

MAT 171: Discrete Mathematics for Computing

Spring Trimester 2008

General Information

- Course meets: Mondays 6:00-9:00 p.m.
- Instructor: Deb Erickson ericksod@augsborg.edu
- Office Hours: Due to the nature of the program in Rochester, it is difficult to set office hours which will work for all students. Therefore, office hours will be held on an as needed basis. If you would like to set up a meeting with me, please contact me via email and I will do my best to set up a time that will work with your schedule. Otherwise, I will always be available before class and after class to answer questions or work through problems.
- Pre/corequisite: Math Placement Group 3 (MPG 3) and CSC 160 Introduction to Computer Science and Communication. Note: CSC 160 may be taken during the same term as this class.
- Text: *Discrete Mathematics, 7th ed.* by Johnsonbaugh (Prentice Hall, 2009)

Topics

In this course you'll study

- Logic: truth tables, connectives, negations, and equivalences.
- Set Theory: operations, subsets, and Venn diagrams.
- Relations: definitions, databases, and graph representation.
- Discrete Functions: domain, range, floor, ceiling, mod, and factorials.
- Graph Theory: definitions, properties, families of graphs, and trees.
- Induction and Recursion: recursive definitions, sequences, summations, pattern recognition, and proof by mathematical induction.
- Representations of integers: binary and hexadecimal representations of integers, binary and hexadecimal arithmetic.
- Counting: the multiplication rule, permutations, combinations, the inclusion-exclusion principle, and introduction to probability.

Goals

This course is designed for you to

- See a wide range of mathematics and mathematical perspectives.
- Learn mathematical concepts used by computer scientists.
- Develop your logical reasoning skills.

Expectations

I want you to be successful in this course. I expect you to give your best effort to meeting these expectations and I will help you learn the material. Here's what it takes to succeed:

- Attend and participate in every class. Be on time and prepared for every class. Bring your text and calculator to every class.
- Take quizzes and exams when scheduled. Follow all academic honesty rules.
- Keep me up-to-date on how the class is going for you. Let me know of any special needs that you have.
- Do all of the assigned homework. After each class I expect you to spend 6-9 hours studying for this course. I suggest you divide your time into four separate study periods of 1 ½-2 ½ hours each. ***You will be much more successful in this course if you do not leave it all until the night before class meets!*** Your study time should include the following activities.
 - ✓ Read the text examples, working out the calculations and read your notes from class.
 - ✓ Work through the assigned homework problems. Check your answers with the back of the text answer.
 - ✓ Get help from me or other students.
 - ✓ Review important concepts or formulas.
 - ✓ Check your Augsburg e-mail account for any updates on the course.

Course Grade

Your course grade is based on

Homework.....	30%
Quizzes (top 7 of 9).....	30%
Midterm & Final.....	40%

- * If you must miss a quiz (or two) even for an excused absence, they will be the one(s) dropped. If you will have three or more absence, excused or otherwise, you will have grave difficulty passing this course and should seriously consider making alternative plans. It is entirely within my discretion whether to allow a make-up for a third excused absence for a quiz or for an excused absence for an exam but no more than one make-up quiz or exam per semester will be granted.

At the end of the course, your percentage grade is converted to a course grade according to the following curve.

94% – 100%	4.0	73% – 79%	2.5	59% – 65%	1.5
87% – 93%	3.5	66% – 72%	2.0	52% – 58%	1.0
80% – 86%	3.0	[2.0 minimum for pass]		0% – 51%	0.0

- If you elect to take this course P/N, you must earn at least a 2.0 to get grade P. Please talk with me if you are considering the P/N option.
- For this course to meet the prerequisites of any CSC course, you must earn a grade of 2.0 or higher.
- I reserve the right to lower your course grade if your attendance, participation, or preparation falls well below expectations.