

Math 22  
MTWTh

Discrete Mathematics

Summer 2022  
Online

INSTRUCTOR: Victor Legge

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PREREQUISITE: A passing grade in Math 32, 43 or equivalent or placement in this class via test.

TEXTBOOK: Discrete Mathematics, An Introduction to Mathematical Reasoning, Brief Edition:  
Susanna S Epp  
Downloadable: <https://engineeringbookspdf.com/download/?file=4409&format=pdf>  
Rental or Buying: <https://www.amazon.com/Discrete-Mathematics-Introduction-Mathematical-Reasoning/dp/0495826170>

ZOOM: All lectures and tests will be done using zoom. It is important that you have a basic understanding of zoom before you start the class. If you have never used zoom then I highly recommend you set up a zoom session with a friend and get to know the basic tools.

MATERIALS: You are required to have a basic scientific calculator, graph paper, a 3 ring binder, binder paper, pencils and a ruler for this class. A graphing calculator is very useful.

ATTENDANCE: Classes begin promptly. Attendance will be taken for each session. Each class is divided into 2 sessions. Attendance is mandatory and you are expected to be on time and to attend all sessions unless you are ill or have a real emergency. **YOU ARE ALLOWED TO HAVE 2 UNEXCUSED SESSION ABSENCES AFTER WHICH YOU MAY BE DROPPED FROM THE CLASS. PLEASE NOTE THAT 3 UNEXCUSED TARDIES EQUALS ONE UNEXCUSED ABSENCE.** Whether you are dropped or not after exceeding 2 unexcused absences depends on your grade. Students with poor attendance and low grades will be dropped from the class very quickly. If you think your absence or tardy should be excused please tell me, otherwise I shall assume that it is unexcused. If you have 16 total session absences (excused or unexcused) and it is before the W drop deadline you will automatically be dropped from the class.

ADDING: I will not be going over 40 in this class. I will add waitlisted students until I get to 40. If somebody drops the class I will add someone else. The last day I will add will be Wednesday June 30.

DROPPING: A student is responsible for dropping him/herself. Please do not assume that I will drop you from the class just because you have stopped attending. By not taking responsibility for dropping or withdrawing yourself, your “no grade” may become a W or an F or your W may become an F. If you have not been attending class for a while and still plan to attend please inform me by email or phone. Otherwise you may be dropped from the class. Students who have not dropped and who do not show up for the final exam will receive an F in the course unless there are extreme extenuating circumstances.

- TECHNOLOGY:** Please do not use your cell phones during class. Please do not eat during class. Please have your cameras on during class. Please treat this class like a regular face to face class.
- CLASSROOM ENVIRONMENT** Please make sure you mute your microphone during the zoom class session. It is fine to ask questions in class. In fact I prefer when students ask questions and engage in the class.
- HOMEWORK:** Homework will be graded for completeness only. It will be worth 10 points. I do not accept late homework under any circumstances.
- CLASSWORK:** During sessions there will sometimes be classwork. You can consult with other students on the classwork and you can ask me questions as well. The classwork should be completed on the night that it is assigned. It is worth 10 points. I do not accept late classwork.
- MIDTERMS:** There will be two 1.5 hour midterms. Each midterm is worth a maximum of 200 points. You may bring into each midterm notes on both sides of a 6in x 4in note card. Please note that a photo ID will be required for the first midterm only. It is very important that you take the midterms. Missing a midterm for any reason will mean that you will score the same on the midterm as you do on the final as a percentage
- RETAKES AND MAKE-UPS:** There are no retakes or make-ups of midterms or quizzes, under ANY circumstances, EVER!! If you are ill and miss the final then you must show documentation that you were ill and then you will be issued with an incomplete for the class. The final then has to be made up within one year. Besides illness the only acceptable reason for missing the final is a REAL emergency. By a real emergency I mean an unforeseen event that could not have been avoided. Examples include a funeral being scheduled at the same time as the final. Please note that difficult life circumstances do not constitute an emergency.
- REVIEWS:** If time allows there will be a review for midterms. This will involve test taking tips as well as a mathematics review. Just because a question is being reviewed does not mean it will be on the test. It is possible but highly unlikely that all questions reviewed on the review will not be on the test.
- FINAL EXAM:** There will be a comprehensive 2.5 hour final given on the last day of instruction. You cannot take the final early under ANY circumstances. Do not ask. The final is worth a maximum of 600 points. **YOU MUST ATTEND THE FINAL.** If you know that you cannot attend the final due to a prior commitment then you should not take this class. Missing the final without a valid reason (see the last section – Retakes and Make-ups) will result in an F in the class. You may bring into the final notes on both sides of two 6in x 4in note cards, or notes on 1 side of an 8.5 inch by 11 inch sheet of paper.  
The final will be given on the last day of instruction Thursday, August 4, It is imperative that you be on time for the finals.

