

Syllabus

Math 209

Fall '23

Text: **Discrete Mathematics and Its Applications**, 7th edition by Rosen

Instructor: Jed Herman Office: SCI D 287 eherman@uwsp.edu

Office Hours: M 3:00-3:50, W 3:00 – 4:50, Th 12:00 – 12:50

Office Hours will be available in person and can be made available via zoom on request

Class times & room: MWThF 11:00 – 11:50 pm in SCI A225

Mathematics-specific Learning Objectives

- Develop confidence in problem solving and the ability to communicate your work effectively to others
- Gain an understanding of mathematical topics useful in computing (algorithm design, trees, logic, sets, graphs, counting, relations, circuit design)

Calculators

A calculator is helpful for this course. Network-connected and/or symbolic calculators may not be used on exams.

Grading

Grading will be based on an overall percentage score, using the following scale:

90%+ A- or better	80%-89.9% B-, B or B+
70%-79.9% C-, C or C+	60%-69.9% D-, D or D+
<60% F	

I reserve the right to adjust the final percentage +/- up to about 2%, based on my assessment of your effort and/or participation in the class and course in general.

To get your overall score, you will be graded on the following:

Participation	19%
Weekly Homework	19%
3 in-class exams	19% each (so 57%)
Final	<u>5% or 24%*</u>
Total	100%

Note: you cannot simply add your points together for each activity – a homework point and an exam point, for example, are not worth the same part of your grade.

*Also note: your final is cumulative and normally worth 5% of your course grade. But if you do well on it, it can replace one in-class exam score. This means you can bomb one test and still do fine in this class.

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Grading (continued)

What if my lowest score is homework or participation? This score can also be replaced by the final – **but there are conditions:** you must either have submitted at least 2/3 of the assignments or earned at least 50% of the points for that category. If you blow off homework assignments or participation classwork, you are not eligible!

Canvas Grading:

Canvas provides a useful location to submit assignments and record grades. It even has an automatic feature to “total” the assignments stored on it, producing some sort of misshapen “Grade” which students sometimes think is related to their course grade. It is not. **DO NOT LOOK AT THE CANVAS COURSE TOTAL AND EXPECT IT TO REFLECT YOUR ACTUAL COURSE GRADE.** When we get towards the end of the semester I will add a few columns to the Canvas grades which show where you stand.

Weekly homework

Mathematics often requires time to ponder ideas and write them out. There will therefore be homework due every week. These should be written up **NEATLY AND CLEARLY, ORGANIZED IN AN OBVIOUS MANNER.** Submit them on Canvas – scan or take pictures of your work and upload it to the appropriate place. **DO NOT IGNORE THESE ASSIGNMENTS!**

Class Participation

Your instructor believes in *active learning* – students learn more from *doing* than from *watching*. To that end, most days will have class work – typically a group worksheet or class discussions on the topics of the day. You are expected to be in class and participate in the day’s activities. *This is part of your grade!*

If you are in class and trying, you will get credit for that day’s worksheet. If you have to miss class, you will need to submit the worksheet on Canvas (see Daily Homework for more on how to submit assignments on Canvas). If you came to class and worked on the worksheet you *may* submit it on Canvas, but it’s not necessary.

These worksheets are always graded on effort rather than accuracy. Learning is messy, and being occasionally wrong on a worksheet is very normal. Being wrong all the time is less desirable, but mistakes on your worksheet won’t hurt your grade.

Exams

There will be three exams and a cumulative final. The exams are scheduled for the following days: October 6, November 3 and December 8; the final is on Thursday, December 21 **at 2:45 pm to 4:45 pm.** Note that the actual dates of in class exams may vary slightly.

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Extra Credit and Canvas Discussion Boards

There will be a Canvas discussion board topic listed for weekly homework preparation. If you post a question or an answer to a question on this board, you will receive extra credit (max +1 point per week can be earned). Your SUBJECT LINE should include the problem number, and your MESSAGE should include a restatement (full or partial) of the problem. This way, other students will be able to read and learn from the postings. *To be eligible for the extra credit, your posting must have content – a posting such as “I agree” or “That doesn’t seem right” does not earn any extra credit on homework.*

In addition to the boards mentioned above, there will be general discussion boards which are optional and offer no grade benefit. They are set up to allow you to ask your professor questions, or to offer a place for discussions not about the material (e.g., organizing study sessions, complaints about the book, etc.)

