

Student Learning Outcomes Assessment Summary

Electrical Engineering, BSEE

College of Engineering and Mines

AY 2014-15 and 2015-16

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1. Assessment information collected

During these two academic years, we collected data using 3 direct assessment mechanisms and 1 indirect method.

- 1) All 11 ABET a-k outcomes were assessed by the faculty teaching the senior capstone design projects on a 1-5 scale. The results are shown for 23 students in this 2 year period.

a=3.84, b=3.83, c=3.65, d=3.82, e=3.67, f=4.02, g=3.90, h=3.79, i=3.88, j=3.84, k=3.96

Assessed value for each of the a-k outcomes is above the 3.0 threshold.

- 2) ABET outcomes c, d, f, g, h, i, and j were assessed in 2014-15 by faculty in their FPAR (Faculty Performance Indicator Assessment Reports). Results are given in terms of the percentage of students (out of 12) that exceeded the performance threshold in each of the outcomes.

c = 92%, d = 78%, f = 78%, g = 100%, h = 100%, i = 89%, j = 100%

Each of the outcomes is above the threshold value of 75%

- 3) The nationally normed FE exam was taken by graduating seniors. The results of the FE exam over the last 2 years are 94% of 18 UAF EE students passed compared to the national average of 77%.

- 4) All 11 ABET a-k outcomes were indirectly assessed by the seniors. The results (in a 1-5 scale) are shown for 23 students in this two year period.

a=4.22, b=4.30, c=3.80, d=4.52, e=4.13, f=4.46, g=4.52, h=4.33, i=4.44, j=3.60, k=3.74

Assessed value for each of the a-k outcomes is above the 3.0 threshold.

2. Conclusions drawn from the information summarized above

In the senior capstone courses, some students were not quite performing at the expected level in outcome d - an ability to function on multidisciplinary teams and outcome f - an understanding of professional and ethical responsibility. For example, FPAR assessment (2) shows relatively low (78%) but above the threshold success rate, for these two outcomes. However, these assessments differs from those

assessed by faculty (1) or by seniors (3), which give well-above-threshold assessments for outcomes d and f. Given that all outcomes assessed by three independent methods were above the respective threshold for each method, faculty decided to take no actions at this time on addressing outcomes d and f, other than keep a close eye on it during the next assessment cycle.

3. Curricular changes resulting from conclusions drawn above

Overall our program is strong and there were no significant curricular changes resulting from the above conclusions. However, *senior exit survey from 2015-16 indicates*: 1) Even though no scores were below threshold, we continue to struggle with students understanding that they are being taught "Outcome J - knowledge of contemporary issues. 2) Outcome C - design system to meet needs - also took a downturn this year. Faculty has recommended to monitor outcomes c and j in the coming years, as more data becomes available. FPAR assessment of outcome I (lifelong learning) in EE 464 indicated the need for improvement. Instructor Jason McNeely will include an additional lecture on this topic next year.

4. Identify the faculty members involved in reaching the conclusions drawn above and agreeing upon the curricular changes resulting

The entire ECE department faculty, excepting Professor Bogosyan who is on leave of absence, reached the above conclusions and resulting minor curricular changes.

The ECE faculty includes:

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