

COMP 2700 Discrete Structures – Fall 2024

Kriangsiri (“Top”) Malasri

Instructor Contact Information:

- kmalasri@memphis.edu - I will almost always respond within 24 hours
- I’m on the unofficial CS Discord server as **Slothington IV**. Discord invite link: <https://discord.gg/7brNMvuz76>
- Office: Dunn Hall 396
- Office Hours: No formal hours, but feel free to contact me to schedule an appointment! I also encourage you to ask questions in the **#comp-2700** channel on Discord, as that can be beneficial for other students. However, do *not* post full answers there! Ask about the specific parts that are giving you trouble.

Lecture Meeting Times/Locations:

Section	Meeting Times	Location	Graders (shared between both sections)
001	MW 1420-1615	Mitchell 325	Maria Kennedy, mkngsbry@memphis.edu
002	TR 1730-1925	Dunn 233	Sarawut Manthongkham, smnthngk@memphis.edu

Catalog Description:

COMP 2700 – Discrete Structures (4) Elementary logic, sets, relations, functions, equivalence relations, permutations, combinations, mathematical induction, recurrence relations, graph algorithms. NOTE: students may not receive credit for both COMP 2700 and MATH 2702. PREREQUISITE: MATH 1910 or MATH 1421 (or MATH 1830 for COMP minors), and COMP 1900.

Course Website:

Course materials and grades will be posted to the Canvas system at <https://memphis.instructure.com/>

Required Text:

Online text through zyBooks. A subscription costs \$64 and will last until December 26, 2024. Please sign up at <https://learn.zybooks.com> and use the registration code **MEMPHISCOMP2700MalasriFall2024**. Some notes:

- *You must register using your memphis.edu email address.*
- If you’re retaking the course or have otherwise subscribed to the zyBook previously, you may be eligible for a free or reduced-cost subscription. Please email support@zybooks.com to take advantage of this.
- If you are enrolled in the UofM Smart Start textbooks program, the bookstore should provide you with an access key that lets you view the book.
- If you don’t have the funds to get the book immediately, you can get a free temporary subscription: <https://support.zybooks.com/hc/en-us/articles/360007439574>

This course requires *solid algebra skills*. Some algebra concepts are reviewed in the zyBook and during lecture, but if you need more depth check out Khan Academy: <https://www.khanacademy.org/math>

Evaluation:

Lecture Attendance and Classwork	100 pts
zyBook Assignments	100 pts
Homework	235 pts
Programming Labs	75 pts
Quizzes	240 pts (3 @ 80 pts each)
Final Exam (Comprehensive)	300 pts

Your final percentage grade is determined by (your total points on all graded items) / 1000. Note that because there are 1050 maximum possible points, this gives you 50 points of built-in buffer in case your second cousin’s ex-wife’s brother-in-law has an event that forces you to miss an assignment, or a temporary zombie apocalypse happens to just your neighborhood, or whatever. *This also means I’ll be strict about enforcing assignment deadlines. Please don’t beg for late credit.*

Grading Scale: Letter grades will be determined from your total points as follows:

A+: 960+; **A:** 900-959; **A-:** 890-899
B+: 870-889; **B:** 800-869; **B-:** 790-799
C+: 770-789; **C:** 700-769; **C-:** 690-699
D+: 670-689; **D:** 600-669
F: Below 600

Assignments:

This is a math course that happens to involve some programming. The only way to get better at both things is to do a lot of it. There will be many assignments throughout the semester to give you hands-on practice. Altogether, assignments make up *about half your grade* for this course. You cannot pass unless you do them! The assignments fall into several categories:

1. **Classwork** consists of simple problems to immediately reinforce what was covered during lecture. Attendance is also indirectly taken through classwork submissions. We will do at least one classwork assignment almost every lecture.
2. **zyBook assignments** are reading activities selected from the required textbook. These are done on your own, to further reinforce what was covered during lecture. There will be a zyBook assignment given most weeks (posted in the zyBook itself, as well as on Canvas). You should complete all **Participation** and **Challenge** activities from the assigned sections.
3. **Homework** gives you a chance to practice the mathematical concepts we discuss. These assignments will generally be more involved than the zyBook assignments.
4. **Programming labs** show how some of the mathematical concepts we cover can be applied to computer science. We'll be using the Python language to do these labs.

Time Expectations:

Many people find this class challenging. It's not as formulaic as algebra, trig, or calculus – it requires you to think deeply about the material. In order to do well, most students should expect to spend 2-3 hours per week outside of class per hour of in-class time. Since this is a 4-hour class, that translates to *8-12 hours per week of work outside of class*. If you are unable or unwilling to devote this time, I highly recommend that you postpone taking the course until you can.

Attendance:

It is crucial that you attend class regularly. There is a lot of material to cover, and we'll be moving at a brisk pace. As mentioned above, *I will indirectly take lecture attendance via classwork submissions*.

