CSC-101-D01 - Intro to Computer Science

Spring 2022

Professor: Zee Haddad
Office Location: Building 17 Room 309
Office Phone: (413)755-4679
Email Address: Zhaddad@stcc.edu
Office Hours: Monday 11:15 -12:05

Welcome

Each student in the class has something to offer. Please be respectful to the different experiences, beliefs and values expressed by other students in this course. We support STCC's commitment to diversity, and welcome individuals of all ages, backgrounds, citizenships, disability, sex, education, ethnicities, family statuses, genders, gender identities, geographical locations, languages, military experience, political views, races, religions, sexual orientations, socioeconomic statuses, and work experiences.

Required Textbook(s)/Reading(s)

- No textbook is required. Any C++ textbook will be helpful.
- YouTube videos and Blackboard

Course Description

This course assumes no prior knowledge of computer programming. The course starts with the basic of problem solving and algorithm development using the standard control structures of sequencing, selection, iteration, and function abstraction. A brief introduction to object- oriented design perspective is fully introduced and integrated into the student's problem- solving methodology. The C++ programming language will be used in this course. A summary of the topics contained in the course include: an overview of computer science, problem solving, input and output techniques, functions, selection statement, repetitious statements, strings, structured data will classes, files, and arrays.

- **Co-requisite**: CSC-101L (Lab Intro to Computer Science)

Student Learning Outcomes

Upon completion of this course students will be able to:

1. Define the processes of a C++ program
2. List the steps in problem analysis coding
3. Identify basic components of a C++ program, including functions, special symbols, and identifiers
4. Classify simple data types and use in assignment statements
5. Create assignment and input statements and the use of variables within statements.
6. Differentiate between operators
7. Develop output results using output statements

8. Define basic programming terminology
9. Write a basic C++ program
10. Identify input and output streams
11. Read data from the standard input device
12. Describe input stream functions get, ignore, putback, and peek
13. Use manipulators in a program to format output
14. Perform input and output operations using the string data type
15. Identify how to form and evaluate logical (Boolean) expressions
16. Use one-way and/or two-way selection syntax
17. Demonstrate a switch statement in a program
18. Distinguish the use of While loops including For, Do, EOF
19. Write If and Else statements
20. Test break and continue statements
21. Build nested control structures
22. Describe predefined and user-defined functions
23. Identify value-returning functions, including actual and formal parameters
24. Construct and use a value-returning, user-defined function in a program
25. Use void functions in a program
26. Distinguish between value and reference parameters
27. Compare and contrast local and global identifiers
28. Use static variables
29. Define enumeration types
30. Differentiate the use of enumeration types in assignment statements, arithmetic, and relational operators.
31. Use for loops with enum types
32. Create input data and output data storage using an enumeration variable
33. Write functions to process enumeration types
34. Use string functions
35. Declare and initialize arrays
36. Demonstrate manipulating data into arrays
37. Distinguish the restrictions on array processing
38. Pass an array as a parameter to a function
39. Demonstrate how to search and sort an array
40. Use auto declarations
41. Define parallel, two-dimensional
42. Define records (structs)
43. Identify various operations on a struct
44. Determine ways to manipulate data using a struct
45. Clarify the relationship between a struct and functions
46. Compare arrays and structs
47. Create an array of struct items and structs within a struct
48. Define classes and members and identify how they are implemented
49. Describe constructors and destructors
50. Differentiate between a struct and a class

Course Expectations

This course is designed for those students interested in transferring to a four-year college or university. Consequently, the student must be prepared to invest much time and effort for successful course completion.

This course will consist of Zoom meeting every Thursday at 8am and watching videos on YouTube. Students are expected to participate in class discussions, complete homework assignment and 5 examinations.

Attendance Policy

Students are encouraged to attend the zoom meetings. Should a meeting be missed, students are responsible for all information and instruction provided in that meeting; this includes any modifications of test dates or procedures

Delivery Method

This is a Blended Synchronous class with a weekly Zoom meeting scheduled for Monday from 11:15 – 12:05pm. In addition to that, the use of YouTube and Blackboard is required.

Teaching Procedures

A typical zoom meeting consists of answering any questions. Once all the questions are answered, we will move to new material. There are detailed videos, created by me, posted on Blackboard. Please watch them for complete explanations of the topics in the textbook.

Lab Work

To transfer to a 4-year university, you must have at least two semesters of laboratory experience. Therefore you will not be permitted to take this class without registering for the lab associated with this class. The grade for the lab will be the same as the grade for the course

Supplemental Instruction (SI)

The college has a program called Supplemental Instruction (SI). Through this program, you will have the opportunity to meet weekly with your SI Leader, who will provide weekly review sessions for all interested students. The Leader is a current student who has recently taken the course and done well. They will be reviewing all class materials weekly, hearing what you hear, and reading what you read. During each review session, you will have a chance to get together with your classmates to compare notes, discuss concepts that might be confusing, review material for tests and quizzes, and ask any questions that you might have.

Sessions will begin the week of January 25th, and run through the end of the semester. All Sessions will be held via **ZOOM.** You can attend as many review sessions as you like; each one will be different because you will have new material to discuss. SI sessions are informal – bring any notes you have, your textbook, or a classmate! By coming to these sessions, you will be able to develop a better understanding of the course content as well more effective ways of learning.

