

# Student Learning Outcomes Assessment Summary

## Computer Science, BS College of Engineering and Mines AY 2016-17 and 2017-18

Submitted by: Chris Hartman  
Contact Information: cmhartman@alaska.edu  
Date: 5/3/2018

### 1. Assessment information collected

During these two academic years we collected data using direct assessment of specific homework, projects, and midterm and final exam answers, as per our SLOA assessment plan. ABET assessment performance indicators e-h and i3 were assessed in 2016-2017, using material from all students in CS 331, CS 371, CS 372, CS 471, and CS 472. ABET assessment performance indicators a-d and i1-2 were assessed in 2017-2018 using materials from all students in CS 301, CS 311, CS 372, CS 411, CS 471, and CS 472. Each ABET outcome category has from 2-4 performance indicators, usually evaluated using a rubric of 1-Beginning, 2-Developing, 3-Accomplished, and 4-Exemplary, with a tripwire of 2.9 (unless otherwise noted) below which performance is considered unsatisfactory. Some outcomes are evaluated using expanded oral and writing rubrics on a 0-100 scale where 100-Exemplary, 80-Accomplished, 60-Developing and 40-Beginning. These have a tripwire of 80. The data collected is summarized in the following tables.

2016-2017

PI	Performance
E1	3.22
E2	2.95
E3	3.17
F1	81.8
F2	83.3
F3	<b>78.8</b>
F4	3.38
G1	3.18
G2	2.97
H1	2.93
H2	86.5
I3	3.3

2017-2018

PI	Performance
A1	2.97
A2	3.52
A3	<b>2.57</b>
B1	<b>2.75</b>
B2	2.92
B3	70.2
C1	2.77
C2	2.95
C3	77.25
D3	3.5
D5	3.1
D7	88.3
I1	3.51
I2	3.5

# Student Learning Outcomes Assessment Summary

## **2. Conclusions drawn from the information summarized above**

For the most part the indicators being assessed were met at a fairly high level, with most of the students falling into the Accomplished or Exemplary categories.

Indicator F3 ("Ability to create effective end-user documentation (individual)") was slightly below the tripwire. Student performance was highly variable, with some students creating figures, etc., and others submitting a "wall of text." Faculty decided to stress the unacceptability of "wall of text" submissions in future classes.

Indicator A3 ("Ability to determine the efficiency class of a recursive algorithm") was poor in fall 2017. Students need still more emphasis on using the Master Theorem to analyze recursive algorithms. Faculty have planned a novel delivery method for this content next year (using a skit with a super hero named Master Master) and will re-assess in Fall 2018.

Indicator B1 ("Ability to recognize the complexity class of a problem") was also far below the tripwire. The faculty decided to watch this indicator closely when it is next assessed in 2020. Historically our students have performed well above the tripwire on this indicator, so this may be an outlier. Factors contributing to the poor performance include a particularly weak cohort this year, and a choice of question that was not ideal.

## **3. Curricular changes resulting from conclusions drawn above**

There were no curricular changes resulting from the above conclusions.

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

All CS department faculty reached the above conclusions.

## **5. Has your SLOA plan been updated to include assessment of the program's Communication Plan, as required by Faculty Senate motion? (Required for baccalaureate programs only)**

No update to the SLOA plan is necessary, as the indicators described in our Communications Plan are already part of our assessment process.