group member. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.

**Target:** Seniors.

**Implementation Plan (timeline):** Yearly  
**Responsible Individual(s):** CET faculty

---

**Findings** for Senior Project

No Findings Added

**OBJ 9: Communication skills**  
Students will learn communication skills.

**Outcome 9.1: Produce technical documents**  
Students will produce a technical document that is factually correct, and with good logical structure, proper format, citation, and references.

**Measure:** Senior Exit Survey  
**Indirect - Survey**

**Details/Description:** The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

**Target:** Graduating seniors  
**Implementation Plan (timeline):** Every semester  
**Responsible Individual(s):** CET faculty

---

**Findings** for Senior Exit Survey

No Findings Added

**Measure:** Senior Project  
**Direct - Portfolio**

**Details/Description:** Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group member. They will investigate, evaluate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.

**Target:** Seniors.

**Implementation Plan (timeline):** Yearly  
**Responsible Individual(s):** CET faculty

---

**Findings** for Senior Project

No Findings Added
Outcome 9.2: Technical document with minimum errors

Students will produce a technical document with a minimum of errors in spelling, punctuation, grammar and usage.

Measure: Senior Exit Survey
Indirect - Survey

Details/Description: The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

Target: Graduating seniors

Implementation Plan (timeline): Every semester

Responsible Individual(s): CET faculty

Findings for Senior Exit Survey

No Findings Added

Measure: Senior Project
Direct - Portfolio

Details/Description: Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group memeber. They will investigate, evalulate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.

Target: Seniors.

Implementation Plan (timeline): Yearly

Responsible Individual(s): CET faculty

Findings for Senior Project

No Findings Added

Outcome 9.3: Communicate in a professional manner

Students will communicate in a professional manner, and respond to questions in language that is both concise and commensurate with audience’s background.

Measure: Senior Exit Survey
Indirect - Survey

Details/Description: The graduating seniors will complete an online survey about the program components and their evaluations of the program curriculum.

Target: Graduating seniors

Implementation Plan (timeline): Every semester

Responsible Individual(s): CET faculty

Findings for Senior Exit Survey

No Findings Added

Measure: Senior Project
Direct - Portfolio

Details/Description: Source of assessment: ECT 406. The course is offered once a year. The students work in group on a specific project. The subject is chosen with consultation with the instructor. Each group needs to develop a working plan, and detail assignment for each group memeber. They will investigate, evalulate, and implement their design and present the final results to the program faculty in an open Q & A session at the end of the semester.

Target: Seniors.
Implementation Plan (timeline): Yearly
Responsible Individual(s): CET faculty

Findings for Senior Project

No Findings Added

Overall Recommendations

No text specified

Overall Reflection

No text specified

Action Plan

Status Report
2015-2016 Assessment Cycle

- Assessment Plan
- Assessment Findings
- Action Plan
- Status Report
2016-2017 Assessment Cycle

Assessment Plan

Assessment Findings
2017-2018 Assessment Cycle

Assessment Plan

Assessment Findings
2018-2019 Assessment Cycle

Assessment Plan

Assessment Findings
2019-2020 Assessment Cycle

Assessment Plan

Assessment Findings
Appendix

A. CET Curriculum Maps (Curriculum Map)
B. Industrial Advisory Survey on Program Educational Objectives (Adobe Acrobat Document)
D. Computer Engineering Technology Standards (Microsoft Word)
Section III

Compliance with Standards

Electronics, Computer, & Mechanical Engineering Technology Department

Computer Engineering Technology B.S.
6.1 Preparation of the Self-Study Report

The Computer Engineering Technology (CET) program faculty collaborated closely on the preparation of Self-Study Report. Senior faculty Dr. Croft led the group in deliberating individual tasks on evidence collection and report composition. Each faculty was assigned to respond to certain ATMAE accreditation standards. Dr. Yuetong Lin, the program coordinator, prepared the major portion of the initial report. Inputs from Dr. Croft and Li were then assembled to form the full version. The final write-up was revised and approved by the entire group.

6.2 Philosophy and Objectives

6.2.1 Mission: The department, college, and institutional missions shall be compatible with the approved definition of Industrial Technology.

The Computer Engineering Technology program embraces the same mission of the parent unit, the Electronics, Computer, and Mechanical Engineering Technology Department:

The mission of the Department of Electronics, Computer, and Mechanical Engineering Technology at Indiana State University is to prepare students for careers as technical professionals in an environment that involves applications in design, manufacture, control and integration of electromechanical products or systems, and requires a practical problem solving approach that emphasizes hands-on skill with modern productivity tools (e.g. design, analysis, control, diagnostic, and project management tools).

The mission statement is published in University catalog and available online at http://www1.indstate.edu/ecmet/index.htm.

6.2.2 Program Definition: The major program definition and purpose shall be compatible with the approved definition of Industrial Technology.

The CET program consists of curricular experiences that are application-oriented; with technical content, information, and theory for the design, development, and utilization of digital computer circuitry, microprocessor applications, networking systems, and other related technologies.

The CET program meets the definition of an Industrial Technology Program because its curriculum prepares students for technical and technical management-oriented professional positions in business, industry, and government. The curriculum provides:

1. Foundational Studies that integrate liberal arts, behavioral science, and communication skills.

2. Mathematics and physical science concepts and theories that are critical to the understanding and applications of computer engineering technology.

4. All-around training in microcontroller, robotics and automation, digital systems, data communication, networking, and circuit analysis.

6.2.3 **Program Acceptance:** Each major program shall be understood and accepted by appropriate individuals and representative groups within the internal university community and the external business and industrial community.

The Computer Engineering Technology program is accepted throughout the University. Faculty members are represented on College of Technology Faculty Council and major College of Technology committee.

The support offered to the program by industrial donations and willingness of industrial individuals to serve on the advisory board demonstrate their acceptance and unqualified belief in the value of the Computer Engineering Technology to provide viable graduates able to perform and meet the needs of the employers.

6.2.4 **Program Goals:** Each major program shall have clearly written short and long range goals and objectives, which are consistent with the mission statements, and plans for achieving them.

Based on the mission statement the program developed the following educational objectives (the short title at the end of each objective statement is created for future reference in this document):

CET graduates are expected to demonstrate:

1. Technical proficiency by applying disciplinary reasoning and critical thinking to identify, analyze and solve problems in computers, systems integration, automation, digital systems, data communications, computer networks, and electronics (Technical Competency).

2. Effective communication skills in both oral and written form to articulate technical knowledge, ideas, and proposals to peers, management, and other potentially diverse audience (Communication Competency).

3. Organizational, and increasing levels of managerial skills in their chosen field (Managerial Competency).

4. The awareness of professional, ethical and social responsibility and impact of engineering technology practices in Indiana and a diversified world (Responsibility Awareness).

5. The ability to function effectively, think independently and work collaboratively in a multidisciplinary team environment (Teamwork Competency).

6. Individual desire and commitment to remain technically current by engaging in continuous self-improvement and lifelong learning (Lifelong Learning Competency).
6.3 Major Program(s)

6.3.1 Program Name: Each program of study and/or program option shall have appropriate titles consistent with the approved ATMAE definition of Industrial Technology.

Computer Engineering Technology

6.3.2 Program Level: The program of study shall lead to the baccalaureate degree, and not less than the junior and senior years of baccalaureate level study shall be offered by the institution seeking accreditation. Appropriate lower division requirements may be offered by the same institution or may be transferred from other institutions including community colleges and technical institutes.

Bachelor of Science, 124-130 semester hours. Student must complete a minimum of 50 hours of 300/400 level course work in order to graduate with a CET baccalaureate degree.

6.3.3 Program Definition: The program of study may have more than one option, specialization, or concentration; but specific course requirements for each option shall be clearly specified, and the requirements for all program options shall meet or exceed appropriate ATMAE standards.

The Computer Engineering Technology is a day program designed for on campus full-time students. The program is offered on semester basis; one 50-minute lecture or one 100-minute lab session per week in a sixteen-week semester constitutes one-credit. The Indiana State University (ISU) academic year consists of Fall, Spring and Summer sessions. During Summer no CET courses are normally taught, but students may take Foundational Studies courses. Students are encouraged to participate in co-operative education, summer internships and summer professional experiences. The 2009-10 curriculum is provided in Figure 4 to give the reader a brief overview of the CET program. The educational objectives and learning outcomes are implemented throughout this curriculum.

6.3.4 Program Emphasis: Primary emphasis in the program of study shall reflect the current technology and management of industry.

The ECT faculty constantly seeks to maintain a contemporary level of technology in all of its programs. This is accomplished through a variety of methods including meetings with the Department's advisory board; and contacts with alumni and local industry leaders.

Visitation to area industrial facilities and contacts with colleagues through participation in professional organizations are also used to provide feedback in maintaining a contemporary level of technology in our program.

6.3.5 Foundation Requirements: Programs of study shall be a minimum of 120 semester hours (or equivalent) and must meet the minimum foundation requirements shown in Table 6.1. Programs may exceed the maximum foundation requirements specified in each area, but appropriate justification shall be provided for each program and/or program option that
exceeds the maximum limits. A specific list of courses and credit hours that are being counted toward each curricular category shall be included in the Self-Study Report.

The minimum 120 semester hours of CET curriculum was designed to meet ATMAE foundation requirements. Table 6.1 offers a detail breakdown of the curricular categories, ATMAE limits, and CET courses associations.

See next page for Table 6.1.
## Computer Engineering Technology
### B.S. Degree Program
#### Minimum/Maximum Foundation Requirements

<table>
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<tr>
<th>General Education</th>
<th>ATMAE Requirements</th>
<th>ISU Requirements</th>
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</thead>
<tbody>
<tr>
<td>Eng. 101 &amp; 105 or Eng 107</td>
<td>3-6</td>
<td></td>
</tr>
<tr>
<td>Communications 101</td>
<td>3</td>
<td></td>
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<tr>
<td>Physical Education</td>
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<td>English 305T</td>
<td>3</td>
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<td>Social &amp; Behavioral Studies</td>
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<td>Multicultural Studies</td>
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</tr>
<tr>
<td>Foreign Language</td>
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<td>18-36 35-44</td>
</tr>
<tr>
<td><strong>Total Required Hours</strong></td>
<td>18-36</td>
<td>35-44</td>
</tr>
</tbody>
</table>

| Mathematics                                           |                    |                  |
| Math 115 – College Algebra                            | 3                  |                  |
| Math 301 – Applied Calculus                           | 3                  |                  |
| CS 256 – Prin. Of Structured Des.                     | 3                  |                  |
| **Total Required Hours**                              | 6-18               | 9                |

| **Physical Science (any combination of the following)**|                    |                  |
| Physics, Chemistry, Life Science, Geology             | 8                  | 6-18 8           |
| **Total Required Hours**                              | 12-24              | 21               |

| Management                                            |                    |                  |
| ECT 437 – Comp. Systems Mgt.                          | 3                  |                  |
| MCT 471 – Production Planning                         | 3                  |                  |
| MCT 478 – Ind. Organization                           | 3                  |                  |
| MCT 492 – Ind. Supervision                            | 3                  |                  |
| ECT 130 – Intro. to Electronics                       | 2                  |                  |
| ECT 430 – Senior Seminar                              | 1                  |                  |
| Select 6 hrs of Mgt. Courses from Courses such as:    | 6                  |                  |
| TMGT 471 – Prod. Plan & Control                       |                    |                  |
| TMGT 478 – Ind. Org. & Function                       |                    |                  |
| TMGT 492 – Ind. Supervision                           |                    |                  |
| MET 405 – Econ. Anal. for Tech.                       |                    |                  |
| **Total Required Hours**                              | 24-36              | 39               |

| Technical                                             |                    |                  |
| ECT 165 – D.C. Ckts. & Design                         | 3                  |                  |
| ECT 167 – A.C. Ckts. & Design                         | 3                  |                  |
| ECT 168 – Comp. Des. Tech.                            | 3                  |                  |
| ECT 231 – Digital Computer Logic                       | 3                  |                  |
| ECT 232 – Digital Computer Ckts.                      | 3                  |                  |
| ECT 281 – Robotics Controls                           | 3                  |                  |
| ECT 301 – Comp. Net. Mgt. Tech.                       | 3                  |                  |
| ECT 303 – Micro. Hdw. & Soft.                          | 3                  |                  |
| ECT 306 – Tech. Data Mgt. & App.                      | 3                  |                  |
| ECT 308 – Micro. App. & Interfacing                   | 3                  |                  |
| ECT 401 – Data Comm. & Internet Technology            | 3                  |                  |
| ECT 403 – Prac. Digital Logic Design                  | 3                  |                  |
| ECT 406 - Comp. Systems Integration                   | 3                  |                  |
| **Total Required Hours**                              | 24-36              | 39               |

| Electives                                             | 6                  | 6-18 6           |

| **Total Required Hours**                              | 124-130            |                  |
6.3.6 Course Sequencing: There shall be evidence of appropriate sequencing of course work in each program of study to ensure that advanced level courses build upon concepts covered in beginning level course work.

To ensure that advanced level courses in computer engineering technology build upon concepts covered in beginning-level course work, the curriculum structure is specific: all 100-level courses are intended for entry-level students; the 200-level courses are for students in the second year of their program; 300-level courses are for third-year students, and 400-level courses are for seniors. See Undergraduate Catalog 2009-2010 for listing of courses with prerequisite requirements. See Appendix A for courses of study and Typical Four Year Plan.

6.3.7 Application of Mathematics and Science: Appropriate applications of the principles of mathematics and science shall be evident in technical and management course work.

There are two required math courses in CET foundational studies: MATH 115 is the entry-level math course that teaches college algebra and trigonometry; MATH 301 fundamentals and application of calculus covers integral and differential calculus. These two courses provide the level and focus of mathematics content to meet ATMAE requirement, and offer students the foundation of math skills in solving technical problems.

Many of the courses in CET also involve theoretical concepts requiring the use of mathematics and science as tools. For circuit design, calculation of power consumption, and electron-flow characteristics, the appropriate application of mathematics and science are essential. See University Catalog 2009-2010 for listing of courses required by this program. See Table 6.1, syllabi, and course textbooks for clarification of use of mathematics and science in this program. See copies of student exams in course notebooks for further clarification of use of mathematics in this program.

6.3.8 Computer Applications: The program of study shall include instruction on computer applications, and the use of computers for information retrieval and problem solving.

CET curriculum builds around computers and their applications. In most CET major courses, computers are widely used in circuit design, simulation, programming, and control. Skillful use of word processing, powerpoint presentation, and spreadsheet software is also of necessity for students to finish homework assignments, laboratory or project reports.

6.3.9 Communications: Oral presentations and technical report writing shall be evident in both technical and management course requirements.

CET Students’ oral and written skills are developed primarily in three courses (9 hours): Communications 101 and English 101-105/107 are basic English writing and speech classes where students practice writing and presenting general topics with clarity and style. English 305T is designed specifically for technical writing and presentation. In addition, communications skills are enhanced in several CET major courses where term papers and in-class presentations are mandatory and carry significant weight in student’s final grades.
6.3.10 Industrial Experiences: Each program of study shall include appropriate industrial experiences such as industrial tours, work-study options/cooperative education, and/or senior seminars focusing on problem-solving activities related to industry. Industrial experiences shall be designed to provide an understanding of the industrial environment and what industry expects of students upon employment.

For supervised industrial experiences, ECT 490A - Z, ECT 351 Cooperative Experience is an elective course available for the students. For several courses periodic tours are scheduled in conjunction with class activities. Also, plant and facility tours are arranged by the various student professional organizations.

6.3.11 Competency Identification: Competencies shall be identified for each program of study, including all options, which are relevant to current employment opportunities available to graduates.

The educational objectives were developed based on several considerations including ATMAE requirements and mission statements of parent units. In the process we consulted intensively with our constituencies, with primary external source of input being the Industrial Advisory Board (IAB). The rationale for such this reliance is because of the start-up nature of the program, other external constituencies, such as alumni and employers, all have very limited numbers. Therefore we consider the IAB’s feedback to be the most comprehensive and expedient for our cause.

We also recognize the importance of program continuity: the transition from a technology program to engineering technology should not occur overnight, and proven practices of program evaluation in the past that are in accordance with ATMAE guidelines should be retained.

The process of developing educational objectives started soon after the program decided to adopt the “engineering technology” name, and began to take shape after faculty representatives participated in the assessment workshops organized by University and external entities on program evaluation that helped clarify several key components of the procedure. The program faculty then developed a set of objectives in conjunction with key constituencies. These objectives were submitted to faculty for discussion and revision. In Fall 2009, the latest objectives were presented to the industrial advisory board for consultation and advice. With further modifications the faculty approved the final version of objectives.

6.3.12 Program Validation: Validation of program of study outcomes/student competencies shall be an on-going process and shall be accomplished through a combination of external experts, industrial advisory committee(s), and follow-up studies of program graduates. Documentation of this validation shall be provided in the Self-Study.

The process to evaluate and revise educational objectives and outcomes is illustrated in detail in Figure 1.1. The Figure shows the feedback loops that lead to continuous refinement of educational objectives and curriculum improvement. Data sources and the respective individuals or units in charge of each link are highlighted. The loop that involves educational objectives review and update is executed every six years, it assures periodic evaluation and redefinition (if necessary) of the current educational objectives and outcomes. The program outcomes and curriculum review loop is executed annually and focuses primarily
on outcomes assessment and curricular improvements. The two cycles are linked together through program outcomes report.

6.3.13 Program Development, Revision, and Evaluation: Program of study development, revision, and evaluation shall involve currently enrolled students, faculty, program graduates, and representative employers.

The CET program identifies the following stakeholders to be the constituencies with respect to educational objectives and learning outcomes. Each group has special interests in these stated goals:

- Students of CET program. The students expect themselves to become a technically competent, professionally and socially responsible individual after earning a bachelor degree from the program.
• Alumni. The alumni expect a continued high quality educational program as their career and reputation is associated with the quality of their alma mater.
• Faculty. The faculty are expected to fulfill their educational responsibility in leading the students in the learning process, and by periodically evaluating, and adjusting if necessary, the educational pedagogy relative to the educational objectives.
• Industrial Advisory Board (IAB). This selective and highly involved group of individuals expects to see the program yield quality graduates that meet industry needs.
• Student employers. This group expects to hire fresh employees who are technically competent, productive, self-motivated learners, team members, and have excellent communication skills.

Assessing Educational Objectives The data to assess how effectively graduates have met these objectives come from a variety of sources. The program has in place the following instruments to continuously collect direct, measurable, and objective data on graduates’ performance within the first few years after graduation: a) Survey of advisory board; b) Survey of alumni; c) Survey of Employers. Though differences exist in the content of the surveys to target different groups, all surveys have similar formats and share some common questions that are intended to poll the respondents to evaluate the educational objectives with respect to the industry demands for CET professionals. For returnees who raise concerns about certain aspects of educational objectives through survey results, we request them to provide elaborate textual comments on proper ways of improvements. To improve the response rate and expedite the turn-around time, all the surveys are also available online through ISU web site.

Two performance criteria, i.e., “Appropriateness”, and “Degree of Preparedness”, have been established to evaluate survey responses. Both criteria are assessed through a five-level rubric as shown in Table 2:

<table>
<thead>
<tr>
<th>Performance Criteria</th>
<th>Rubric</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Appropriateness</td>
<td>Very Inappropriate</td>
</tr>
<tr>
<td>Preparedness</td>
<td>Significantly under-prepared</td>
</tr>
</tbody>
</table>

Table 2: Educational Objectives Performance Rubric

The three types of surveys carry equal weight in the overall index of appropriateness and fulfillment, which is calculated by averaging the survey returns from the three categories. The index for Criterion “Appropriateness” takes inputs from all surveys, while Criterion “Degree of Preparedness” index replies only the feedback from alumni and employers. The program adopts three levels of overall index benchmarks. Table 3 lists these benchmarks, interpretations, and corresponding program actions pertinent to the educational objectives evaluating process.

6.3.14 Transfer Course Work: Institution and/or department policies shall be used to evaluate course work transferred from other institutions. All programs/options, including those with a significant amount of transfer course work, must meet the minimum credit hour foundation course requirements (Table 6.1) in each curriculum category.
Transfer students constitute a significant portion of our undergraduate population. Most of our transfers come from neighboring community colleges. The main factor contributing to this scenario is because the expansion of the two year junior college system in Indiana to offer more affordable higher education that has been a priority for State Legislatures and Higher Education Commission. This agenda has posed serious competition for enrollment at lower levels for our program. In the mean time the State is pressing for an increase in the rate that two year graduates continue to pursue four year bachelor degree. Therefore we consider this to be a great opportunity for future program growth, and with a strategically crafted transfer plan in place we expect transfers to remain strong in the coming years.

The Electronics Technology program in ECMET Department has established articulation agreement with sister programs at several colleges and regional universities that allow students to complete an associate degree and credit towards a bachelor degree at ISU. Each articulation agreement stipulates the ISU courses needed to complete the bachelor degree, and requirements or guidelines that govern the agreement. An associate degree holder from these institutions takes the so called “block transfer”, meaning courses with acceptable grade would directly substitute ISU equivalents without repeated scrutiny. These agreements help pre-establish course equivalency and ease the transition to ISU. They are also reviewed and revised if necessary every two years to assure the courses are well aligned on both ends.

