PHYS 319 Spring 2024

Course Syllabus

Instructor: Andrzej Kotlicki

email: kotlicki@phas.ubc.ca

Labs: T, W, Th 2-6 pm,

Lecture: Th 11:30-12:30

Text: Introduction to Embedded Systems Using Microcontrollers and the MSP430. Available for download from the UBC library at http://webcat2.library.ubc.ca/vwebv/holdingsInfo?bibId=7372090. We won't follow this text, but it's a great reference.

Web Page: The lab manual and many other helpful links can be found on the course web page at http://www.phas.ubc.ca/~kotlicki/Physics_319

Introduction:

In this course, you will learn how to program a microcontroller and have it interact with the world via devices like sensors, motors and displays. For the first 6 weeks, you will follow a lab manual to get started on the basics of learning how to program the devices. The remainder of the course is project-based. You will need to choose a project, acquire the parts needed, build the circuitry required, and write the code for your microcontroller to make it work.

You will have to program the devices from your own computer. We will do our best to help you with any problems during the lab time.

Grading Scheme:

To pass the course you have to:
1. Submit all three reports and check all the required parts (show them working to the TAs or instructor)
2. Present the final project and submit the final report.
If any of these elements are missing, your grade will be lower of 45% or total of the points.
Marking:

- A Lecture test 20%
- Activities 5%
- Programs and lab reports in first 6 weeks 20%
- Project proposal 3%
- Status report 2%
- Project quality and functionality 20%
- Presentation 10%
- Final report 20%

Late report submissions - 10% of the grade will be subtracted per day down to 50%. We often wave it for good reasons.

Week of Classes	Week of	Lab	Lecture	Due
1	08-Jan-24	No labs	1	
2	15-Jan-24	Lab 1	2	
3	22-Jan-24	Lab 2	3	
4	29-Jan-24	Lab 3	4	Lab 1 and 2 report before lab 3,
5	05-Feb-24	Lab 4	5	
6	12-Feb-24	Lab 5	6	Lab 3 and 4 report before lab 5
7	19-Feb-24	No labs	No lecture	Midterm break
8	26-Feb-24	Lab 6	test	project plans to discuss during the lab 6
9	04-Mar-24	Project	8	Lab 5 and 6 report before lab 8
10	11-Mar-24	Project	9	
11	18-Mar-24	Project	10	
12	25-Mar-24	Project	Project help	Progress report
13	01-Apr-24	Project	Project help	
14	08-Apr-24	Project Presentations		
	15-Apr-24			Final report due on Canvas