

EE 2325 – Syllabus – Fall 2018

Professor: Dr. Christopher R. Carroll Office: 252 MWAH Phone: 726-7530
Office Hours: Tuesday & Thursday 11-1
Email: ccarroll

Lecture Place & Time: MWAH 191, 8:00-8:50 MWF

Lab Place & Time: MWAH 295, black-topped tables, any time
Lab has key-card access so you can come and go as needed. I will generally be in or near MWAH 295 Tuesdays 1-3:50 PM to sign off your lab solutions, but other times work too.

Textbook: Margush, *Some Assembly Required*, available in bookstore

Computer Usage: Experience with assembly language programming and interfacing a digital microcontroller

Assessment: Labs: 30% 5th week test: 20% 10th week test: 20% Final exam: 30%
Labs are graded on a 5-point scale. Labs are due in class on Wednesdays. 20% off Wednesday after class and Thursday, 40% off Friday, etc. (20% per weekday late.) MATERIAL THAT YOU SUBMIT FOR GRADING IS EXPECTED TO REFLECT YOUR OWN IDEAS AND WORK.

<u>Dates</u>	<u>Topics</u>	<u>Reference</u>
8/27-31	Micro-processors/controllers/computers, memory map, parallel ports	<i>Chap 1</i>
9/5-7	Lab introduction, Harvard/Princeton architecture, RISC/CISC design	<i>Chap 2</i>
9/10-14	ATmega32 instruction set	<i>Chap 3</i>
9/17-21	ATmega32 instruction set, assembly language	<i>Chap 8, 9, 11</i>
9/24-28	Data representation, test on 28th	<i>Chap 4</i>
10/1-5	AVR family organization, stack, procedures	<i>Chap 5, 6</i>
10/8-12	Interrupts	<i>Chap 10</i>
10/15-19	ATmega32 timer capabilities	<i>Chap 8, class handout</i>
10/22-24	More ATmega32 timer capabilities, (<i>holiday 10/25-26</i>)	<i>Class handout</i>
10/29-11/2	Review, test on 2nd	<i>review</i>
11/5-9	Analog input	<i>Class handout</i>
11/12-16	Analog features	<i>Class handout</i>
11/19-21	Data organization (<i>holiday on 11/22-23</i>)	<i>Chap 12</i>
11/26-30	Serial I/O	<i>Chap 7</i>
12/3-7	IEEE floating point format, programming the ATmega32 in C	<i>Chap 13, 14</i>
12/12	(Wednesday) Final exam 8:00-9:55 AM	<i>EVERYTHING!</i>

Accreditation Outcomes addressed by this class: (Students should demonstrate . . .)

- an ability to apply knowledge of mathematics and science to engineering
- an ability to design and conduct experiments, as well as to analyze and interpret data
- an ability to design a system, component, or process to meet desired needs
- an ability to identify, formulate, and solve engineering problems
- an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice

It is the policy and practice of the University of Minnesota Duluth to create inclusive learning environments for all students, including students with disabilities. If there are aspects of this course that result in barriers to your inclusion or your ability to meet course requirements – such as time limited exams, inaccessible web content, or the use of non-captioned videos – please notify the instructor as soon as possible. You are also encouraged to contact the Office of Disability Resources to discuss and arrange reasonable accommodations. Please call 218-726-6130 or visit the DR website at <https://umd-general.umn.edu/disability-resources> for more information.

Prepared by _____ August 21, 2018
Christopher R. Carroll