ABET Criterion 3: Student Outcomes

Program: Bachelor of Science in Computer Science
Course: CS 441G - Compilers for Algorithmic Languages
Term: Fall 2015

Student Learning Outcome: SO (b)

(b) An ability to analyze a problem, and identify and define the computing requirements appropriate to its solution

Methods: Student Learning Outcome SO (b) in CS441-001 has been evaluated with Rubric applied to a randomly selected sample of students using the instruments (a list and synopsis of the assignments/instruments is provided below.) The sample of students has been selected randomly and the number of samples follows the rule: accessing 20% of the students but no less than 10. (when the class is smaller than 50 students, a sample includes min(sizeClass, 10) students).

Instruments:

1. (ex1-q11) Exam 1, Question 11
2. (pa5) Programming Assignment # 5
3. (exf-q11) Exam Final, Question 11

Discussion of the results:
The percentage of the assessed work that Exceeds Standards, Meets Standards, Partially Meets Standards or is Does not Meet Standards, respectively, is listed in Table 1.

<table>
<thead>
<tr>
<th>Instrument</th>
<th>CS-441</th>
<th>Sec-001</th>
<th>Fall 2015</th>
<th>SO(b)</th>
<th>JWJ</th>
<th>Class size=58</th>
</tr>
</thead>
<tbody>
<tr>
<td>ex1-q11</td>
<td>5</td>
<td>17</td>
<td>8</td>
<td>1</td>
<td>31</td>
<td></td>
</tr>
<tr>
<td>pa5</td>
<td>2</td>
<td>22</td>
<td>6</td>
<td>1</td>
<td>31</td>
<td></td>
</tr>
<tr>
<td>exf-q11</td>
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<td>6</td>
<td>2</td>
<td>1</td>
<td>12</td>
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<tr>
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<td>45</td>
<td>16</td>
<td>3</td>
<td>74</td>
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</tr>
<tr>
<td>%samples</td>
<td>13%</td>
<td>60%</td>
<td>21%</td>
<td>4%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 1: SO (b) CS441-001 Fall 2015

The number of selected students that exceed or meet standard is 73%. This number meets the target benchmark of 70% for the Student Outcome
(b): this target has been discussed and approved by the College and the Department.

Although the target has been met, the following *Improvements* for the future instances of this course are suggested: *(note: if the target is not met, *Improvement Actions* are essential and critical part of the assessment)*

- Improvement Action #1: (formulate the suggested improvement and the rationale based on the results of the assessment.)
- etc.
Synopsis of the selected instruments

1. (ex1-q11) Exam 1, Question 11

This question is about designing a Context Free Grammar for... Specifically, the students were asked to...

2. (pa5) Programming Assignment #5

This programming project, is the last milestone in development of a compiler from a subset of a C language to P-code for a P-stack machine. The development uses multiple compiler-compiler tools for available in Unix environment. Students are asked to implement a number of features related to programming construct, semantic analysis, and optimization.

3. (exf-q11) Exam Final, Question 11

This question is about designing semantic analysis for a compiler for the language that uses labels and jumps, to ensure that all jumps correspond to existing labels. Specifically, the students are asked to...