

Discrete Math for Computing Syllabus Math 190-01 Summer Semester 2022-23

Instructor: Dr. Manuel Lopez, malsma@rit.edu

Class Time & Place: Monday & Wednesday 1:00 – 3:10 PM

Via Zoom: Join URL: <https://rit.zoom.us/j/99279205386>

Recitation: Friday 1:00 – 3:10 PM via Zoom: Join URL: <https://rit.zoom.us/j/96212283641>

Office Hours: Tuesday and Thursday 1:00 – 3:00 P.M. via Zoom

Zoom link for Office Hours: Join URL: <https://rit.zoom.us/j/5581073504>

Official Textbook: **Discrete Mathematics and Its Applications**, 8th Edition

Author: Kenneth Rosen

Publisher: McGrawHill.

Welcome to Discrete Math for Computing!

The official RIT textbook is the one listed above and as such it was automatically listed as required in the RIT Bookstore website Akademos.

I will not demand you purchase the textbook for such a short course as ours.

I try to make it easier in these short summer sessions to complete the course while minimizing expenditures:

- At the bottom of this syllabus there is a list of the topics we cover. A textbook covering such standard topics will work as a substitute. In fact, here is an option that is open source and interactive:
<https://discrete.openmathbooks.org/dmoi3.html>
- Homework will be delivered via WebWork, which is an open source homework platform. You find our course at
<https://webwork.rit.edu/webwork2/MATH-190-01/>

Because of the shortness of our course there is only time for one midterm test.

Other forms of individual assessment will be four quizzes and one Final Exam.

I encourage you to work with peers while studying and doing homework assignments. However your individual efforts, with no source of help other than I (the instructor), is all you are allowed for the midterm, the quizzes and the Final Exam. You are bound during these individual assessments by RIT's Honor Code.

Your overall course grade will weight each type of grade as follows:

Final Exam 35%
Midterm Test 25%
Homework 20%
Quizzes 20%

Attendance will also have an impact on your grade. Being synchronously present while the Zoom class meeting takes place is the only way to be counted present for a class meeting. The cloud recordings of our Zoom meetings is for record-keeping. It is no substitute for the interactive Zoom call we call our class meeting.

Friday attendance is essential for either one of the quizzes or the midterm.

If you have a planned event preventing you from attending on any one given day, you should tell with to schedule a time for you to complete due work before the rest of the class. For example, if going to a wedding on the day of the midterm then schedule an early test. A wedding does not constitute an excused absence so you can't ask for a make-up afterwards.

I understand life happens, so there is a contingency in case there is a mess-up on the day of the midterm. If you score higher in the Final Exam than the Midterm Test, a bonus will be added to your Midterm Test (even if midterm score = 0) to bring it up to your Final Exam score.

Calculators: I allow the use of a basic calculator for doing arithmetic. This policy is to help keep a leveled playing.

Homework: Homework assignments will be due every Monday at 11:59 PM, except the first week of this short summer term. To turn your answers in you will either use a drop box in myCourses or you will finish the homework in WebAssign if you do purchase access from Cengage.

Quizzes: Every Friday we don't have a midterm test scheduled, there will be a 16-minute/4-question question through MyCourses.

The quiz dates are July 7, 14, 21 and August 4 of 2023.

In-class Test/Midterm: Scheduled for 7/28/2023, during our regular class-meeting time. They'll consist of twelve problems, and you will have 1.5 hours to do it. All test questions will carry the same weight. In the days leading up to the midterm we will take time to go over a test study guide. The actual test questions will be numerically different than the study problems.

Final Exam: The Final Exam is takes place Friday, August 11, 2023 from 1:00 PM to 3:30 PM. The final will be synchronous using a zoom link found in our myCourses shell – the same process you now use to connect to the lectures. The final exam will have 20 questions and the standard final exam period is 2.5 hours. All Final Exam questions will carry the same weight.

As explained above, if you do better in the Final Exam than the midterm, the difference in the scores will be given as a bonus in the category of midterms. This should be an incentive for you to finish strong with a good Final Exam score.

This is how numerical scores become letter grades for the course grade:

A- [90, 93]	A [93, 100]	
B- [80, 83)	B [83, 87)	B+ [87, 90)
C- [70, 73)	C [73, 77)	C+ [77, 80)
D [60, 70)		

Anything below 60 will be graded F

Two Policies to be aware of...

- 1) **Honor Code and Academic Integrity:** RIT's [Honor Code](#) (P03.0) is the academic work code of conduct. It goes beyond no cheating and no plagiarism to help you understand what constitutes a breach of the Honor Code. If a breach were to occur the [Student Academic Integrity Policy](#) (D08.0) describes the process to address such a breach.
- 2) **Student Accommodations Statement:** RIT is committed to providing academic adjustments to students with disabilities. If you would like to request academic adjustments such as testing modifications due to a disability, please contact the Disabilities Services Office (DSO). Contact information for the DSO and information about how to request adjustments can be found at <https://www.rit.edu/disabilityservices/>. After you receive academic adjustment approval, it is imperative that you see me during office hours so that we can work out whatever agreement is necessary.

List of Topics for our Course:

Propositional Logic

Statements, Operators, Implication, Biconditional, Negation
If-Then statements and the Converse, Inverse and Contrapositive statements derived
Valid Conclusions
Predicates and Quantifiers

Sets Operations on sets (union, intersection, set difference, complementation)

Power Sets
Partition of a set
Cartesian product
Cardinality of a set (countable vs. uncountable)

Function Definition and properties: injective (one-to-one), surjective (onto), bijective

Counting Additive and Multiplicative principles Special Counting Numbers Combinations and Permutations

Sequences Recursively defined vs. determined by closed-form formula

Equivalence Relations

Orderings: Partial and Total

Modular Arithmetic