

Carnegie Mellon University

95-733 Internet of Things

Syllabus

Instructor

Name: Michael J. McCarthy

Email: mm6@andrew.cmu.edu

Office: Hamburg Hall 3015

Phone: 412-268-4657 (Office)

Officer Hours: Tuesday and Thursday 2:00 PM - 4:00 PM

Teaching Assistant

Name: TBA

Email: TBA

Office Hours: See Canvas

Communication

We will use Piazza rather than email for most of our course related communications.

Prerequisite

The ability to program is the main prerequisite. The student may be asked to learn and work with programming languages he or she has not been exposed to. A certain level of programming maturity is required. If you are unsure about your ability, speak with your instructor.

Assignments

There will be three programming projects equally weighted (40%).

There will be four or five quizzes on the readings at the start of lecture with the low score dropped (15%).

There will be a closed Book Final Exam based on readings, lectures, and programming (45%).

The Final Exam is scheduled on Thursday, October 10, 5:00-6:20 PM Room: HBH 1005

Late Assignment Policy

You have 7 grace days to spend. This policy is meant to cover such issues as job interviews, travel and so on. After the seven days are spent, there is a late penalty of 10% per day.

If you elect to use the late days at the end of the course, alert your instructor before your final exam. An "I" grade will be submitted and changed to a normal grade when the work is complete.

Policy on collaboration

You may work with other students when doing your projects. You may also use such tools as Stack Overflow and large language models. It is required that you cite the source of any code that you do not write yourself.

Note that if you get help from a colleague or use a large language model, be sure to master the material and truly understand the code. You will not have access to a large language model or colleagues on the exam.

Note that LLMs often make mistakes. You are responsible for any errors or problems that may be present in the code that you submit. The closed book exam is designed to test your knowledge and coding skills.

Be sure to note that you must follow the academic integrity guidelines of the university. If you use a generative AI tool to develop content for an assignment, you are required to cite the tool's contribution to your work, just as you should cite code acquired from any other source.

Policy on grading complaints

Grading mistakes may occur. Please email the TA who graded your assignment about grading mistakes. It will be up to the TA to handle the complaint. If you are still not satisfied with the TA's grade please contact me immediately. My initial reaction will be to support the TA's grade. In some cases, however, I might agree with the student and ask for the grade to be adjusted. Please make any grading concerns known to the TA immediately. Communicate with the TA and get the matter resolved as soon as possible.

Use of Canvas

There will be a Canvas site for the course. Grades will be posted there and assignments will be submitted there. We will also make good use of the discussion board on Piazza. It is far better to post a question to the discussion board than it is to send your instructor or TA an email. Answers posted there are available for all to see. The main site for the course (syllabus, course description and schedule) is this page on GitHub.

FERPA Statement

Some classes may be recorded via Zoom so that students in this course (and only students in this course) can watch or re-watch past sessions. These recordings will be available on Canvas. Please

note that you are not allowed to share these recordings. This is to protect your FERPA rights and those of your fellow students.

Software Requirements

You will need to install Node.js, Express (a web framework for Node.js), and Node-RED. Directions will be provided on the first project.

Hardware Requirements

The student needs to have access to a Particle Photon 2 and the Edge ML Kit for Photon 2. [Available here.](<https://store.particle.io/products/edge-ai-kit-for-photon-2>) These will be provided to you in class for free.

If you are not able to get access to a Photon 2, directions will be provided to simulate the device.

Delivery Mode:

In Person Expectation

Time and Place

Fall 2024 Mini 1

Tuesday, Thursday 5:00 PM - 6:20 PM HBH Room 1005

Grading Scale

97.5 - 100 A+

92.5 - 97.4 A

90.0 - 92.4 A-

87.5 - 89.9 B+

82.5 - 87.4 B

80.0 - 82.4 B-

77.5 - 79.9 C+

72.5 - 77.4 C

70.0 - 72.4 C-

Recommended Text/Resources

+ We will be using Node for web sites:[Visit Node](<https://nodejs.org/en/about/>)

+ We will be using Node-RED to build flows:[Visit Node-RED](<https://nodered.org/>)

+ Building the Web of Things By Guinard and Trifa is [available here](<https://webofthings.org/>). For CMU students, a free online copy is available. Click on the O'Reilly for [Education link](<https://www.oreilly.com/library/view/building-the-web/9781617292682/?ar>). You want to select View Online option.You'll get a "Select your institution" dropdown menu prompt. Select the "Not listed? Click here" option in that dropdown. Enter your Andrew email address and click "Let's Go." You'll then get full text access to the book through the platform.

Optional Text

+ Programming the World Wide Web, Eighth Edition by Robert W. Sebesta, University of Colorado, Colorado Springs, ISBN: 978-0-13-377598-3, Publisher: Addison-Wesley[Available here.](https://www.amazon.com/Programming-World-Wide-Web-8th/dp/0133775984/ref=pd_sbs_1/145-4982105-1913726?pd_rd_w=w8kNt&pf_rd_p=f8e24c42-8be0-4374-84aa-bb08fd897453&pf_rd_r=24P162J7ZQRTFD1M9DWZ&pd_rd_r=9dcd81de-a3c1-4517-b29e-27c0cb48789a&pd_rd_wg=4FhZj&pd_rd_i=0133775984&psc=1)

Good health:

Take care of yourself. Do your best to maintain a healthy lifestyle this semester by eating well, exercising, avoiding drugs and alcohol, getting enough sleep and taking some time to relax. This will help you achieve your goals and cope with stress.

All of us benefit from support during times of struggle. You are not alone. There are many helpful resources available on campus and an important part of the college experience is learning how to ask for help. Asking for support sooner rather than later is often helpful.

If you or anyone you know experiences any academic stress, difficult life events, or feelings like anxiety or depression, we strongly encourage you to seek support. Counseling and Psychological Services (CaPS) is here to help: call 412-268-2922 and visit their website here. Consider reaching out to a friend, faculty or family member you trust for help getting connected to the support that can help.

If you or someone you know is feeling suicidal or in danger of self-harm, call someone immediately, day or night:

CMU CaPS: 412-268-2922

Re:solve Crisis Network in Pittsburgh: 888-796-8226

If the situation is life threatening, call the police:

On campus: CMU Police: 412-268-2323

Off campus in Pittsburgh: 911

