

CEG 4330/6330 - Microprocessor-Based Embedded Systems

Fall 2024

Lecture:	Room: Russ 346	Time: MWF 2:30 pm - 3:25 pm
Lab:	Room: Russ 347	Time: M 4:40 pm - 6:30 pm
Instructor:	Max Gilson	Contact: max.gilson@wright.edu
Office Hours:	Room: Russ 336	Time: MW 11:10 am - 12:10 pm MW 1:20 pm - 2:20 pm
Lab TA:	Nathan Roberts	Contact: roberts.458@wright.edu

Course description:

Introduction to small, special-purpose microprocessor systems. Topics include hardware design issues, software design and implementation, and real-time operating systems.

Prerequisites:

Undergraduate level CEG 3320 Minimum Grade of D or (Undergraduate level EE 2000 Minimum Grade of D and (Undergraduate level CEG 2170 Minimum Grade of D or Undergraduate level CS 1160 Minimum Grade of D or Undergraduate level CS 1180 Minimum Grade of D))

Software:

Arduino IDE (<https://www.arduino.cc/en/software>)

Pilot/campus email:

<http://pilot.wright.edu> Pilot will be used in this course for submitting labs and projects and for accessing course materials and grades. It is the student's responsibility to check the Pilot site, as well as his/her WSU email, for course announcements, updates to project requirements, etc.

Schedule*:

Week(s)	Topic(s)
1	Introduction and Lab Introduction
2	Registers
3	Registers
4	Interrupts
5	Analog to Digital Converter
6	Analog to Digital Converter
7	Input and Output Ports
8	Microprocessor Based Systems
9	Low Power Design
10	ADC Interface
11	Noise Considerations
12	Real Time Operating Systems
13	Real Time Operating Systems
14	Sensors
15	Memory

*Schedule is subject to change at any time

Grading:

Quizzes (best 10 of 12):	10%
Midterm	25%
Lab Assignments:	30%
Final exam:	35%

All exams are open book, open note, and open internet. Exams shall be completed individually. Students who get outside assistance from others during exams will receive a 0 for the exam. No makeup exams are given unless there is a verifiable emergency.

The grading scale for the course is [90-100] A; [80-90) B; [70-80) C; [60-70) D; [0-60) F.

Lab Policy:

Attendance and participation is required in lab sessions. This attendance can be done in person or remotely on Webex. If you attend and participate in the lab and still have questions outside of the lab, the TA and I would be glad to assist you. If you have completed the lab in full and submitted it to the dropbox, you do not have to attend lab sessions for that specific lab.

Specific due dates are given in the Dropbox section of Pilot.

All labs and projects must be submitted via the Dropbox on Pilot. Be sure you upload the files and then click submit. If you do not receive an email confirmation, then your work was not properly submitted. Be sure to allow enough time to submit your work before the Dropbox closes. Personal computer issues/loss of data/not allowing enough upload time are not valid justifications to merit an extension of the deadline.

Late Policy for Labs:

Late work will be penalized 10% per day late for up to 7 days after the assignment was due. Late work will not be accepted beyond 7 days after the due date.

Students with disabilities:

Any student with a disability must register with the Office of Disability Services to determine what accommodations, if any, are appropriate. The student must inform the instructor of the special accommodations needed as soon as possible.

Technology Requirements:

This course requires you to have access to a computer and the internet. If you do not own or have access to any of these items, please see the "Remote Support Information" options through CaTS and contact them for assistance here: wright.edu/it. In the event CaTS does not have support options for any of the listed items above after contacting them, please contact me via email as soon as possible.

Academic misconduct:

All assignments are to be completed individually. Sharing your work or copying someone else's work, including using AI generated work, will result in a 0 for the assignment(s) and a formal Academic Integrity Violation will be submitted. The university policy on academic misconduct can be found at:

<https://policy.wright.edu/policy/3710-academic-integrity-standards-and-process-misconduct>