CSCI 350- Digital Logic and Computer Organization Syllabus Companion (Spring 2026)

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1 Logistics

This document is a companion to the course syllabi. I have prepared this with LaTeX to make the document easier to navigate.

1.1 Instructional Staff

Instructor: Michael Levet (He/Him/His); lastnamefirstinitial (at) cofc (dot) edu.

I will attempt to provide a Zoom (hybrid) option for remote synchronous participation. Note that this class is not officially listed as hybrid, and so any Zoom option is provided as-is and without liability. In particular, students who do participate remotely or rely on the recordings are solely responsible for keeping up with the material, in the event that Zoom is unavailable on a given day (e.g., due to technology issues).

1.2 Key Dates

Last Day to Drop Before Grade of 'W' Is Recorded: January 13.
Last Day to Drop Before with Grade of 'W': March 20.
Breaks: January 19 (Martin Luther King Jr. Day), March 1-8 (Spring Break).
Final Exam:

- April 28 (10:30 AM - 12:30 PM): For Section 02 (the 11:20 section).
- April 29 (10:30 AM – 12:30 PM): For Section 01 (the 9:55 section).
- Please plan for in-person finals. Make your travel plans accordingly.

1.3 Course Website

All announcements will be posted to the course website: `https://michaellevet.github.io/S26/CSCI350/index.html`. Students are responsible for checking the course website daily. Assignments and other course materials will be posted to OAKS.

1.4 Lecture

Lectures:

- Section 01: TR, 9:55-11:10 (HWEA 300)
- Section 02: TR, 11:20-12:35 (HWEA 300)

1.5 Office Hours

Office hours will be on Zoom. The Zoom link and days/times for office hours will be posted to my course homepage. Your success is my top priority– if any of these times don't work, please do not hesitate to email me to schedule an appointment! **If you have COVID or another contagious illness, please do not attend my office hours in-person. I will be happy to facilitate remote participation.**

2 Course Description

2.1 Prerequisites

- CSCI 250 Computer Organization (Grade of C- or Better).
- Math 307 (prerequisite or corequisite)

2.2 Workload

CSCI 350 is a 3-credit course. Well-prepared students should expect to spend on average 9-12 hours/week outside of class. Students who have significant gaps in their backgrounds may find that they need to carve out additional time to review the prerequisite material.

2.3 Official Course Description

A course designed to introduce the student to the basic principles of digital-logic design. Topics covered will include Boolean algebra and gate networks, flip-flops and logic design, the arithmetic-logic unit, memory units, input-output devices and interfacing, control units, and digital circuits. Lectures three hours per week.

2.4 Learning Objectives

There are several key learning objectives for this course.

- Understand the relationship between logic circuits, Boolean functions, Boolean expressions, truth tables.
- Use Boolean algebra and Karnaugh maps to simplify Boolean expressions
- Know how to analyze simple combinational circuits by giving a truth table or Boolean function for it.
- Use basic MSI components such as adders, decoders, multiplexers in more complex circuits.
- Design sequential circuits using state diagrams – state tables – and flip-flops.
- Analyze sequential circuits by constructing state diagram/state tables.
- Use lower level memory units to build higher-level units.
- Know the different properties of memory, especially the difference between static and dynamic memory.
- Understand the basic principles behind the design of synchronous and asynchronous buses and develop timing diagrams for synchronous and asynchronous read/write operations.
- Design a microprogrammed control unit and a hard-wired control unit for an instruction set of a hypothetical cpu and be able to implement instructions as sequences of register transfers with respect to
- Understand the basic principles of cache memory organization, including multi-level caches, line replacement policies and cache-write policies.
- Know how to map memory addresses to direct, associative, and set-associative cache schemes.
- Understand pipelining as a way to improve processor speed and see it applied in the hypothetical cpu.

2.5 Course Text

I will not follow any course textbook particularly closely. Your primary reference will be the handwritten notes from class. Supplemental texts that might be helpful include:

- Introduction to Logic Design by Alan Marcovitz.
- Models of Computation (Ch. 2-3) by John Savage. This is freely available from the author: https://cs.brown.edu/

  Note that Savage's text provides a theoretical (mathematical) treatment of much (but not all) of the material.