<table>
<thead>
<tr>
<th>Benchmark Level</th>
<th>Criterion</th>
<th>Interpretation</th>
<th>Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level A</td>
<td>Overall performance index ≥ 4 AND no individual survey category returns average ≤ 3</td>
<td>The specific objective meets constituents' and industrial need</td>
<td>The program continues to implement the elements in the curriculum that correlate with this objective</td>
</tr>
<tr>
<td>Level B</td>
<td>Overall performance index ≥ 3.5 AND no individual survey category returns average ≤ 3</td>
<td>The constituents generally approve the significance, and/or are satisfied with graduates’ readiness of the specific objective</td>
<td>Adjustments in curriculum or teaching pedagogy are needed.</td>
</tr>
<tr>
<td>Level C</td>
<td>Overall performance index ≤ 3.5 OR individual survey category returns average ≤ 3</td>
<td>Constituents have serious concerns about the appropriateness, and/or readiness of our graduates in meeting the objective</td>
<td>The objective needs to be re-developed, or curriculum needs a significant overhaul to address the issue</td>
</tr>
</tbody>
</table>

Table 3: Educational Objectives Assessment Benchmarks, Interpretations, and Program Actions

Currently CET program has no articulation in place mainly due to the fact no associate degree programs is available for computer engineering technology or Computer Engineering Technology at neighboring institutions. However after seriously contemplating the status quo, the faculty have reached consensus that it is the direction that program needs to pursue to secure quality transfer students and seamless transferability. We believe the successful operation of ET
articulation has created a congenial working relationship with partner programs, and such relation will certainly help in the creation and execution of CET transfer agreements. In the mean time CET can learn from the practice of two other programs in the department, MET and ACET, who have reminiscent situations for not having counterpart programs with articulated partners but manage to balance transfer requirements and degree programs.

Currently all CET transfer evaluations utilize course--by-course approach.

- Transfer students first apply to and are admitted to the University through the regular admissions process. Their record will be evaluated first by Transfer Central, the on-campus office that provides a centralized process primarily for nontechnical credits. If there are any questions regarding the suitability of a substitution or transfer course, the program will be consulted to provide input.

- The program will be responsible for reviewing the CET subjects to determine whether they have rigor and coverage equivalent to ones in our curriculum. The decisions are made based on the syllabus, course description, and other supplemental material presented by students. If a course is not found to be suitable for substitution, a transfer equivalency may not be granted. A course that is qualified to be university level work in the technical subjects but cannot be substituted into the curriculum can be counted towards the general semester hour requirement or electives.

A maximum of 94 hours of transfer credit may be assigned toward a bachelor’s degree, however in all cases, the final 45 credits of the degree program must be earned while in residence. In August 2005 the department unanimously passed a motion to require all transfer students to complete a minimum 15 credits of major courses while enrolled at ISU.

We recognize transfer credits may originate from different sources. To maintain the curriculum integrity, the program does not “grandfather” credits accepted by other institutions and reserves the right to evaluate according to CET requirements.

6.3.15 Upper Division Course Work: Students shall successfully complete a minimum of 15 semester hours of junior or senior level major courses at the institution seeking program accreditation.

The admissions policy of Indiana State University allows a student to transfer a maximum of 94 semester-hours towards a Baccalaureate degree. Of this, no more than 64 semester-hours may have been earned at a two-year institution. Departmental policy requires that a transfer student must complete at least 15 hours of major courses at ISU.

Computer Engineering Technology majors must complete 27 hours of technical coursework at the 300-400 levels. These students must also complete 9 hours of 300-400 level coursework for general education requirements (see Table 6.1). See Undergraduate Catalog 2009-2010 for University policy on residency and upper-division level course work requirements.
6.3.16 Program Publicity - Adequate and Accurate Public Disclosure: Institutions shall broadly and accurately publicize, particularly to prospective students: (a) Industrial Technology program goals and objectives, (b) preadmission testing, evaluation requirements, and standards, (c) assessment measures used to advance students through the program(s), and (d) fees and other charges.

Potential students who are seeking information about the Bachelor of Science Degree in Computer Engineering Technology receive information from the Admissions Office at Indiana State University. The 2009-2010 Undergraduate Catalog and other descriptive materials that the Admissions Office provide to potential applicants, include information about: 1) the program goals and objectives; 2) pre-admission testing or evaluation requirements and standards; 3) assessment measures used to advance students through the program; 4) fees and other charges.

Further, a support unit on campus, the Publications Office, provides brochures for the Computer Engineering Technology program. The current edition of these brochures (Figure 2 and Figure 3) reflects the recent changes in curriculum.

Departmental contact, degrees offered, descriptive information, and references to other links are available at our university website www.indstate.edu/ecmect. A support unit in the College of Technology, the Office of Technology Student Services, also provides information and disclosure to prospective students via recruitment activities such as College Tech Prep Days, Hands-on High Tech, and Tech T.R.E.K.
Be prepared for the future

The bachelor’s degree in computer engineering technology will prepare you for employment opportunities in a variety of positions.

Typical positions:
- Instrumentation and controls
- Computer applications in industrial settings
- Computer engineering and design
- Electronic design and hardware
- Computer aided design and manufacturing
- Computer system management
- Preparing design

Typical employers:
- Hewlett-Packard
- Texas Instruments
- Delco
- GE
- IBM
- Allen-Bradley
- Siemens
- Rockwell International
- MDG Engineering Associates
- Capgemini
- IBM

Investigate financial assistance

Indiana State offers many types of financial assistance including scholarships, grants, loans, and student employment opportunities. Students and their families may apply for financial assistance through the Office of Student Financial Aid, Traye Hall, Room 115, Terre Haute, IN 47801. Contact 812-237-3474.

Computer Engineering Technology
College of Technology

To find out more:
- To learn more about the computer engineering technology major at Indiana State, or to arrange a tour of our facilities, contact the Department of Engineering, Computer, and Mechanical Engineering Technology.

Indiana State University
Terre Haute, IN 47801
Indiana 812-237-3474
Web site: www.indstate.edu/tech
The program is part of the College of Technology, a national leader in providing high-quality, cost-effective, high-impact education. The college offers more than 50 programs in various fields. Core courses in the program provide a logical sequence of study beginning with the basics of computer and progressing to highly technical principles and include development of management skills.

Detailed information about the programs and courses is available. In addition, students have the opportunity to participate in various activities and clubs.

The College of Technology's involvement with industry, government, and business is reflected in faculty and student participation in real-world projects, providing students with educational experiences designed to expand their career opportunities.
6.3.17 Legal Authorization: Only institutions legally authorized under applicable state law to provide degree program beyond the secondary level, and that are recognized by the appropriate national or regional accrediting agency, are considered for ATMAE accreditation.

Indiana State University and the Indiana Commission have approved the Bachelor of Science Degree in Computer Engineering Technology for Higher Education. Accordingly, it receives endorsement from both the University and the State.

Specific reference to legal authorization is addressed on the 2009-2010 Undergraduate Catalog.

6.4 Instruction

6.4.1 Course Syllabi: Course syllabi must be presented which clearly describe course objectives, content, references utilized, student activities, and evaluation criteria. Representative examples of student's graded work shall be available for coursework.

For each course, professors are required to provide study guides or syllabi that clearly describe appropriate course objectives, content, references utilized, student activities, and evaluation criteria. For accreditation review, these study guides or syllabi are included within the appropriate Computer Engineering Technology Course Notebooks in the centrally located files for this department. These Course Notebooks that are a part of the require program include ECT 168, 231, 232, 281, 301, 301, 303, 308, 308, 401, 401, and 406. For accreditation review, examples of student work and other examples related to each class have been included in the Course Notebooks.

The University also provides a guideline for Faculty that helps prepare adequate course documentation. The University offers new faculty orientation and course preparation seminars.

6.4.2 Reference Materials: Appropriate reference materials such as periodicals, audio-visual materials, websites, and computer application software (when appropriate) shall be utilized for each course or series of courses to supplement textbooks or course packs.

Appropriate reference books, library periodicals, and computer application software are available for each course. Listed reference books, and computer search services are in the University’s main library. A technical library is also housed in the Department's Conference Room. Various technical periodicals are received by faculty and later placed in a distribution area for student use.

The University Library houses technical-related books, periodicals, etc. This material is available to the student. Faculty are encouraged to utilize this material in their classes to supplement required course texts.

The World Wide Web has become a major source for acquiring technical publications and data references for materials used in CET courses.
instructors (see course syllabi) make appropriate use of these materials in their respective courses.

The ECMET Department currently utilizes MultiSim – a software package that allows students to develop and simulate circuits. The Department provides this software free to its students. The Department uses Cross Assemblers, Cross Compilers, and C for courses that include ECT 168, 303, and 308. The Department uses Xilinx for FPGA work in ECT 403. The Department uses Visual Studio, specifically Visual C and Visual Basic in ECT 168, 303, 306, 308, and 406. The Department has placed various reference material and software on the computers used in each classroom based on the needs of the courses typically assigned to those classrooms. Also, room such as TC 306 and TC 307 include physical manuals necessary for those courses. Included in the COT Technologist office are technical manuals related to various ECT classes.

6.4.3 Program Balance: Appropriate laboratory activity shall be included in the program(s) and a reasonable balance must be maintained in course work between the practical application of how and the theoretical/conceptual emphasis of why.

The courses are lecture/laboratory in nature; for these, approximately 50% of the class time is devoted to laboratory experience. For the Computer Engineering Technology program ECT 168, ECT 231, ECT 232, ECT 281, ECT 301, ECT 303, ECT 306, ECT 308, ECT 401, ECT 403, and ECT 406 are primarily laboratory based computer engineering technology courses. Each of these courses has a lecture/theory component and then follows this material with laboratory-based exercises to complement the lecture/theory. Examples of lecture and laboratory material have been included in the Course Notebooks. The courses at 300-400 are higher-level applications courses involving architecture, language, data communications, Internet technology, information technology, and computer systems applications.

The University Undergraduate Catalog references each program offered by the various departments. The ECMET department notes in this Catalog all courses and which courses include a laboratory component.

6.4.4 Problem-solving Activities: Emphasis in instruction shall be focused on problem-solving activities which reflect contemporary industrial situations.

The baccalaureate of Computer Engineering Technology curriculum begins with cognitive assimilation activity. At the 100-200 levels the CET courses emphasize fundamental concepts related to both electronics and computer engineering technology. Students receive lecture on theory followed by application in the laboratory. As students acquire more knowledge, they are introduced to problem-solving processes that relate to fundamental digital logic and digital circuit design (ECT 231 & ECT 232), programming (ECT 168 & CS 256), microcomputer/microcontroller applications (ECT 303 & ECT 308), database concepts (ECT 306), data communications and Internet technologies (ECT 301 and ECT 401), synthesis of previous material and analysis of new occurs in ECT 403 and ECT 406. ECT 401 also requires the student to be involved in a dedicated semester based project. As stated, 400-level courses require students to synthesize and evaluate component, circuit, or system applications as they relate to business or industry computer-based applications (see Course Notebooks).
Each course has assigned homework, in-class problem solving activities (both individual and group-based), and laboratory exercises that require students to apply fundamental, theory, and applied concepts. Examples of this type of work have been placed in the Course Notebooks.

As part of the ECT Industrial Advisory Board (IAB) meetings, there is a regular session on curricula. During this session faculty and IAB members discuss the content of the curricula in regards to what IAB members perceive as a necessary part of the curricula in order to meet the demands of industry. The minutes of the IAB meeting are available in the Department.

As a cited example, in ECT 303 students learn the concepts related to creating programs that control the functions of a dedicated microcontroller; this is followed by assigned laboratory exercises that have the student write programs on a PC then download the appropriate files to the memory of the targeted microcontroller, run the program, and demonstrate to the instructor that the program and hardware function properly and perform the required tasks.

6.4.5 Supervision of Instruction: Appropriate supervision of instruction shall be evident throughout the program.

The College of Technology's Promotion, Tenure, & Evaluation Policy (See COT Appendix) provides the teaching standards expected for all ranks of faculty. The policy also includes the procedures in the evaluation methods and documentation of teaching effectiveness required for promotion and tenure. Faculty are evaluated by their peers, and by the department chairperson to these established teaching standards.

Each faculty member's class is evaluated by students using the Student Instructional Report (SIR), see Appendix C, standardized instrument at the end of each semester. The SIR is the most widely used course/instructor evaluation instrument in the University. Faculty SIR results are distributed to the Faculty and placed in the Department Personnel File.

Each faculty member that is progressing through the tenure process is evaluated by his/her peers and the Chairperson for the Department during each academic year. This is accomplished by utilizing the Peer Evaluation Instrument (PEI), Appendix D, and Chairperson Evaluation Instrument (CEI), Appendix E. Faculty utilize the Chairperson and Peer Evaluation Instruments as they advance in the tenure and promotion stages.

6.4.6 Scheduling of Instruction: The organization and scheduling of instruction shall allow adequate time for completion of appropriate homework assignments and laboratory problem-solving activities.

The College of Technology's Promotion, Tenure, & Evaluation Policy provides a listing of the basic expectations of all faculty members. Item 2.1 of this listing requires that faculty members shall "exercise care in the planning and supervision of academic work so that an honest effort by students will be encouraged." Also see Course Notebooks with syllabi for a further description of how faculty distributes time for lecture, homework and laboratory assignments.

ECT courses are scheduled based on a Typical 4 Year Plan (Appendix A) adopted by the Faculty. This plan established the pattern of Spring or Fall offerings based on allowing a student to complete the program in four years.
ECT lecture-only courses are scheduled for 3 class hours per week during the semester. A laboratory course includes additional hours. A laboratory course is often scheduled for 6 hours per week during the semester. The number of hours per week per class is accepted policy by the University and the Department.

The Chairperson of the Department is responsible (by University Handbook) for the scheduling of classes. The Chairperson typically schedules classes based on consultation with Faculty and according to the Typical 4 Year Plan (Appendix A) of each program of study in the Department.

At the course level, instructor syllabi typically include topic or content outlines. These outlines help the instructor plan his/her semester and how he/she will manage instruction over the semester. Because laboratory class assignments/projects may vary in length due to the nature of the course and students, these types of classes often require that the instructor be able to modify his/her outline in order to complete the requirements for the course. The Department has discussed these issues and decided that it is incumbent on the instructor to maintain the course in which he/she deems an appropriate manner.

6.5 Faculty

CET faculty shares diversity in background, race, and ethnicity. The regular fulltime workload includes teaching, scholarly activities, and services. Faculty members have terminal degree in computer engineering or closely related areas. The teaching of the faculty as a whole is well received by our students as evidenced by the students' evaluations each semester.

6.5.1 Full time faculty: Each major program and program option shall have an adequate number of appropriately qualified full-time faculty. Program faculty qualifications shall include emphasis upon extent, recency, and pertinence of: (a) academic preparation, (b) industrial professional experience (such as technical supervision or management), (c) applied industrial experience (such as technical applications), (d) membership and participation in appropriate Industrial Technology professional organizations, and (e) scholarly activities.

There are three (3) fulltime faculty members (tenured or tenure-track) directly associated with CET program, and five (5) fulltime ECMET faculty teaching technical core or elective courses. The three CET faculty members include one full professor and two assistant professors. The department has a tradition of hiring adjunct faculty members but due to the budget constraints has decided to cut back on these appointments. Dr. Yuetong Lin is the coordinator who takes charge of representing the program to external entities. All faculty members share the responsibility of teaching, advising and service pertinent to the program. The faculty is also the main body to define, revise, implement and achieve program objectives.

6.5.2 Minimum Faculty Qualifications: The minimum academic qualifications for a tenure track faculty member (except in unusual circumstances which must be individually justified) shall be a bachelor’s and master’s degree in a discipline closely related to the faculty member's instructional assignments.
The current number of fulltime faculty is sufficient to accommodate teaching, student-faculty interaction, service activities, professional development, and communications with industrial partners. Table 5 shows the rank and educational background of CET program faculty, where full C. V’s are included.
<table>
<thead>
<tr>
<th>Name</th>
<th>Rank</th>
<th>Type of Academic Appointment</th>
<th>FT or PT</th>
<th>Degrees</th>
<th>Institution from which Degrees Earned &amp; Year</th>
<th>Years of Experience</th>
<th>Professional Registration/Certification</th>
<th>Level of Activity (high, med, low, none) in:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Govt./Industry Practice</td>
</tr>
<tr>
<td>Bill Croft</td>
<td>Professor</td>
<td>T</td>
<td>FT</td>
<td>Ph.D</td>
<td>Indiana University, 1997</td>
<td>6</td>
<td>27</td>
<td>27</td>
</tr>
<tr>
<td>Yuetong Lin</td>
<td>Assistant Professor</td>
<td>TT</td>
<td>FT</td>
<td>Ph.D</td>
<td>University of Arizona, 2005</td>
<td>1</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>Xiaolong Li</td>
<td>Assistant Professor</td>
<td>TT</td>
<td>FT</td>
<td>Ph.D</td>
<td>University of Cincinnati, 2006</td>
<td>3</td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

\[a\] FT=Full-Time  
\[b\] TT=Tenure-Track  
\[c\] T=Tenured  
\[d\] NTT=Non Tenure-Track  
\[e\] PT=Part-Time

Table 5: Faculty Analysis
6.5.3 Academic preparation of Faculty: A minimum of fifty percent of the regular full-time faculty members assigned to teach in the major program(s) shall have an earned doctorate (exceptions to this standard will be granted only for unique programs such as Marine Transportation). If more than one major program exists at an institution, this standard will apply to all regular full-time faculty assigned to teach major programs in Industrial Technology at the institution. The Board may grant exceptions to this standard if the institution has a program in place that will bring the institution into compliance within a reasonable time.

All CET Faculty have doctoral degrees. The supporting members from the Electronics Technology Faculty also hold doctoral degrees.

6.5.4 Selection and Appointment Policies: Policies and procedures utilized in the selection and appointment of regular faculty shall be clearly specified and shall be conducive to the maintenance of high quality instruction.

College of Technology’s Promotion, Tenure, & Evaluation Policy provides a listing of the minimal levels of academic preparation and field experience required to receive appointment at each level of the professorate.

6.5.5 Tenure and Reappointment Policies: Faculty tenure and reappointment policies and procedures shall be comparable to other professional program areas in the institution. Requirements in the areas of teaching, service, and scholarly activity shall be clearly specified for faculty in Industrial Technology.

College of Technology’s Promotion, Tenure, & Evaluation Policy provides a listing of the minimal requirements in the areas of teaching, scholarship, and service necessary to receive tenure and promotion at each level of the professorate.

6.5.6 Faculty Loads: Faculty teaching, advising, and service loads shall be comparable to the faculty in other professional program areas at the institution. Consideration shall be given in faculty teaching load assignments to high contact hours resulting from laboratory teaching assignments.

The teaching assignments are designed to accommodate individual interests and skills, while maintaining accountability and a reasonable level of balance. This flexibility in the teaching load distribution is possible because our faculty can teach comfortably several of the courses in our curriculum. Besides teaching major courses, some CET faculty are also assigned to teach basic electronics and graduate level courses. Table 6 shows workload summary for CET faculty.
<table>
<thead>
<tr>
<th>Faculty Member (name)</th>
<th>FT or PT</th>
<th>Classes Taught (Course No./Credit Hrs.)</th>
<th>Total Activity Distribution</th>
<th>Total Activity Distribution</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Term and Year</td>
<td>Teaching</td>
<td>Consulting</td>
</tr>
<tr>
<td>Dr. Bill Croft FT</td>
<td>ECT 351 Fall 08 3 hrs ECT 435 Fall 08 3hrs ECT 490 Fall 08 3hrs ECT 603 A &amp; B Fall 08 2hrs ECT 324 SP 09 3hrs ECT 351 Spring 09 3hrs ECT 490 Spring 09 3hrs ECT 603 Spring 09 3hrs ECT 631(web) Spring 09 3hrs</td>
<td>60</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>Dr. Yuetong Lin FT</td>
<td>ECT 130 Fall 08 2hrs ECT 165 Fall 08 3hrs ECT 542 Fall 08 3hrs ECT 167 Spring 09 3hrs ECT 421(web) Spring 09 3hrs ECT 642 Spring 09 3hrs</td>
<td>60</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>Dr. Xiaolong Li FT</td>
<td>ECT 231 Fall 08 3hrs ECT 325 Fall 08 3hrs ECT 160 Fall 08 3hrs ECT 160(001 &amp; 002) Spring 09 6hrs ECT 168 Spring 08 3hrs ECT 490 Spring 09 3hrs</td>
<td>60</td>
<td>30</td>
<td>10</td>
</tr>
</tbody>
</table>

Table 6: Faculty Workload Summary

Four courses per semester are considered as the full load. Table 7 demonstrates the average load for program faculty. However, the load can be reduced if insufficient enrollment numbers are presented. In addition, faculty with research agenda can also have teaching load reduced with the consensus from department faculty and administration.

