

**Department of Engineering, Physical, and Computer Sciences
Montgomery College**

**ENEE150: Intermediate Programming Concepts for Engineering
Spring 2019**

1. General Information

Lecture : 31300 M/W 10:00-11:15AM Location: SC424

Lab : 31301 M/W 11:25-11:50AM Location: SC424

Instructor: Dr. Lan Xiang

Email: Lan.Xiang@montgomerycollege.edu

Office: SC436F

Phone: (240) 567-1740

Office Hours: MW 12 – 1:00pm, 2:30pm – 3:00pm, TR 9:00am – 10:00am

Textbook: NO required textbook. Class handouts and lecture notes are available on MyMC.

Recommended Readings:

C How to Program, by Deitels, 8th Edition, Prentice Hall, ISBN: 0136123562

2. Catalog Description

Intermediate principles of software development: high-level languages, object-oriented design, documentation, data structures, graphs, dynamic memory allocation, software development for applications in electrical and computer engineering, and software development in teams. Programs will use the C and Java languages. Software development projects will involve relevant electrical engineering topics, such as analysis of digital and analog circuits; cryptography; bio-informatics; embedded software; game programming; image processing; and wireless sensor networks. Three hours lecture, one-hour laboratory each week.

Prerequisites: ENEE140 and MATH181.

3. Grading Policy

Letter grade will be based on the total score in the following five categories:

Programming Projects	35%
Embedded System Projects	15%
Lab Exercises	10%
Midterm Exam	20%
Final Exam	20%

4. Course Structures

There will be programming projects. These are relatively larger programming projects. You are supposed to work on such projects individually and originally. It is acceptable, and you are encouraged, to discuss assignments with other students, but you have to code by yourself. **Do not share your source code with others. Working in groups, copying other student's**

program, or allowing others to copy your work will be considered as academic dishonesty, and will be not be tolerated.

We will have in-class programming exercises. In each exercise, you will be asked to write and debug small C programs or answer short questions during the class time. We will also work on embedded system projects. Students will work in teams build and program robots to complete certain tasks.

Midterm exam and final exam are both written exams. Makeup exams will be ONLY allowed for documented excused absences as defined by the Student Handbook or as a result of a prior arrangement with the instructor.

Heavy Workload Warning:

You can expect a heavy workload in this course. The programming assignments are not necessarily difficult, but they do require lots of time and patience. Please always start early on your programming assignments.

Attendance

Each student is required to attend the lecture and the lab on time every time. Late arrivals will disturb the class. **More than TWO unexcused absences without prior permission from the instructor will have one grade level penalty in the final grade (for example, A to B).** Lateness of more than 15 minutes will be counted as one absence.

Support Services

A student needing special accommodations due to a disability should let the instructor know as soon as possible. A letter from Disability Support Services (DSS) authorizing the accommodation is required. The DSS office is located in Room 122 CB and may be called on (301) 279-5060 or TDD (301) 294-9672.

In addition to course requirements and objectives that are in this syllabus, Montgomery College has information on its web site (see link below) to assist you in having a successful experience both inside and outside of the classroom. It is important that you read and understand this information. The link below provides information and other resources to areas that pertain to Student Success such as: Student Behavior (Student Code of Conduct); Student e-mail, College Tobacco Free Policy; Course Withdrawal and Refund Information; Resources for Military Service Members, Veterans and Dependents; how to access information on delayed openings and closings; how to register for Montgomery College's Alert System and how closings and delays can impact your classes.

Important Student Information Link: <http://cms.montgomerycollege.edu/mcsyllabus/>

ENEE150 Course Outline (Spring 2019)

Weeks	Dates	TOPICS	Readings	Notes
1	1/23	Introduction to course and UNIX	Notes	
2	1/28	C-basics review	Notes	
	1/30	C-basics review	Notes	Project 1 Due
3	2/4	Separate compilation	Notes	
	2/6	Command line arguments	14.4	
4	2/11	Unit testing	Notes	Project 2 Due
	2/13	Pointers I	Chapter 7	
5	2/18	Pointers II	Chapter 7	
	2/20	Strings and pointers	Chapter 8	Project 3 Due
6	2/25	Project discussion		
	2/27	Dynamic memory allocation	12.3, 14.9	
7	3/4	Dynamic memory allocation	12.3, 14.9	
	3/6	Project discussion		Project 4 Due
8	3/11	Spring Break		
	3/13	Spring Break		
9	3/18	Midterm Exam		
	3/20	Introduction to Python	Notes	
10	3/25	Introduction to Raspberry Pi	Notes	
	3/27	Project discussion	10.1-10.6	Project 5 Due
11	4/1	Structures		
	4/3	Linked list I	12.1-12.6	
12	4/8	Linked list II	12.1-12.6	Project 6 Due
	4/10	Abstract data type I	Notes	
13	4/15	Abstract data type II	Notes	
	4/17	Project design		Project 7 Due
14	4/22	Project design		
	4/24	Project design		
15	4/29	Project design		
	5/1	Project design		
16	5/6	Project demo and presentation		

Note: Final Exam May 13 Monday, 10:15- 12:15pm. The above course outline is tentative and subject to change. Please check MyMC often for updates.