If you are unable to attend the group session, but would like to meet with the SI Leader, you can set up an individual time to meet with them. You can let them know you would like to make an appointment with them. Feel free to send them a note through their college email or the Blackboard site.

I am thrilled that we have this opportunity for you, and I am hopeful that you take advantage of this program.

Our SI leader is **XXXX** and his email address is XXXXXXXXXXXX

Academic Dishonesty

Honesty is expected in all academic work. Policies set by STCC will be followed regarding academic dishonesty. While students are encouraged to work together to complete assignments, each student must submit only their own work for grading. Any student violating this policy is subject to failing the course.

Course Requirements

Exams

There will be 5 exams given in this course. These exam are worth 40% of the final grade.

Lab Assignments

9 Lab assignments will be assigned this semester. These assignments are worth 60% of the final grade/

All of the above assignments will be graded based on the following rubric:

	Level of Achievement		
Criteria	**Novice**	**Competent**	**Proficient**
Completeness 50%	Attempted few problems and the majority of them are correct (40%)	Attempted most of the problems and the majority of them are correct (70%)	Attempted all the problems and most of them are correct (100%)
Organization 30%	Some of the problems are neat and somewhat in order (40%)	All the problems are neat and somewhat in order (70%)	All the problems are neat and in order (100%)
Time Submitted 20%	Submitted more than 3 days and less than 7 days after the due date (30%)	Submitted less than 4 days after the due date (50%)	Submitted on or before due date (100%)

Grading Policy

Your average in the class will be based on Discussions, LearnSmart assignments, homework assignment, 4-examinations and a comprehensive final exam. This final exam will be required of all students completing the course. The average for the course will be calculated as follows:

Assignment	***Precent***
Lab assignments	50%
Examinations	40%
Discussions	10%

Make-up examinations will be given only under the following conditions: (1) a student notifies the professor of a conflict before the examination; or (2) a student presents the instructor with an excuse, which may be verified by the Dean of Students Office.

Exam Dates and Passwords

- Test 1 Feb 20 Test Password: Pencil
- Test 2 Mar 13 Test Password: Biafine
- Test 3 Apr 10 Test Password SIGN
- Test 4 May 1 Test Password Sharp
- Test 5 May 15 Test Password: National

Grading Scale

The STCC grade scale can be found in the STCC catalog

93.00 to 100.0 = A	80.00 to 82.99 = B-	67.00 to 69.99 = D+
90.00 to 92.99 = A-	77.00 to 79.99 = C+	63.00 to 66.99 = D
87.00 to 89.99 = B+	73.00 to 76.99 = C	60.00 to 62.99 = D-
83.00 to 86.99 = B	70.00 to 72.99 = C-	Less than 60.00 = F

Disruptive Behavior

Disruptive behavior, which disrupts the establishment or maintenance of the learning environment, may result in the student causing the behavior to be removed from the classroom by the instructor. The student may be subject to further disciplinary action by the Dean of students.

Office of Disability Services

In compliance with Springfield Technical Community College's policy and equal access laws, disability-related accommodations or services are available. Students who desire such services are to meet with the professor in a timely manner, preferably the first week of class, to discuss their disability-related needs. Students will not receive services until they register with the Office of Disability Services (ODS). Proper registration will enable the ODS to verify the disability and determine reasonable academic accommodations. ODS is located in Building 19 Room 141 and can be reached at (413) 755-4785. The offices are open 7:30am - 5pm, Monday through Friday. Evening hours by appointment.

Disclaimer

The official content of this course (I. e. the information you will be tested on) is, by definition, WHAT IS PRESENTED IN CLASS. The syllabus presented above is only a tentative indication of the direction the course will take. It is not to be construed as limiting to learn any and all material discussed in class.

Course Schedule

Assignments Date	***Topic*** *(Readings should be completed prior to the day they are listed*	***Assignments*** *(should be completed prior to the day they are listed)*
February 6	*Unit 1 notes/videos*	*Discussion 1*
February 14	*Unit 2 notes/videos*	*Discussion 2*
February 16	*Unit 2 notes/videos*	*Hw1*
February 20	***Units 1 & 2***	***Test 1***
February 26	*Unit 3 notes/videos*	*Discussion 3*
February 28	*Unit 3 notes/videos*	*HW2*
March 4	*Unit 4 notes/videos*	*Discussion 4*
March 10	*Unit 4 notes/videos*	*HW3*
March 13	***Units 3 & 4***	***Test 2***
March 23	*Unit 5 notes/videos*	*Discussion 5*
March 25	*Unit 5 notes/videos*	*HW4*
April 6	*Unit 6 notes/videos*	*HW5*
April 10	***Units 5 & 6***	***Test 3***
April 6	*Unit 7 notes/videos*	*HW5*
April 17	*Unit 7 notes/videos*	*HW6*
April 26	*Unit 8 notes/videos*	*Discussion 7*
April 28	*Unit 8 notes/videos*	*HW7*
May 1	***Units 7 & 8***	***Test 4***
May 7	*Unit 9 notes/videos*	*HW8*
May 8	*Unit 9 notes/videos*	*Discussion 8*
May 13	*Unit 10 notes/videos*	*HW9*
May 15	***Units 9 & 10***	***Test 5***