<table>
<thead>
<tr>
<th></th>
<th>Range</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Semester Hours</td>
<td>9 - 15</td>
<td>12</td>
</tr>
<tr>
<td>Contact Hours Per Week</td>
<td>4 - 6</td>
<td>5</td>
</tr>
<tr>
<td>Laboratory Size</td>
<td>10 - 24</td>
<td>10</td>
</tr>
<tr>
<td>Class Size</td>
<td>8 - 25</td>
<td>10</td>
</tr>
<tr>
<td>Advisees</td>
<td>15 - 40</td>
<td>10</td>
</tr>
</tbody>
</table>

Table 7: Faculty Workload Average
6.6 Students

The ECMET Department has been offering undergraduate degrees since 1978. Though having experienced several cycles of growing and merging, the faculty have always championed the core value of excellence in producing high quality graduates.

There were thirty-two students in the CET program by the end of Fall 2009 semester, with ethnic minorities constituting about 1/4 of the student population. From Fall 2008 to Summer 2009, twenty-six new students, transfers or freshmen, have been admitted. Ten students, have enrolled in Fall 2009. Our students comprise primarily of residents of Indiana, Illinois, and Kentucky. Many other states and several foreign countries are also represented. Most of students are full time students of a traditional age (18 to 23).

6.6.1 Admission and Retention Standards: Admission and retention standards shall be used to ensure that students enrolled are of high quality. These standards shall compare favorably with the institutional standards. Sources of information may include admission test scores, secondary school rankings, grade point averages, course syllabi, course examinations, written assignments, and oral presentations.

The Admissions Office handles admittance to ISU at the undergraduate level. The program has no involvement with this process. A CET freshman has the same eligibility requirements as freshmen in other majors. Table 8 shows the admission statistics for the first group of CET freshmen.

<table>
<thead>
<tr>
<th>Academic Year</th>
<th>Composite ACT MIN.</th>
<th>Composite ACT AVG.</th>
<th>Composite SAT MIN.</th>
<th>Composite SAT AVG.</th>
<th>Percentile Rank in High School MIN.</th>
<th>Percentile Rank in High School AVG.</th>
<th>Number of New Students Enrolled</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>N/A</td>
<td>N/A</td>
<td>940</td>
<td>1037</td>
<td>51</td>
<td>59.3</td>
<td>4</td>
</tr>
</tbody>
</table>

Table 8: History of Admissions Standards for Past Five Years (BS in CET)

6.6.2 Scholastic Success of Students: Students in Industrial Technology shall have scholastic success comparable to those in other curricula in the institution. Grading practices in Industrial Technology courses shall be comparable to other departments and/or programs in the institution. Evidence shall be presented to indicate the scholastic achievement level of Industrial Technology students in both basic studies and major course work.

N/A.

6.6.3 Placement of Graduates: The initial placement, job titles, job descriptions, and salaries of graduates shall be consistent with the program(s) goals and objectives. The advancement of graduates within organizations shall be tracked to ensure advancement to positions of increasing responsibility. Industry’s reaction to graduates as employees must be favorable. Follow-up studies of graduates shall be conducted every two to five years. Summary statistics relating to follow-up studies of graduates shall be made available to prospective students. These statistics shall include placement rates as well as salary levels of program graduates.

Table 9 shows the information of the first group of CET graduates.
<table>
<thead>
<tr>
<th>Numerical Identifier</th>
<th>Year Matriculated</th>
<th>Year Graduated</th>
<th>Certification/ Licensure (If Applicable)</th>
<th>Initial or Current Employment/ Job Title/ Other Placement</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Fall 2005</td>
<td>05/01/2009</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Fall 2005</td>
<td>05/01/2009</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Fall 2004</td>
<td>05/01/2009</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Fall 2004</td>
<td>05/01/2009</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5a</td>
<td>Fall 2006</td>
<td>05/01/2009</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*transfer student
(For Past Five Years or last 25 graduates, whichever is smaller)

Table 9: Program Graduates

6.6.4 Graduate Studies: If an objective of the program(s) is to prepare students for graduate studies, then the success of Industrial Technology graduates in graduate programs shall be tracked and confirmed.

N/A.

6.6.5 Student Evaluation of Program(s): Evaluations of the Industrial Technology program(s) shall be made by its graduates on a regular basis (two to five years). Their reactions and recommendations shall be considered in program revisions.

The COT carries out evaluation of the CET program. The COT conducts a mail survey of alumni. This survey includes a form mailed to alumni. Pertinent statements prepared by CET Faculty are asked of each alumnus. Surveys are returned to the COT and results are tabulated by the University, then distributed to the Department. The following page illustrates our alumni survey for the CET program.
Computer Engineering Technology

Directions: The following items have been identified as competencies needed for successful functioning by professionals in Computer Engineering Technology. Please read each statement carefully and numerically rate its importance using the validity or confidence scale shown below.

When marking your response, identify the corresponding question by filling in the appropriate circles in the computer scanner column. Please use only soft lead (No. 1 or 2) pencil.

Validity / Confidence Scale

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Great Importance – Essential that competency be acquired during the college program</td>
</tr>
<tr>
<td>B</td>
<td>Considerable Importance – Not essential but of greater value to acquire during a college program</td>
</tr>
<tr>
<td>C</td>
<td>Moderate Importance – Desirable to acquire if time permits</td>
</tr>
<tr>
<td>D</td>
<td>Little Importance – Nice to know but of little value</td>
</tr>
<tr>
<td>E</td>
<td>No Importance – Competency not needed</td>
</tr>
</tbody>
</table>

1. Demonstrate the ability to apply methods of circuit analysis to analyze electrical circuits
2. Demonstrate the ability to apply principles of design/analysis using circuit simulation software
3. Demonstrate the ability to develop structured programs to solve technical problems
4. Demonstrate the ability to design and analyze digital logic circuits
5. Demonstrate the ability to utilize the principles of automation in industrial applications
6. Demonstrate the ability to configure and troubleshoot computer networks
7. Demonstrate the understanding of fundamental data communication architectures and protocols
8. Demonstrate the understanding of microprocessor / microcontroller architecture, organization and peripheral control structures
9. Demonstrate the ability to design and develop a microprocessor/microcontroller-based system
10. Demonstrate the understanding of programmable logic devices circuit
11. Demonstrate the ability to design and develop digital logic circuit using hardware description language (HDL)
12. Demonstrate the understanding of database applications related to technical data management
13. Demonstrate the understanding of computer-based systems integration
14. Demonstrate knowledge of organizational principles of industry
15. Demonstrate the ability to identify and apply principles of industrial supervision
16. Demonstrate the ability to function on multi-disciplinary teams
17. Demonstrate the understanding of professional and ethical responsibility
18. Demonstrate the ability to communicate effectively in both written and oral form
19. Demonstrate the recognition of the need for, and an ability to engage in life-long learning
6.6.6  Student Enrollment: Enrollment shall be adequate in each program area to operate the program(s) efficiently and effectively. The level of available resources shall be considered as a constraint on the maximum number of qualified students to be admitted to the program(s). Enrollment shall be tracked, and factors affecting enrollment patterns shall be identified and analyzed. Enrollment projections shall be made which relate closely to short and long-range goals and resource needs.

Enrollments in the computer engineering technology program (previously Computer Hardware Technology) have been relatively stable. We hope to grow the program to a level of 50 students within the next few years, and are working towards that goal through recruiting and advertisement. Table 10 lists the enrollment data. Since the CET program was officially launched in 2008, one year of data is available.

<table>
<thead>
<tr>
<th></th>
<th>Year 2007-08 (Current2)</th>
<th>Year 2008-09 (Current1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fulltime Students</td>
<td>27</td>
<td>27</td>
</tr>
<tr>
<td>Part-time Students</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Student FTE(^a)</td>
<td>27</td>
<td>27</td>
</tr>
<tr>
<td>Graduates</td>
<td>5</td>
<td>5</td>
</tr>
</tbody>
</table>

\(^a\) FTE=Full-Time Equivalent
\(^b\) We don’t have exact information of how many courses the part-time students were enrolled in. We have assumed on average to be 2 courses, i.e. 0.5 FTE. This is how we have computed student FTE.

Table 10: Enrollment Trends for Past Five Academic Years (BS in CET)

6.6.7  Advisory and Counseling Services: Adequate and timely advising and counseling services shall be available for students.

Advising Academic advising is an integral part of the educational process. The primary purpose of advising is to assist students in the development of meaningful educational plans compatible with the attainment of their life goals.

Advisor and Student Role CET faculty foster a good working relationship with students, and adapt to their experiences and changing needs to assure the effectiveness of advising. By having faculty members serving in university and college level academic affairs committees, the program is able to enhance understanding, affirming, and respecting the individual differences within the University community to assure quality advising. The department and program expect advisors to develop the knowledge, experience, and interest for successfully communicating with students in a genuine, sincere, accurate, and confidential manner. Students are expected to understand University and program requirements and accept the responsibility for fulfilling them. Together advisors and students are expected to maintain a professional and mutually respectful relationship as they review students’ progress toward the attainment of educational objectives.

Academic advising is an interactive process in which both students and advisors share the responsibility. The advisor serves as a facilitator of communication, as a source of
accurate information, as a coordinator of academic planning, as an assistant in helping students to solve academically related problems, and as an agent of referral to other professionals and campus resources.

Advising Units Advising in CET program starts from the freshman year and will continue through the senior year. Students have a variety of advising resources provided by units at the college and department level. As a student progresses through the academic program, each advising unit will play a different role, depending on the status and concern of the student. Key advisement personnel include:

1. Associate Dean’s office. The Associate Dean is the chief administrator in the College for undergraduate academics. This office oversees all advising and curriculum issues. There are several support staff in this office that help students on advising, scheduling and registration:

   - The central academic advisor is currently the academic advisor for CET majors. This position was created after the college reorganization in Fall 2006 with the goal of having a centralized advising contact. They handle the advising requests on a daily basis.

   - The central records coordinator. This role is to assist the Associate Dean in organizing and coordinating New Students Orientation program assist students’ registration, process transfer request, provide information on General Education requirements, and review degree requirements at the time of graduation.

   These staff members establish student contact during the orientation process (See below, 6.6.6). In the hierarchy of advising team they are the first line of response. Meetings with dean’s staff are generally on an “as needed” basis, usually upon student’s request. Having a single point of contact provides a convenient and consistent base for students to seek help on issues such as transfer credits, general education, course substitutions, etc.

As the student progresses through his/her program of study, individual advisement is increasingly provided by CET faculty advisor.

2. Academic advisor. When a student enrolls as a CET major, he/she is assigned an academic advisor who is a fulltime member of the faculty. The student will retain this advisor as long as he/she feels advising has been productive, thereby enabling the development of a closer, more interactive relationship between the two parties. Students may request a change in their assigned advisor at any time by contacting the department chair or program coordinator. The role of the faculty advisor is to provide general guidance regarding CET curriculum and career paths. Each faculty advisor has a crucial role in monitoring and advising students and in catching academic problems before they become serious.

General Advising Policy It is mandatory for students to arrange advisement meeting with their advisor at least once per semester to review progress and discuss plans and courses for subsequent semesters. The advisor will evaluate up-to-date DARS and grades from the previous semester to see if there exists a need to adjust the schedule. The meeting is to take place prior to registering for each semester. All students are required to obtain advisor approval on the signed scheduling form before they can register online for courses. The approval is also indispensable when students decide to add or drop courses from their schedule.
Besides advisement meetings, advisors routinely monitor each student’s progress towards the degree and work carefully to identify any deficiencies, and communicate the concerns to student through emails and, meetings if necessary. In the mean time, the student may also request more frequent meetings depending on his/her needs.

In addition to academic advising, advisors also offer counsel with the help from appropriate authority on campus to students who are experiencing emotional, personal or family troubles. For students with documented physical and learning disabilities, advisors will help accommodate their special needs following university guidelines.

New Students Orientation Program Fall and spring semester freshman are required to attend the Sycamore Advantage registration program held in June and early January of each year. Any freshman that fails to attend this program will not be allowed to register for classes before attending the “Knowing Sycamores” Orientation program and completing a consultation with Student Financial Aid.

During this orientation program the freshmen will have the first experience of academic advising. Not only will they meet with the entire College level advising team including the Associate Dean and support staff, participating CET faculty member will have one-on-one session with the students to introduce important advising tools such as the university catalog, program guide sheet, and online DARS report. Advisors also review student's first semester schedule: these courses are preregistered based on their ACT/SAT score and placement results. Additionally students learn to search, add or drop courses online.

Advising Tools The main advising tools are CET the curriculum guide sheet and exemplary four-year plan.

• The guide sheet is a one page curriculum form that itemizes all the courses required to obtain a degree in CET. For the student’s program of study, this is a one page form that many students find to be the most useful means for tracking progress toward degree completion, CET Program Curriculum (Figure 4)). Student can carry a copy of the guide sheet as a checklist to monitor academic progress.

• The CET Four Year Plan (Figure 5) arranges the curriculum in a suggested semester-by-semester track. This document also shows students when classes are offered (fall, spring, or both).

• Degree Audit Report System (DARS) is the most complete curriculum tracker available to students through their ISU “isuportal” access. It is especially convenient for transfers and students who switch majors. Students will have repeated exposure to DARS and are expected to understand the contents and all legends.

Advisor Personal Identification Number (PIN) - For students who have not completed a minimum 63 credits, an advisement PIN is to be assigned after the student's advisor has signed a complete scheduling form. The department secretary and associate dean’s staff has access to this PIN for student inquiry. Students must have the PIN to be able to register.

Student Record - The department maintains student’s record in separate folder. The content includes the courses in which the student is currently enrolled, which courses have been taken, along with student’s grades and notes regarding advice to the student. Figure 6, Graduation Checklist, is the checklist for graduation kept by associate dean’s office.
## COMPUTER ENGINEERING TECHNOLOGY MAJOR
(BACHELOR OF SCIENCE DEGREE)

INDIANA STATE UNIVERSITY
COLLEGE OF TECHNOLOGY
TERRE HAUTE, IN 47809

Student's Name

Advisor's Name

CONTACT: Department of Electronics, Computer, and Mechanical Engineering Technology - (812) 237-3456
Interim Chair: Dr. Ming Zhou http://www.indstate.edu/ect/

### TECHNOLOGY REQUIRED COURSES

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Required: 38 Semester Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECT 165</td>
<td>3</td>
<td>D. C. Circuits and Design</td>
</tr>
<tr>
<td>ECT 167</td>
<td>3</td>
<td>A. C. Circuits and Design</td>
</tr>
<tr>
<td>ECT 188</td>
<td>3</td>
<td>Comp. Design Technology</td>
</tr>
<tr>
<td>ECT 231</td>
<td>3</td>
<td>Digital Computer Logic</td>
</tr>
<tr>
<td>ECT 232</td>
<td>3</td>
<td>Digital Computer Circuits</td>
</tr>
<tr>
<td>ECT 281</td>
<td>3</td>
<td>Robotics Controls</td>
</tr>
<tr>
<td>ECT 301</td>
<td>3</td>
<td>Comp. Network Mgmt. Tech.</td>
</tr>
<tr>
<td>ECT 303</td>
<td>3</td>
<td>Microprocessor Hw. &amp; Soft.</td>
</tr>
<tr>
<td>ECT 309</td>
<td>3</td>
<td>Micro. App. &amp; Interfacing</td>
</tr>
<tr>
<td>ECT 401</td>
<td>3</td>
<td>Data Comm. &amp; Intern. Tech.</td>
</tr>
<tr>
<td>ECT 403</td>
<td>3</td>
<td>Prac. Digital Logic Design</td>
</tr>
<tr>
<td>ECT 405</td>
<td>3</td>
<td>Comp. Systems Integration</td>
</tr>
<tr>
<td>ECT 430</td>
<td>1</td>
<td>Intro. To Elec. &amp; Comp. Tech.</td>
</tr>
<tr>
<td>ECT 437</td>
<td>3</td>
<td>Ind/Usu Comp Sytms Management</td>
</tr>
</tbody>
</table>

Select 6 sem. hrs. of Management from courses such as:
- TMGT 471: Prod Plan & Control
- TMGT 492: Industrial Supervision

### PUBLIC HEALTH REQUIREMENTS: 4 Semester Hours
- CS 205: C++ (or higher level structured language course)
- MATH 301: Fund & Apl of Calculus or Calculus Proficiency
- Physical Science course (8 hrs)

### TECHNICAL ELECTIVES: Minimum 6 Semester Hours
A minimum of 6 semester hours fulfilled by taking any College of Technology course.

### GENERAL EDUCATION COURSES

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Required: 11-28 Semester Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG 101/5</td>
<td>6</td>
<td>Fund. of Writing*</td>
</tr>
<tr>
<td>OR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ENG 107</td>
<td>3</td>
<td>Freshman Writing*</td>
</tr>
<tr>
<td>MATH 115</td>
<td>3</td>
<td>College Algebra and Trigonometry</td>
</tr>
<tr>
<td>ENGL 101/2</td>
<td>(6)</td>
<td>Foreign Language 101 &amp; 102*</td>
</tr>
<tr>
<td>COM 101</td>
<td>3</td>
<td>Intro to Speech</td>
</tr>
<tr>
<td>PE 101 &amp; 102</td>
<td>(2)</td>
<td>Fitness for Life</td>
</tr>
<tr>
<td>SCI 101</td>
<td>3</td>
<td>College Algebra and Trigonometry</td>
</tr>
</tbody>
</table>

### SEMESTER HOURS REQUIRED IN MAJOR (TCH, MATH, ELECT)
- 71

### SEMESTER HOURS REQUIRED TO MEET GEN. ED REQUIREMENTS
- 42-57

### NOTE:
Some required major hours meet Gen. Ed. Requirements

### MINIMUM NUMBER OF SEMESTER HOURS REQUIRED TO GRADUATE
- 124-130

Figure 4: CET Program Curriculum
## Computer Engineering Technology Bachelor of Science Degree
### Typical Four Year Plan

**Spring 2006**

<table>
<thead>
<tr>
<th>Fall Year 1</th>
<th>Spring Year 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECT 130</td>
<td>3 Credit Hour</td>
</tr>
<tr>
<td>ECT 165</td>
<td>3 Credit Hours</td>
</tr>
<tr>
<td>English 101**</td>
<td>3 Credit Hours</td>
</tr>
<tr>
<td>**OR ENG 107</td>
<td>(3 Credit Hours)</td>
</tr>
<tr>
<td>SBS: F.E</td>
<td>3 Credit Hours</td>
</tr>
<tr>
<td>COMM 101</td>
<td>3 Credit Hours</td>
</tr>
<tr>
<td>† † Foreign Language</td>
<td>(3 Credit Hours)</td>
</tr>
<tr>
<td>14-17 Credit Hours</td>
<td>12-18 Credit Hours</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fall Year 2</th>
<th>Spring Year 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECT 231</td>
<td>3 Credit Hours</td>
</tr>
<tr>
<td>ECT 281</td>
<td>3 Credit Hours</td>
</tr>
<tr>
<td>HS: R</td>
<td>3 Credit Hours</td>
</tr>
<tr>
<td>CS 296</td>
<td>3 Credit Hours</td>
</tr>
<tr>
<td>MCS: USD</td>
<td>3 Credit Hours</td>
</tr>
<tr>
<td>15 Credit Hours</td>
<td>15 Credit Hours</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fall Year 3</th>
<th>Spring Year 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECT 301</td>
<td>3 Credit Hours</td>
</tr>
<tr>
<td>ECT 303</td>
<td>3 Credit Hours</td>
</tr>
<tr>
<td>Tech. Elective</td>
<td>3 Credit Hours</td>
</tr>
<tr>
<td>Management</td>
<td>3 Credit Hours</td>
</tr>
<tr>
<td>LAPS: LL</td>
<td>3 Credit Hours</td>
</tr>
<tr>
<td>†† Elective</td>
<td>(3 Credit Hours)</td>
</tr>
<tr>
<td>15-18 Credit Hours</td>
<td>16 Credit Hours</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fall Year 4</th>
<th>Spring Year 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECT 401</td>
<td>3 Credit Hours</td>
</tr>
<tr>
<td>ECT 403</td>
<td>3 Credit Hours</td>
</tr>
<tr>
<td>ECT 437</td>
<td>3 Credit Hours</td>
</tr>
<tr>
<td>Elective</td>
<td>3 Credit Hours</td>
</tr>
<tr>
<td>ENG 306T</td>
<td>3 Credit Hours</td>
</tr>
<tr>
<td>†† Elective</td>
<td>(3 Credit Hours)</td>
</tr>
<tr>
<td>15-18 Credit Hours</td>
<td>16 Credit Hours</td>
</tr>
</tbody>
</table>

† See University Undergraduate Catalog requirements.
†† May be required to meet min. 124 sem. Hrs. for graduation.

