# Bachelor of Science in Electrical Engineering (BSEE)  College of Engineering and Mines (CEM)

## Table 4.1 Outcomes Assessment Implementation Summary

<table>
<thead>
<tr>
<th>Assessment information collected</th>
<th>2007-08</th>
<th>2008-09</th>
<th>2009-10</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>1) Senior design</td>
<td>1) Senior design</td>
<td>1) Senior design</td>
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<tr>
<td></td>
<td>2) FCAR (Faculty Course Assessment Report)</td>
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<td></td>
<td>3) Exit survey</td>
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<td>4) FE Exam</td>
<td>4) FE Exam</td>
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<td>5) ECE Advisory and Development Council Meeting</td>
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<td>Conclusions drawn from the information collected above and how are faculty collectively involved in drawing conclusions</td>
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| Department faculty discuss the data collected and draw conclusions during an annual Outcomes Assessment meeting.  
1) Sr. Design – Only outcome h below threshold.  
2) FCAR (Faculty Course Assessment Reports) indicated that the lowest scoring ABET outcomes were c and h, but these were above our tripwire.  
3) Sr. Exit survey showed the lowest scoring ABET outcome was j, but these were above our tripwire.  
4) 100% pass rate on FE exam (9/9), national average is 73%.  
  
Outcome J is contemporary issues. We have decided to explain to the students what we mean by contemporary issues, and that whenever we bring up a contemporary issue (all senior level courses should contain a number of these) we will specifically mention that this is a contemporary issue in the content area of this class. |
| Department faculty discuss the data collected and draw conclusions during an annual Outcomes Assessment meeting.  
1) Sr. Design all above threshold.  
2) FCAR (Faculty Course Assessment Reports) indicated that the lowest scoring ABET outcomes were a, c and e, but these were above our tripwire.  
3) Sr. Exit survey showed the lowest scoring ABET outcomes were d and j, but these were above our tripwire.  
4) 100% pass rate on FE exam (5/5), national average is 73%.  
5) There was unanimous agreement among the ADC members that UAF is providing education that meets the expectations of the employers. UAF ECE graduates receive a well rounded academic curriculum which requires a high level of lab work. This hands-on experience increases the value that UAF graduates bring to their employers.  
  
Outcome (j) on contemporary issues shows an improvement over past years due to some closed loops and additions/modifications made to several courses to better address this outcome.  
3) SR Exit Survey indicated an improvement in categories (d) and (k), which had hit the tripwire in 2009. All categories were above the tripwire and significantly improved over past years.  
4) 100% pass rate on FE Exam (9/9), which is higher than the national average of 72%.  
5) ADC was supportive of program and the outcomes assessment methodologies.  
  
ECE faculty held several meetings to discuss the data collected for the annual outcomes assessment; also notably how to effectively assess outcomes on lifelong learning, contemporary issues, and multidisciplinary skills.  
1) Sr. Design all above threshold.  
2) FCAR: The weighted average of all courses indicated an overall drop to 1.78 in outcome (a). This drop was noted specifically in courses such as EE 353 and EE 354 which have a strong math content.  
Outcome (j) on contemporary issues shows an improvement over past years due to some closed loops and additions/modifications made to several courses to better address this outcome.  
3) SR Exit Survey indicated an improvement in categories (d) and (k), which had hit the tripwire in 2009. All categories were above the tripwire and significantly improved over past years.  
4) 100% pass rate on FE Exam (9/9), which is higher than the national average of 72%.  
5) ADC was supportive of program and the outcomes assessment methodologies. |
| Curricular changes resulting from conclusions drawn above | Addition of contemporary issues to senior level courses. All senior level courses will contain some mention of contemporary issues in the content area of the course. | Based on the assessment of their individual courses (FCARs) all faculty have proposed changes and improvements in their course offerings, design of homework and experiments so as to better meet the program objectives. No new courses were added or old courses removed from the curriculum. It was also decided that an overall improvement in the assessment process itself is needed. | There has been an increase in the Matlab content of several ECE courses that traditionally used simulation and computational tools in assignments. Discussions have also been initiated among faculty for a systematic approach to improve the basic math skills of students based on the low FCAR results of several courses in outcome (a). Measures may be necessary to strengthen students' math skills in prerequisite courses in preparation of more advanced courses. A senior design course in power is in development. Faculty have also discussed the expected changes in FCAR procedures starting next year, and courses have been determined to assess certain sub-categories of ECE Program Outcomes, instead of assessing (a-k). Overall, the improved results indicate that the faculty have been doing a good job in closing the loop in individual courses, as well as in the program. |