## ACADEMIC

**DISHONESTY:** Looking at someone else's exam, helping another student during an exam, talking to anyone except the lecturer during an exam or using an external source of information for which you were not explicitly given permission may result in my dropping you or an F grade in the course. As this is online if I see two identical answers to the same question from two students I will assume you helped each other and I will give you zero. If this continues to happen you will get zero for the whole test.

**COURSE GRADE:** There will be many classworks, 6 homeworks, two midterms, and a comprehensive Final Exam.

Points are assigned as follows:

Best 5 homeworks	50 pts
Classwork	200 pts approx
Two Midterms	400 pts
Final Exam	600 pts
Total points – maximum	1250 pts approx

Letter grades are assigned as follows:

97.0% and above	A+
90.0% to 96.9%	A
88.0% to 89.9%	A-
86.0% to 87.9%	B+
82.0% to 85.9%	B
80.0% to 81.9%	B-
78.0% to 79.9%	C+
70.0% to 77.9%	C
68.0% to 69.9%	D+
55.0% to 67.9%	D
0% to 54.9%	F

## ASKING FOR HELP DURING TESTS:

It is my policy not to give you help during a test of any kind. A test is designed to discover what you know without help. Giving one student individual help during a test would be unfair to other students. The only 2 valid questions to ask the instructor during a test is “This question seems unclear to me. Could you please check it?” and “This question seems to be impossible. Could you please check it?” Students for whom English is not their primary language should know that I will not help in any way on tests to explain what words, sentences or any piece of text means. Please note that all students can bring a non-electronic dictionary to a test.

If a student has a question during a test my response will be either “I am sorry but I cannot help you,” OR “the question is clear,” OR in the case that there is something wrong with the test I will write on the board what needs to be changed on the test. During midterms and sometimes quizzes, friends will not be allowed to sit near each other. Students who I think are looking at somebody else's paper will be moved without warning.

**DISABLED STUDENTS:** Students who are disabled and qualify for special help by law should take advantage of what is entitled to them. Please see me or tell me EARLY in the class if you are one of these students so that I can do everything in my power to give you the assistance you deserve. In getting your initial accommodations for your disability please think carefully about what you need. Requests for accommodations or requests for changes to your accommodations in the middle or near the end of a quarter will not get an enthusiastic reception from me.

**COURSE GRADES:** Grades for the course can only be changed in the event of a clerical error. It is not legal for me to change the grade for any other reason. If you require your grade quickly after the final please send me an email within 3 days of the final and I will give you your grade on the final within 5 days of the final. If you send me an email more than 3 days after the final I will get you your grade within 48 hours.

**TEACHER ABSENCE:** Please note that if and when I am absent the general policy is not to provide a substitute teacher to cover for the class unless the absence is over one day. Usually, but this does not always happen, a note is posted on the door of the room informing students that class is cancelled for that day. In the event of this happening it is the student's responsibility to study the material that was scheduled for that day. It is also recommended that you study the material for next week's class as well, in advance. This is because when I return from the absence I will cover the material that was missed and the current material in one week. In other words I will be going quicker!!!  
If I am absent for an extended period of time a substitute will be provided. Please check your email just before coming to class. If I am going to be absent an email will be sent to you.

**CONTRACT:** One purpose of this greensheet is to provide you with the guiding principles of the class and another is to make sure that you have answers to any questions that might arise. Please put this sheet in a safe place where you can easily refer to it. Make sure you read all of it before you ask me any questions about the course. It is also a contract between you, the student, and myself, the instructor of record. Make sure you understand its contents fully especially the parts that pertain to testing and the computation of your grade because so long as you remain enrolled in the course you are implicitly agreeing to abide by these terms.

## SCHEDULE FOR MATH 22

### KEY:

\* INDICATES THAT A MIDTERM IS SCHEDULED FOR THIS DAY.