Figure 5: CET Program Four Year Plan
Graduation Checklist

___ Maintain a minimum GPA of 2.0 (2.5 in an Education program)

___ Satisfy all requirements of your major—listed on the Curriculum Guidelines for your major and also in the ISU Undergraduate Catalog for the year you entered ISU.

___ Satisfy all General Education (Basic Studies and Liberal Studies) requirements. An outline of these requirements begins on approximately page 32 in the ISU Undergraduate Catalog.

___ Complete a minimum of 124 hours (excluding Math 010 or 011). If you meet all General Education and Major requirements but still have not completed 124 hours, you must take additional coursework.

___ At least 50 hours must come from 300-400 level courses.

___ As you approach completion, apply for graduation on MyISU. Click on the ‘Student’ tab, select ‘Apply for Graduation’ under My ISU Quicklinks, and follow the prompts. If you are receiving more than one degree (AS and BS), contact the Registrar’s Office at 812-237-2489 in order to apply. If possible, apply for graduation at least one semester prior to graduating. You cannot graduate without applying.

ISU students can graduate in May, August, or December. Commencement ceremonies are held in May and December. August graduates participate in the May ceremony.

Additional For Transfer Students:

___ A maximum of 94 transfer hours can be used toward a Bachelor degree. A maximum of 64 transfer hours can be used toward an Associate degree. Courses taken at other institutions must have a grade of C or higher in order to transfer.

___ Of the last 15 hours preceding graduation, no more than 5 can be transfer hours.

___ To receive a Bachelor degree, you must complete at least 30 hours of Residence Credit. Residence Credit is earned from courses taken at the ISU campus, ISU Distance courses, or ICN courses. Hours granted through Credit By Exam, Credit for Prior Learning, or credit for Professional Occupational Experience do not count toward the Residence Credit requirement.

Figure 6: Graduation Checklist
6.6.8 Ethical Practices: Ethical practices shall be fostered, including equitable student tuition refunds and nondiscriminatory practices in admissions and employment.

An active Affirmative Action Office is located at Indiana State University. Mandatory attendance of all administrators, down through the Chair level, for annual workshops on harassment, racism, and other unfair practices are a part of University policy.

Students receive refunds for dropping their courses according to an established time percentage schedule.

6.7 Administration

6.7.1 Program Administration: Programs in Industrial Technology are expected to have an identifiable, qualified individual with direct responsibility for program coordination and curriculum development. This individual should be a full-time employee of the institution.

The CET program has three-full-time faculty. Dr. Yuetong Lin serves as the program coordinator. Dr. Bill Croft, the senior member of the group, brings unique experience in program administration and curriculum development. Dr. Xiaolong Li represents the program in College Academic Affairs committee.

6.7.2 Administrative Leadership: Individuals assigned to administer Industrial Technology programs must demonstrate effective leadership and satisfactory support for Industrial Technology.

The administration, from ISU president, to the College of Technology and the department, has been very supportive of the direction the CET program is headed. President Bradley has frequently inquired about the preparation of accreditation process. The Dean allocated fund to support CET and MET faculty representative to attend workshops on program assessment. Associate dean, who is the coordinator for all accreditation efforts, directed his office to help furnish data on faculty, enrollment, and transfer students etc. The department also provided both personnel (office assistant and part-time worker during summer), and consulting (An expert in accreditation was invited to campus for consultation) support. Department chair, an MET faculty, is also personally involved.

6.7.3 Administrative Support: There must be appropriate support for Industrial Technology from the personnel holding leadership positions in the departments and colleges where Industrial Technology is administratively located.

The College of Technology provides support to the program as follows:

Selection, Supervision, and Support of Faculty The Dean of the College recommends to the Provost the hiring of tenure track faculty, and authorizes hiring of adjunct instructor based on demonstrated needs for maintaining adequate size of faculty and excellence of the program. Department Chair makes the request, and recommends to the dean the candidate, on personnel issues. Both the dean and chair responded swiftly in approving the request for a national search to fill a CET tenure track position when a faculty member left for another institution.

The Dean has met with junior CET faculty, among tenure track faculty from other programs, individually after annual review to offer his own suggestions on how to prepare tenure & promotion dossier. The Dean also supported program faculty to apply for both
internal and external funding. Evidence included are the letters the Dean provided for CET’s proposal for NSF CCLI (Figure 7) and STEM (Figure 8) program.

The department chair works closely with CET faculty to balance workload, and to provide administrative support for program development in issues such as recruiting and articulation.
May 20, 2008

National Science Foundation
Directorate for Education & Human Resources
Division of Undergraduate Education
Washington, DC

Subject: CCLI 08-546

Dear Reviewers:

I am writing this letter in support of the proposal prepared by a team of faculty in the College of Technology at Indiana State University for a grant to innovate a set of courses in the Automotive Technology Management, Computer Engineering Technology, and Mechanical Engineering Technology programs. I am very supportive of this initiative and will commit my time and resources to facilitate its success.

The College’s faculty are dedicated to the following values: (a) the study of technology as an essential part of our cultural heritage and an essential part of a university education; (b) high quality, state-of-the-art programs and the embracing of future technologies; (c) experiential instruction using modern laboratories to develop knowledge and skill; (d) functioning as a student-centered academic unit (i.e., high quality teaching and advising as well as meeting individual needs of students is central for all); and (e) to identifying, enhancing, and rewarding faculty and student excellence in scholarship (all forms) and service, and is committed to excellence, in general. As a result, we are committed to the mission of providing exemplary undergraduate and graduate programs, generating solutions and knowledge through research, and serving the technology needs of the State, the nation, and the international community.

I have been fully apprised of the goals and outcomes of this project and agree with my colleagues that this work is highly valued and will make a major contribution not only to the programs it will impact in our College, but will serve as a model that can be replicated by others. I have full confidence in the team assembled to manage this project. They have many years of experience and a reputation for “getting the job done.”

Regarding the requested funding, please note that I will work with our School of Graduate Studies to ensure that internal funds will be made available for the graduate assistant assigned to this project.

Again, I am in full support of this project and look forward to the opportunity to join with the National Science Foundation in this important endeavor. Please let me know if I can be of further service.

Sincerely,

[Signature]

W. T. Foster, Professor and Dean

Figure 7: Dean’s Support Letter for CET NSF CCLI Proposal
November 5, 2007

National Science Foundation
Directorate for Education & Human Resources
Division of Undergraduate Education
Washington, DC

Subject: NSF Scholarships in Science, Technology, Engineering, and Mathematics (S-STEM); Program Solicitation NSF 07-324

Dear Reviewers,

I am writing this letter in support of the proposal prepared by a team of faculty in the College of Technology at Indiana State University for a grant to provide a set of scholarships for enrollment in our Mechanical Engineering Technology and Computer Engineering Technology programs. I am very supportive of this initiative and will commit my time and resources to facilitate its success.

Like the National Science Foundation, we in the College of Technology are keenly aware of the need to increase enrollments in STEM disciplines. The shortages are reaching a critical stage. Each year, we find it increasingly more difficult to recruit students to these majors.

We have worked hard to ensure that the Mechanical Engineering Technology and Computer Engineering Technology programs are of the highest quality that will prepare students for robust employment and for advanced education. Based on our follow-up studies, we also know that our graduates are highly sought after by employers. In fact, it is almost always the case that the demand far exceeds the supply. We also believe that it is extremely important that we dedicate 50% of the scholarships to enhance our efforts to increase the number of minorities in engineering and technology fields. This will be in addition to and in support of our current efforts (Females-in-Technology) to increase females in these fields.

The College’s faculty are dedicated to the following values: (a) The study of technology is an essential part of our cultural heritage and an essential part of a university education; (b) high quality, state-of-the-art programs and the embracing of future technologies are highly valued; (c) experiential instruction using modern laboratories to develop knowledge and skill; (d) a student-centered academic unit (i.e., high quality teaching and advising as well as meeting individual needs of students) is central for all; and (e) to identifying, enhancing, and rewarding faculty and student excellence in scholarship (all forms) and service, and is committed to excellence, in general. As a result, we are committed to the mission of providing exemplary undergraduate and graduate programs, generating solutions and knowledge through research, and serving the technology needs of the State, the nation, and the international community.

Again, I am in full support of this project and look forward to the opportunity to join with the National Science Foundation in this important endeavor. Please let me know if I can be of further service.

Sincerely,

W. Todd Foster, Professor and Dean

Figure 8: Dean’s Support Letter for CET NSF STEM Proposal
Selection and Supervision of Students  The Associate Dean’s office takes the charge of undergraduate academics. The Associate Dean and the staff track student’s academic progress, advise students, and work with program faculty to identity and help students with academic liability. Other critical duties of Associate Dean’s office include working with admission office to coordinate new students’ orientation; outreach to high school and two-year institutions to recruit high school and transfer students; coordinating articulations. For example, CET faculty joined the associate dean’s team to visit Ivy Tech Community College for renewal of program articulation agreement in April 2008; and Vincennes University for preliminary articulation negotiation in March 2009.

6.8 Facilities and Equipment

6.8.1 Adequacy of Facilities and Equipment: Physical facilities and equipment, which are suitable to serve the goals and objectives of the program(s), shall be available for each program option. Where facilities and equipment appear to be minimal to support a quality program(s), comparisons with support levels for other relevant programs at the institution will be made by the visiting team.

Building  The CET program together with ECMET Department is housed in the John T. Myers Technology Center, which is also the home for the Collage of Technology. The building was erected in 1997 and has received regular hardware upgrades to incorporate state-of-the-art instructional facilities as well as student work and lounge areas.

CET Office Space  The ECMET Department office complex is located on the third floor of Myers Center. Most of the classrooms on this floor are used by the department and CET program. Research lab and graduate assistants office also take some space on the same floor. The central location of these facilities offers students the convenience to further enhance encounters with faculty, fellow students and graduate assistants.

All CET faculty have their own offices in Suite 301, close to the classrooms, labs, and meeting rooms. It is standard for faculty to have Dell PC desktop computers and/or IBM - Lenovo T60 laptop computers. The Suite also has office space for undergraduate/graduate student worker and adjunct faculty.

Auditorium and Meeting Rooms  The College of Technology has an auditorium or theatre-like classroom that seats 100 students. There is also an atrium to hold large social gatherings. The ECMET Department has one meeting/conference room. In addition, the College of Technology has three meeting rooms and two breakout rooms.

Research Centers  The Myers Facility houses three Centers: the Indiana Packaging Research and Development Center (4000 sq ft), Center for Systems Modeling and Simulation (1000 sq ft, with MATLAB, I Grip, Rockwell Arena, etc.), and the Center for Automation and System Integration.

Classrooms  ECMET classrooms also function as laboratories, which allow students to continue on lab experiments in the same room when the lecture session of the class is complete. All classrooms are equipped with PC’s with network access and educational software required for courses taught in the room, and the latest teaching apparatus: the audio/visual cabinet with master control, VCR/DVD player and audio amplifier. Most of the rooms have installed overhead projector, and pull-down projector screen. Each room
also has multiple equipment/documentation cabinets to store lab tools and manuals, e.g., motherboards, oscilloscopes, multimeters, function generator etc.

Room physical dimension is usually large enough to accommodate up to 24 seats, which is the normal cap for class size. The layout is designed to facilitate student’s interaction and collaboration on labs.

Room 306 is the primary teaching room for core CET courses. The room has two types of Motorola microcontroller development boards, and Xilinx Spartan3 development boards. On computers integrated development software are installed.

Room 304 is one of the 17 new symposium classrooms across ISU campus. The Smart Symposium in this room operates identically to a Smart Board. The system allows each input switch from desktop, laptop, and other visual sources. Writing on the touch screen can also be saved through special software.

<table>
<thead>
<tr>
<th>Room</th>
<th>Lab Specialization</th>
<th>CET Major Courses Taught</th>
</tr>
</thead>
<tbody>
<tr>
<td>TC 304</td>
<td>ECT Classroom &amp; Lab</td>
<td>ECT 130, ECT 231, ECT 306, ECT 430, ECT 437</td>
</tr>
<tr>
<td>TC 306</td>
<td>Microcontroller Lab</td>
<td>ECT 303, ECT 308, ECT 403, ECT 490</td>
</tr>
<tr>
<td>TC 307</td>
<td>Transistor Lab</td>
<td>ECT 165, ECT 232, ECT 490</td>
</tr>
<tr>
<td>TC 308</td>
<td>Solid State Lab</td>
<td>ECT 165, ECT 167, ECT 168</td>
</tr>
<tr>
<td>TC 315</td>
<td>Robotics Lab</td>
<td>ECT 160</td>
</tr>
<tr>
<td>TC 316</td>
<td>Pilot Projects Lab</td>
<td>ECT 281</td>
</tr>
</tbody>
</table>

Table 11: ECMET Department Classrooms

Laboratories, Equipments and Tools The Computer Integrated Manufacturing (CIM) laboratory (3600 sq ft) has been developed to represent modern automation. The CIM lab has seven Adept robots, some with vision systems, a Fanuc robot, an automated guided vehicle (AGV), an automated storage and retrieval system (ASRS), and an automated conveyor system. All of these systems have been integrated so they function as an automated factory.

In addition, the College has a lab dedicated to the study of programmable logic controllers (PLC) (2400 sq ft), a wet process control lab (2400 sq ft) that helps students learn about automation used in the chemical and plastics industries, and a Mitsubishi robot lab (2000 sq ft). The Mitsubishi lab has eight robots and I/O systems. All of these systems are computer operated and can be migrated for web delivery.

Besides commonly used software such as Microsoft Office Suite, most of the classroom PC’s have field specific software including MultiSim, LabView, and Microsoft Visual Studio, installed.

6.8.2 Support for Facilities and Equipment: Facility and equipment needs shall be reflected in the long range goals and objectives for the program(s), and sources of potential funding shall be identified.

The department has been very accommodating equipment acquisition and update requests. Over the years the department has appropriated funds to purchase, or upgrade
microcontroller and FPGA boards. To oversee the allocation of department equipment money for proposals exceeding $2500, an Equipment Committee, on which each program of the department has its representative, was created. In the latest meeting in April 2009, the committee approved all purchasing requests from CET program including Xilinx Spartan 3E, an FPGA development board with LabView module support, and Xilinx VirtexII Pro FPGA Development System (Figure 9). The department also supported the purchase of new microcontroller boards in Spring 2009. The manager of electronics and computer technical services in the College of Technology, with assistance of OIT student workers, is in charge of maintaining and repair of failed or malfunctioning equipments.
### Figure 9: Equipment Order: FPGA Development Board

**Invoice**

**Bill To**
Indiana State University  
Accounts Payable  
Electronics & Comp Tech  
650 Cherry, New Technology Bldg 301  
Terre Haute, IN 47809

**Ship To**
Indiana State University  
Ernie Kramer  
Electronics & Comp Tech  
650 Cherry, New Technology Bldg 301  
Terre Haute, IN 47809

<table>
<thead>
<tr>
<th>P.O. Number</th>
<th>Terms</th>
<th>Rep</th>
<th>Ship</th>
<th>Via</th>
<th>Project</th>
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</thead>
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<tr>
<td>F9065329</td>
<td>Net 30</td>
<td>SNR</td>
<td>6/12/2009</td>
<td>UPS Ground</td>
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<table>
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<tr>
<th>Quantity</th>
<th>Part No.</th>
<th>Description</th>
<th>Price Each</th>
<th>Amount</th>
</tr>
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<td>5</td>
<td>Spartan 3E Star-...</td>
<td>Spartan 3E Starter Boards</td>
<td>149.00</td>
<td>715.00</td>
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<td>5</td>
<td>USB-AB-RET</td>
<td>Retractable USB Cable (A to B)</td>
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<td>5</td>
<td>5V 2.5A Switching...</td>
<td>5V, 2.5A switching wall-plug power supply</td>
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<td>2</td>
<td>XUP V2 Pro BGA...</td>
<td>Virtex - 2 Pro Circuit Board</td>
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<td>598.00</td>
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<tr>
<td>2</td>
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<td>4 Amp, 5 Volt switching power supply - USA AC cord</td>
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<td>USB Cable</td>
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<tr>
<td>2</td>
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<td>XUP V2 Pro Companion CD</td>
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<td>8</td>
<td>V2PRO Stand-offs</td>
<td>V2PRO Stand-offs</td>
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<tr>
<td>1</td>
<td>XUPV5 Kit</td>
<td>XUPV5-110T board</td>
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<tr>
<td>1</td>
<td>1GB Compact Fl...</td>
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<tr>
<td>1</td>
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<td>6A power supply</td>
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<td></td>
<td>Shipping &amp; Haul...</td>
<td>Product Shipping</td>
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|          | 1VEA926803568327H5 |  
|          | On-state sale, exempt from sales tax | 0.00 |

Total: $2,118.88

Thank you for your business.
6.8.3 Appropriateness of Equipment: Equipment shall be appropriate to reflect contemporary industry.

The equipment invested by the program represents a cross section of the types and brands graduates will encounter on the job. The present equipment and an ongoing equipment modernization have insured that the students’ laboratory experiences are relevant and up-to-date, reflecting contemporary industrial needs. Department faculty have been actively involved in acquiring new industrial equipment donations, contributions, and deep educational discounts. Examples of donations or contributions include robots, computer equipment, PLC software, variable frequency ac drive control software, Device Net equipment and software, additional process control equipment, power equipment, and digital training equipment. Examples of companies from which contributions or donations have been received are: Rockwell International, Allen Bradley, Siemens, Eli Lilly, National Instruments, Microbot, TRW, Adept Robot, and Intel.

6.9 Computer Systems

ISU contains 85 technology enhanced classrooms, 15 public labs and 45 discipline specific computer labs, and 5 distance learning classrooms. Campus infrastructure currently supports over 100 servers and high performance computing facilities. The campus has become a notebook institution beginning with freshmen in Fall 2007. The campus is served by an extensive fiber optic cable system, and uses a gigabit backbone to deliver data and interactive video connections to every building. Wireless network access is available in all academic areas. High speed connection to both the commercial Internet and Internet2 is provided for faculty and student use. Student computing needs are served by 450 microcomputers in general use computer clusters, and 600 microcomputers in special use clusters.

Students have multiple venues for computer access. Besides PC’s in every classroom, staffed public computer labs are available to students, faculty and staff, one of which is located in Myers Center (Room 212) that is equipped with 52 stations (IBM PC’s), one laser printer, one Smartboard, two additional projector screens, and one scanner. The list of software packages accessible on these stations can be seen online at http://www.indstate.edu/oitlabs/software.html.

The computers in each classroom receive regular upgrades. The hardware configuration is sufficient to meet the requirements to run various educational software.

6.10 Financial Resources

6.10.1 Financial Support: The budget for the Industrial Technology program(s) shall be adequate to support program objectives. When judging sufficiency, the visiting team may wish to make comparisons with the support levels given to other professional programs at the institution.

ISU is a public university and its main resources are state funds and tuition revenues. The university allocates its funds to each college following a formula that considers the number of faculty, staff, graduate assistants, and student workers with their salaries and benefits, number of students, student semester hours generated, equipment and supplies including labs, travel funds for professional development, etc. College of Technology Dean allocates funds to each department. From the department it is used for different programs and associated faculty and equipment for the programs based on
the need. Categories of budgeted items and corresponding amounts have been shown in Table 12 for the ECMET department, which houses CET program. ECMET Faculty salary data are shown in a separate table, Table 13.

<table>
<thead>
<tr>
<th>Expenditure Category</th>
<th>previous year&lt;sup&gt;a&lt;/sup&gt;</th>
<th>current year&lt;sup&gt;b&lt;/sup&gt;</th>
<th>year of visit&lt;sup&gt;c&lt;/sup&gt;</th>
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</thead>
<tbody>
<tr>
<td>Operations (not including staff)&lt;sup&gt;d&lt;/sup&gt;</td>
<td>200708</td>
<td>200809</td>
<td>200910</td>
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<td>Travel&lt;sup&gt;e&lt;/sup&gt;</td>
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<td>$7,625</td>
<td></td>
</tr>
<tr>
<td>Equipment&lt;sup&gt;f&lt;/sup&gt;</td>
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<td></td>
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<tr>
<td>(a) Institutional Funds</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(b) Grants and Gifts&lt;sup&gt;g&lt;/sup&gt;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Graduate Teaching Assistants</td>
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<td></td>
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<tr>
<td>Part-time Assistance&lt;sup&gt;h&lt;/sup&gt; (other than teaching)</td>
<td>$27,031.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Faculty Salaries</td>
<td>$963,280.8</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<sup>a</sup> Provide the statistics from the audited account for the fiscal year completed year prior to the current fiscal year.

<sup>b</sup> This is your current fiscal year (when you will be preparing these statistics). Provide your preliminary estimate of annual expenditures, since your current fiscal year.

<sup>c</sup> Provide the budgeted amounts for next fiscal year to cover the spring term when the AEMAE team will arrive on campus.

<sup>d</sup> Categories of general operating expenses to be included here.

<sup>e</sup> Institutionally sponsored, excluding special program grants.

<sup>f</sup> Major equipment, excluding equipment primarily used for research. Note that the expenditures (a) and (b) under “Equipment” should total the expenditures for Equipment. If they don’t, please explain.