3 Course Structure and Grading

3.1 Grading Scheme

There will be regular Homework, quizzes, and exams. The quizzes and exams will be "chunked" into units (more on this shortly). So you will have Unit 1 Quiz Average, Unit 2 Quiz Average, and Unit 3 Quiz Average. The breakdown will be:

- **Homework:** 10%. Each HW assignment will count equally.
- **Highest Unit Quiz Average:** 40%
- **Second Highest Unit Quiz Average:** 30%
- **Third Highest Unit Quiz Average:** 20%

3.2 Written Homework

Homework will be assigned regularly, with clearly posted deadlines. You are responsible for being aware of both the dates and times for these deadlines. Late homework will not be accepted, unless prior arrangements are made or in emergency situations. Please discuss with the instructor as soon as possible if you have a situation that may warrant an extension. Please submit your homework via OAKS. **Note that OAKS is the final arbiter as to whether your submission was received on time.** Please plan accordingly.

- There will be a regular written homework. The written homework must be **typed** using LaTeX. Diagrams (e.g., graphs, trees) may be hand-drawn and embedded in the LaTeXdocument as an image and **oriented so that we do not have to rotate our screens to grade your work.** Note that **mathematical equations must be typed.** Please note that **handwritten solutions or those prepared without LaTeXwill not be graded.** Similarly, **if we have to rotate our screens to grade your work, then your work will not be graded.**

- Students who make, in the instructor's judgement, a good faith effort on $\geq 70\%$ of the problems will receive full credit. Note that you do not need to get the problems correct to receive credit!

  Each problem will receive a "score" and feedback, to provide a clear sense of your progress. These "scores" do not count towards your grade. That is, feedback and grades for homework will be decoupled.

  Note that 70% of the problems might not always be an integer. This result will be ceiled (rounded up to the nearest integer). As an example, if there are 5 problems, $0.7 * 5 = 3.5$. In this case, students would be expected to attempt 4 problems.

- The first question on every homework will be an honor code agreement. Failure to indicate that you have upheld the honor code will result in your assignment not being graded.

- You are welcome to discuss the problems with your classmates, as well as reference outside resources. **Anything you submit must be in your own words and reflect your understanding of the material. You should be able to explain your solutions to the instructor, such as in an interview grading session.** If there are any questions about this, it is your responsibility to contact the instructor reasonably ahead of the submission deadline. **Looking up solutions or copying from other sources (including your classmates or generative AI) is an honor code violation.** You must **cite** any resource (other than the course text or instructor) that you use. This includes any classmates with whom you collaborate. Failure to cite your sources will be treated as an **honor code violation.** See Section 3.6.

- Posting to online forums for help (e.g., Chegg, Reddit, StackExchange, etc.) is an **honor code violation.** See Section 3.6.

- Using generative AI (including, but not limited to ChatGPT) and regurgitating a solution it produces is an **honor code violation**. Again, anything you produce must be in your own words and reflect your understanding of the material.

- Individual assignments may have additional instructions beyond the syllabus. Students are responsible for adhering to those instructions.

3.3 Quizzes

There will be regular quizzes throughout the semester. These will be given in-person. In general, quizzes will be announced clearly in advance, though I reserve the right to give pop quizzes. Unless otherwise stated, quizzes and exams will be open-book, open-note, and in-person. Electronic devices will be strictly prohibited.

- Quizzes will be timed at 20 minutes, scaled for students with disability accommodations.

- There will also be two midterms (dates TBD) and a final exam. Each question on an exam will count the same as a quiz.

- Each quiz question will be scored using the following scale.

  (a) Outstanding

  (b) Proficiency

(c) Progress

(d) Attempted

(e) No Attempt

- In order to earn credit for a quiz, it is sufficient and necessary to score an Outstanding or Proficiency.
- Your Unit Quiz Average will be calculated using all of the quizzes and the exam for a given unit. So for instance, your Unit 2 Quiz Average will include all of the quizzes covering content post-Midterm 1, through and including Midterm 2.
- Your Unit Quiz Average will be the higher (more favorable) of the two schemes:
  - Scheme 1 (Average from Quizzes): (#Proficiency + #Outstanding) / (0.9∗ #Non-Exam Quizzes + #Exam Problems).
  - Scheme 2 (Exam Score): (#Proficiency + #Outstanding + 0.4∗ #Progress) / (#Exam Problems).

  In other words, if your Exam Score is better than your Average from Quizzes, then poor performance on the quizzes will not be factored into your grade!

