UNIVERSITY OF NOTRE DAME

Syllabus

Discrete Mathematics

Spring 2024

This course is an introduction to the branch of mathematics known as *computer science*. The objective is to cultivate in you, the reader, the maturity, skills, and knowledge requisite of an academic as inspired by the *history* and *tradition* of the field of computer science. This will involve a basic working proficiency with the languages of the *first-order logic* and *axiomatic set theory* as well a development of the *art of proof-writing*.

1 *Calendar*

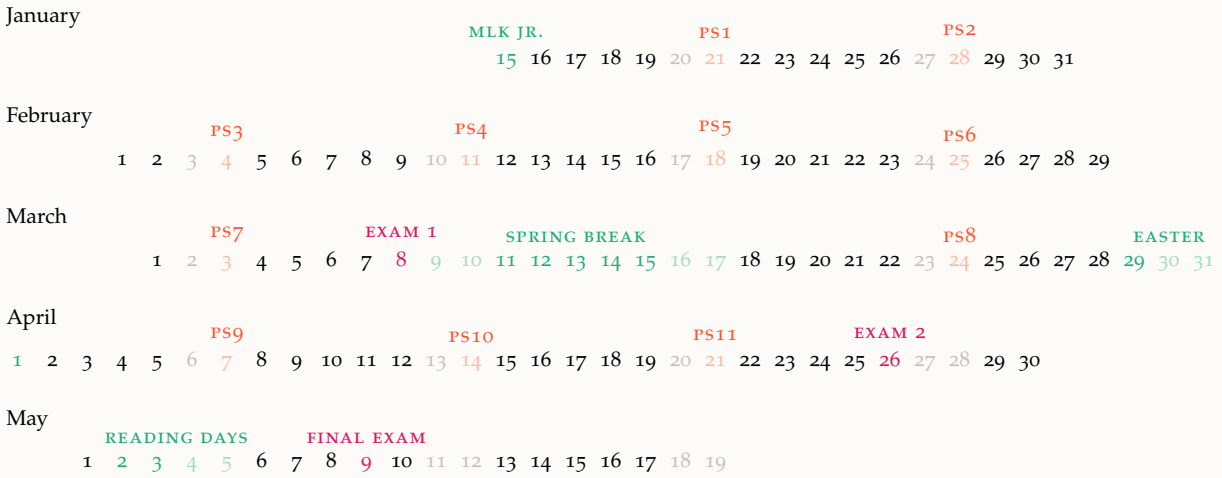

Fig. 1: Important dates for the semester.

2 *Personnel*

Daniel Gonzalez Cedre	Instructor	dgonza26@nd.edu	TBD
Aydin Wells	Grad. TA	awells24@nd.edu	TBD
Helena Berens	Undr. TA	hberens@nd.edu	–
Max Graves	Undr. TA	mgraves4@nd.edu	–
Celeste Mannel	Undr. TA	cmannel@nd.edu	–
Norah Swatland	Undr. TA	nswatlan@nd.edu	–

Tab. 1: Contact information and office hours for the instructor and TAs. The instructor is also available by appointment.

3 *Assignments*

Problem Sets	Sun.	11:59 pm		Gradescope
Lectures	Mon. Wed. Fri.	11:30 am	12:20 pm	116 DeBartolo Hall
Recitations[1]	Thu.	3:00 pm	7:00 pm	TBD
Exam 1	03/08/2024	11:30 am	12:20 pm	116 DeBartolo Hall
Exam 2	04/26/2024	11:30 am	12:20 pm	116 DeBartolo Hall
Final	05/09/2024	4:15 pm	6:15 pm	116 DeBartolo Hall

Tab. 2: Assignment and lecture schedule.

[1] *Recitations* are *entirely optional.* These are extended sessions where the instructor will be available to answer course-related questions and go over problems.

Problem Sets

There will be roughly 11 graded problem sets throughout the semester. *The lowest 2 out of these 11 will be dropped.* Problem sets will be assigned every week and due on Sundays at midnight one week later.[1] *Late work will receive zero points* and there will be *no makeups for missed assignments.* Solutions will be posted to Canvas on each assignment's due date.