<sup>g</sup> Including special (not part of institution’s annual appropriation) nonrecurring equipment purchase programs.

<sup>h</sup> Do not include graduate teaching and research assistant or permanent part-time personnel.

Table 12: Support Expenditures

Department of Electronics, Computer and Mechanical Engineering Technology<sup>a</sup> Academic Year 200809 (as of Nov 1, 2008)

<table>
<thead>
<tr>
<th></th>
<th>Professor</th>
<th>Associate Professor</th>
<th>Assistant Professor</th>
<th>Instructor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number</td>
<td>4</td>
<td>3</td>
<td>6</td>
<td>1</td>
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<tr>
<td>High</td>
<td>$80,356</td>
<td>$70,483</td>
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<tr>
<td>Mean</td>
<td>$78,664</td>
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<td>Low</td>
<td>$77,594</td>
<td>$62,064</td>
<td>$58,167</td>
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</tbody>
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<sup>a</sup> If the program considers that this information to be confidential, it can be provided only to the Team Chair.
### Table 13: Faculty Salary Data

#### 2009-2010 Regular Tenured and Tenure Track Faculty Report

<table>
<thead>
<tr>
<th>Rank</th>
<th>Dept</th>
<th>Name</th>
<th>FY09 Budget 7.1.08</th>
<th>FY09 Promo Adj.</th>
<th>FY09 Total Adj.</th>
<th>FY10 Budget 7.1.09</th>
<th>FY10 Promo Adj.</th>
<th>FY10 Total Adj.</th>
</tr>
</thead>
<tbody>
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<td>Ch Ast Prof</td>
<td>AVT</td>
<td>Minniear, Harry</td>
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<td></td>
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<td></td>
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<tr>
<td>Ast Prof</td>
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<td>Shahhosseini, Mehran</td>
<td>---</td>
<td></td>
<td></td>
<td>$65,000</td>
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<tr>
<td><strong>Subtotal</strong></td>
<td><strong>Electronics, Computer, and Mechanical Engineering Technology (ECMET)</strong></td>
<td></td>
<td><strong>$810,860</strong></td>
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<td><strong>0</strong></td>
<td><strong>$875,860</strong></td>
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<td>Hayden, Michael</td>
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<td><strong>Subtotal</strong></td>
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<td><strong>$2,100</strong></td>
<td><strong>$2,100</strong></td>
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<td><strong>$2,208,710</strong></td>
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<td><strong>$4,200</strong></td>
<td><strong>$2,277,910</strong></td>
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</tbody>
</table>
6.10.2 External Financial Support: There shall be evidence of external support for the program(s) in Industrial Technology. However, this external support shall be treated as supplementary support and be used to achieve and maintain a high level of excellence. This external support shall not be used to displace funding support normally provided by the institution.

The ECMET Department has a foundation fund, supported by the alumni, faculty, and other contributors. This allows the Department to sponsor the annual advisory board meeting, and provides limited support for faculty development.

6.11 Library Services

6.11.1 Library and Internet Resources: The administrative unit containing the Industrial Technology program(s) and/or the institutional library shall have access to technology resources, literature, and reference materials adequate to meet the curriculum and research needs of students and faculty.

The Indiana State University Cunningham Memorial Library (CML) serves as the main library and is supplemented by the Career Center and the Women's Resource Center. The total ISU library collection numbers in excess of 2 million items and includes: books, journals, government documents, microforms, video recordings that include DvDs and CDs, filmstrips and computer software. The library collection is accessible through the Library User Information System (LUIS) on-line computerized data search, which also lists holdings in the Rose Hulman Institute of Technology as well as Saint Mary-of-the-Woods College.

Additional library holdings are accessible from Vincennes University, University of Southern Indiana, Purdue University, and the Vigo County Public Library system. The CML offers services for free database searches, Internet searches, instruction for classes and compact disk (CD-ROM) searches. The CML is also a subscriber to electronic media materials such as E-journals and E-books.

The College of Technology Library Committee, which consists of three members representing each technology department, recommends the purchase of books, journals, recordings and computer software to be housed in the CML. A search of the CML catalog using LUIS shows over 30,000 items related to the areas of technology, computer engineering technology and computer technology/science. As the Internet has become a primary source of electronics and computer technology information, access to the Internet is available through a number of computer sites in the College of Technology building, the CML, and across campus.

6.11.2 Utilization of Library and Internet Resources: Evidence shall be available which indicates that students and faculty are making adequate and appropriate use of library and reference resources.

Each faculty is encouraged to utilize available Library and Internet resources. CET Faculty assign readings available in the Library and utilize online technical documentation to support or supplement texts required in their classes. Student research for classroom presentations or laboratory exercises requires regular use of library and/or Internet based resources. Students are required to document for their presentation or laboratory reports utilization of library or web-based resources.
Course Notebooks include syllabi. The syllabi describe instances of Library/Internet resource utilization. For example ECT 303 references using microprocessor/microcontroller online documentation.

Syllabi are available in the Visiting Team’s Resource Room, TC 314.
6.12 Support Personnel

The ECMET Department has one secretary. The secretary’s time is informally assigned to approximately 0.75 for undergraduate related work and 0.25 for graduate related work. The manager of electronics and computer technical services in the College of Technology, with assistance of OIT student workers, is in charge of maintaining and repair of failed or malfunctioning equipments.

Annually, the program supports 3 graduate assistantships and 1 doctoral fellowship per academic year.

6.13 Placement Services

6.13.1 Placement Services: Appropriate services shall be available to assist with the placement of program graduates. Placement of graduates shall be tracked and the effectiveness of the services shall be evaluated by the administrative unit containing the Industrial Technology program(s).

ISU Career Center offers services to prepare, educate and assist ISU students throughout their career development, to prepare them for a competitive work environment, and to proactively develop and maintain effective relationships among students, employers and other relevant constituencies. Career Center is responsible for hosting two career fairs on campus. Other services benefitting students employment include a) MyPlan: a Career Center online service to help students plan their career; b) CAREERLINK: a national recruiting network and suite of web based recruiting and career services automation tools serving the needs of colleges, employers and job candidates; c) Networking etiquette workshop: workshop that lets students learn about and practice important networking and dining skills including conversations; interviewing tips; proper dress etc; d) Speed interview review workshop: workshop that lets students practice interviewing skills in group setting alongside their peers.

6.13.2 Cooperative Education: If cooperative education is either a required or an elective part of the program, then appropriate services shall be provided to assist with the placement and supervision of cooperative education students.

ECT 351 is the designated cooperative course for all electronic technology and CET majors. Though not a required course in the current CET curriculum, all faculty have been informed to advise their advisees to complete this elective. The ECMET Department has established long working relations with numerous industry partners who are willing to offer part-time or intern positions that require students to apply classroom experience to solve field problems.

6.14 Industrial Advisory Committee(s)

6.14.1 Program Advisory Committee(s): An industrial advisory committee shall assist in the validation of program content. If more than one program of study or program option is available, then appropriately qualified industrial representatives shall be added to the committee or more than one committee shall be maintained. Policies shall be presented to indicate the: (a) procedures used in selecting members, (b) length of appointment, (c) organization of the committee, (d) committee responsibilities, (e) frequency of meetings, and (f) methods of conducting business.
Currently the CET program does not have a separate individual advisory committee. We intend to continue to work with ECT Industrial Advisory Board. This advisory board has existed since the formation of the Electronics and Computer Technology Department. Many members of the board are department alumni, and the department continues to invite graduates who are willing to help the programs improve their education objectives and program outcomes to join the board. CET faculty has established good working relations with the board members. Over the years the board annual meeting has proven to be a valuable venue to review program curricula and provide advisement on current and future needs of the technical fields in which graduates are employed. The current member list for the ECT Industrial Advisory Board appears below.

2009 Industrial Advisory Board - Electronics and Computer Technology

David Adler
59 Lakeshore Circle
Brownsburg, IN   46112-1733
317-852-4636
davidadler@comcast.net

John Brasker
Lilly Corporate Company DC4515
Indianapolis, IN 46285
317-276-7905
JDB@lilly.com

Brian Bridgewater
Lilly Corporate Center DC3511
Indianapolis, IN   46285
317-276-7145
bbridgeh2o@lilly.com

J. R. Musselman
Software Engineering Manager
Wright Industries
1520 Elm Hill Pike
Nashville, TN 37210
615-361-4111, ext.
3127jr.musselman@wrightind.com

Dana Nakanishi
Rockwell Automation
3750 Priority Way South Drive, Suite 100
Indianapolis, IN 46240
317-571-6612
ddnakanishi@ra.rockwell.com

Richard Roop
Donaldson Capital Management, LLC
20 Northwest First Street
Fifth Floor
Evansville, IN   47708
812-421-3211 or 800-321-7442
rroop@dcmol.com

John Watler
Process Development & Fabrication, Inc.
P.O. Box 493
Brazil, IN    47834
812-443-6000
jwatler@pdfcontrols.com
6.14.2 Advisory Committee Meetings: The industrial advisory committee(s) shall meet at least once each year, and appropriate minutes shall be kept of these meetings showing agenda items, actions taken, and recommendations made.

Members of the advisory committee contribute time, telephone information, and assistance as necessary throughout the year. The Department meets with its committee at least once each year. Appropriate minutes and records pertaining to the advisory board meetings are included in Appendix B.

6.15 Educational Innovation

6.15.1 Educational Innovation: There shall be evidence that innovation furthering program objectives is being carried out in the administrative unit housing the Industrial Technology program. This includes developing and testing new learning approaches and technologies and disseminating the results.

Presentations and participation of faculty at national and international conferences in education or technology provide partial evidence that innovation furthering program objectives is being carried out. This information is included as portions of the faculty resumes.

Educational innovations of the Department include emerging areas of distance delivery or evaluation; and cooperative/multidisciplinary research or development activities. As of 2009, the ECMET faculty participate in a degree completion program that allows students to start their education at other institutions and to complete it at Indiana State University. There are also many signed articulation agreements between programs in the ECMET Department with two-year institutions from Indiana and Illinois.

Faculty and students in ECMET have developed a robotics laboratory that is viewable across the Internet.

Two course description examples are included to demonstrate innovation in diverse areas such as management and robotics.

- Course development work for ECT437 and ECT537 Industrial Computer Systems Management

This course offers students in the Computer Engineering Technology and other engineering technology programs exposure to classic project management practices and tools. The course was developed in 1981. Extensive changes were made incrementally to the course during the 2005 and 2006 schools years. These changes included: (a) the addition of a team project component where the teams are tasked to develop a complete project plan including staffing, scheduling, costing, risk analysis and closure plans; (b) the team members share common technical skills or a mix of backgrounds to accommodate cross-discipline project experience; (c) the graduate students are assigned team leadership roles; (d) the distance and face-to-face sections of the course were combined using Blackboard as the common course delivery tool with classroom lectures being recorded and archived for the distance students; (d) the project teams were organized such that each had both on-campus and distance members, requiring the use of web meeting tools to accomplish the project assignment; and (e) the need for professionalism and timeliness is stressed in all written and oral communications in the course.

A description of these course improvements and the results were outlined in a peer-reviewed paper published and presented at the 2008 Annual ASEE IL/IN Section
Conference held on April 5, 2008. The paper was titled *Facilitating Team Activities in a Project Management Course*.

- **Lab tools developed for ECT381 Robotic Control Systems**

This course which Computer Engineering Technology and students of other engineering technology programs may elect, offers lab experiences using robot and Programmable Logic Controller (PLC) based control systems. In conjunction with a MSECt degree student's project, two faculty members designed and built a PLC based Radio Frequency Identification (RFID) trainer which students can integrate into robot material handling lab exercises. The trainer uses current industrial PLC and RFID hardware and software. Data can be written to and read from tags which are attached to simulated products or pallets which the robots handle. The RFID data can be communicated to other PLCs and robots in the lab via either DeviceNet, DH-485 or discrete I/O interfaces.

A description of the system and its application in the lab course was presented as a peer-reviewed paper at the 2008 NAIT conference on November 17, 2008. The paper was titled *Development of a Training System Integrating RFID Technology with a PLC*.

Faculty in the ECMET Department are currently involved in Project Lead the Way. This project involves developing curriculum in Indiana High Schools that lead to college credit.

At present, the Electronics Technology baccalaureate program offers 100% of the department's upper division courses via WEB based delivery.

Recently (2009) several ECMET faculty have participated in traveling to local high schools and delivering discussions and presentations regarding degree programs at Indiana State University.

Several ECMET faculty are currently involved in a large National Science Foundation grant secured by members of the Department. This grant calls for participation between ECMET faculty at ISU with faculty at a local two-year institution to develop educational modules to be delivered via distance-based modality.

The NSF grant is in the last year of a three-year effort. The grant team is developing a series of automation technician training modules in collaboration with Ivy Tech Community College Wabash Valley. The program, called AutomationTek will include 60 online training modules. A student will be able to complete the modules and receive a certificate of completion validating the learning experience. Indiana State University will offer the online laboratory exercises for the program.

Members of the department participated in a number of automation related activities including:

1. Member of a team in partnership with the International Society of Automation (ISA) and the US Department of Labor to develop an Automation Competency Model.
2. Member of a team to develop an Automation Engineering sample curriculum through ISA.
3. Met with White house and Congressional officials to support development of an Industrial Cyber Security curriculum.
6.16 Assessment

6.16.1 Performance Criteria

Each program outcome needs to be assessed by performance criteria. The criteria have to be specific, measurable, and confirmable through evidence. Based on this principle, the following criteria have been created.

1. Outcome 1: Problem solving skills
   1.1 apply algebra, discrete math, and basic law of physics to build, test, and operate electric circuits, computer systems and networks
   1.2 program in low/high-level computer languages to build microcontroller based applications and digital logic circuits.
   1.3 understand database principle and working mechanism for technical data management.

2. Outcome 2: Commanding contemporary tools
   2.1 apply simulation tools to verify theoretical design or trouble-shoot potential system problems.
   2.2 analyze lab data using statistical tools.

3. Outcome 3: Design skills
   3.1 design microcontroller based control circuitry.
   3.2 develop digital logic circuitry using FPGA and HDL.
   3.3 design and implement LAN for small business environment.

4. Outcome 4: Lab skills
   4.1 plan experiments to collect desired data or observations.
   4.2 conduct experiments to truthfully record results following manual or proposed steps.
   4.3 follow safety procedure and lab protocols, handle equipments with care.
   4.4 examine and interprete lab results to draw conclusions.

5. Outcome 5: Managerial skills
   5.1 develop work plan with clearly defined phased goals and timeline.
   5.2 follow work plan by observing time line and reporting progress.
   5.3 modify schedule based on progress.

6. Outcome 6: Ethics awareness
   6.1 analyze ethics issues based on professional ethics codes.
   6.2 understand technology impact on society.

7. Outcome 7: Lifelong learning
   7.1 involve in professional societies.
   7.2 research the latest technological trend in a specific area.

8. Outcome 8: Teamwork skills
   8.1 understand individual role and share duties.
8. 2 listen to others; cooperate with teammates; respect different opinions.

9. Outcome 9: Communication skills
9. 1 produce technical document that is factually correct, and with good logical structure, proper format, citation, and references.

9. 2 produce technical document with a minimum of errors in spelling, punctuation, grammar and usage.

9. 3 communicate in professional manner, and respond to questions in language that is both concise and commensurate with audience’s background.

6.16.2 Performance Criteria Rubric
A rubric is a scoring guide that is used to measure the work of a student. For each of the performance criteria above, we use a rubric with range of one(1) to four(4) to rate performance. Each rubric contains specific performance characteristics arranged in levels indicating the degree to which a standard has been met.

6.16.3 Assessment Plan
The program Faculty has agreed to use both direct and indirect measures to collect data. The detailed assessment plan is shown in Table 23.

<table>
<thead>
<tr>
<th>Performance Criteria</th>
<th>Rubric</th>
</tr>
</thead>
<tbody>
<tr>
<td>apply algebra, discrete math, and basic law of physics to test, troubleshoot and operate electric circuits, computer systems and networks</td>
<td>Unsatisfactory 1</td>
</tr>
<tr>
<td></td>
<td>Developing 2</td>
</tr>
<tr>
<td></td>
<td>Competent 3</td>
</tr>
<tr>
<td></td>
<td>Exemplary 4</td>
</tr>
<tr>
<td>apply algebra, discrete math, and basic law of physics to test, troubleshoot and operate electric circuits, computer systems and networks</td>
<td>lacks fundamental math skills and science concepts, cannot independently conduct diagnosis and testing.</td>
</tr>
<tr>
<td></td>
<td>has basic understanding of math and science concepts, can operate systems with supervision</td>
</tr>
<tr>
<td></td>
<td>has solid math and science knowledge, can operate systems but may need minor directions on troubleshooting</td>
</tr>
<tr>
<td></td>
<td>has solid math skills and understanding of physics laws, can independently operate systems, identify and solve problem</td>
</tr>
<tr>
<td>program in low/high-level computer languages to build microcontroller based applications and digital logic circuits</td>
<td>lacks understanding of syntax and semantics of the languages; cannot develop algorithm; cannot use development tools</td>
</tr>
<tr>
<td></td>
<td>has basic understanding of the languages and development tools; needs direct guidance to develop algorithms to implement the applications or circuits</td>
</tr>
<tr>
<td></td>
<td>fluently with the languages and development tools; can develop algorithms to accomplish the tasks with minor guidance</td>
</tr>
<tr>
<td></td>
<td>commands the languages and development tools; can develop algorithms to accomplish the tasks independently</td>
</tr>
<tr>
<td>understand database principle and working mechanism for technical data management</td>
<td>lacks understanding of database architectures and data structures</td>
</tr>
<tr>
<td></td>
<td>has basic understanding of database concepts and architecture</td>
</tr>
<tr>
<td></td>
<td>understands database architecture; can filter information using database tools; can generate summary report</td>
</tr>
<tr>
<td></td>
<td>can filter data for useful information using database tools; can use data for quality analysis</td>
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</table>
### Table 14: Performance Criteria for Outcome 1: Problem Solving Skills

<table>
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<td>Unsatisfactory 1</td>
</tr>
<tr>
<td>apply simulation tools to verify theoretical design, or trouble-shoot potential system problems.</td>
<td>lacks fundamentals of simulation concepts; cannot use simulation tools</td>
</tr>
<tr>
<td>analyze lab data using statistical tools.</td>
<td>lacks fundamentals of statistics concepts; cannot use analytical tools</td>
</tr>
</tbody>
</table>

### Table 15: Performance Criteria for Outcome 2: Commanding Contemporary Tools
<table>
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<tr>
<th>Performance Criteria</th>
<th>Unsatisfactory 1</th>
<th>Developing 2</th>
<th>Competent 3</th>
<th>Exemplary 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>design microcontroller based control circuitry.</td>
<td>lacks understanding of microcontroller architecture and interfacing mechanism</td>
<td>has basic understanding of microcontroller architecture and interfacing mechanism; needs direct guidance on design procedures and implementation details</td>
<td>understands microcontroller architecture and peripheral device interfacing mechanism; needs minor guidance on design and implementation</td>
<td>understands microcontroller architecture and interfacing mechanism; can design hardware/software component based on microcontroller hardware resources and peripheral circuitry requirements</td>
</tr>
<tr>
<td>develop digital logic circuitry using FPGA and HDL.</td>
<td>lacks fundamental knowledges of digital logic and circuits</td>
<td>has basic understanding of FPGA architecture; needs major guidance on design and implementation</td>
<td>understands FPGA architecture; needs minor guidance on design and implementation</td>
<td>can independently design and implement digital logic circuits using FPGA and HDL based on technical specifications and requirements</td>
</tr>
<tr>
<td>design and implement LAN’s for small business environment.</td>
<td>lacks understanding of LAN architecture and protocols</td>
<td>has basic understanding of LAN architecture and protocols; can conduct network configuration under supervision</td>
<td>can implement and troubleshoot LAN with minor supervision</td>
<td>can design, implement, and configure LAN’s based on technical specifications and requirements</td>
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</table>

Table 16: Performance Criteria for Outcome 3: Design Skills
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<th>Performance Criteria</th>
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</thead>
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<td>Unsatisfactory 1</td>
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<tr>
<td>plan and conduct experiments to observe or truthfully record results following manual or proposed steps.</td>
<td>does not plan ahead for experiments; does not study pre-lab assignments; incompetent in lab environment</td>
</tr>
<tr>
<td>follow safety procedures and lab protocols, handle equipments with care.</td>
<td>totally unaware of proper procedures and safety protocols; handles equipment rough</td>
</tr>
<tr>
<td>examine and interprete lab results to draw conclusions.</td>
<td>lacks understanding of the collected data; unable to reach any conclusion of experiment results</td>
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</table>