  Do note that the grading scheme incentivizes learning the material thoroughly and fixing your mistakes, rather than trying to accrue or game for partial credit.
- Please note that Scheme 1 only considers 90% of your Non-Exam Quizzes. This is to allow for flexibility with occasional absences. For this reason, makeups will not be available for quizzes, except in extenuating circumstances (see the next paragraph).
- If you need to miss an extended amount of class, that will result in missing multiple quizzes, for reasons that are unavoidable (e.g. COVID quarantine or other prolonged emergency situations), you must contact me to discuss as soon as you are able and at least 24 hours in advance, where possible. I reserve the right to make the final determination as to what constitutes an emergency, as well as how to handle the situation (e.g., make-ups, dropping additional quizzes, etc.).
- Exams will only be rescheduled in extenuating circumstances, religious observations, major life events (e.g., interviews, grad school visits), or participation in sanctioned university events (e.g., athletics, research presentations). You must contact me to discuss as soon as you are able and at least 24 hours in advance, where possible. I reserve the right to make the final determination as to what constitutes an emergency, as well as how to handle the situation (e.g., rescheduling the exam, letting the final exam count in place of the midterm, etc.).
- There will be a Syllabus Quiz. It will count towards your Unit 1 Quiz Average. However, in order to earn a C or higher in the course, it is necessary to satisfactorily complete the Syllabus Quiz.

3.4 Cutoffs

Grades will be awarded according to the following cutoffs. Any rounding is at my discretion. If there are any grade bumps or a curve at the end of the semester, students who violate the Honor Code will not be eligible.

	Weighted Average
A	90%
A-	88%
B+	86%
B	83%
B-	80%
C+	78%
C	76%
C-	70%
D+	65%
D	60%
D-	50%
F	$< 50\%$

3.5 Regrade Requests

Students have 7 days (including weekends) from when a grade was returned to request a regrade. I am happy to fix mistakes in grading. Other regrade requests will not be considered. When you submit a regrade, please clearly indicate the error made in grading. All regrade requests must be submitted using the Google form on the course homepage.

3.6 Honor Code

I expect students are familiar with policies pertaining to academic integrity, outlined in the Student Handbook. Much of what you will learn about mathematics and theoretical computer science will come from your discussions with your peers. You are welcome and encouraged to discuss the homework problems with each other and with me. It is expected that you work the problems by yourself first, so that you can contribute to the discussion. This policy will be changed, reluctantly, if I find it is being abused. **Your submissions must be written in your own words and reflect your understanding of the material.** Note that you are responsible for citing any resource (including other people) that are not members of the course staff, the course lecture notes, or the lectures. Posting to online forums for help (e.g., Chegg, Reddit, StackExchange, etc.) is an **honor code violation.** Regurgitating solutions from generative AI (including, but not limited to ChatGPT) is an honor code violation. If there are any questions regarding this policy, please ask the instructor.

Any acts of suspected academic dishonesty will be reported to the Office of the Dean of Students and addressed through the conduct process. I reserve the right to impose grade penalties up to, and including, an F in the course.

The Office of the Dean of Students may choose to award an XXF for the course, which carries the same weight as an F. The XX modifier denotes that the grade was received for academic integrity violations. Please do not cheat. It is not worth it.

4 Course Policies

4.1 Office Hours: Norms and Expectations

There will be a mix of in-person and online office hours (see the course homepage for the Zoom link). The purpose of office hours is to supplement lecture and the associated readings. In order to get the most out of office hours, we recommend the following.

- Attend the lectures and read through the lecture notes. In particular, work through the provided examples. These materials are there to help you! **If you are out, such as with an illness, I will be happy to accommodate remote participation.**
- Spend some time working the problems first. Try to identify specific approaches you have made, as well as identify where you are stuck. If you are spending more than 30 minutes on a single problem without making much progress, then I strongly encourage you to seek help in office hours!
- If you wish to discuss specific work, please have it typed up so that you can share your screen on Zoom. It is very hard to help you if your work is on paper and you are holding it up to the camera.
- My goal is to provide hints about homework problems, as well as help students obtain momentum to keep working. In particular, I aim to help students arrive at the solutions on their own. It is completely normal to need time to digest a hint, and then come back to office hours with more questions! Learning CS Theory and Math is an iterative process– we encourage students to iterate!
- Please note that I will neither provide entire solutions in office hours nor grade work ahead of the due date.

