

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

Fall 2018 – Spring 2019 Assessment Cycle
Analysis of the Results of the Evaluations of the Assessment Data
of
the Program Student Outcome

Curriculum Committee Subgroup: Computer Organization

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Objective: S6: Design, implement, and evaluate a computing-based solution to meet a given set of computing requirements in the context of the program's discipline.

A. Analysis of the Results of the Evaluations of the Assessment Data

For the assessment period Fall 2018 to Spring 2019, this student outcome was assessed in the courses CS3410 and CS3420.

In CS3410, 21 and 14 students took the course respectively in the fall and the spring semester and only 2 or 6% of them performed at a level below adequate. However, in the spring no student performed at the highest level.

In CS3420, 13 and 15 students took the course respectively in the fall and the spring semester and 2 or 7% students performed at a level below adequate.

B. Suggestions for Improvement

N/A

C. Improvement Implemented

N/A

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

a. Faculty Course Assessment Report: CS3410, Fall 2018

Data Collected: Each team’s level of performance in the design, implementation, and simulation of a digital system.

Method of Collection: students (team approach) select a topic by themselves then design a digital logic circuit, implement and simulate their circuits by using Logic Works CAD software package. The faculty member use completeness, correctness, and complexity as the criteria to measure students’ performance. Most students can complete their project correctly; however, the complexity is varied which is the major factor to determine their score.

Performance Levels	Frequency	Percentage
No Ability	0	0 %
Some Ability	0	0%
Adequate Ability	13	62 %
More than Adequate Ability	5	24 %
High Ability	3	14 %

Observations:

- 1) The performance of this semester is the worst in recent years.
 - 2) In general the quality of all projects is poor and, only two teams have creative work. Some teams also selected easy topics, some did not complete their projects, and some made mistakes in the implementation of their projects.
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b. Faculty Course Assessment Report : CS3410 Spring 2019

Data Collected: Each team’s level of performance in the design, implementation, and simulation of a digital system.

Method of Collection: students (team approach) select a topic by themselves then design a digital logic circuit, implement and simulate their circuits by using Logic Works CAD software package. The faculty member use completeness, correctness, and complexity as the criteria to measure students’ performance. Most students can complete their project correctly; however, the complexity is varied which is the major factor to determine their score.

Performance Levels	Frequency	Percentage
No Ability	0	0 %
Some Ability	2	14%
Adequate Ability	3	21 %
More than Adequate Ability	9	64 %
High Ability	0	0 %

Observations: Most teams' performance of this semester are satisfactory. Only one team has creative work. One team's work is too simple.

c. Faculty Course Assessment Report : CS3420 Fall 2018

Data Collected: A substantial programming project that requires students to measure the execution time of several sort algorithms as a function of data size n. The measured results compared with the theoretical prediction. In addition, tests and final exam contain questions designed to measure student achievement toward Objective S6.

Method of Collection: Questions on tests and the final exam are used to assess students' knowledge of the different data structures and their ability to understand and use the algorithms used to manipulate these data structures. Students also write programs that demonstrate their understanding of the data structures and the algorithms that are used to manipulate them.

Performance Levels	Frequency	Percentage
No Ability	0	0.0%
Some Ability	0	0.0%
Adequate Ability	7	54%
More than Adequate Ability	4	31%
High Ability	2	15%

Observations: Similar to the reasoning stated in the "Observations" section in for S3, the actual overall student achievement toward Objective S3 should be higher than the numbers in the above table tends to indicate.

d. Faculty Course Assessment Report : CS3420 Spring 2019

Data Collected: Students' ability to assess and select the most efficient data structures among a variety of common and advanced data structures in practical problem solving. In addition, data collected also include students' ability to use library software including C++ STL container classes and UNIX utilities such as sort.

Method of Collection: Each student is given a score on the three tests, final exam, and all programming projects.

Performance Levels	Frequency	Percentage
No Ability	0	0.0%
Some Ability	2	20.0%
Adequate Ability	1	33.3%
More than Adequate Ability	8	33.3%
High Ability	4	13.4%

Observations:

Analysis of algorithms is central to the course yet the topic is hard to learn and apply to practical problems. Teach the topic early enables more students to eventually reach the eureka moment; this is reflected in students' continued improvement in test scores on the topic.

Spent four weeks on reviewing all OOP topics taught in the previous course as most students had trouble with programming assignments.

A total of nine programming projects were assigned and only three students were able to complete all nine.