

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

Fall 2015 – Spring 2017 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

Members: John Najarian, Gilbert Ndjatou (Chair)

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A. Analysis of the Assessment Data

For the assessment period fall 2015 to spring 2017, this student outcome was assessed in CS3820 with 19, 11, and 22 students taking the course respectively. From these students, only 10 (which represents 19% of those students) did have less than adequate ability. However, it is observed that in fall 2016 and spring 2017, many students in the class did not have a good foundation in programming, which made it difficult to grasp many concepts discussed in the class. Most students in general tend to have difficulties with regular expressions and CFGs. It has been suggested in the past to have students do more in class exercises on regular expressions and CFGs. However, because we spent a lot of time on programming fundamentals, we did not have enough time to do that.

B. Suggestions for Improvement

- Try to emphasize structured programming paradigm early in students' course of study.
- Continue to do more in class exercises on regular expressions, context free grammars and derivations.

C. Improvement Implemented

The above suggestions have been implemented in Spring 2018.

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

- a. Faculty Course Assessment Report: CS3820, Spring 2016

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
No Ability	0	0%
Some Ability	3	21.1 %
Adequate Ability	6	26.3 %
More than Adequate Ability	7	36.8 %
High Ability	3	15.8 %

Observations: The strong background in programming language concepts of more than half of the students in this class made it easier for them to grasp most of the concepts discussed in the class. The major challenge for some students in this class was the use of regular expressions and context free grammars in the context of program translation.

- b. Faculty Course Assessment Report: CS3820, Fall 2016

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
No Ability	0	0.0%
Some Ability	1	9.1 %
Adequate Ability	6	54.5 %
More than Adequate Ability	3	27.3 %
High Ability	1	9.1 %

Observations: Very few students in this class had the required foundation in programming to handle the class and there was a lack of effort from many of them. The lack of a good programming experience also made some of the programming language concepts discussed in the class a little bit challenging for them. Another major challenge for most students in this class was the use of regular expressions and context free grammar in the context of program translation.

c. Faculty Course Assessment Report : CS3820, Spring 2017

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
No Ability	0	0%
Some Ability	6	27.3 %
Adequate Ability	6	27.3 %
More than Adequate Ability	7	31.8 %
High Ability	3	13.6 %

Observations: Some of the students in this class (a little bit less than a third) did not have a good foundation in programming and did not also have a good programming experience, which made some of the programming language concepts discussed in the class a little bit challenging for them. Another major challenge for some students in this class was the use of regular expressions and context free grammar in the context of program translation.
