

CMSC 203: Lecture 1

Introduction and Priming

Welcome!

- This is CMSC 203 – Discrete Structures (Mathematics)
- Tuesday and Thursday @ 2:30 – 3:45
- I am Shawn Squire
 - You may call me Shawn, “teacher,” Mr. Squire, etc.
 - I am not technically “Professor”
- I will learn names slowly
 - Visit office hours and ask questions!
- <https://www.csee.umbc.edu/courses/undergraduate/203/Fall13/squire/>

Communication

- There are a several ways to get answers or contact me
 - **Piazza:** <https://piazza.com/umbc/fall2013/cmssc203>
 - **Email:** ssquire1@umbc.edu
 - **Office Hours:**
 - ITE 214
 - Wednesday @ 10:30 – 11:30
 - Thursday @ 11:30 – 12:30
 - **Website:**
<https://www.csee.umbc.edu/courses/undergraduate/203/Fall13/squire>

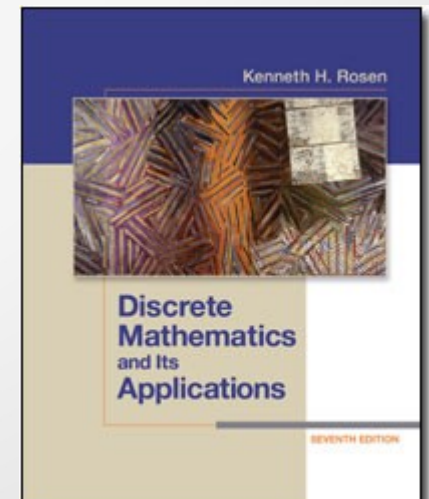
Piazza

<https://piazza.com/umbc/fall2013/cmssc203>

- Should be used for questions about content or general group discussion
- I will respond quickly to messages on Piazza, and others could help give answers / benefit from the answer
- Feel free to share relevant information or look for study groups

Textbook

- Discrete Mathematics and Its Applications, 7/e, Kenneth H. **Rosen**. McGraw-Hill, 2011.
- Website has good resources
- Readings are assigned from textbook
- Please get the textbook
 - I may assign readings



Grading

- **A** – You have mastered the content and can apply it independently [Generally > 90%]
- **B** – You have mastered the content, but need help applying it [Generally > 80%]
- **C** – You need help with content [Generally > 70%]
- **D** – You need a lot of help with content [Generally > 60%]
- **F** – You do not understand the content at all
- Curving may happen, but don't rely on it

Grading Cont.

- **Homework** – 35%
- **Quizzes** – 10%
- **Midterm Exams** – 15%
- **Final Exam** – 20%
- **Participation** – 5%
- There will be extra credit opportunities
- Email me to see how you're doing
- *YOU* are responsible for knowing your grade

Homework

- ~10 homework; ~2 hours each
- Will guide what you need to know for exams
- You *MUST* have independent answers, but...
- I encourage you to work in groups
 - Write down who you worked with!
- Homework will be reviewed in class
- Use Piazza!

Turning in Assignments

- Assignments are due at the beginning of class on their assigned due date
- You are responsible for getting it there
- You get *one free late*
 - You **must** email me the day it is due letting me know
- No assignments will be accepted late otherwise

Quizzes / Exams

- Will be in-class assessments of what you know
- Will be from material covered in class and readings
- Undetermined number of quizzes
- 2 Midterm exams; one final exam
- May not be rescheduled without prior notice (unless extraordinary circumstances)

Getting a Good Grade

- Do your homework (on time)!
- Prepare for exams
- Take opportunities for extra credit
- Use Piazza / study groups
- Email me / attend office hours
- Pay attention in class and ask questions
 - Please interrupt me

Academic Honesty

- You agreed to it by being in the course
- Don't cheat
- Don't copy answers (even in a group)
- Don't use something someone else made (with or without their permission)
- Mention if you received help from anyone (eg: group members working on same homework)
- Cheating is VERY bad news

Lectures & Notes

- Please attend and be on time!
- Lectures will be presented via PowerPoint and the whiteboard
- Lecture notes will be posted on the website, after class
- I will use Piazza to send class messages
 - Please sign up and set to email notifications
- Homework grades will be returned in class, but not posted online

Code of Conduct

- Ask questions. Seriously!
 - Asking questions is the best way to succeed
 - If you don't want to ask in class, ask on Piazza
- You may use laptops, but please be respectful
- Cell phones should be **silenced** and away
 - I should not hear it [ringer or vibrate] or see it

Discrete Math ... what is it?

- Discrete means “individually separate and distinct”
- Discrete is contrary to “continuous”
 - Continuous math: calculus, algebra, trig (mostly)
- Discrete refers to “countable” and finite
- Things like:
 - Sequences of real numbers
 - Collections of integers
 - Abstract sets of “things”

Some examples of “discrete”

- Sequences of real numbers
 - $a_n = 1/n$; $b_n = (-1)^n$; $c_n = \cos(n^2)$
- Collection of integers
- Logical statements
 - Heads / tails; $((P \rightarrow Q) \rightarrow P) \rightarrow P$
- Graphs
- Sets

Why should I care?

- How many valid passwords are there?
- What is the probability of winning the lottery?
- Is there a link between two computers in a network?
- How can I encrypt a message (cryptography)?
- What is the best way to sort a list? Can I prove it?

Proofs

- A lot of this class will cover the process by which we prove statements to be true (proofs)
- They will be used in future classes (esp. Algorithms)
- They will also be used in future research
- They will also be used to prove valid programs
- These techniques lead to Boolean algebra, and AND / OR logic gates (the building block of computers)
- They should **not** be scary ... there are simple tricks

We will also talk about...

- Graphs! (not the ones you plot on a calculator)
- Discrete probability (similar to STAT 355 and CMPE 320)
- Sets (at least an introduction to them)
- Counting (but not like Count von Count)
- Recursion
- Algorithm complexity

Homework #1

- Read the syllabus; tour the website
- Acquire the textbook
- Sign up to the Piazza page
- Post a reply in the Homework 1 thread that contains the following:
 - Your name / what you would like to be called
 - What insights you hope to gain from the class
 - Any questions you have about the class
 - Your biggest concern about the class
 - Would you rather jump into a pool of marshmallows or a pool of jelly?
And why?
- Complete this by Thursday, before class