

William Paterson University
College of Science and Health - Department of Computer Science

Fall 2013 – Spring 2015 Assessment Cycle
Analysis of the Program's Student Outcome Assessment Data

Program's Student Outcome: S7: Demonstrate an understanding of programming language concepts.

ABET's Related Student Outcomes (i)

Curriculum Committee Subgroup: Programming Languages

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A. Analysis of the Assessment Data

For the assessment period Fall 2013 to Spring 2015, this student outcome was assessed in CS3820 with 8, 13, 24, and 13 students taking the course respectively. From these students, only 6 (which represents 10% of those students) did have less than adequate ability. However, some deficiencies are observed as follows: some students did not have a good grasp of C-Strings manipulations; some students have poor programming skills which made it hard for them to have a good grasp of the concepts introduced in the course; and finally, some students had hard time in the syntax analysis part of the course.

B. Suggestions for Improvement

- Review C-string manipulation library functions before the assignment on the scanner. Also provide a hand-out on those functions
- Have students complete their programming assignment projects in groups so that students with poor programming skills could learn from the other students in the group.
- Do more in class exercises on context free grammars and derivations.

C. Improvement Implemented

The above suggestions have been implemented in Fall 2016.

D. List all the “performance level/frequency/percentage” tables and their sources.

a. Faculty Course Assessment Report: CS3820, Fall 2013

Data Collected: Each student’s level of performance on tests and the final exam.

Method of Collection: Each student is given a score on the tests and the final exam.

Performance Levels	Frequency	Percentage
Some Ability	1	12.5 %
Adequate Ability	4	50.0 %
More than Adequate Ability	2	25.00 %
High Ability	1	12.5 %

Observations: Some deficiencies in C-strings manipulations and pointer arithmetic are observed in class projects; not enough time is spent on the Java programming language and the Web programming languages.

b. Faculty Course Assessment Report : CS3820, Spring 2014

Data Collected: Each student’s level of performance on tests and the final exam.

Method of Collection: Each student is given a score on the tests and the final exam.

Performance Levels	Frequency	Percentage
Some Ability	4	30.8 %
Adequate Ability	4	30.8 %
More than Adequate Ability	3	23.1 %
High Ability	2	15.4 %

Observations: About half of the students in this class have very poor programming skills which make it difficult for them to understand some programming concepts. However, the rest of the class has a very good grasp of the concepts.

c. Faculty Course Assessment Report: CS3820, Fall 2014

Data Collected: Each student’s level of performance on tests and the final exam. Homework also required students to demonstrate the process of learning these principles.

Method of Collection: Each student is given a score on the tests and the final exam, totaling 80% of the grade and remaining 20% is homework.

Performance Levels	Frequency	Percentage
Some Ability	1	4%
Adequate Ability	8	33%
More than Adequate Ability	12	50%
High Ability	3	13%

Observations: The tests and final were very rigorous and Scott's level well exceeds Sebesta's level. Hence only 3 attained excellence. Of the 12 in the B category, 3 – 4 were very hard working but the expectations and threshold for an A was just beyond them. Students found the first quarter, including Fundamentals, Regular Expressions, and Scanning / Lexical Analysis quite easy and did uniformly well. The second area, Syntax, was the hardest aspect, producing the greatest variance/spread in grades. From then on, each student's individual grades were relatively uniform / consistent.

d. Faculty Course Assessment Report: CS3820, Spring 2015

Data Collected: Each student's level of performance on tests and the final exam.

Method of Collection: Each student is given a score on the tests and the final exam.

Performance Levels	Frequency	Percentage
Some Ability	0	0 %
Adequate Ability	6	46.2 %
More than Adequate Ability	5	38.5 %
High Ability	2	15.4 %

Observations: This is very hard working class. However, most students barely made it because of a lack of strong programming skills. Some few students have a very good grasp of the concepts.
