CS 240: Computer Organization — Fall 2025 — Syllabus

Professor: Darren Strash
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Drop-In Hours: M 4pm–5pm, T 10am–12pm, W 10am–11am
Location: Taylor Science Center 3040
Lecture Time: MWF 2:30–3:20pm
Course Resources:

- **GitHub:** Project starter code available through `https://classroom.github.com`
- **Gradescope:** Assignment submission and feedback: `https://gradescope.com`
- **Blackboard:** Course grade: `https://blackboard.hamilton.edu`

Course Textbooks:

- *Game Boy Coding Adventure*, Maximilien Dagois.
  In this class, we will touch on copyright and pirating issues, and so I am requiring everyone to purchase a copy of the book.

  If you are unable to afford a copy, or are otherwise unable to purchase the book, please get in touch with me via email, the department will purchase it for you.
- *Other Sources.* I will potentially draw from *many* sources, including textbooks and online resources. If supplementary reading is essential to understanding, it will be posted on the course EdStem page.

Copyright and Piracy. Because of the nature of this course, copyright violations and piracy aren't tolerated. Any student found engaging in piracy and/or copyright violations, specifically connected this course's content (for example, by pirating and/or illegally downloading games) is at risk of receiving an F in the course.

Catalogue description

A study of the connection between high-level programs and the machines on which they run by means of extensive programming experience using assembly language. Topics will include translation of high-level language idioms into assembly language, number systems and representation schemes, exceptions, interrupts, polling, and an introduction to the structure of the underlying hardware. In the final project, students develop an assembler. Prerequisites, 102 or 111 or 112 or senior standing and permission of instructor.

Communication

All communication for this course (including course materials) happens through the course EdStem page. It is the student's responsibility to check EdStem and email for updates and communication from the professor. Students are encouraged to ask and answer each other's questions, following the guidelines under **Collaboration**. The professor generally responds in the hours of 8am–5pm on weekdays, and within 24 hours, but often much sooner. Any personal communication, or communication for which privacy is desired, should be done via email or in one-on-one meetings with the professor.

Active Participation and Collaborative Learning

The classroom should be a vibrant atmosphere that is safe and conducive to learning. One my goals for this course to create an atmosphere of acceptance that encourages everyone to openly ask and answer questions. Making this a reality requires everyone's persistent and diligent participation. You must be *present* and *ready* for discussions, *tolerant* and *respectful* of others, and the classroom must be free of distractions. *Every*

student will be called on to participate at some point during the course. It is therefore important to be ready to discuss the day's topic.

Lectures will be dynamic, interactive, and will include a mix of board work, work in groups, slides, live coding, and Q&A.

Actively and *judiciously* reading the material (by weaving together repeated reading, practice, annotating, and thoroughly questioning your understanding) is highly recommended.

Come to class prepared to actively discuss the reading, ask questions, apply principles to new problems, and to exercise your creative problem solving skills. Active and enthusiastic participation in discussions is *highly* encouraged.

Attendance

Attending regularly and arriving on time is critical to learning – both yours and others in the class. Let x represent the number of unexcused absences, and y represent the number of unexcused late arrivals. Any student, with:

$$x + 0.5y > 3$$

will lose 5% of their grade.

Worlds

Coding projects (which we'll call *Worlds*) are generally given on a weekly basis, and are written in assembly code. Starter code is given through GitHub Classroom and all problem sets are submitted through Gradescope.

Emulator

As a special project, students will write a Game Boy emulator. Parts of this code will be written together in class.

Quizzes and Final Exam

There will be bi-weekly quizzes on Mondays. Quizzes consist of "pencil and paper" problems written by hand. No resources are allowed on quizzes. We will have a final exam.

Extensions and grade changes.

If you need an extension due to extenuating circumstances, reach out via a email at any time for an extension without penalty. As long as you reach out before the due date, you receive an automatic 24 hour extension, even if I haven't replied yet. Undue stress (including high workloads, such as two 2 big projects/assignments/exams in a week) counts as an extenuating circumstance.

If you want to request a grade change, you must do so within a week of the grade being released to you, in writing on Gradescope.

