CS 7A - Section 3457

Computer Science II

TR 2-5:05, B6

Geoff Hagopian

ghagopian@collegeofthedesert.edu
geofhagopian.net
Math 12
Office Hours: MW 9:10-11, or by appointment.
(760) 776-7223

This syllabus is the alpha version of an open source platform.
For weekly assignments, go to *The calendar*

Course Description: This introductory course in computer programming and computer science is designed primarily for computer science and related transfer major. Its primary objective is to teach fundamentals of computer science and problem solving using the C++ programming language. Topics include structured procedural programming with program control structures (sequence, selection, iteration), modular program structures (functions and parameter passing), data types (primitive types, arrays, files and structures) and an intro to object-oriented programming.

Note: No prior knowledge of computer programming is required.

Prerequisite: MATH 005 with a minimum grade of C or any other math course with math 40 as a prerequisite.
Credit Hours: 4

Texts: *Programming Principles and Practice Using C++* (2nd ed). ISBN: 978-0-321-99278-9, by Bjarne Stroustrup (Addison-Wesley, 2014) also recommended: *Theory and Problems of Fundamentals of Computing with C++* ISBN: 0-07-030868-3, by John R. Hubbard in the Schaum's Outlines Series.

Course Objectives:

At the completion of this course, students will be able to:

1. Demonstrate the grammar, punctuation, and vocabulary of C++ by composing original programs to meet specified design conditions.
2. Demonstrate good program design principles to do problem solving, creating programs that are correct, efficient, and easily read, modified, and repaired.
3. Describe the sequence of steps to go through, in designing, writing, testing and debugging a C++ program.
4. Synthesize application-specific knowledge (e.g. to write a program that draws geometric shapes on the screen, you have to know something about geometry.)

Grade Distribution:

Programming Assignments	50%
Midterms	30%
Final Exam	20%

Letter Grade Distribution:

$\geq$ 90.00	A	70.00 - 79.99	C
80.00 - 89.99	B	60.00 - 69.99	D
.	.	$\leq$ 59.99	F

Grades Grades in the **C** range represent performance that **meets minimal expectations**; Grades in the **B** range represent performance that is **substantially better** than the expectations; Grades in the **A** range represent work that is **excellent**.

Note: A minimum grade of C is required in this course to progress to CS 7B.

Course Policies:

- **Homework**

  – Homework will consist largely of reading the textbook and developing programs.

- **Programming Assignments**

  – To support your foundation of computer science theory and good programming habits, this course involves reading, writing, rereading and rewriting C++ code extensively to develop programs for accomplishing various algorithmic tasks. The programs you write will vary from the relatively short and simple to hundreds of lines of code involving significant complexity. Programs will be only console-oriented (input and output involved in the program will be limited to ascii text data, not graphics.)

    The programming assignments are designed to be interesting, challenging and to build incrementally on your existing skills. A big part of writing code involves debugging - that is, rewriting your code to eliminate various kinds of "bugs", improving the efficiency of algorithms and/or improving the way the code provides flexibility in interaction with other code, coders and users. This can be quite time-consuming and, well, frustrating at times. That's normal. Please consult with me and your classmates–but ultimately you must invent your own code and to understand it for yourself.

    If your work duplicates in whole or in significant parts the work of someone else, both will receive a grade of 0. If there is doubt about authorship, you may be required to defend your work. If you submit work copied from the internet without attribute, that's plagiarism. According to the Student Conduct Code in the College Catalog, plagiarism "shall constitute good cause for discipline, including but not limited to the removal, suspension or expulsion of a student."

The programming projects are listed on the calendar page. These should be emailed to my cod email address attaching the file named using the format ⟨your initials⟩_⟨assignment name⟩ and the file type either .txt or .cpp depending on whether you are submitting plain text or C++ code. It's sometimes helpful to zip multiple files together in a bundle, in which case the file type will be .zip. This will build a portfolio which I will evaluate periodically. Your programming work will be evaluated according to the rubric shown on the next page.

- **Attendance and Absences**

  – Attendance is expected and will be noted. If you're not there, you missed it. Excessive absences are cause for dismissal, as per the college catalog.

  – Students are responsible for all missed work, regardless of the reason for absence. It is also the absentee's responsibility to get all missing notes or materials and to learn what was missed.

  – It is the student's responsibility to drop all classes in which he/she is no longer participating or attending.

  – It is the instructor's discretion to drop a student for excessive absences or non-participation any time during the allowed drop/withdrawal period for the course.

  – Student who remain enrolled in a class beyond the published withdrawal deadline, as stated in the class schedule, *must* receive an evaluative letter grade in the class. (A 'W' grade cannot be assigned during the final grading for students till appearing on the roster.)

  – The final grade in this class will be affected by active participation, including attendance, as indicated in the in-class quiz scores.

- **Cell Phones**

  – Turn off your cell phone during class. You may not receive calls or messages in class.

Note: No makeup quizzes will be given. Only legitimate excuses (with a doctor's note, say) will allow a makeup exam.

Academic Honesty Policy

In addition to skills and knowledge, College of the Desert aims to teach students appropriate ethical and professional standards of conduct. The college catalog specifies that students are expected to "be honest and ethical at all times in the pursuit of academic goals. Students who are found to be in violation of the Student Conduct Standards and Procedures will receive a grade of zero on the assignment, quiz, or exam in question and may be referred for disciplinary action in accordance with Student Disciplinary Procedures." Any attempt to deceive a faculty member or to help another student to do so will be considered a violation of this standard.

Trait	Exceptional	Acceptable	Fledgling	Unsatisfactory
Specifications	The program works and meets all of the specifications	The program works and produces the correct results and displays them correctly. It also meets most of the other specifications	The program produces correct results but does not display them correctly.	The program is producing incorrect results.
Readability	The code is exceptionally well organized and very easy to follow.	The code is fairly easy to read.	The code is readable only by someone who knows what it is supposed to be doing.	The code is poorly organized and very difficult to read.
Reusability	The code could be reused as a while or each routine could be reused.	Most of the code could be reused in other programs.	Some parts of the code could be reused in other programs.	The code is not organized for reusability.
Documentation	The documentation is well written and clearly explains what the code is accomplishing and how.	The documentation consists of embedded comment and some simple header documentation that is somewhat useful in understanding the code.	The documentation is simply comments embedded in the code with some simple header comments separating routines.	The documentation is simply comments embedded in the code and does not help the reader understand the code.
Delivery	The program was delivered on time.	The program was delivered within a week of the due date.	The code was within 2 weeks of the due date.	The code was more than 2 weeks overdue.
Efficiency	The code is extremely efficient without sacrificing readability and understanding.	The code is fairly efficient without sacrificing readability and understanding.	The code is brute force and unnecessarily long.	The code is huge and appears to be patched together.