

CS 120: High-Level Programming I: The C Programming Language

Fall 2019 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

This course serves as a foundation for all high-level programming courses and projects by introducing control flow through statement grouping, decision making, case selection, and procedure iteration as well as basic data types. Additionally, this course addresses the lexical convention, syntax notation, and semantics of the C programming language.

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.

Status	Day and Time	Room
Required	M, 10:30 am - 11:50 am	Michelangelo
Required	W, 9:00 am - 11:20 am	Michelangelo
TBA	W, 12:00 pm - 1:50 pm	Al-Kwarismi

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).
- Others will be assigned during the course and will be available online.

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
Midterm exam	20%	$x \geq 93$	A
Homework/Labs	35% (20% / 15%)	$90 \leq x < 93$	A-
Final exam	45%	$87 \leq x < 90$	B+
		$83 \leq x < 87$	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 scores.

Attendance is mandatory. For every lecture 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.)

Disability Support Services

If students have disabilities and will need formal accommodations in order to fully participate or effectively demonstrate learning in this class, they should contact the Disability Support Services Office at 425-629-5015 or dss@digipen.edu. The DSS Office welcomes the opportunity to meet with students to discuss how the accommodations will be implemented. Also, if you may need assistance in the event of an evacuation, please let the instructor know.

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 (skip 12.4, 12.5)
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). 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). There will also be some smaller programming assignments (labs) given out during each week. In addition to attending the lectures, you should plan to spend at least 4 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 and homework 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.

Religious Accommodation

DigiPen Institute of Technology provides reasonable accommodations to students who may be absent from activities or incur significant hardship due to religious holidays or observances. These holidays or observances must be part of a religious denomination, church, or religious organization, and the course instructor must be notified in writing during the first two weeks of the course. The institute's policy for grievances is published in the course catalog.

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, and perform other tasks. Finally, no food is allowed in the classroom.