

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

Fall 2018 – Spring 2019 Assessment Cycle
Analysis of the Course Coverage and Assessment Report Data

Course Number: CS 3410

Course Coordination Committee Members: Bogong Su

Date: May 29, 2019

A. Course Prerequisites/Corequisites

a) Problems/Issues Identified

No problem identified.

b) Suggestions for Improvement N/A

B. Course Objectives

a) Problems/Issues Identified:

No problem identified.

b) Suggestions for Improvement N/A

C. Course Student Outcomes

a) Problems/Issues Identified

No problem identified.

b) Suggestions for Improvement N/A

D. Course Content

a) Problems/Issues Identified:

Many students have problems of power exponent and logarithm. They could not solve the relationship between the size of memory and the number of address bit; most students gave wrong answer in a question of final exam, even they had similar homework questions before and a table listing the relationship was provided during the open book final exam.

b) Suggestions for Improvement

Give more practice chances in homework. However, this weakness of mathematic should be solved in some prerequisite mathematic courses.

E. Support for the Attainment of the CS Program Student Outcomes

Student Outcome S1: Effectively communicate in written and oral forms.

In this course, students complete a digital circuit project that includes its design, implementation and simulation in a team of two students. They also produce a report of their project and also make an oral presentation. The report is evaluated by the instructor of the course based on its style and presentation whereas the presentation is evaluated by the whole class, including the instructor. This course therefore supports the attainment of this student outcome.

Student Outcome S2:

Demonstrate abilities to apply knowledge of mathematics to the discipline of computer science.

In this course, the principles of Boolean algebra are applied to switches, providing mathematical tools for the analysis and synthesis of switching systems. This course therefore supports the attainment of this student outcome.

Student Outcome S4: Work effectively as part of a team in a software or hardware project.

In this course students complete a digital circuit project that includes its design, implementation and simulation in a team of two students. They also produce a report of their project and also make an oral presentation. The report is evaluated by the instructor of the course based on its style and presentation whereas the presentation is evaluated by the whole class, including the instructor. One criterion in the evaluation of students' work is how well they work together on the project. This course therefore supports the attainment of this student outcome.

Student Outcome 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.

In this course students are expected to complete a digital circuit project that includes its design, implementation and simulation (by using a CAD software) in a team of two students. This project is used to assess this student outcome.

F. Analysis of The Results of the Evaluations of the Course Student Outcomes Assessment Data and Suggestions for Improvement

Student Outcomes with Observed Deficiencies	Suggested Improvements
L3. Understand Boolean algebra and its application on digital logic.	The average score of Test 1 in F18 semester is lower than previous semester. The major reasons are weak background in particular mathematic background and not spending enough efforts. The instructor indicated their mistakes via go-over the homework and tests, and allow them to re-do homework to correct their mistakes, however many students gave up this opportunity. This homework re-do policy should be emphasized.
L8. Demonstrate ability to think critically through homework, tests, and project.	Most teams work hard and few have creative work, however some teams didn't spend enough efforts in their projects and few teams work poorly. Show students the grading criteria of project to stimulate them.
L9. Demonstrate ability to integrate knowledge and ideas through the project to design a digit circuit.	
L10. Work effectively with others and effectively express themselves in written and oral forms through a research project..	

G. Results of the Evaluations of the Course Student Outcomes Assessment Data

F2018

Student Outcomes	Where Measured	Percentage of Satisfactory Results*
L1. Recognize the nature and characteristics of digital logic and computer organization.	N/A	N/A
L2. Recognize various kinds of number systems and the conversion among them.	HW1, T1	78
L3. Understand Boolean algebra and its application on digital logic.	HW2, T1	31
L4. Analyze and design digital logic.	HW3, 4, 5, T1, T2, F	74
L5. Use logic simulator and other software tool for digital logic design.	Project	62
L6. Identify major components of computer organization.	N/A	N/A
L7. Locate and identify the new trends and technologies of digital logic design.	N/A	N/A
L8. Demonstrate ability to think critically through homework, tests, and project.	Average	38
L9. Demonstrate ability to integrate knowledge and ideas through the project to design a digit circuit.	Project	62
L10. Work effectively with others and effectively express themselves in written and oral forms through a research project.	Project	71

S2019

Student Outcomes	Where Measured	Percentage of Satisfactory Results*
L1. Recognize the nature and characteristics of digital logic and computer organization.	N/A	N/A
L2. Recognize various kinds of number systems and the conversion among them.	HW1, T1	100
L3. Understand Boolean algebra and its application on digital logic.	HW2, T1	71
L4. Analyze and design digital logic.	HW3, 4, 5, T1, T2, F	86
L5. Use logic simulator and other software tool for digital logic design.	Project	86
L6. Identify major components of computer organization.	N/A	N/A
L7. Locate and identify the new trends and technologies of digital logic design.	N/A	N/A
L8. Demonstrate ability to think critically through homework, tests, and project.	Average	86
L9. Demonstrate ability to integrate knowledge and ideas through the project to design a digit circuit.	Project	86
L10. Work effectively with others and effectively express themselves in written and oral forms through a research project.	Project	100

*** Notes:**

1. For all the scores, the percentage corresponds to the number of students who receive a score of at least 70% on the question(s) related to the learning outcome.
2. Semester grade consists of composite scores of homework, projects, and exams. The grades were not curved.