

CS 120/120L: High-Level Programming I (Introduction to C Programming)

Fall 2015 Course Syllabus

Contact Information

Instructor: Matthew Mead
Office Hours: By arrangement (I'm usually here M-F all day and can usually meet anytime I'm not in class.)
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Course Description

In presenting the C programming language, this course serves as a foundation for all high-level programming courses and projects. It provides the fundamentals in programming, including control-flows (such as statement grouping, decision making, case selection, procedure iteration, and termination test) and basic data types (such as arrays, structures, and pointers). Additionally, it will discuss intensively the lexical convention, syntax notation, and semantics of the C programming language. There are no prerequisites for this course.

Objectives and Outcomes

After successfully completing this course, the student should be able to read, write, and understand most of the C programming language. Specifically, students will be able to:

1. communicate with a computer using a higher-level language.
2. understand how the higher-level language is translated into instructions that the computer can execute.
3. compile, link, and execute a computer program.
4. understand the way in which a program interacts with the computer's CPU and memory.
5. use simple data structures and understand how they are represented in the higher-level language.
6. apply the course concepts to implement various computer algorithms to solve problems.

The successful student will be prepared for the next programming course in the sequence (CS 170 Intro to C++) and will be able to use the C language in the second-semester game course.

Day and Time	Room
W, 10:30 am - 11:50 am	Plato
F, 1:30 pm - 3:50 pm	Plato

Textbooks and References

Required

- *C Programming: A Modern Approach, Second Edition* by K. N. King. Published by W. W. Norton and Company. Copyright © 2008 (ISBN: 978-0-393-97950-3).

Additional references (Optional)

- *The C Programming Language, Second Edition*, by Kernighan and Ritchie. Published by Prentice Hall. Copyright © 1989 by Bell Telephone Laboratories, Incorporated. (ISBN: 0-13-110362-8).
- *The Standard C Library*, by P. J. Plauger. Published by Prentice Hall. Copyright © 1992 by P. J. Plauger. (ISBN: 0-13-131509-9).
- *The World Wide Web*. Quite possibly the greatest asset to learning since the teacher and the textbook.

Grading

Grades will be derived from homework assignments and exams. The detailed weightings and letter grades are as such:

		x%	Grade
Homework	30%	$x \geq 93$	A
Quizzes	10%	$90 \leq x < 93$	A-
Midterm exam	20%	$87 \leq x < 90$	B+
Final exam	40%	$83 \leq x < 87$	B
		$80 \leq x < 83$	B-
		$77 \leq x < 80$	C+
		$73 \leq x < 77$	C
		$70 \leq x < 73$	C-
		$60 \leq x < 70$	D
		$x < 60$	F

You must receive an average score of 60% on both the midterm and final exams combined to pass this course, regardless of your homework/quiz/lab scores.

Attendance is mandatory. There are no makeup exams or quizzes. Also, for every lecture/lab that is missed, you will lose one point from your final grade (e.g. a 90 becomes an 89). The only exceptions are if you notify me prior to your absence with a valid reason. (Sleeping, studying for another class, working on your game, etc., are not valid reasons for an absence.)

Disabled Student Services

Students with physical, psychological or learning disabilities that affect their ability to perform major life activities associated with this class may be eligible for reasonable accommodations under the Americans with Disabilities Act. If you have a documented disability please contact the Disability Support Services office to arrange for accommodations for this class.

Tentative Schedule (This is a guideline for the semester and is subject to change.)

<i>Week</i>	<i>Topic</i>	<i>Reference material (Chapter)</i>
1	CS120 overview, programming fundamentals, C overview	1, 2
2	C syntax and grammar, data types, basic input/output	3
3	Expressions and operators	4
4	Conditionals (control-flow), Iteration (looping, repetition)	5, 6
5	Functions, stack, run-time environment	9.1-.9.5
6	Arrays	8.1
7	Midterm, TBD	
8	Scope, visibility, lifetime	10, 18.2
9	More data types and operators	7
10	Pointers	11, 12
11	Character strings	13
12	Simple file I/O	22
13	Structures	16
14	Dynamic memory allocation	17.1 – 17.4
15	Finals week	

Workload

During the semester there will be two major exams (midterm and final), several short quizzes. There will be several (about 7) programming assignments to work on outside of class. These are not large and you will usually have one to two weeks to complete them (although they generally take no more than a few hours to complete). In addition to attending the lectures, you should plan to spend at least 6 hours per week reading, studying, and programming for this class.

Submitting Homework

Programming assignments will (obviously) use the C programming language. More specifically, all programs must follow Standard C, which is what this course is about. Programming assignments are due at the time/day specified and **NO LATE ASSIGNMENTS WILL BE ACCEPTED**, (even if it's 1 second late). Time management is your responsibility. Additional details on homework submissions will be discussed in class.

Academic Honesty

All homework assignments and exams must represent your own, individual work. It is permissible to discuss assignments (not solutions) with other students in the class, but the solutions must be recognizably your own. Cheating of any kind (copying someone else's work, allowing others to copy your work, collaborating, etc.) will not be tolerated and will be dealt with SEVERELY (at the discretion of the instructor, which usually includes removal from the class with a grade of F.) Please keep in mind that discussing solutions to exams, quizzes, homework, etc. with students that haven't taken the exam or turned in the assignment is also prohibited. Ultimately, you are only wasting your time (and money) because if you can't master the fundamentals covered in this course, you have little hope of succeeding in other courses or as a programmer in the Real World.

From The "It-shouldn't-need-to-be-said-but..." Department

During class, all electronic devices must be turned **OFF**. This includes cell phones, pagers, PDAs, game consoles, digital cameras, laptop computers or any other devices. If you absolutely must have a cell phone on for an emergency situation, you must first clear it with me **BEFORE** class begins. In addition to showing up for class on time, other student responsibilities include proper behavior during class, learning the material, completing assignments correctly, submitting assignments properly and on time, studying for the exams, and participating in class by asking or answering questions during the lectures. **All students are required** to bring a pencil (or other writing instrument) and paper to class to take notes, quizzes, and perform other tasks. Finally, no food is allowed in the classroom.