

MTH 1240 Discrete Structures - Vital Information

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Monday-Friday: 1:00-2:00

You can also ask questions at any time on my blog.

WELCOME TO SOMETHING NEW. Work hard, use your imagination, and you may even have some fun. I have listed my goals for the course below. Let us work together to achieve them.

Goals of the Course

We will cover the material described in the Table of Contents of these notes. By the end of the course, you should be able to:

- use discrete mathematics to solve problems;
- write and understand logic proofs;
- write and understand mathematical proofs;
- engage in mathematics research, and understand what that means;
- have some fun with mathematics!

Topics Covered

- Discrete systems
- Symbolic logic
- Proof techniques
- Number theory
- Set theory
- Graph theory
- Combinatorics and probability
- Mathematics of social choice
- Function iteration

Skills

In this course we will spend a significant amount of time developing these skills.

- Writing mathematics using *complete sentences, correct notation, proper organization, and clear explanations*.
- Using appropriate technology for computation and communication.

- Deciding whether to use technology or hand computation in a given situation.
- Problem solving using quantitative reasoning.
- Communicating technical material verbally.

What factors will determine your grade?

Online Quizzes & In-class Work	20%
Homework	20%
3 Exams	20% each
	100%

I may change these proportions, but only if we all agree that the change reflects the way the class went. *Be an active participant in your education!* If you do, we are going to have a great time! My grading scale for a score of x is given below.

$92 \leq x \leq 100$	A
$90 \leq x < 92$	A-
$88 \leq x < 90$	B+
$82 \leq x < 88$	B
$80 \leq x < 82$	B-
$78 \leq x < 80$	C+
$72 \leq x < 78$	C
$70 \leq x < 72$	C-
$68 \leq x < 70$	D+
$62 \leq x < 68$	D
$60 \leq x < 62$	D-
$0 \leq x < 60$	F

I will post scores to Schoology as often as I can.

Homework Assignments

I maintain a web page containing the homework assignments for this course, together with other information. The main page is at the following address.

<http://www.marksnavelly.us>

You can go directly to the course website, or use the link in the Schoology site. Check the web page for homework assignments and due dates. Written homework should be written *neatly* and clearly labelled. On written homework, you *must* show your work to receive credit! I provide homework solutions as requested on the Help Page on the course website. The user name is **student** and the password is **mathhelp**. This is the user name and password that you will use everywhere on my website marksnavelly.us!

You are not permitted to do a web search to find online solutions to the homework problems. If I realize that some of you are doing this, I will take action to prevent such behavior.

Homework is due at the beginning of class. Place your assignment on the pile at the front of the room or scan the assignment or email it to me as a single pdf document before class begins. I will not accept late homework (written, online quizzes, etc.) unless there are exceptional circumstances, which will be determined on a case-by-case basis.

I will be collecting the homework as indicated on the course website. **I strongly encourage you to work in pairs or trios on these assignments, but everyone must turn in their own work. I recommend working together to figure out the problems but writing by yourself.**

I will not answer questions over homework on the day it is due, and I ask that you not stop by my office before class with questions. I also will not “pre-grade” your work (“Would you look at this and tell me if it’s right?”). If you think your work is correct, turn it in. If you don’t think it’s correct, why don’t you think it’s correct? I *love* to answer questions you have about the problems you’re working on, but “Tell me if this is right” isn’t a question.

Schoology

Carthage uses a course management system called Schoology. You’ve probably been introduced to this package elsewhere. I will certainly post grades there as often as I can, and I have included a link to the course website.

Office Hours

During office hours, I promise to be in my office and ready to help you in any way I can. I realize that you may have other activities during my office hours, so I welcome appointments and drop-ins. If you stop by and the blind is up, tap on the door and I’ll let you know if I can help you at that time! If I’m on the phone, after I see you, please go to the chairs in the hallway and wait. I’ll come to you when I get off the phone. If the blind is down or the light is off in my office, there is a reason. You don’t need to bother to knock - if I’m not in, I won’t answer; if I’m in but the blind is down, it is down for a reason.

Computers and Calculators

We use a computer program called *Mathematica* in this course. This program is available in the MathLab next door, and you can download and install the entire package on your computer for free. If you do not want to install Mathematica on your computer, there is an online version available through user.wolfram.com that runs through a web browser. More information is on the course website. While this is not a course in *Mathematica*, the mathematics department at Carthage teaches the computer program as a tool, and a very important tool. We may also use *Microsoft Excel* from time to time.

Questions always arise about graphing calculators. Any calculator that has trigonometric functions, exponential functions and logarithms will do just fine. The TI-30 IIS is a great calculator at a very reasonable price. On tests and quizzes, I may ask those of you who have graphing calculators not to use the calculator’s graphing or equation solving capabilities.

Five Important Items

- **If you’re working online, whether taking a quiz or working homework, the same rules apply as if you were working in person.** For homework, I encourage you to work together, but you should be working on problems together, not just sharing answers. **All exams and quizzes will be given in class**, but if COVID affects our class and you’re taking a quiz or exam online, you should do your own work, with no assistance from any other person, website, book, text, notes, or anything that you would not be permitted to use in class. You should not go to any website during the exam other than the exam itself (if appropriate).

- **Unless you are using your phone, laptop, or tablet to take notes or to complete class material, please turn off all cell phones, music players, and other electronic devices before class, especially on exam days.** If you need to have your communication equipment on during class, please talk to me before class starts. Texting during class is rude and not appropriate behavior.
- **It's January in Wisconsin.** You knew that already, but that means that weather could be an issue. If you don't feel it's safe to come to campus, join us via the live stream. I also have a Zoom meeting set up for each class session, so it will be possible for you to Zoom with other classmates. If I don't feel comfortable coming to campus (I live around 30 miles away), I may decide to conduct class remotely. Check the blog and your Carthage email account if the weather is bad.
- **Carthage College strives to make all learning experiences as accessible as possible.** If you anticipate or experience academic barriers due to your disability (including mental health, learning disorders and chronic medical conditions), please let me know immediately so that we can privately discuss options. To establish reasonable accommodations, you also need to register with Diane Schowalter in Learning Accessibility Services (dschowalter1@carthage.edu).
- Peer Tutoring is a free resource for Carthage students. The center is staffed by undergraduate students who have been recommended by Carthage faculty and trained to help students understand the concepts in this course. This semester they are offering one-on-one in-person and live virtual (Zoom) sessions by appointment. For more information and to schedule an appointment, visit carthage.edu/tutoring or carthage.mywconline.com.