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 2800

Course Coordination Committee Members: Bogong Su

Date: May 29, 2019

A. Course Prerequisites/Corequisites

a) Problems/Issues Identified

Some students have weak math background who failed in MATH 116 and failed in this course.

b) **Suggestions for Improvement** add a prerequisite: students must pass MATH 116

B. Course Objectives

a) **Problems/Issues Identified:**

No problem identified. The objectives are sufficiently abstract to reflect and to be inclusive of current trends and literature.

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

No problem identified.

b) Suggestions for Improvement N/A

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

Student Outcome S2:
Demonstrate abilities to apply knowledge of mathematics to the discipline of computer science.

In addition to discussing number systems (binary, hexadecimal, and octal number systems), the conversions among those number systems and the basic arithmetic operations on those number systems, we also discuss signed decimal arithmetic and two's complement arithmetic. This course therefore supports the attainment of this student outcome.

F. Analysis of the Results of the Evaluations of the Course Student Outcomes Assessment Data

Learning Outcomes with Observed Deficiencies	**Suggested Improvements**
L1. Perform conversions between binary, octal/hex-decimal, and decimal number systems and perform the basic arithmetic operations in these number systems.	Give more practice opportunities to those students with weak math background and allow them to re-do homework to correct their mistakes.
L4. Represent different types of data inside the computer and perform addition and subtraction of 2's complement binary integers, and recognize overflow conditions. Also perform conversions between two's complement binary integers with different length.	
L9. Demonstrate ability to integrate knowledge and ideas through lab projects	Require students converting data in memory dump file to decimal values.

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

F2018

Learning Outcomes	Where Measured	Percentage of Satisfactory Results*
L1. Perform conversions between binary, octal/hex-decimal, and decimal number systems and perform the basic arithmetic operations in these number systems.	HW1,2,T1	86
L2. Understand the assembly level machine organization and memory segmentation.	HW4, T1	84
L3. Represent an absolute address in selector/offset form and compute an absolute address from a selector/offset address.	HW4,T1	84
L4. Represent different types of data inside the computer and perform addition and subtraction of 2's complement binary integers, and recognize overflow conditions. Also perform conversions between two's complement binary integers with different length.	HW3,T1	85
L5. Specify an instruction in assembly language and machine language.	HW6,T2	80
L6. Know how to use the compare and jump, loop, call, return, and stack instructions	HW7,8,9, T2	82
L7. Write assembly language programs and understand the assembly process.	LAB 1,4	86
L8. Know how to assemble, link, and execute an assembly language program in DEBUG environment, and interpret the result.	LAB 2,3	64
L9. Demonstrate ability to integrate knowledge and ideas through lab projects	LAB 1-5	79
L10. Demonstrate ability to think critically through classroom participation, homework, tests, and lab projects.	Average	71
L11. Effectively express themselves in written forms through the lab projects.	LAB 1-5	79
L12. Locate and know basic concepts of interrupts, Input/Output operations and computer architecture.	N/A	N/A

S2019

Learning Outcomes	Where Measured	Percentage of Satisfactory Results*
L1. Perform conversions between binary, octal/hex-decimal, and decimal number systems and perform the basic arithmetic operations in these number systems.	HW1,2,T1	*90*
L2. Understand the assembly level machine organization and memory segmentation.	HW4, T1	80
L3. Represent an absolute address in selector/offset form and compute an absolute address from a selector/offset address.	HW4,T1	80
L4. Represent different types of data inside the computer and perform addition and subtraction of 2's complement binary integers, and recognize overflow conditions. Also perform conversions between two's complement binary integers with different length.	HW3,T1	70
L5. Specify an instruction in assembly language and machine language.	HW6,T2	85
L6. Know how to use the compare and jump, loop, call, return, and stack instructions	HW7,8,9, T2	65
L7. Write assembly language programs and understand the assembly process.	LAB 1,4	75

L8. Know how to assemble, link, and execute an assembly language program in DEBUG environment, and interpret the result.	LAB 2,3	60%
L9. Demonstrate ability to integrate knowledge and ideas through lab projects	LAB 1-5	77
L10. Demonstrate ability to think critically through classroom participation, homework, tests, and lab projects.	Average	60%
L11. Effectively express themselves in written forms through the lab projects.	LAB 1-5	85%
L12. Locate and know basic concepts of interrupts, Input/Output operations and computer architecture.	N/A	N/A

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.