Table 17: Performance Criteria for Outcome 4: Lab Skills

<table>
<thead>
<tr>
<th>Performance Criteria</th>
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</thead>
<tbody>
<tr>
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<td>Unsatisfactory 1</td>
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<tr>
<td>develop work plan with clearly-defined phased goals and timeline.</td>
<td>unable to develop clear defined-goals and timeline</td>
</tr>
<tr>
<td>follow work plan by observing time-line and reporting progress, make timely adjustment to cope with unforeseen circumstances.</td>
<td>does not follow time-line; no record or log of project progress; does not adjust schedule.</td>
</tr>
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Table 18: Performance Criteria for Outcome 5: Managerial Skills
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</thead>
<tbody>
<tr>
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<td>Unsatisfactory 1</td>
</tr>
<tr>
<td>analyze ethics issues following professional ethics codes</td>
<td>has no knowledge of the professional ethics codes</td>
</tr>
<tr>
<td>understand technology impact on society and environment</td>
<td>has no awareness of technology impact on society or environment</td>
</tr>
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</table>

Table 19: Performance Criteria for Outcome 6: Ethics Awareness

<table>
<thead>
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<th>Performance Criteria</th>
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<td>Unsatisfactory 1</td>
</tr>
<tr>
<td>participate professional societies.</td>
<td>cannot name major professional societies in the field</td>
</tr>
<tr>
<td>research the latest technological trend in a specific area.</td>
<td>cannot independently research resources</td>
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Table 20: Performance Criteria for Outcome 7: Life-Long Learning
<table>
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<th>Performance Criteria</th>
<th>Rubric</th>
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</thead>
<tbody>
<tr>
<td>understand individual role and share duties.</td>
<td>Unsatisfactory 1</td>
</tr>
<tr>
<td></td>
<td>no recognition of contributions of others; does not perform any duties; always relies on others to do the work</td>
</tr>
<tr>
<td>listen to others; co-operate with teammates; and respect different opinions.</td>
<td>always talking; never allows others to speak; argues with teammates; usually wants to have things their way</td>
</tr>
</tbody>
</table>

Table 21: Performance Criteria for Outcome 8: Teamwork Skills
<table>
<thead>
<tr>
<th>Performance Criteria</th>
<th>Rubric</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Unsatisfactory 1</td>
</tr>
<tr>
<td>produce technical document that is factually correct, and with good logical structure, proper format, citation, and references.</td>
<td>document is poorly organized; does not follow format requirements; no citation is included; no reference listed</td>
</tr>
<tr>
<td>produce technical document with a minimum of errors in spelling, punctuation, grammar and usage.</td>
<td>significant amount of spelling and grammatical errors</td>
</tr>
<tr>
<td>communicate in professional manner, and respond to questions in language that is both concise and commensurate with audience’s background.</td>
<td>mumbles, no eye contact, monotonous tone; presentation is poorly organized and prepared; no grasp of information, cannot answer any questions</td>
</tr>
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</table>

Table 22: Performance Criteria for Outcome 9: Communication Skills
<table>
<thead>
<tr>
<th>Performance Criteria</th>
<th>Assessment Method</th>
<th>Source of Collection</th>
<th>Time of Data Collection</th>
<th>Assessment Coordinator</th>
<th>Evaluations of Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>apply algebra, discrete math, and basic law of physics to build, test, and operate</td>
<td>Capstone project: senior exit survey</td>
<td>ECT 408</td>
<td>Yearly</td>
<td>CET faculty</td>
<td>CET faculty</td>
</tr>
<tr>
<td>circuits, computer systems and networks</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>program in low/high-level computer languages to build microcontroller based</td>
<td>Course project: senior exit survey</td>
<td>ECT 308</td>
<td>Yearly</td>
<td>Instructors</td>
<td>CET faculty</td>
</tr>
<tr>
<td>applications and digital logic circuits.</td>
<td></td>
<td>ECT 401</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>understand database principle and working mechanism for technical data management.</td>
<td>Course project: senior exit survey</td>
<td>ECT 437</td>
<td>Yearly</td>
<td>Instructor</td>
<td>CET faculty</td>
</tr>
<tr>
<td>apply simulation tools to verify theoretical design or trouble-shoot potential</td>
<td>Course project: senior exit survey</td>
<td>ECT 401</td>
<td>Yearly</td>
<td>Instructor</td>
<td>CET faculty</td>
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<tr>
<td>system problems.</td>
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<td>ECT 403</td>
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<tr>
<td>analyze lab data using statistical tools.</td>
<td>Course project: senior exit survey</td>
<td>ECT 308</td>
<td>Yearly</td>
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<td>CET faculty</td>
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<tr>
<td>design microcontroller based control circuitry.</td>
<td>Course project: senior exit survey</td>
<td>ECT 308</td>
<td>Yearly</td>
<td>Instructor</td>
<td>CET faculty</td>
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<tr>
<td>develop digital logic circuitry using FPGA and HDL.</td>
<td>Course project: senior exit survey</td>
<td>ECT 403</td>
<td>Yearly</td>
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<tr>
<td>design and implement LAN for small business environment.</td>
<td>Course project: senior exit survey</td>
<td>ECT 401</td>
<td>Yearly</td>
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<td>CET faculty</td>
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<tr>
<td>plan and conduct experiments to observe or truthfully record results following</td>
<td>Course project: senior exit survey</td>
<td>ECT 401</td>
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<td>manual or proposed steps.</td>
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<th>Time of Data Collection</th>
<th>Assessment Coordinator</th>
<th>Evaluations of Results</th>
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<td>follow safety procedures and lab protocols, handle equipments with care.</td>
<td>Course project; senior exit survey</td>
<td>ECT 401, ECT 403</td>
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<td>CET faculty</td>
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<tr>
<td>examine and interpret lab results to draw conclusions.</td>
<td>Course project; senior exit survey</td>
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<td>develop work plan with clearly-defined phased goals and timeline.</td>
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<td>CET faculty</td>
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<tr>
<td>follow work plan by observing time-line and reporting progress, make timely adjustment to cope with unforeseen circumstances.</td>
<td>Capstone project; senior exit survey</td>
<td>Capstone</td>
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<td>analyze ethics issues following professional ethics codes</td>
<td>Course presentation; senior exit survey</td>
<td>ECT 130</td>
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<td>understand technology impact on society and environment</td>
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<td>participate professional societies.</td>
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<td>research the latest technological trend in a specific area.</td>
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<td>understand individual role and share duties.</td>
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<td>listen to others; cooperate with teammates; and respect different opinions.</td>
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<td>produce technical document that is factually correct, and with good logical</td>
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<td>produce technical document with a minimum of errors in spelling, punctuation,</td>
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<tr>
<td>both concise and commensurate with audience's background.</td>
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APPENDIX A. Curriculum
# COMPUTER ENGINEERING TECHNOLOGY MAJOR
(BACHELOR OF SCIENCE DEGREE)

INDIANA STATE UNIVERSITY
COLLEGE OF TECHNOLOGY
TERRE HAUTE, IN 47809

Student's Name ____________________
Advisor's Name ____________________

CONTACT: Department of Electronics, Computer, and Mechanical Engineering Technology - (812) 237-3456
Interim Chair: Dr. Ming Zhou http://www.indstate.edu/ect/

<table>
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<th>TECHNOLOGY REQUIRED COURSES</th>
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<td>ECT 306 (3) Micro. App. &amp; Interfacing</td>
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<td>ECT 403 (3) Pract. Digital Logic Design</td>
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<td>ECT 406 (3) Comp. Systems Integration</td>
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| Required: 12 Semester Hours |      |       |
| ECT 130 (2) Intro. to Elec. & Comp. Tech. |    |       |
| ECT 430 (1) Senior Seminar |    |       |
| ECT 437 (3) Indus. Comp. Sys. Management |    |       |

Select 6 sem. hrs. of Management from courses such as:
- TMGT 471 (3) Prod. Plan & Control
- TMGT 475 (3) Industrial Organization & Func.
- TMGT 482 (3) Industrial Supervision
- MET 404 (3) Engineering Design & Mgt.
- MET 405 (3) Economic Analysis for Tech.

Math and Physical Science Requirements: 14 Semester Hours

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<th>CS 256 (3) C++ (or higher level structured language course)</th>
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<td>MATH 301 (3) Fund. &amp; Appl. of Calculus or Calculus Proficiency</td>
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Physical Science course (6 hrs)

Technical Electives: Minimum 6 Semester Hours
A minimum of 6 semester hours fulfilled by taking any College of Technology course.

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<thead>
<tr>
<th>SEMESTER HOURS REQUIRED TO MEET GEN. ED. REQUIREMENTS</th>
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<td>SEMESTER HOURS REQUIRED TO GRADUATE</td>
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Note: Some required major hours meet Gen. Ed. Requirements

| SEMESTER HOURS REQUIRED IN MAJOR (Tech, Math, Elect) | 71 |

See Gen. Ed. Requirements for details of courses and electives.
## Computer Engineering Technology Bachelor of Science Degree

### Typical Four Year Plan

**Spring 2008**

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† See University Undergraduate Catalog requirements.
†† May be required to meet min. 124 sem. hrs. for graduation.
Appendix B

IAB minutes
Indiana State University  
Department of Electronics and Computer Technology  
College of Technology  

Advisory Board Meeting  
November 24, 2009  
Minutes

Present:  
Advisory Board Members:   Mr. David Adler, Mr. John Brasker, Mr. Brian Bridgewater (by teleconference from Ireland), Mr. J. R. Musselman (by teleconference from Nashville, TN), Ms. Dana Nakanishi, and Mr. John Watler.  
ECT Department Faculty:   Dr. Joe Ashby, Dr. David Beach, Dr. William Clyburn, Dr. Gerald Cockrell, Dr. William Croft, Dr. Xiaolong Li, Dr. Yuetong Lin, Mr. David Malooley, and Dr. Ming Zhou  
Guest:   Dr. Brad Sims

The annual Industrial Advisory Board Meeting for the Electronics and Computer Technology Department was held November 24, 2009 on the campus of Indiana State University, TC 314.   The meeting came to order at 9:00 a.m.  Opening remarks were made by Dr. Ming Zhou.  He outlined some of the challenges facing our programs, such as enrollment concerns, financial constraints, and competition from other institutions.  He asked the board for their help with efforts to continue improvements to our programs and with issues and requirements regarding accreditation.

Dean’s Remarks.  Dean Sims welcomed members of the advisory board and thanked them for their participation and efforts to improve programs in the College of Technology.  He said that priorities within the COT are boosting enrollment and increasing outside funding.

Prof. Malooley thanked the advisory board for their participation in this meeting on such short notice.  He said that we are currently in the midst of three accreditations:  North Central Association (University), ATMAE, and TAC-ABET.  He gave an overview of the current curriculum, and asked whether board members think that courses currently being offered are appropriate, or if there are others that should be added.  What direction do we need to go to ensure that our students are successful?

Electronics Technology.  
Cockrell:  Do we still need to be doing device level courses?  
Musselman: No.  
Adler: Students need to know the basics even if they don’t actually use it.  
Watler: Agreed that you need to have an understanding.  
Musselman: Suggested combining ECT 231 and ECT 232 into one course.  
Watler: Agreed that courses could be compressed or combined.  
Ashby: What are emerging technologies that should be included in the curriculum?  
Musselman: Anything about I.P.  
Clyburn: How about communications?  
Watler: Students should know how to interface software & hardware.  
Malooley: What about Visual Basic?  
Watler: Said that he deals with that every day.
Adler: Students need to know about embedded microcontrollers
Sims: Suggested adding more soft skills in addition to technical skills—negotiating, selling, and writing. Hopefully our students want to be managers.
Dana: Students are doing Power Point presentations in elementary schools now.
Cockrell: We try to produce problem solvers.
Bridgewater: Asked if surveys to recent graduates are being done?
Adler: How do we keep current with hardware that is obsolete in three years?
Clyburn: If you understand basic fundamental concepts, you have an education and have the ability to learn new things.
Adler: There is a perception in industry that academia is teaching technologies that are dated. He said he doesn’t have the answer, but just stating the problem.
Musselman: What type of people are we trying to develop?

Prof. Malooley asked the advisory board members to create a graduate profile for each of the three programs and get them back to us within the next 3 weeks. The ECT faculty will then see how we can mesh this into our curriculum. The hope is with this information in hand to be better equipped to have three well designed programs.

**Computer Engineering Technology.**
Dr. Lin thanked the advisory board members for their response to his recent survey. He also outlined deficiencies found in the CET program by the TAC-ABET team.

The team did not see enough involvement by the advisory board.
Periodic surveys are needed.
More meetings – at least one meeting per semester
Board members assist with co-ops.
Developing program educational objectives.
Must define educational objectives in consultation with advisory board.
Continuous improvement must be shown.
Capstone course or integrating experience needs to be implemented into curriculum.

Prof. Malooley said that we are going to need to know more from the board members, and have at least two sit down meetings per year. Also, we will be more frequently bouncing ideas off them throughout the year. He asked the board if they are willing to increase their participation, and respond to frequent communications. We are being required by our accrediting agencies, as well as increasing our commitment to them, as employers, by raising our level of students we provide to industry.

Bridgewater: Can we sit in on senior projects as a way to help critique the program?
Musselman: Invited us to bring our students to his company for co-ops. He also challenged all advisory board members to become more involved and more productive.

Watler: He said he is willing to commit more time.
Cockrell: He said he would like to see the board create the agenda for our meetings.
Adler: Culminating experience is important not only for accreditation, but also to show employers what the student has or can accomplish. This type of capstone course can make this school even better.
Musselman: Described his experience as a member of the advisory board for Vanderbilt Engineering School (Nashville, TN) and being involved with students and guiding them in a two-semester group co-op course.

Lin: Do we need to add a capstone in the curriculum, or take one 3-hour block out and convert it to a capstone experience? How do we approach this?

Bridgewater: Due to the rising cost of education, he does not agree with adding more hours. He suggested re-arranging the curriculum to add the capstone.

Watler: We all agree that a capstone course needs to be added, however it may be implemented.

**VOTE: 6-0-0** to add a Capstone or culminating experience to the curriculum.

Maloolley: Should the program name be changed from Electronics Technology to Electronics Engineering Technology and move to TAC-ABET accreditation?

There was discussion regarding the marketing aspect and employer recognition. Motion (Musselman/Watler), **VOTE: 6-0-0**.

There was general agreement by Mr. Brasker, Ms. Nakanishi, and Mr. Watler that the main reason for favoring the name change is program marketability and employer marketability/name recognition. Mr. Bridgewater said that the Engineering title is also more recognized internationally.

**VOTE: 6-0-0** to seek TAC-ABET accreditation.

**Electronics Technology Questionnaire.** Prof. Maloolley said that the questionnaire identifies 21 areas that make up the program and asks graduates to rate them. He asked advisory board members to take a look at the questionnaire and let us know if any changes should be made to the form.

Brasker: #10 and #11 are duplicates

Croft: Instead of C++, he would prefer “high level structured language”

Maloolley: Asked if the board has heard of a program called “Python,” and should we discontinue the requirement of Visual Basic? The general consensus was no, Visual Basic should stay.

Croft: Change #18 to theories of amplification circuits.

Dana (and Musselman agreed): change PLC to automation controllers and instrumentation.

**Employee Information Form.**

Musselman, Brasker, and Watler: That subject is an “untouchable” one for them as employers. They are not allowed to talk about their employees to anyone.

**NSF Grant.**

Dr. Cockrell mentioned that he and Dr. Ashby are working on a NSF and gave disks to advisory board members containing examples of the work that is being done, presentations, etc.
The meeting adjourned at 12:00 Noon and was followed by a luncheon at Generations Restaurant.

Indiana State University
Department of Electronics and Computer Technology
College of Technology

Advisory Board Meeting
April 11, 2008
Minutes

Present:

Advisory Board Members:   Mr. John Brasker, Mr. Richard Roop, and Mr. John Watler
ECT Department Faculty:   Mr. Joe Ashby, Dr. David Beach, Dr. William Clyburn,   Dr. William Croft, Dr. Nicholas Farha, Mr. Richard Jinbo, Dr. Yuetong Lin,   Mr. David Malooley, and Dr. Ming Zhou
Guest:   Dr. Todd Jochem (by teleconference)

The annual Industrial Advisory Board Meeting for the Electronics and Computer Technology Department was held April 11, 2008 on the campus of Indiana State University, TC 314. The meeting came to order at 9:45 a.m. Opening remarks were made by Dr. William Clyburn. He explained the reorganization that has taken place within the College of Technology and what programs are now included in the new ECMET Department. He talked about the challenges facing us as well as opportunities.

Dean’s Remarks. Dean Foster told the advisory board how important their input is to our department. He reported that graduate enrollment is growing, undergraduate enrollment is declining. He mentioned that a new faculty member has been recommended by the department for hire (Dr. Xiaolong Li). He also reported that a TAC-ABET consultant will be visiting on April 23, 2008 to explore the possibility of accreditation. Dean Foster also talked about the Automation and Control Engineering Technology (formerly CIM) major that was recently moved to this Department.

Comments, Concerns, Etc. from the Advisory Board members:

Brasker: How are we dealing with increased pressure because of legislature changing the status of Vincennes University and IVY Tech.

Roop: His son recently graduated from Wabash College. He was amazed at their marketing success. He asked if money has been allocated for recruitment with high school counselors, etc. Dean Foster answered that Prof. Ashby is certified with the Project Lead the Way Program. Participating schools get $450/student. Those students come to us with 15 college credit hours and technology experience. ISU is reaching out to these students.
Dean Foster: IVY Tech has the same course content as the first two years of our programs, same accreditation, but it 40% cheaper for students.

Roop: Suggested that a market positioning statement is needed. Also suggested that we should use our alumni database for recruitment. R.O.I. (Return on Investment) should be stressed.

Jochem: Campus activities are much richer at ISU than IVY Tech or Vincennes University. He suggested that we find out what salaries their graduates are getting as compared to ours.


Brasker: 1981 ISU graduate, and is a team leader at Eli Lilly in insulin manufacturing facility.

Roop: 1980 Murray State EET graduate, received MBA at ISU. He began working in portfolio investments in 2001.

Watler: 1994 ISU graduate (M.S.)

**Updates by Faculty on Curriculum.**

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Farha: Asked Ashby how do you attract high school students to the Automation program?
Ashby: Project Lead the Way
Clyburn: Suggested that names of large well known industries that hire our students be used in our recruiting.
Brasker: Suggested that we get information about the Automation & Control Engineering Technology Program into publications such as Control Magazine, etc.
Ashby: We are getting really good publicity from ISA. Scholarships will also help attract students.
Brasker: Don’t forget IEEE.

**Student Co-ops and Placement.** Dr. Croft reported that we have several students doing co-ops in local corporations. The last data we have regarding placement of our graduates was gathered for our last NAIT accreditation. Placement information is no longer being kept by the university. We do have graduates working all over the nation and in major and minor corporations all over the state. Our graduates also work in insurance and other unexpected fields.

**Grants.** Prof. Ashby reported that we recently received a NSF grant in the amount of $800,000. Dr. Cockrell and Don Arney (Ivy Tech) are P.I.s. Prof. Ashby is a secondary
investigator. He talked about the remote lab advantage over simulation and outlined the 60 learning modules being developed.

**Recruitment & Retention Activities.** Dr. Farha talked about activities on the College of Technology level: Tech Trek, Tech Prep, Hands On High Tech, Articulation Agreements, and new brochures are being developed. Also University level: new web site (indstate.edu), Foundational Studies Program, First Year Students Program, Sycamore Advantage, Knowing Sycamores. Dr. Croft also mentioned that the ECT Department sent out materials to local and area high schools for the past few years and has begun to see some benefits from that effort.

**Scholarships.** Dr. Croft said that he had attended an Honors Day ceremony a few years ago where the ECT Department only awarded one scholarship. So we initiated a campaign to start new scholarships for our students (Alumni Endowed Scholarships). This year we were able to award four scholarships from this fund. Mr. Roop asked if it would be appropriate for the Advisory Board members to support a student scholarship?

**Program Accreditation.** Current accreditation is from NAIT. A consultant from TAC-ABET is coming later this month to consider accreditation.

**Faculty Search Update.** Prof. Malooley reported that we recently conducted a nationwide search. We had 40+ candidates and brought in 3 for interviews. The Search Committee has made their recommendation to the Dean. The Dean is currently contacting the candidate who was the number one selection.

**Chair.** A nationwide chair search was not granted. Dr. Ming Zhou is the Interim Chair until June.

**Directions for the Future.**

Jochem: We value critical thinking skills. One way to do this is to give students projects. He would encourage this. He would also encourage ECT students to take as many Computer Science courses (Linux, C++, etc.) as they can.

Roop: Suggested that we should be selling “a quality of life” instead of selling our product. Most big companies are using this approach to their advertising.

Brasker: What distinguishes us from other programs? He said that the Automation and Control Engineering Technology Program may be just that thing. He sees a real need in industry for graduates of this exact program.

Jochem: Does the department or college have funds for marketing without asking the university? Prof. Malooley replied that we are required to go through our marketing office for permission to use any ISU logo, etc. Dr. Jochem said to tell the university that our advisory board suggests these things (“This is industry talking.”) He asked what can we as outsiders do for you? We suggested that as outsiders we can say & do things that faculty cannot. He said that we need to build constituency and support within the College of Technology.