All boards will be monitored after the fact. That is, you will post directly to the board, and I will monitor periodically throughout the week. Certain standards apply to postings:

- Postings are never anonymous
- Postings must not contain inappropriate (foul, rude, hostile) language

Violation of these rules may constitute academic misconduct (see below).

Attendance:

You are expected to regularly attend class. When circumstances arise to prevent you from coming to class, you should let your instructor know (email is best, but in an emergency you can contact the [Dean of Students office](#), 715-346-2611).

Note: missing an exam or scheduled presentation day will only be allowed in exceptional circumstances and will require ACCEPTABLE DOCUMENTATION as to the reason for the absence.

Academic Misconduct Policy

I expect you to complete the coursework for this course. Failure to complete an assignment will result in zero points awarded for that assignment. Late assignments may lose points, at the discretion of the instructor. Also see the following link:

<http://www.uwsp.edu/admin/stuaffairs/rights/rightsChap14.pdf>

Student Rights and Responsibilities

All students are expected to know the UWSP student responsibilities found on the Dean of Students webpage. Information on Academic Concerns is available at <https://www.uwsp.edu/dos/Pages/stu-academic.aspx>. Information on Conduct Concerns and on Personal Concerns are also available on the Dean of Students site.

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Inclusivity and Accommodations

It is my intent that all students from diverse backgrounds and perspectives be served by this course, that students' learning needs be addressed both in and out of class, and that the diversity brought by everyone in this class be viewed as a resource, strength, and benefit. It is my intent to present materials and activities that are respectful of diversity. I encourage you to make suggestions to this end. Please let me know ways to improve the effectiveness of the course for you personally, or for other students or student groups.

If you have experienced a bias incident (an act of conduct, speech, or expression to which a bias motive is evident as a contributing factor regardless of whether the act is criminal) at UWSP, you have the right to report it using this [link](#). You may also contact the Dean of Students office directly at dos@uwsp.edu.

UWSP is committed to providing reasonable and appropriate **accommodations** to students with disabilities and temporary impairments. If you have a disability or acquire an impairment or injury during the semester and you need assistance, please contact the * Disability Resource Center as soon as possible, in room 108 of the Collins Classroom Center (CCC), at 715-346-3365, or at DATC@uwsp.edu. You may also want to visit their website, [Disability Resource Center \(DRC\) - University of Wisconsin-Stevens Point \(uwsp.edu\)](#).

Tentative Schedule Fall 2023

Week	Coverage
9/5 to 9/8	Pseudocode, 3.1 Algorithms, 3.2 Growth of Functions
9/11 to 9/15	3.3 Complexity of Algorithms, 3.4 Recursive Algorithms
9/18 to 9/22	Stacks and Queues, 11.2 Applications of trees, 11.3 Tree traversal
9/25 to 9/29	11.4 Spanning Trees, 11.5 Minimal Spanning Trees, 1.1 Propositional Logic
10/2 to 10/6	1.3 Propositional Equivalences, 2.1 Sets, Exam I
10/9 to 10/13	2.2 Set Operations, 2.3 Functions, Priority Queues/Heaps
10/16 to 10/20	10.1 Graphs and Graph Models, 10.2 Graph Terminology
10/23 to 10/27	10.5 Euler paths and Hamiltonian Paths
10/30 to 11/3	10.6 Shortest Path Problems, Exam II
11/6 to 11/10	4.5 Application of Congruences and Hashing, 6.1 The basics of counting
11/13 to 11/17	6.3 Permutations and Combinations, 6.5 Generalized Permutations and Combinations
11/20 to 11/22	9.1 Relations and their properties + THANKSGIVING WEEK
11/27 to 12/1	9.2 n -art relations and their applications, 9.5 Equivalence Relations, 9.6 Partial Orderings
12/4 to 12/8	13.3 Finite State Machines with no output, Task Processing, Exam III
12/11 to 12/15	Topics from Voting Systems, 12.1 Boolean Functions, 12.3 Logic Gates, 12.4 Minimization of Circuits; Course Review
Final Thursday	12/21 at 2:45 pm to 4:45 pm