

Fort Lewis College

COURSE SYLLABUS

Program: 2019 TRIO Upward Bound Summer Academy
Course Name: Computer Programming and Embedded Electronics
Instructor Name: Yiyang Li
Time: June 3 – July 3, Monday – Thursday, 1 pm – 2:30 pm (Section 1), 2:45 pm – 4:15 pm (Section 2).
Location: SFH 2771
Office Location: SFH 2755B
Office Hours: Thursday, 9 am to 11 am in my office.

Course Description:

This is a hands-on, learn-by-doing course that trains students to find solutions to real-world problems using embedded systems and the C programming language. The course uses a bottom-up approach from building simple interfacing of switches and LEDs to complex concepts like display drivers, remote control panels, motors, and a robot car.

Course Materials & Resource:

Visit my website: www.yilectronics.com for all the tutorials for this course. (The tutorials will be available online from June 3rd).

Required Text:

The textbook will be provided to students in an electronic PDF version.

Course Weekly Plan:

Week 1: Introduction to the computer number systems and electrical circuits.

Week 2: Introduction to the computer logic, the C programming language, and using the Arduino microcontroller to drive LEDs.

Week 3: Using the Arduino microcontroller to drive a Seven-Segment Display device and an LCD (liquid crystal display) device.

Week 4: Remote control and sensors.

Week 5: Build an Arduino Robot Car.

Student Course Learning Objectives:

After completing the computer programming and embedded electronics summer class students will be able to:

- Programming in the C language on a simple computer (an 8-bit microcontroller).
- Analyzing DC electrical circuits and computer logic circuits.
- Programming a microcontroller device to automate an electrical network.
- Assembling and programming a robot car.

Grading Scale by %:

70% In-Class Tasks/Homework Assignments/Quizzes

30% Final Project

Letter Grade/Point Range:

A	90-100
B	80-89
C	70-79
D	60-69
F	50-0

Attendance:

Attendance is defined to be: in class on time, in class for the duration of the class period, prepared for the day's topic, participation in class.

Disability Services:

Fort Lewis College is committed to providing all students a liberal arts education through a personalized learning environment. If you think you have or you do have a documented disability which will need reasonable academic accommodations, please call the Director of Disability Services, 280 Noble Hall, 970-247-7459, for an appointment as soon as possible.

Academic Integrity:

Academic dishonesty includes all forms of unethical or illegal behavior which affects a student's academic standing, including, but not limited to, cheating, plagiarism, forgery of academic documents, falsification of information on academic documents, or unauthorized access to computer files containing academic information. Academic dishonesty may result in sanctions ranging from a lowered grade on an assignment to an "F" in the class.