Collaboration

With humans. Collaboration with other students (i.e., humans) in the class on assignments is highly encouraged, but within very specific parameters. You are allowed to work a in pair (no more). If you work with someone, you must write all of your code together in each other's physical presence (i.e., Pair programming). You must submit your combined solution on Gradescope as one submission. Each team

member should note their contribution and describe the workload distribution. Individuals are given an assignment grade based on the work submitted and that individual's contribution. Everyone must be able to explain the entire work.

You may also discuss strategies and ideas with other students in the class, for example by brainstorming on a whiteboard, and briefly showing each other short snippets of code for guidance (but without allowing copying of code). You must acknowledge these collaborators if you get significant[1] help from anyone, you should cite them, and be specific about the scope of that help. (See Citations, below, for how to properly cite your sources.)

Take care not to plagiarize. You should never simply take code from someone else and include it in yours. If you find yourself doing so, and then disguising the fact by changing variable names and so on, then you are absolutely violating the honor code by plagiarizing.

In addition to prohibiting the sharing any amount of code and/or written solutions directly with someone, the honor code prohibits receiving such materials from someone, typing code into someone else's editor, and having someone type into yours. In all of these cases, either you are not properly wrestling with the content of the course, or you are doing someone else's work for them. The students on either end of this transaction are equally culpable.

You are not allowed to consult with any humans outside of class, other than departmental TAs, unless you have the instructor's explicit permission.

Citing others is honorable and will have no effect on your assessment. Plagiarism, however, is not excused by citations.

Online Sources. It is acceptable to seek clarification on class topics by searching online. However, searching for solutions to a problem, or any part of a problem is not allowed. If you seek help from an online source, then you need to cite that source. All of the plagiarism problems described above pertain to online sources. If you find yourself searching for a solution (either written or in code) from on online source, then you are breaking the honor code. It's possible you may innocently see a part of a solution without searching for one. **If you see any part of a solution online, you must notify the professor, otherwise you are breaking the honor code.** There is no penalty for saying you saw the solution. You will receive a new problem to work on. If you copy any part of this solution, or even use it for inspiration, then you are plagiarizing, even if you cite the source.

AI Agents. Unless otherwise specified on an assignment, the use of AI agents (such as large language models, like ChatGPT, or coding assistants such as Copilot or Ghostwriter) is forbidden in this class. It is not a citable resource and its answers are not always reliable. If for some reason you see a solution or part of one in this setting, treat it the same as if you had seen the solution in an online resource: tell the professor without penalty.

On Exams and Quizzes. Exams and Quizzes must be taken without help from anyone.

If you are unsure if a form or degree of collaboration is allowed by this Collaboration section, ask for clarification before engaging in the collaboration.

Citations

On written assignments, list the names of your collaborators together with a brief explanation of the help they provided.

On code, any collaboration must be listed and cited according to the following guidelines.

All collaborators who are not a teammate must be listed with the **@collaborators** tag in your file header comment. An example follows here:

[1]By significant, we mean the kind of help that is deeper than a simple syntax correction. If someone reminds you (for example) that you are missing a semicolon, or that you forgot to declare a data type, then you do not have to cite. But if someone assists you with your overall code design, or helps you navigate a logical error, then that is significant help. By analogy, imagine asking someone if you should use *affect* or *effect* in a sentence, and they explain. You wouldn't cite them for that bit of help. But if that person proofread your paper? Of course you would.

```
; CS-240 World 1: Calculates the answer to life, the universe,
;                  and everything
; @file thanks_for_all_the_fish.rgbasm
; @author Ford Prefect
; @collaborators Arthur Dent
; @date May 42, 4242
```

Any lines of code for which a (non-teammate) collaborator's significant help was given must be accompanied by a citation comment on the preceding lines. You must specifically list your collaborator(s)'s name(s), and describe what help was given. The citation must be formatted with the keywords "CITE" and "DESC" follows:

```
; CITE: collaborator name(s)
; DESC: description of collaboration
```

Examples of proper citations:

```
; CITE: Taranga Leela
; DESC: Verbally coached me to use the ld instruction for this computation
ld a, 2
```

```
; CITE: https://www.asknumbers.com/furlongs-to-fathoms.aspx
; DESC: Used this tool to learn conversion from furlongs to fathoms
ld a, 110
...
```

Quizzes and the final exam

Quizzes are handwritten. You will not be allowed to use any resources during quizzes. For the final exam, you will be able to use a cheatsheet. You will not be allowed to use any textbooks, digital materials, materials written by someone else, or online sources.