Roop: Suggested that we approach the Marketing Department to have students to a project advertising our department.

Croft: Asked the board members what we can do to increase enrollment? He suggested the possibility of setting up communication among themselves and providing input to us.

Jochem: He suggested the possibility of offering a Robotics Engineering Technology program.

Roop: Robotics and Automation are the new basic skill sets to take out and market.
Watler: Recruit high school counselors and IVY Tech counselors.
Jochem: Asked if it would be possible for the advisory board members to get a list of new
admits to contact by phone. Watler and Jochem both agreed that could be very useful.

The meeting adjourned at 2:45 p.m. Faculty members took the advisory board members on a
tour of the ECT labs and facilities.

Indiana State University
Department of Electronics and Computer Technology
College of Technology

Advisory Board Meeting
April 13, 2007
Minutes

Present:

Advisory Board Members: Mr. David Adler, Mr. John Brasker, Mr. Brian Bridgewater, Mr. J.
R. Musselman, Ms. Dana Nakaniishi, Mr. Richard Roop, and Mr. John Watler
ECT Department Faculty: Mr. Joe Ashby, Dr. David Beach, Dr. William Clyburn, Dr. Gerald
Cockrell, Dr. William Croft, Mr. Nicholas Farha, Dr. Yuetong Lin, Mr. David Malooley,
and Dr. Reza Raeisi
Guest: Mr. Brian Bonnett (TRW)

The annual Industrial Advisory Board Meeting for the Electronics and Computer
Technology Department was held April 13, 2007 on the campus of Indiana State University, TC
101E. The meeting came to order at 9:45 a.m. Members and faculty briefly introduced
themselves. Opening remarks were made by Dr. William Croft.

Dean’s Remarks. Dean Foster reported on the College of Technology’s reorganization
from five to three departments effective Fall 2007. He also spoke about the COT’s participation
in Project Lead the Way, a program whereby high school students can earn up to 15 credit hours
for courses taken. The Dean talked about some of the COT graduates and the jobs they are being
offered upon graduation. He also mentioned the competition being provided by IVY Tech.

Advisory Board members each gave updates on their recent activities.

Minutes from the last meeting (4/7/06) were approved (Motion, Watler/Cockrell)
unanimously.
Undergraduate Electronics Technology Program. Dr. Cockrell reported that the ECT programs have gone about 25 years without modifications. He asked board members what they see as new electronics technology for the future. Dr. Cockrell talked about program considerations such as standards being very important in the curriculum. Ms. Nakanishi noted that we should include not only U.S. standards, but also global standards. Is there benefit to putting a lab together? A large percent of our curriculum is lab-based. Is that what we should continue to be doing? Or can we simulate? It was suggested that much of the labs could be done in Project Lead the Way.

Dr. Croft asked how much of these program considerations need to be emphasized?
Mr. Bonnett: Some consolidation could take place.
Mr. Musselman: AC-DC op amps could be condensed, and that fundamentals should be covered at a shallow level while upper level material should be at a deeper level.
Mr. Bridgewater: Ability to communicate in a technical way.
Mr. Brasher: Students can not get enough Physics.
All agreed that Fluid Power should remain.
Math
IMT 103—some yes, some no
Dr. Cockrell: The emphasis in the last two years has been critical thinking and critical analysis.
Ms. Nakanishi: Make first two years better than what IVY Tech students are getting in their first two years.

Internship Report. Jesse Wortman transferred to ECT from Lakeland. He had an internship during Summer 2006 at B&C Machine & Design in Effingham, IL and gave a presentation about his experiences and discussed the types of technology used. Jesse is graduating May 2007 and has been offered a job at Praxair.

Nationwide Electronics Program at Distance. Dr. Croft explained the Nationwide articulation which would open up our 3rd and 4th year degree completion program to distance students nationwide. We would transfer in credits as a block for students who have earned an A.S. degree.

Computer Engineering Technology. Dr. Croft explained the process that has gone into revising the old Computer Hardware Technology program which has become the new Computer Engineering Technology major. The ECT Department has surveyed Advisory Board members, alumni, students, etc. After examining other programs across the country we found that we were already a Computer Engineering Technology program. We just didn’t have the name. Former students said that the “name” would have made a difference in the type of job they could get. The accrediting group would change from NAIT to TAC-ABET. Dr. Croft described the new curriculum and the courses. Mr. Roop: “Awesome, this hits exactly what we need in industry.” Mr. Musselman: “I don’t see anything on computer security.” The faculty has worked on this program revision and voted to approve. Dr. Croft asked for a vote (7-0-0) from the Board to proceed.

Information Technology Program. Prof. Farha gave an overview of the IT Program and noted that it does lack a security course. If it did include a security course he would put it up against any IT program in the nation. Mr. Musselman: Needs a security course and system design (configuration, etc.)
Graduate Programs. Dr. Clyburn reported briefly that there are approximately 80 students currently in the on-campus M.S. ECT Program. These students are mainly from India, and come here without any advertising or promoting.

Mr. Musselman: Through his company, he works with Vanderbilt Advisory board. They solicit companies for projects.

Dr. Cockrell talked about the M.S. ECT Distance Program and that it continues to grow. Students are enrolled from all over the United States.

Dr. Cockrell also spoke about the Ph.D. Program. 156 students are currently enrolled in the program among a consortium of five universities. He reported that Mr. Timur Mirzoev is graduating from the program in May and has a faculty position at Georgia Southern University beginning in Fall 2007.

Articulations. Our articulations with two-year colleges have recently been updated.

Internships/Co-ops. A list of recent internships and co-ops was presented to the Board.

Placement. The ECT Department continues to have very high undergraduate placement numbers (80-85%).

Student Recruitment & Retention. After brainstorming sessions, the ECT Department tried the simplest thing first—we sent letters to all the Guidance Counselors in Indiana and Illinois. Then we sent letters to technical teachers in those high schools. We are now beginning to get calls and inquiries from these people.

NAIT Accreditation. Dr. Croft announced that we have full accreditation until 2010 for all programs in the department.

Faculty Grants.
Prof. Joe Ashby: His Promising Scholar funding is internal ISU money, but came from Lilly. His project is “Remote Labs.” Mr. Ashby also has an IRTS grant. He reported that he will be going to Project Lead the Way Training.

Dr. Yuetong Lin: Has a Promising Scholar grant. His project is “Combining Neural Networks & Fuzzy Logic.”

Dr. Reza Raeisi: Has a grant for Digital Logic Design.

Dr. Gerald Cockrell: Has been awarded an NSF grant. He mentioned that this opens the doors for ISU College of Technology to get more of these grants in the future. He will write 60 modules to be used in conjunction with IVY Tech. The award is for $800,000 over 3 years.

College of Technology Reorganization. The ECT Department will meld with a portion of the IMT Department. We will take on four of their faculty and some of their programs. Our programs will continue to exist as they are and we will still have need for our Advisory Board.
**Assessment Plan.** NAIT said that we lacked an Assessment Plan. Dr. Croft presented a two page (draft) questionnaire. The Advisory Board suggested that the wording in the questionnaire be changed from “liked best” or “liked least” to something like “strongest points.”

**Directions for the Future.** Mr. Musselman again mentioned the Vanderbilt Advisory Board and suggested that it might have some benefits for us.

Dr. Croft thanked all for coming, and emphasized that we do listen to their suggestions and advise. He gave each member a College of Technology shirt. The meeting adjourned at 2:50 p.m.
Dr. Croft announced that Dr. Maloba has resigned his faculty position in the ECT Department and remains in the Democratic Republic of Congo as the President of the National Electric Company there.

**Undergraduate Electronics Technology Program.** Prof. Malooley gave an overview of the curriculum. The Program is scheduled to be revised in the next two years. He asked board members for their input for program revision. ECT 160 will become a non-major course and will be developing a section of 160 for Automotive majors. He announced that we will be offering our program (ECT 321 forward) at a distance on a nationwide basis. Mr. Roop inquired as to what had previously limited it to the state of Indiana. Dr. Cockrell asked the board members what language would be most beneficial for our students to study. They replied: Chinese, Spanish, Japanese. Prof. Malooley also talked about the transfer and articulation process and showed ISU’s Transfer Central website and the Computer Assisted System (CAS). ISU is one of 259 institutions participating in CAS, and students may log on and get direct course equivalency information. Also, an interactive DARs is soon to come online.

**Computer Hardware Technology Program.** Dr. Raeisi explained that the program was very similar to the Electronics Technology program and that was the reason for revision. The Program has undergone a 2 year review. We are presenting the results of that review and we ask for comments from the Advisory Board. New emerging technology courses are to be offered in the revised program. Some courses have been eliminated from the old program and new ones added. Mr. Bridgewater asked if we based our benchmark against Computer Engineering degrees? Dr. Raeisi and Prof. Ashby gave a course by course overview of the courses to be included in the new program. Mr. Bridgewater asked if any course would cover industry standards such as S95? Dr. Croft asked for input—are we on the right track, have we missed anything? Ms. Nakanishi commented that some 200 level courses have been re-numbered as 100 level courses. Mr. Bridgewater asked how we will differentiate ourselves from MIS or IT majors. Dr. Croft replied that the revised program will move us to look like MSI or IT majors, but with much more added. We will keep the IT side but will retain the industrial flavor. Dr. Cockrell explained that in 1981 the program was called Computer Technology and later changed to Computer Hardware Technology. Mr. Bridgewater asked if our vision for the program is plant floor perspective or IT perspective. He sees too much computer design. Mr. Watler agreed. Those things are not needed in industry. Dr. Croft explained that we need to produce a person who is employable in all facets and useful in the marketplace. Mr. Bridgewater added that our graduates need to be able to “program it, understand it, and communicate it.” Ms. Nakanishi sees a product design person coming out of this program more than overall systems integration. Mr. Roop: (1) In the power industry, there is a need for the Computer Hardware program and that is the type of person they look for. (2) Small and medium sized businesses are driving the economy and this Computer Hardware Program fulfills their needs. Mr. Watler said that careful advising will be needed to know what direction a student would want to take. Mr. Roop wants to challenge us to be visionary-- what will be needed for the future. Mr. Watler felt like he got from the ECT Department a very good foundation for what he needed in his career. Mr. Bridgewater suggested that plant tours would be very beneficial, and that after tours students should be asked what route they want to take—plant floor or IT? We could ask alumni to give plant tours.

**Nationwide Articulation.** We are preparing to open up our 3rd and 4th year degree completion program to distance students nationwide. We would transfer in as a block for
students who have earned an A.S. degree. Question to the advisory board: Do you have any reservations about the concept or ideas on the subject. Mr. Bridgewater expressed concerns about resourcing or staffing to support the courses. Could graduate students teach? Mr. Watler asked how large we anticipated the population grow, and that we might consider limiting enrollment if needed. Dr. Cockrell sees this as growing to be similar to the University of Phoenix, and added that it will be open to those in the military. Mr. Bridgewater asked who we are aligned with for marketing? Dr. Croft asked if there were any cons to consider and how it might be viewed by employers. Mr. Roop asked if we have a plan in place to prevent other schools from copying. Ms. Nakanishi asked if we had the hardware requirements to support the increased student enrollment. The Advisory Board as a whole gave their approval to offering the program on a nationwide basis.

**Information Technology Program.** Prof. Farha gave a brief overview of the program, explaining that there were four ways to approach the study of computers at ISU: 1. Computer Science (Programming), 2. MIS (Business based), 3. Computer Hardware Technology (Electronics based), and 4. IT (Technology based, broadest content). Currently there are 126 majors in the IT Program. Prof. Farha hopes to add a securities course to the program. Mr. Watler suggested that we open up Computer Technology courses into the IT program.

**M.S. Program.** Dr. Clyburn gave an overview of the program. He reported the enrollment figures for the on-campus M.S. in ECT program were 51 students in Fall 2005, and 40 students in Spring 2006. He has admitted an additional 40 students for Fall 2006. Enrollment in the on-campus program is primarily made up of students from India. He asked board members to keep in mind that these students have BSEE degrees and could help with projects or problems in industry, and the students could then use that experience as a Major Project. Advisory Board members could then serve as a member of the student’s Major Project committee.

**M.S. Program (Distance).** Dr. Cockrell reported that currently 24 students are enrolled in the distance M.S. program. These students are full time working professionals.

**Ph.D. Program.** Dr. Beach gave an overview outlining specializations and participating consortium members. There are currently 152 students enrolled, 48 are in Digital Communications.

**Faculty Activities, Grants, etc.:**
- **Prof. Joe Ashby:** Mini-grant ($5,000) for PLC Trainers for remote lab to allow distance students to perform hands on lab work.
- **Dr. David Beach:** Serving on 37 Ph.D. dissertation committees
- **Dr. William Clyburn:** Mini-grant for Systems Integration
- **Dr. Gerald Cockrell:** He is involved in a long-term project with Russia. 11 students came here last summer for a week as part of an exchange program with ISU. 6 more students are scheduled to visit this Fall. He has been teaching a Distance Project Management course and will be awarding completion certificates at the end of this semester. He also announced the creation of CASI (Center for Automation and Systems Integration).
- **Dr. Yuetong Lin:** Mini-grant for the upgrade of software. He is also collaborating with Dr. Beach on the Neural Network.
- **Dr. Reza Raeisi:** Internal grant to revitalize micro-controllers in labs.
Recruitment. Dr. Croft reported that recently the faculty met for a brainstorming session regarding ideas for recruiting new students to ECT. They came up with 30 ideas and narrowed those down to the top 5. Dr. Cockrell asked student Michael Grounds what he would view as the best way to reach high school students? And what influenced him to come to ISU. Suggestions from the advisory board: Science Fairs, Boy Scout Science Fair, and 4-H.

NAIT. Dr. Clyburn reported that the ECT department is in the process of preparing a 2-year report. During our last review, the accreditation team felt that we were in partial compliance for 10 items. A 2-year review will answer those problems. We were criticized heavily on our Assessment Plan.

Questions from the Advisory Board:
What is our budget for the year? (Mr. Bridgewater)
$11,000 equipment
What about contact with alumni and gifts? (Mr. Roop)
  • Scholarship initiative
  • ECT Foundation
  • New Development Director interviews are currently taking place
What about the possibility of a Mentoring program (alumni)? (Mr. Bridgewater)
What about the possibility of a Career Day—bring in alumni who are professionals for students to talk with? (Mr. Roop)

Dr. Croft asked the board members to complete the written surveys before they left for the day including an Assessment Survey.

Mr. Bridgewater mentioned that Purdue graduates are required to do a 4-year project as an assessment tool.
Mr. Watler suggested an Exit interview with students upon graduation. A one-on-one informal interview. Not necessarily every student, maybe just a sampling.
Mr. Roop suggested a Senior Exam that would pull everything together in their major. Dr. Croft asked, “What do we do with the results?” Compare grade results with those in courses taken by the student. Mr. Roop said the exam does not need to be difficult—just something to see that students have basic competency and help bring together everything they have learned. Bring career application-type questions into the exam. Or—questions to graduates after one year of work to find out if students are adequately prepared.
What competencies are needed? Written and verbal communication skills (Nakanishi and Bridgewater). Mr. Roop suggested that each course require a written report. Senior projects would challenge students’ technical and communication skills. Ms. Nakanishi added that presenting gives students the opportunity to present in a safe environment.
Dr. Croft asked, “What made your employer hire you?” I was able to exhibit fundamental methodology of problem solving (Nakanishi). Common sense and could communicate. They saw that I had a degree and knew that I could problem solve (Watler). Titles are very important buzzwords to employers when they hire (Roop).
Suggested Content Areas for the Future:

- Technical Research skills (Watler)
- Being able to read prints (Roop)
- Understanding Standards (Bridgewater)
- Industry Regulations (Nakanishi)
- Regulatory bodies—teach OSHA, NFPA, etc. (Roop)
- Industrial Safety Network (Nakanishi)

The meeting adjourned at 3:35 p.m.
Prof. Farha reported on the Information Technology major which currently has about 130 majors. ECT, MIS, and CS departments are all involved in this major.

Dr. Clyburn talked about the M.S. in ECT Program on campus. He spoke of his duties as Coordinator and stated that there are currently 54 students in the program. A brief overview of the curriculum was presented.

Dr. Cockrell described the M.S. in ECT at Distance Program. ISU has become a leader in presenting distance courses and simulation via the internet. The only advertising for the program is done through ISA. The content is exactly the same as for the students who study on the ISU campus. There are currently 66 active students in the M.S. at Distance program.

Dr. Cockrell also spoke about the Ph.D. in Technology Management degree. It is made up of a consortium of five universities, and is the largest doctoral program at ISU. Admission to the program is very selective, with about 150 students currently accepted. Eleven students have graduated to date.

Prof. Malooley described the Electronics Technology B.S. degree and the articulation programs with 2-year schools. He gave an overview of our current curriculum and 4-year plan. Dr. Cockrell asked the Advisory Board what foreign language they would view as most beneficial for advisors to recommend to students. All agreed that Spanish is the language they would recommend.

Dr. Croft talked about the distance-based undergraduate program in ECT. IHETS courses have been eliminated and delivery is now internet-based, paving the way for consideration to offer the program nationwide. He told the board members that he will be seeking their input on issues they may anticipate in offering the courses on a nationwide basis.

Prof. Ashby and Dr. Raeisi reported for the Computer Hardware Subcommittee. They discussed the proposal to revise the Computer Hardware Program and asked for help in finding opportunities for our students. The purpose of the program modification is in response to changes in industry. The proposed 4-year plan was presented and discussed course by course. Several new courses are included in this plan. J. R. Musselman noted the addition of several new courses and asked if old courses had been eliminated or combined. Dr. Croft clarified what is being done. He also talked about how the Computer Hardware major and Electronics major curricula currently look almost identical except for only 4 courses. David Adler asked about server technology. What course or courses would include that material? Brian Bridgewater asked about other networks besides ethernet networking such as bus networks. Dr. Cockrell noted that we no longer are working with components. This has become a “systems world.” J.R. Musselman expressed that he saw this program modification as a great move. He said that we must think about the future, and that the U.S. is becoming less of a manufacturing country and is moving more toward Information Technology. He asked about Information Security. He was concerned as to whether we were including courses covering security. Brian Bridgewater mentioned a need for people to understand Data Segregation. Dr. Croft said that sometime between now and the next meeting the department will be asking for input from the Advisory Board members on the proposed curriculum. Brian Bridgewater and J.R. Musselman talked about Wireless Technology and how it can be applied to the plant floor. Mr. Musselman applauds our efforts and thought we are on the right path but also advised us to look to the future.
A Computer Hardware Technology Survey was included in the materials given to the Advisory Board members. Dr. Croft asked the board to answer the questions on the survey and return them to the ECT Department by June. There was also some discussion about the name of the program and if it conveys what the major is about. Mr. Adler mentioned the possibility of using the word “Infrastructure” in the program name.

A motion was made (Cockrell/Malooley) to have Brian Bridgewater and David Adler as permanent members of the ECT Industrial Advisory Board.

Dr. Croft reported to the board about the ECT Department Scholarship Initiative. It is an in-house initiative to promote new scholarships for our students. What can we do to establish and offer new scholarships to our students? He asked for input from the board members as to where we might seek money for this program.

Lunch was served at George’s Café, 12:00-1:00pm.
Dr. Cockrell reported that the Automation Task Force was looking at developing among several departments an interdisciplinary program in Automation. The Dean would like to develop a Center for Automation and Systems Integration which would be a Center for Expertise to be utilized by industry. Dr. Cockrell asked for input as to whether something like this is needed. Mr. Adler mentioned that Imperial College (London) might be a good place to model the Center after. He could provide information about that institution. Mr. Bridgewater said this would allow high school students to know what can be done with this kind of degree. He thinks they would find it fascinating. Dr. Croft asked what kind of issues they could see us having to deal with. Mr. Adler mentioned colloquialisms and ways we communicate with other cultures. Dr. Croft asked how does industry view hiring people who have a distance based education. Mr. Adler related that Lilly is very traditional in the types of people they hire, and are more inclined to hire people from the Midwest.

At the conclusion of the meeting the Industrial Advisory Board members were invited to tour the John Myers Technology Building and the ECT laboratories.

The meeting adjourned at 1:50 p.m.
Appendix C

Student Instructional Report (SIR)
This questionnaire gives you the chance to comment anonymously about this course and the way it was taught. Using the rating scale below, mark the one response for each statement that is closest to your view. Fill in the appropriate circle to the right of the statement.

(5) Very Effective
(4) Effective
(3) Moderately Effective
(2) Somewhat Ineffective
(1) Ineffective
(0) Not applicable, not used in the course, or you don't know. In short, the statement does not apply to the course or instructor.

As you respond to each statement, think about each practice as it contributed to your learning in this course.