Office Hours vs. Email: I am generally happy to discuss course logistics via email (e.g., scheduling appointments, etc.). However, email is usually not a conducive medium for tutoring. If you email me with a question about the homework (and you are certainly welcome to do so), I reserve the right to ask you to come to office hours with your question. Note that this does associate some risk with procrastination, in that you may not

get your question answered until after the assignment due date (or after the quiz/exam). Similarly, if you email me late at night, I may not see your email until after the assignment is due. Please plan accordingly.

4.2 Late Work

Late work will **not** be accepted, unless prior arrangements have been made or in case of emergency situations. Extensions can be requested using the Google form on the course homepage. I recognize that you all will frequently have competing deadlines, including for your other classes as well as personal obligations. There is not always time to meet all of one's deadlines. The way to handle these situations is to communicate reasonably in advance. For non-emergency situations, please request an extension at least 24 hours in advance. In general, I encourage you to ask for what you need. While I will in general try to be flexible for short-term extensions, do note that that requesting an extension does not guarantee that you will receive one.

In the event of an emergency situation which prohibits you from turning in work before the deadline, I may choose to offer alternative flexibility instead of accepting late work.

For long-term emergencies, please talk to me.

Note that missing the homework or quiz deadlines by a couple minutes is not a valid reason for late work to be accepted. Due dates and times will be clearly posted. Please plan accordingly.

4.3 Late Enrollments

Students who enroll in the course after the first day of class are subject to the same deadlines as the rest of the class.

4.4 Attendance

Attendance is not required and will only be taken during the first two weeks, for the purpose of attendance verification as required by CofC. Students who have not engaged with class by attending, completing assignments, or emailing me may be reported as having "never attended." If you are sick, please stay home– let me know if this is in the first two weeks, so that you do not get dropped. In particular, if you have COVID, please quarantine until such time as you are not contagious. I will be happy to facilitate remote participation in these instances. In the event that any member of the class (myself included) contracts COVID, I reserve the right to move the entire class online. For in-person assignments, I reserve the right to provide make-ups, utilize (portions of) an exam, or handle the situation in another way that is in my judgment appropriate. Please contact me within 48 hours– or sooner if at all possible– if you anticipate missing an in-person assignments.

Note that ≥ 0 class sessions will be recorded via both voice and video recording. By attending and remaining in this class, the student consents to being recorded. Recorded class sessions are for instructional use only and may not be shared with anyone who is not enrolled in the class.

4.5 Modifications to the Syllabus

The instructor reserves the right to modify any of the policies in the syllabus at any time, particularly as dictated by the interests of learning and fairness. Students will not be graded any harsher than as outlined in Section 3.

4.6 Student Feedback

Student feedback regarding this course is welcome at any time. Those who wish to leave feedback anonymously are welcome to do so using the Google form on the course homepage. Students are also welcome to reach out to the instructor via email or in office hours to discuss their concerns.

5 Required Syllabus Statements

5.1 Religious Holidays

Campus policy regarding religious observances requires that faculty make every effort to deal reasonably and fairly with all students who, because of religious obligations, have conflicts with scheduled exams, assignments

or required attendance. In this class, please contact the instructor within the first two weeks to discuss any conflicts with religious events.

5.2 Students with Disabilities

The Center for Disability Services/SNAP is committed to assisting qualified students with disabilities achieve their academic goals by providing reasonable academic accommodations under appropriate circumstances. If you have a disability and anticipate the need for an accommodation in order to participate in this class, please connect with the Center for Disability Services/SNAP. They will assist you in getting the resources you may need to participate fully in this class. You can contact the Center for Disability Services/SNAP office at 843.953.1431 or at snap@cofc.edu. You can find additional information and request academic accommodations at the Center for Disability Services/SNAP website.

If you are not registered with SNAP and believe you may need a disability accommodation, please do not hesitate to contact me.

5.3 Inclement Weather, Pandemic or Substantial Interruption of Instruction

In the event of inclement weather, I will communicate a detailed plan for how class will proceed (if at all). Please prioritize your safety in these situations, including any need to evacuate. If there is a need to evacuate, I will also be prioritizing my own evacuation. The university has allocated make-up days on the weekends to be used if class is canceled for inclement weather. I will communicate in a timely manner for if/how these days will be used.

In the event of a surge in the ongoing COVID pandemic, I reserve the right to make adjustments to the structure of the class. In particular, if there exists at least one member of the class with COVID, I reserve the right to move the course online.