\*\* MEANS DROP OR WITHDRAW DEADLINES

DAY	CLASS	HOMEWORK
<b>Week 1 of class</b>		
1.(6/27)	Green Sheet, 1.1, 1.2	<b>1.1</b> (2, 6, 12) <b>1.2</b> (3, 7, 10)
2.	1.3, 2.1, 2.2	<b>1.3</b> (4, 8, 15) <b>2.1</b> (2, 6, 17, 23, 32, 42) <b>2.2</b> (4, 19, 27, 32)
<b>** JUNE 28 – LAST DAY FOR DROPS WITH A REFUND</b>		
3.	2.3, 3.1	<b>2.3</b> (6, 10, 20, 32, 40) <b>3.1</b> (2, 6, 18, 27)
<b>**JUNE 29 – LAST DAY FOR ADDS</b>		
4.	3.2, 3.3	<b>3.2</b> (3, 8, 16, 32, 44) <b>3.3</b> (4, 12, 19, 24, 30, 44)
<b>** JUNE 30 – LAST DAY FOR DROPS WITHOUT W AND WITHOUT A REFUND</b>		
<b>Week 2 of class</b>		
5.(7/4)	No Classes – Independence Day	
6.	3.4, 4.1	<b>3.4</b> (4, 10, 21, 32) <b>4.1</b> (2, 14, 28, 34, 44)
7.	4.2, 4.3 <b>Hwk 1 due: 1.1 -3.3</b>	<b>4.2</b> (8, 16, 22, 28, 34) <b>4.3</b> (4, 15, 24, 37, 46)
8.*	4.4, 4.5 <b>Midterm1 (Chapters 1, 2 and 3)</b>	<b>4.4</b> (2, 12, 23, 32, 40) <b>4.5</b> (3, 10, 20, 32)
<b>Week 3 of class</b>		
9.(7/11)	4.6, 5.1	<b>4.6</b> (4, 16, 28, 33) <b>5.1</b> (5, 14, 31, 44, 64, 71)
10.	5.2, 5.3	<b>5.2</b> (5, 12, 20, 32) <b>5.3</b> (3, 10, 22, 35)
11.	5.4, 5.5 <b>Hwk 2 due: 3.4 – 4.5</b>	<b>5.4</b> (4, 11, 18, 27) <b>5.5</b> (6, 14, 21, 32, 38)
12	5.6, 6.1	<b>5.6</b> (6, 13, 32, 44, 54) <b>6.1</b> (3, 1,0 18, 26, 33)

#### Week 4 of class

- 13.(7/18) 6.2, 6.3 **6.2** (4, 18, 26, 38) **6.3** (7, 22, 31, 38, 50)
14. 6.4, 7.1 **6.4** (2, 8, 13, 21) **7.1** (6, 12, 24, 32)
15. 7.2, 7.3 **7.2**(8, 12, 20, 28, 33) **7.3** (2, 10, 16, 25)  
**Hwk 3 due: 4.6 – 6.1**
16. 7.4, 8.1 **7.4** (6, 12, 21, 33) **8.1** (3, 7, 14, 20)  
**Midterm 2 (Chapters 4 and 5)**

#### Week 5 of class

17. (7/25) 8.2, 8.3 **8.2** (4, 13, 22, 30, 46) **8.3** (4, 12, 20, 26, 38)
18. 8.4, 8.5 **8.4** (4, 10, 20, 32) **8.5** (4, 16, 28, 34, 43)
19. 9.1, 9.2 **9.1** (4, 10, 14, 20) **9.2** (6, 13, 20, 36)  
**Hwk 4 due: 6.2 – 8.1**

#### **\*\*WEDNESDAY JULY 27 - LAST DAY FOR DROPS**

20. 9.3, 9.4 **9.3** (2, 8, 22, 34, 44) **9.4** (6, 13, 26, 34)

#### Week 6 of class

- 21.(8/1) 9.5, 9.6 **9.5** (4, 12, 16, 22, 30) **9.6** (6, 13, 24, 32, 44)
22. 10.1, 10.2 **10.1** (2, 8, 12, 22, 34, 46) **10.2** (3, 10, 20, 29, 43)  
**Hwk 5 due: 8.2 – 9.4**
23. 10.3, 10.4 **10.3** (6, 15, 24) **10.4** (6, 15, 20)
24. Final (Covers everything but more emphasis on Chapters 6 through 10)  
**Hwk 6 due: 9.5 – 10.4**

**Student Learning Outcome(s):**

\*Critique a mathematical statement for its truth value, defend choice by formulating a mathematical proof or constructing a counterexample.

\*Analyze and apply patterns of discrete mathematical structures to demonstrate mathematical thinking.

**Office Hours:**

By Appointment	online M,T,W,TH	07:00 AM	07:00 AM
By Appointment	Online M,T,W,TH	10:00 PM	10:00 PM