A. Course Organization and Planning

1. The instructor's explanation of course requirements
2. The instructor's preparation for each class period
3. The instructor's command of the subject matter
4. The instructor's use of class time
5. The instructor's way of summarizing or emphasizing important points in class

B. Communication

6. The instructor's ability to make clear and understandable presentations
7. The instructor's command of spoken English (or the language used in the course)
8. The instructor's use of examples or illustrations to clarify course material
9. The instructor's use of challenging questions or problems
10. The instructor's enthusiasm for the course material

C. Faculty/Student Interaction

11. The instructor's helpfulness and responsiveness to students
12. The instructor's respect for students
13. The instructor's concern for student progress
14. The availability of extra help for this class (taking into account the size of the class)
15. The instructor's willingness to listen to student questions and opinions

D. Assignments, Exams, and Grading

16. The information given to students about how they would be graded
17. The clarity of exam questions
18. The exams' coverage of important aspects of the course
19. The instructor's comments on assignments and exams
20. The overall quality of the textbook(s)
21. The helpfulness of assignments in understanding course material

E. Supplementary Instructional Methods

Many different teaching practices can be used during a course. In this section (E), rate only those practices that the instructor included as part of this course.

Rate the effectiveness of each practice used as it contributed to your learning.

22. Problems or questions presented by the instructor for small group discussions
23. Term paper(s) or project(s)
24. Laboratory exercises for understanding important course concepts
25. Assigned projects in which students worked together
26. Case studies, simulations, or role playing
27. Course journals or logs required of students
28. Instructor's use of computers as aids in instruction

Questionnaire continued on the other side.
For the next two sections (F and G), use the rating scale below. Mark the one response for each statement that is closest to your view. Fill in the appropriate circle to the right of each statement.

<table>
<thead>
<tr>
<th>(5) Much More than most courses</th>
<th>(4) More Than most courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>(3) About the Same as others</td>
<td>(2) Less than most courses</td>
</tr>
<tr>
<td>(1) Much Less than most courses</td>
<td>Not Applicable, not used in the course, or you don't know. In short, the statement does not apply to the course or instructor.</td>
</tr>
</tbody>
</table>

F. Course Outcomes

29. My learning increased in this course .................................................. 0 1 2 3 4 5 6 7 8 9
30. I made progress toward achieving course objectives ........................................... 0 1 2 3 4 5 6 7 8 9
31. My interest in the subject area has increased ............................................... 0 1 2 3 4 5 6 7 8 9
32. This course helped me to think independently about the subject matter ........... 0 1 2 3 4 5 6 7 8 9
33. This course actively involved me in what I was learning .................................. 0 1 2 3 4 5 6 7 8 9

G. Student Effort and Involvement

34. I studied and put effort into the course .................................................. 0 1 2 3 4 5 6 7 8 9
35. I was prepared for each class [writing and reading assignments] ................. 0 1 2 3 4 5 6 7 8 9
36. I was challenged by this course ............................................................... 0 1 2 3 4 5 6 7 8 9

H. Course Difficulty, Work Load, and Pace

37. For my preparation and ability, the level of difficulty of this course was: Very difficult Somewhat difficult About right Somewhat elementary Very elementary
38. The work load for this course in relation to other courses of equal credit was: Much heavier Heavier About the same Lighter Much lighter
39. For me, the pace at which the instructor covered the material during the term was: Very fast Somewhat fast Just about right Somewhat slow Very slow

I. Overall Evaluation

40. Rate the quality of instruction in this course as it contributed to your learning (try to set aside your feelings about the course content): Very effective Effective Moderately effective Somewhat ineffective Ineffective

J. Student Information

41. Which one of the following best describes this course for you?

A major/minor requirement A college requirement An elective Other
42. What is your class level?

Freshman/first year Sophomore/second year Junior/third year Senior/fourth year Graduate Other
43. Do you communicate better in English or in another language?

Better in English Better in another language Equality well in English and another language
44. Sex

Female Male
45. What grade do you expect to receive in this course?

A A- B+ B B- C Below C

K. Supplementary Questions

If the instructor provided supplementary questions and response options, mark your answers in this section. Mark only one response for each question.

46.  
47.  

L. Student Comments

If you would like to make additional comments about the course or instructor, use a separate sheet of paper. You might elaborate on the particular aspects you liked most as well as those you liked least. Also, how can the course or the way it was taught be improved? An additional form may be provided for your comments. Please give these comments to the instructor.
Appendix D

Peer Evaluation Instrument (PEI)
# PEER EVALUATION INSTRUMENT (Objective Format)

The objective of this instrument is to ascertain whether the teaching is categorized according to the teaching excellence section: Outstanding, Above Average, Average, or Poor.

**INSTRUCTIONS:** Check (✓) each item as: S - Satisfactory or NI - Needs Improvement. Items which are not applicable to the lesson presented should be checked as NA - Not Applicable.

<table>
<thead>
<tr>
<th>NAME OF FACULTY MEMBER (last, first, middle initial)</th>
<th>Time Observation Started:</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>Time Observation Completed:</td>
</tr>
</tbody>
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| NAME OF EVALUATOR (last, first, middle initial) | Course Number | Regular Class Time: | Lecture ( ) Lab ( ) |

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<tr>
<th>ITEMS</th>
<th>RATING</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>S</td>
<td>NI</td>
</tr>
</tbody>
</table>

## A. ORGANIZATION/PREPARATION/CLASS MANAGEMENT

1. Class starts promptly

2. Teaching materials and equipment prepared for class

3. Goals for lesson clearly stated; objective and sequence are consistent with approved department outline

4. Time managed well

5. Proper control of class

6. Main points reviewed at conclusion

## B. COMMUNICATION SKILLS

1. Proper use of the language

2. Easily understood

## C. SUBJECT MATTER KNOWLEDGE

1. Excellent grasp of subject matter

2. Subject matter up-to-date

3. Material detailed

4. Material presented was relevant and timely

## D. FLEXIBILITY IN APPROACHES TO TEACHING

1. Stimulates interchange/exchange of ideas

2. Develops high and consistent standards that can be achieved

3. Creates an environment in which maximum learning can take place

4. Student participation encouraged

## E. EVALUATION TECHNIQUES

1. Questions phrased clearly and to the point

2. Questions appropriate for the lesson

3. Student’s questions answered adequately

4. Expands and discusses student responses
Appendix E

Chair Evaluation Instrument
# HAIR EVALUATION INSTRUMENT (Objective Format)

**Date Observed**

The objective of this instrument is to ascertain whether the teaching is categorized according to the teaching excellence section: Outstanding, Above Average, Average, or Poor.

**INSTRUCTIONS:** Check (✓) each item as: S- Satisfactory or NI - Needs Improvement. Items which are not applicable to the lesson presented should be checked as NA - Not Applicable.

**AME OF FACULTY MEMBER** (last, first, middle initial)  
**Time Observation Started:**

**Time Observation Completed:**

**AME OF EVALUATOR** (last, first, middle initial)  
Course Number:  
Regular Class Time:  
Lecture ( ), Lab ( )

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<td>Class starts promptly</td>
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<tr>
<td>Goals for lesson clearly stated; objective and sequence are consistent with approved department outline</td>
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<tr>
<td>Time managed well</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proper control of class</td>
<td></td>
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</tr>
<tr>
<td>Main points reviewed at conclusion</td>
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<td></td>
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<tr>
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<tr>
<td>Proper use of the language</td>
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<tr>
<td>Easily understood</td>
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<td>Material detailed</td>
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<tr>
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<td><strong>FLEXIBILITY IN APPROACHES TO TEACHING</strong></td>
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<tr>
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<tr>
<td>Develops high and consistent standards that can be achieved</td>
<td></td>
<td></td>
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<tr>
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<td></td>
<td></td>
</tr>
<tr>
<td>Student participation encouraged</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>EVALUATION TECHNIQUES</strong></td>
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<td>Expands and discusses student responses</td>
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</table>
INDIANA STATE UNIVERSITY
COLLEGE OF TECHNOLOGY

ACCREDITATION SELF-STUDY
REPORT

March 2010
SECTION I
Requests for Re-Accreditation and Accreditation

SECTION II
General Information

SECTION III
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Advanced Manufacturing Management, BS
Automotive Technology Management, BS
Computer Engineering Technology, BS
Electronics Technology, BS
Packaging, BS
Safety Management, BS
Technology Management, BS
Health & Safety (Occupational Safety Management), MS

March 2010
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   c. Part-time  
   d. Full-time equivalent  

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2. Names of Deans and Department Heads
3. Names of Other Departments in Administrative Units
4. Names of Program Heads
5. Names and Titles of Others with Program Administration and/or Coordination Responsibility
6. Titles of Degrees, Programs, and Concentrations for which Accreditation is Being Requested

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COT GPA
COT Faculty List
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COT Graduate Faculty
COT Faculty Demographics
Faculty Positions
COT Faculty Rank History
COT Faculty Retirement Projections
Library
COT Student Organizations
Surveys
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Automotive Technology Management, BS
Computer Engineering Technology, BS
Electronics Technology, BS
Advanced Manufacturing Management, BS
Packaging, BS
Technology Management, BS
Safety Management, BS
Health & Safety (Occupational Safety Management), MS
The Association of Technology, Management, and Applied Engineering

Request for Initial Accreditation or Reaccreditation Visit
Please Type Information

1. Institution
   Indiana State University
   Terre Haute, IN 47809

2. Head of Institution
   Dr. Daniel Bradley
   Telephone 812-237-4000
   Fax 812-237-7948

3. Head of Program
   Dr. Bradford Sims
   Telephone 812-237-3166
   Fax 812-237-3733

4. Contact Person
   Dr. Jeffrey McNabb
   Title Assoc. Dean
   Mailing Address ISU College of Technology, Terre Haute, IN 47809
   Telephone 812-237-2987
   Fax 812-237-2823
   Email Address jmcnabb@indstate.edu

5. Type of Visit Requested:
   [ ] Initial Accreditation  [x] Reaccreditation  [ ] 2-Year Follow-Up

6. Program Level:
   [x] Associate  [x] Baccalaureate  [ ] Master

7. List Industrial Technology Program(s) (including options, concentrations, and specializations) to be considered (Note: All options, specializations, and concentrations in a degree program MUST be reviewed. Reference standards 5.3.3 and 6.3.3).

   Degree  Program Name  Option, Concentration, or Specialization

SEE ATTACHED SHEET

(Attach additional sheet if necessary)

8. Billing Address:
   Dean, College of Technology, Indiana State University
   Terre Haute, IN 47809


10. Proposed Dates for Visit (Note: a minimum of two full days are required for the visit plus a travel day).
    First Choice: March 28, 29, 30, 2010  Second Choice: April 4, 5, 6, 2010

11. Recommended Team Member Lodging (include name, address, and telephone number).
    Hilton Garden Inn. 750 Wabash Ave.
    Terre Haute, IN 47807  812-234-8900

12. Authorized Signatures:
    Head of Institution: [Signature]  Date: 7/20/09
    Head of Program: [Signature]  (Interim Dean) Date: 7/21/08
    Institution Contact Person: [Signature]  Date: 7/21/09

Mail this form to: Executive Director, The Association of Technology, Management, and Applied Engineering, 3300 Washienaw Avenue, Suite 220, Ann Arbor, MI 48104-4200. Telephone 734-677-0720. Fax 734-677-0046. Email atmae@atmae.org
G:\UCDATA\UCMAIT\Accreditation\Forms\Certificates\wordaccreditationrequest.doc
2009
Indiana State University
College of Technology
Programs Requesting Reaccreditation

Programs from the Electronics, Computer, and Mechanical Engineering Technology Department

- Automotive Technology Management, B.S.
- Electronics and Computer Technology, A.S.
- Electronics Technology, B.S.

Programs from the Technology Management Department

- Advanced Manufacturing Management, B.S. (previously Manufacturing Technology)
- Packaging, B.S.
- Technology Management, B.S. (previously Industrial Technology)
November 24, 2009

Rick Coscarelli, Executive Director
The Association of Technology Management and Applied Engineering
3300 Washtenaw Ave., Suite 220
Ann Arbor, MI 48104-4200

Dear Dr. Coscarelli:

As we have discussed over the phone, Indiana State University would like to make some changes in our list of programs to be accredited by ATMAE in 2010. (Our original request is attached.) Below is our altered request.

**Programs from the Electronics, Computer, and Mechanical Engineering Technology Department, College of Technology**

- Automotive Technology Management, B.S.
- Electronics Technology, B.S.

**Programs from the Technology Management Department, College of Technology**

- Advanced Manufacturing Management, B.S. (previously Manufacturing Technology)
- Packaging, B.S.
- Technology Management, B.S. (previously Industrial Technology)

**Programs from the Safety Management Department of the College of Nursing, Health, and Human Services**

- Safety Management, B.S.
- Health and Safety (Occupational Safety Management), M.S.

Yours truly,

Jeffrey McNabb, Associate Dean
College of Technology,
Indiana State University
December 9, 2009

Rick Coscarelli, Executive Director
The Association of Technology Management and Applied Engineering
3300 Washtenaw Ave., Suite 220
Ann Arbor, MI 48104-4200

Dear Dr. Coscarelli:

Indiana State University would like to make some changes in our list of programs to be accredited by ATMAE in 2010.

We request that the six programs in the Electronics, Computer, and Mechanical Engineering Technology Department and in the Technology Management Department be evaluated using the traditional standard model.

Programs from the Electronics, Computer, and Mechanical Engineering Technology Department, College of Technology

- Automotive Technology Management, B.S.
- Computer Engineering Technology, B.S.*
- Electronics Technology, B.S.

* We would like to include Computer Engineering Technology although it is also seeking TAC-ABET accreditation. Formerly known as Computer Hardware Technology, this program has had only minor revisions to its curriculum, and we therefore are asking for its reaccreditation rather than an initial accreditation.

Programs from the Technology Management Department, College of Technology

- Advanced Manufacturing Management, B.S. (previously Manufacturing Technology)
- Packaging, B.S.
- Technology Management, B.S. (previously Industrial Technology)

We would like the two programs below to be evaluated using the outcomes assessment model.
Programs from the Safety Management Department of the College of Nursing, Health, and Human Services
- Safety Management, B.S.
- Health and Safety (Occupational Safety Management), M.S.

If, due to these changes, it is deemed necessary to add another accrediting team member, we will understand and cover the additional cost.

Yours truly,

Dr. Jeffrey McNabb, Associate Dean
College of Technology,
Indiana State University

JGM/re
Thanks Rick,

Everything you have mentioned looks right. Jeff

---

Jeff and Malcolm,

Thanks for the update on your Programs/Options and that of the Safety Management Department.

I have made the necessary changes to our database to reflect the Master Program in Health and Safety as an Initial Accreditation and have revived the "Computer Hardware Technology" Program which will now be renamed "Computer Engineering Technology" and considered a reaccreditation.

Sid will be working on setting up the Team. It will have a fourth Team member to handle the Master program and the Safety Management Program. You institution will be billed for the additional member per our policy:

**Accreditation Visits - Fee for Extra Team Members / Extra Days on Campus:**

**Fee:** Based on a proportionate share of actual expenses.

**Fee Calculation:** If the Accreditation Personnel Committee determines that more than three team members are required for any visit, or that more than three (3) on-campus days are required for the visit, or if a follow-up on-site visit is required, then the institution will be billed for actual travel costs for the extra team member(s) or additional visit days, or for the follow-up visit. "Actual travel costs" for each extra team member will be determined by dividing the total travel costs by the number of team members. Actual travel costs for each additional visit day will be determined by dividing the total travel costs by the number of on-campus days required for the visit.

**Billing:** The fee for extra team members / extra days on campus will be billed immediately upon calculation of all direct expenses related to the visit.

**Due:** The invoice for the Extra Team members / Extra Days on Campus Fee is due and payable 30 days after receipt.

(See 2009 Accreditation Handbook 3.6.3)

Also Jeff, per your request, your Programs will be evaluated using the Traditional 2009 Standards and Malcolm's Programs, both B.S. and M.S. will be using the Outcomes Assessment Model.

Let me know if you see anything that needs changing or update.

Thanks.

Rick
Rick Coscarelli
Executive Director, ATMAE formally NAIT
3300 Washtenaw Ave., Suite 220
Ann Arbor, MI 48104
734-677-0720 voice
734-677-0046 fax
rcoscarelli@nait.org

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Jeff,

Indiana State University
Initial and Reaccreditation Visit - March 28-30, 2010

Attached is the "Notification of Team Assignments and Visitation Dates" form for you to sign and get back to me ASAP.

Also, please find out who the contact person should be for Safety. I would like to make sure my records are correct. I understand that you will be the point person for our Team and coordinate activities with the Safety Department, thanks.

You will not receive any hard copy of this notification.

Thanks.

Rick

---

This e-mail, including attachments, may include confidential and/or proprietary information, and may be used only by the person or entity to which it is addressed. If the reader of this e-mail is not the intended recipient or his or her authorized agent, the reader is hereby notified that any dissemination, distribution or copying of this e-mail is prohibited. If you have received this e-mail in error, please notify the sender.
The Association of Technology, Management, and Applied Engineering  
Notification of Team Assignments and Visitation Dates

A. General Information:

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<tr>
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<th>Dr. Jeff McNabb, Associate Dean IT</th>
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<tr>
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<tr>
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<td>Telephone Number:</td>
<td>812-237-2987</td>
</tr>
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<td>Email Address:</td>
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<td></td>
<td>Jeff McNabb will coordinate with</td>
</tr>
<tr>
<td></td>
<td>Safety</td>
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</table>

B. Tentative Team Assignments: (Traditional 2009 Standards for IT Dept. – Outcomes Assessment for Safety BS and Master)

<table>
<thead>
<tr>
<th>Team Chair:</th>
<th>Dr. Verna M. Fitzsimmons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employer:</td>
<td>Kent State University</td>
</tr>
<tr>
<td>Address 1:</td>
<td>Applied Business &amp; Technology</td>
</tr>
<tr>
<td>Address 2:</td>
<td>P. O. Box 5190</td>
</tr>
<tr>
<td>City, State, &amp; Zip:</td>
<td>Kent, OH 44242</td>
</tr>
<tr>
<td>Home Telephone:</td>
<td></td>
</tr>
<tr>
<td>Business Telephone:</td>
<td>330-672-7064</td>
</tr>
<tr>
<td>Email Address:</td>
<td><a href="mailto:vfitzsim@kent.edu">vfitzsim@kent.edu</a></td>
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<table>
<thead>
<tr>
<th>Team Member 2:</th>
<th>Mr. Todd Myers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employer:</td>
<td>Ohio University</td>
</tr>
<tr>
<td>Address 1:</td>
<td>Rm 124B, Stocker Center</td>
</tr>
<tr>
<td>Address 2:</td>
<td></td>
</tr>
<tr>
<td>City, State, &amp; Zip:</td>
<td>Athens, OH 45701-2979</td>
</tr>
<tr>
<td>Home Telephone:</td>
<td></td>
</tr>
<tr>
<td>Business Telephone:</td>
<td>(740) 593-1455</td>
</tr>
<tr>
<td>Email Address:</td>
<td><a href="mailto:myersr2@ohio.edu">myersr2@ohio.edu</a></td>
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<tr>
<th>Team Member 3</th>
<th>Dr. Mandara Savage, CSIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employer:</td>
<td>Southern Illinois Univ-Carbondale</td>
</tr>
<tr>
<td>Address 1:</td>
<td>Technology</td>
</tr>
<tr>
<td>Address 2:</td>
<td>Mailcode 6603</td>
</tr>
<tr>
<td>City, State, &amp; Zip:</td>
<td>Carbondale, IL 62901-6603</td>
</tr>
<tr>
<td>Home Telephone:</td>
<td></td>
</tr>
<tr>
<td>Business Telephone:</td>
<td>618-536-3396</td>
</tr>
<tr>
<td>Email Address:</td>
<td><a href="mailto:msavage@engr.siue.edu">msavage@engr.siue.edu</a></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Team Member 4:</th>
<th>Dr. Jess Godbey</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employer:</td>
<td>Jacksonville State Univ.</td>
</tr>
<tr>
<td>Address 1:</td>
<td>134 Ayers Hall</td>
</tr>
<tr>
<td>Address 2:</td>
<td>700 Pelham Road North</td>
</tr>
<tr>
<td>City, State, &amp; Zip:</td>
<td>Jacksonville, AL 36265</td>
</tr>
<tr>
<td>Home Telephone:</td>
<td></td>
</tr>
<tr>
<td>Business Telephone:</td>
<td>(256) 782-5080</td>
</tr>
<tr>
<td>Email Address:</td>
<td><a href="mailto:jgodbey@jsu.edu">jgodbey@jsu.edu</a></td>
</tr>
</tbody>
</table>

C. The following dates have been selected for the on-site visit: March 28-30, 2010

D. A copy of your Self-Study Report must be sent to each team member by: February 26, 2010

If the above team member assignments and visitation dates are acceptable to your institution, please sign below, return the original to the Executive Director, and **forward copies to your institution head and program head.**

Institution Contact Person: [Signature] Date: 12-22-09

Mail this form to: Executive Director, The Association of Technology, Management, and Applied Engineering, 3300 Washtenaw Avenue, Suite 220, Ann Arbor, MI 48104-4200. Tel: 734-677-0720. Fax: 734-677-0046. Email: atmae@atmae.org.