Grade Calculation

Grading will take place on the standard scale. Let x be your percentage in the class. Your letter grade is assigned as follows:

Letter Grade	**Percentage**
A	$93 \leq x$
A-	$90 \leq x < 93$
B+	$87 \leq x < 90$
B	$83 \leq x < 87$
B-	$80 \leq x < 83$
C+	$77 \leq x < 80$
C	$73 \leq x < 77$
C-	$70 \leq x < 73$
D+	$67 \leq x < 70$
D	$63 \leq x < 67$
D-	$60 \leq x < 63$
F	$0 \leq x < 60$

The grade breakdown will be as follows:

Category	Percentage
Readings	10%
Worlds	50%
Emulator	20%
Quizzes	10%
Final Exam	10%

Important Dates

Day	Date	Event
Thu	Sep 4	Course add deadline (2pm)
Fri	Oct 3	Deadline for credit/no credit option (3pm)
Fri	Oct 3	Last day to drop without penalty (3pm)
Fri	Oct 17	Fall recess
Mon–Fri	Nov 24–28	No class (Thanksgiving break)
Thu	Dec 18	Final Exam (7–10pm)

Intangibles

You might hope to become a teaching assistant for our department, and you might ask us for a letter of recommendation in the future. With regard to such things, you should consider:

- Participating in lectures by asking and answering questions
- Collaborating helpfully with your peers
- Diligently citing your sources, including your peers

How to Succeed in this Class

There are several ingredients for succeeding in this class.

1. Come to class prepared to discuss the material for that day's lecture. Being prepared means: actively read the material by investigating the concepts on your own—practice implementing and running code, seek answers in other texts, on Wikipedia, StackExchange, and discuss with classmates. Concepts can then be strengthened and expanded in lecture.

2. For every hour in class, you are expected to spend 2–4 hours outside of class on reading, working on assignments, and studying for exams. Be sure this time is productive—seek advice if you find yourself 'spinning your wheels'.

3. Invest a small amount of time *immediately after* a project is assigned to make sure you understand it and don't have major questions. Then break down the assignment into manageable pieces and work on them consistently. If you wait until the last minute, seemingly insurmountable problems will undoubtedly arise, and by then it's too late to get assistance.

4. Come frequently to drop-in hours.

5. Ask well-informed questions. Questions such as "I don't understand X; can you explain X to me?" are not well-informed, and will almost certainly not get you the answer you are looking for. Instead, ask questions that reveal your current knowledge of the topic, similar to the following: "I understand how Y works, and I see that X is different from Y in way Z. What is it about X that causes this difference?" Answers to these questions will be much more informative.

Seeking Help

Accommodations. If you believe you may need accommodation for a disability, contact your professor privately within the first two weeks of the semester to discuss your specific needs. If you have not already done so, please contact Allen Harrison, Assistant Dean of Students for International Students and Accessibility at 315-859-4021, or via email at aharriso@hamilton.edu. He is responsible for determining reasonable and appropriate accommodations for students with disabilities on a case-by-case basis.

Extenuating circumstances. Some circumstances are beyond our control. If you find yourself in a situation—such as illness, a death in the family, or a mental health crisis—please contact your professor as soon as possible to discuss your options.

Mental Health and Wellness. If you are feeling isolated, depressed, sad, anxious, angry, or overwhelmed, you aren't alone: we all struggle sometimes, especially with the added isolation from the pandemic. Don't stay silent! Talk to a trusted confidant: a friend, a family member, a professor you trust. The counseling center offers completely confidential and highly professional services, and can be contacted at 315-859-4340. If this seems like a difficult step, contact me. We can talk and call or walk to the counseling center together.

Here are some ways to maintain mental wellness:

- Be open and honest about your needs with safe people
- Practice mindfulness and meditation
- Plan mini-breaks into your schedule
- Get regular vigorous exercise
- Eat meals on a schedule (hunger increases anxiety)
- Get enough sleep ("enough" is different for everyone)
- Do something you love: engage in a hobby, play (video) games, binge Netflix (with someone?!), listen to music
- Avoid social media first thing in the morning (FOMO is real) and avoid doom scrolling
- Combat the winter blues (SAD syndrome) with vitamin D and/or a light box