

MATH 2330.001, Spring 2024 Discrete Structures

Instructor Information

Professor:	Dr. Stephen Graves
Office:	RBN 4011
Email:	sgraves@uttyler.edu
Dept. Phone:	903-565-5839

The preferred method of contact is via Canvas.
uttyler.instructure.com

Class Meeting Times

Section	Days	Times	Location
001	MoWeFr	10:10 – 11:05	RBN 3039

Office Hours

Mo	12:15 – 13:00	RBN 4011
We	09:05 – 09:50	RBN 4011
Fr	11:15 – 12:00	RBN 4011

1. COURSE INFORMATION

1.1. Official Course Description. Study of mathematical logic, sets, combinations, relations, functions, graphs and trees, Boolean algebra, and algebraic structures.

1.2. Course Prerequisites. A grade of C or better in Math 1325 or Math 2413 or equivalent and one high-level computer language. Students may not receive credit for both Math 2330 and Math 3425.

1.3. Student Learning Outcomes. Upon completion of this course, students should be able to do the following:

- Perform set operations such as union, intersection, and complement.
- Recognize the logical format of a given statement in terms of disjunctions, conjunctions, conditionals, quantifiers and propositional functions.
- Understand the basic properties of sequences, relations, and functions.
- Demonstrate problem solving skills using elementary probability concepts of permutations and combinations.
- Write proofs for statements using appropriate proof methods (direct, indirect, or mathematical induction).

2. IMPORTANT DATES

16 Jan.	First day of classes
29 Jan.	Census date
11 – 15 Mar.	Spring Break (No Classes)
25 Mar.	Withdrawal deadline
29 Mar.	Good Friday
29 Apr. – 3 May	Final exams
3 & 4 May	Spring Commencement

I will not hold classes on Good Friday.

3. COURSE CONTENT

3.1. Required Texts.

- a. **Primary, ADS** *Applied Discrete Structures*¹

b. **Secondary, DMOI** *Discrete Mathematics: An Open Introduction, 3rd edition*²

c. **Recommended** *The 5 Elements of Effective Thinking* by Edward Burger and Michael Starbird
ISBN 978-0691156668

This inexpensive book can totally change how you view learning and I recommend it to anyone who thinks they might struggle with course material, whether or not they're in my classes.

3.2. Academic Honesty. All work submitted must be your own. If this is determined not to be the case, you will be referred to the Director of Judicial Affairs, with a consequence appropriate to the level of the infraction. You will be reminded of the UT Tyler Honor Code on every exam.

- Submitting the *homework* or *lecture notes* of another student is **plagiarism** and will result in an earned grade of 0 **for the category**, not just the assignment.
- Cheating on an exam will result in an F for the **course**.
- Posting copyrighted material to the internet without the prior written permission of the copyright holder is **illegal**.

3.3. Civil Environment. The free exchange of ideas is a central part of a university education. Class will be conducted in a polite and professional manner and I expect students to behave politely and professionally. *Disruptive behavior will not be allowed and is judged at my sole discretion.* Persistent incivility will result in your removal from the classroom.

3.4. Canvas & Email. You are expected to check Canvas at least daily, and also expected to check your university email. **All at-home work will be submitted via Canvas.**

3.5. Personal Electronics. Students are required to have access to a device capable of accessing Canvas and a device capable of scanning hand-written work for upload to Canvas. If you have a tablet device this is an optimal use for it, but tablets are an *expensive and unnecessary luxury*.

3.6. Late & Missed Work. Late work will not be accepted. Missed lecture notes and homework will count as 0s. A student who will miss one exam for a *documented, University-sanctioned* reason must notify me at least 2 weeks before the exam, and an alternative will be arranged. A student missing one exam due to documented illness or emergency is eligible to replace the missed exam grade with the grade from their final exam, but then is *unable to receive extra credit*. Students missing more than one in-class exam have failed the course and will receive an F. Students missing the final exam have failed the course and will receive an F.

3.7. Final Exam Policy. A student may earn at most one letter grade higher in the course than they earn on the final exam: *particularly, a grade of F on the final results in a grade of at most D in the course.*

4. UNIVERSITY POLICIES

The University has many policies required to be included on syllabi. As these policies can change, please find the most recent version online.³

5. COURSE STRUCTURE

The course content will be tentatively organized by week in Canvas modules; this is subject to change as our use of class time necessitates. Your grade will be calculated in **percentage points (PP)**: lecture notes (5 PP), homework (5 PP), and exams (90 PP).

5.1. Grade Scale. Student letter grades will be recorded based upon their earned percentage points (PP). The grade scale will be no stricter than the standard:

PP Range	[0, 60]	(60, 70)	[70, 80)	[80, 90)	[90, ∞)
Letter	F	D	C	B	A

5.2. Lecture Notes, 5 PP. Students who consistently attend class and participate by writing notes and asking questions outperform students who do not. In order to encourage attendance, you will be required to scan and upload your handwritten course notes before 23:59 on the same day as class. On every day of class that is not an exam day, make sure you attend, take notes, and submit them via Canvas.

When you miss class, make sure to obtain lecture notes from a classmate and submit them before the deadline. Missed notes will not be provided by the instructor.

Each day's notes will be graded as 0 (no meaningful notes), 1 (halfway complete and meaningful notes), or 2 (complete and meaningful notes). The notes *do not need to be an exact*

transcript of class to be complete, but must contain all meaningful ideas from class.

Late notes receive 0 points. The grade for lecture notes will be computed as

$$\frac{(\text{Total Score for Submitted Notes})}{2 \times (\text{Notes Days} - 3)} \times 5.$$

5.3. Homework, 5 PP. There is no practice as reliable as working homework to help you learn mathematics, so I will assign homework regularly. You are encouraged to work together and even more strongly encouraged to contact me when you struggle. Homework must be written by hand, scanned, and uploaded to Canvas before the scheduled time on the due date. Homework will be graded for *completeness only*, on a similar scale as lecture notes: 0 for minimal completion, 1 for at least half completion, and 2 for full completion. Late homework receives 0 points.

Whether or not the answers are correct, homework which does not show the work you followed to obtain an answer is minimal completion and will receive a 0.

The goal is to have homework due at least one lecture day after the material has been discussed in class, but we will follow the assigned schedule. Homework is due before 23:59 (11:59 PM); many students wait until the last moment to submit their homework and then find that it does not upload until after the due date has passed.

The grade for homework will be computed as

$$\frac{(\text{Total Score for Submitted Homework})}{2 \times (\text{Number of Assignments})} \times 5.$$

5.4. Exams, 90 PP. There will be 3 in-class exams as well as a final exam. In-class exams appear on the Canvas schedule. The Final Exam is scheduled by the University administration and will be held on **Wednesday, 1 May from 10:15 – 12:15.**

In-class exams each contribute up to 20 PP towards your final grade, while the final contributes up to 30 PP. All exams will be comprehensive, but will be skewed toward the newer material covered since the last exam.

5.5. Extra Credit. A student who turns in all homework on time, takes all exams, and earns all nonzero scores on homework and exams will automatically qualify to replace their lowest grade on an in-class exam with their grade on the final, if that improves their score.

5.6. Tentative Schedule of Topics. The schedule for the semester can be found on the main Syllabus page of Canvas, including all assigned due dates.

NOTES

1. Pretext ebook edition: <https://discretemath.org/ads/index-ads.html>

2. Pretext ebook edition: <http://discrete.openmathbooks.org/dmoi3/>

3. Usually at <https://www.uttyler.edu/academic-affairs/files/syllabuspolicy.pdf>