[1] Problem sets should be submitted on Gradescope (*cf.*, subsection 5.2).

Exams

There will be two midterm exams and a cummulative final exam. *If the final exam grade is greater than either of the two midterm grades, then the lower midterm grade will be replaced by the final exam grade.* You will be permitted two sheets of *handwritten* notes. [2]

[2] Paper must be sized A4 or standard 8.5"×11". Notes *must* be *physically written by hand using pen or pencil on paper.*

4 *Grading*

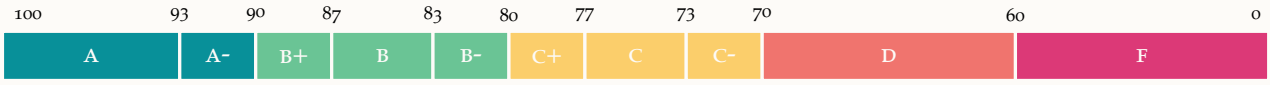

Fig. 2: Final grades are rounded up.

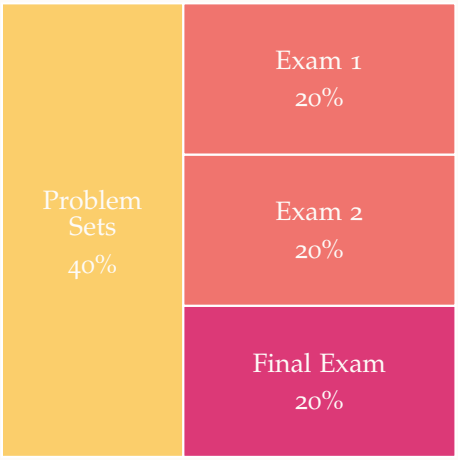

Fig. 3: Breakdown of grades by assignment. Recall that the lowest 2 problem sets are dropped, and the final replaces a lower exam grade.

5 *Resources*

Lecture Notes

There is no required textbook for this class; instead, the instructor is preparing *lecture notes* that will be continually updated throughout the semester. If you'd like other books, we highly recommend these *with the understanding that the presentation of the material might differ substantially.*

Fig. 4: We can also recommend *the introduction and first chapter* of Jech's *Set Theory* for a nice overview of the axioms.

Canvas

Gradescope

Slack

6 *Honor Code*

	Colleagues	Resources	Solutions
Consulting	ALLOWED	ALLOWED	FORBIDDEN
Copying	FORBIDDEN	CITE	FORBIDDEN

Tab. 3: The rules of engagement.

As a member of the Notre Dame community, I acknowledge that it is my responsibility to learn and abide by principles of intellectual honesty and academic integrity, and therefore I will not participate in or tolerate academic dishonesty.

7 *Disabilities & Accommodations*

Students with Disabilities

The policy and practice of the University of Notre Dame provides reasonable accommodations for students with properly documented disabilities. Students who have questions about SBAS[3] or who have, or think they may have, a disability are invited to contact SBAS for a confidential discussion in the Sara Bea Center for Student Accessibility Services or by phone at (574)-631-7157.

For more information about disability accommodations, please visit https://supportandcare.nd.edu/.

[3] Sara Bea Accessibility Services

Mental Health

If you are having mental health issues that are interfering with your ability to function in this course, please reach out to the instructor or the UCC[4] so that we can help you. The UCC provides *cost-free* and *confidential* mental health services to help you manage personal challenges that may threaten your emotional or academic well-being.

For more information about the University Counseling Center, please visit https://ucc.nd.edu.

[4] University Counseling Center

8 *Copyright Notice*

Unless explicitly noted otherwise, all materials created for this course by the instructor are copyrighted material of the instructor. Reposting copies of any of these materials to any location without permission will be considered both an honor code violation and a violation of copyright law. This includes, but is not limited to: video, audio, any aspect of the lectures,[5] exercises, assignments, exams, handouts, tutorials, solutions, *etc. Please ask for permission from the instructor before reposting or distributing any materials!*

[5] with the exception of student notes