Late/Makeup Policy:

All assignments are expected to be completed and turned in on schedule. Due dates will be clearly indicated for each assignment. Late assignments are NOT accepted except in extreme circumstances. Likewise, makeup quizzes and exams will be given only under extreme circumstances. *If you feel that your circumstances warrant a late work submission or a makeup quiz/exam, get in touch with me as soon as possible. Be prepared to show some kind of documented proof of your situation.*

Plagiarism/Cheating Policy:

An essential part of learning any skill is getting plenty of practice with it yourself. As such, *all grade items (unless specifically indicated otherwise) must be individual efforts*. If needed, you can get help from me, your friends/classmates, tutoring, and/or the Internet. However, any assistance should be focused on *helping you arrive at the answer on your own*.

Submitting material that was copied from the Internet, received from another person, or automatically generated by an AI tool such as ChatGPT is considered *plagiarism*. Plagiarism results in a minimum penalty of a 0 grade for the assignment on which it occurred and referral to the Office of Student Accountability. Repeated offenses may possibly result in a failing grade in the entire course. *Please don't put me (or yourself) in this situation.*

Getting Help:

Although I expect your work for this class to be done individually, I encourage you to seek help if you get stuck:

- Contact me! I'm very willing to provide hints without giving away the solution. I can be reached via email and/or Discord.
- Post something in the **#comp-2700** channel on the unofficial CS Discord server (see beginning of syllabus for an invite link). I or another person on the server will usually be able to help.
- Online tutoring: The UofM offers free online tutoring through the Educational Support Program (ESP): <https://www.memphis.edu/esp/onlinetutoring.php>

Miscellaneous Policies:

Email - Please check your University of Memphis email account at least once a day, as that is my primary means of communicating with you outside of class.

Student Disabilities - If you have a disability that may require assistance or accommodations, or if you have any questions related to any accommodation for testing, note taking, reading, etc., please contact me as soon as possible. You must contact the Disability Resources for Students office (901.678.2880, drs@memphis.edu, <https://www.memphis.edu/drs/>) to officially request such accommodations / services.

Tentative Course Schedule (Section 001, MW)

Date	Lecture Material	Text	Quizzes
8/26 8/28	Logic	Ch. 1	
9/02 9/04	<i>NO CLASS – Labor Day</i> Logic	Ch. 1	
9/09 9/11	Logic	Ch. 1	
9/16 9/18	Proofs	Ch. 2	
9/23 9/25	Set theory	Ch. 3	Quiz 1 (9/25)
9/30 10/02	Functions and Boolean functions	Ch. 4-5	
10/07 10/09	Functions and Boolean functions Relations and digraphs	Ch. 4-5 Ch. 6	
10/14 10/16	<i>NO CLASS – Fall Break</i> Relations and digraphs	Ch. 6	
10/21 10/23	Relations and digraphs	Ch. 6	Quiz 2 (10/23)
10/28 10/30	Relations and digraphs Computation	Ch. 6 Ch. 7	
11/04 11/06	Computation Induction and recursion	Ch. 7 Ch. 8	
11/11 11/13	Induction and recursion	Ch. 8	Quiz 3 (11/13)
11/18 11/20	Induction and recursion Number theory and cryptography	Ch. 8 Ch. 9	
11/25 11/27	Number theory and cryptography <i>NO CLASS – Thanksgiving</i>	Ch. 9	
12/02 12/04	Counting	Ch. 10-11	

**FINAL EXAM (same classroom as lecture):
Wednesday, Dec. 11, 1300-1500**

See the full final exam schedule here: <https://www.memphis.edu/registrar/calendars/exams/24f-final-exams.php>

Tentative Quiz and Exam Topics:

- Quiz 1: Logic and proofs
- Quiz 2: Sets, functions, Boolean functions
- Quiz 3: Relations, computation, induction
- Final Exam: Everything!

Tentative Course Schedule (Section 002, TR)

Date	Lecture Material	Text	Quizzes
8/27 8/29	Logic	Ch. 1	
9/03 9/05	Logic	Ch. 1	
9/10 9/12	Logic Proofs	Ch. 1 Ch. 2	
9/17 9/19	Proofs Set theory	Ch. 2 Ch. 3	
9/24 9/26	Set theory Functions and Boolean functions	Ch. 3 Ch. 4-5	Quiz 1 (9/24)
10/01 10/03	Functions and Boolean functions	Ch. 4-5	
10/08 10/10	Relations and digraphs	Ch. 6	
10/15 10/17	<i>NO CLASS – Fall Break</i> Relations and digraphs	Ch. 6	
10/22 10/24	Relations and digraphs	Ch. 6	Quiz 2 (10/22)
10/29 10/31	Computation	Ch. 7	
11/05 11/07	Induction and recursion	Ch. 8	
11/12 11/14	Induction and recursion	Ch. 8	Quiz 3 (11/12)
11/19 11/21	Number theory and cryptography	Ch. 9	
11/26 11/28	Counting <i>NO CLASS – Thanksgiving</i>	Ch. 10-11	
12/03 12/05	Counting <i>NO CLASS – Study Day</i>	Ch. 10-11	

FINAL EXAM (same classroom as lecture):
Thursday, Dec. 12, 1730-1930

See the full final exam schedule here: <https://www.memphis.edu/registrar/calendars/exams/24f-final-exams.php>

Tentative Quiz and Exam Topics:

- Quiz 1: Logic and proofs
- Quiz 2: Sets, functions, Boolean functions
- Quiz 3: Relations, computation, induction
- Final Exam: Everything!