

EECS 203: DISCRETE MATHEMATICS
The University of Michigan
Fall 2007

Course Overview. EECS 203 introduces the mathematical foundations of computer science and engineering. Topics covered include propositional and predicate logic, set theory, functions and relations, growth of functions and asymptotic notation, elementary combinatorics, graph theory, and number theory.

Instructors. When sending email to any of the instructors be sure to put “EECS 203” somewhere in the subject line.

Prof. Seth Pettie, pettie@umich.edu

Lecture 1: Tuesday & Thursday, 9:00–10:30, Room CSE 1670

Lecture 2: Tuesday & Thursday, 12:00–1:30, Room CSE 1670

Office Hours: Tuesday & Thursday, 2:00–3:00, Room CSE 3628

GSI:

Gowtham Bellala, gowtham@umich.edu

Discussion 11: Monday 1:30–2:30, Room DOW 1006

Discussion 21: Wednesday 2:30–3:30, Room DOW 2150

Office Hours: Tuesday & Thursday 3:00–4:00

Sindhu Kutty, skutty@umich.edu

Discussion 12: Friday 3:30–4:30, Room DOW 2150

Discussion 22: Monday 12:30–1:30, Room DOW 1006

Office Hours: Monday 1:30–2:30, Friday 4:30–5:30

Julie Weber, weberjs@umich.edu

Discussion 13: Monday 1:30–2:30, Room EECS 1003

Discussion 23: Wednesday 2:30–3:30, Room EECS 1003

Office Hours: Monday 2:30–3:30, Wednesday 1:30–2:30

All GSI office hours will be held in CSE 1637

Textbook. Kenneth Rosen, *Discrete Mathematics and Its Applications*, University of Michigan Edition, New York: McGraw Hill, 2007. (This is the version sold in the bookstore.) If you find a good price on the standard 6th Edition of this book you can use it instead.

Course Web Site. The homepage for this course will be on CTools. We will use it to make brief announcements and to distribute homework assignments and sample exams so be sure to check it regularly.

Attendance. You may attend either lecture, but it is wise to choose one and stick with it. I will try to keep the two lectures synchronized but this may not be possible. If you switch lectures in the middle of the semester you may see some material twice or miss some altogether. Attendance at a discussion section is optional, but highly recommended. You happen to have some of the best GSIs in the department.

Homework.

- Please write your answers clearly and neatly to avoid problems when the grader is correcting your homework. If the grader cannot read your answer you will not get credit for it.

- You are encouraged to form homework groups and to work on problems collaboratively. However, the collaboration is restricted to the discussion of ideas only. You must write your own solutions.
- To ease handling of homework, staple together your entire set of homework sheets. On the first page print the following items:
 - Your name.
 - Homework number.
 - The lecture section(s) that you are *enrolled* in and *attend*.
 - The discussion section(s) that you are *enrolled* in and *attend*.
- Homeworks are *typically* posted on Tuesdays and due the following Tuesday at 5pm. Refer to the course schedule for the post/due dates for each homework.
- Submit your homework to the drop box labeled EECS 203, located in Room EECS 2420. Late homeworks will not be accepted for any reason because solutions will be posted the following day.
- If there is a mistake in grading your homework you have one week to request a regrade after the homework is returned to you. When requesting a regrade, attach a cover page clearly explaining which questions should be regraded and why. Note that “I think I deserve more partial credit on this question” is not a valid reason for a regrade.
- There will be 10 homeworks, with the top 9 contributing to your final grade. An illness or other unforeseen event will not be given special consideration, so if you are wise you will not miss an assignment frivolously.

Exams. There will be three exams. If you cannot take the exam at the scheduled time you should notify us *at least* one week in advance so we can make alternative arrangements.

Exam 1: Wednesday, October 10, 7–9pm

Exam 2: Wednesday, November 14, 7–9pm

Exam 3: Wednesday, December 12, 7–9pm

Course Grade Distribution.

Homework: 20%

First Exam: 25%

Second Exam: 25%

Third Exam: 30%

EECS 203 Schedule, Fall 2007

Lec#	Topic	Text Sects.	Day	Date	Notes
1	Introduction, foundations, logic	1.1	Tues	4-Sep	HW 1 assigned
2	Propositional equivalences, predicates	1.2, 1.3	Thurs	6-Sep	
3	Quantifiers, nested quantifiers	1.3, 1.4	Tues	11-Sep	HW 1 due, HW 2 assigned
4	Rules of inference, Proofs	1.5, 1.6	Thurs	13-Sep	
5	Sets and set operations	2.1, 2.2	Tues	18-Sep	HW 3 assigned
6	Functions	2.3	Thurs	20-Sep	HW 2 due
7	Graphs	9.1, 9.2	Tues	25-Sep	HW 4 assigned
8	Graph representation, graph connectivity	9.3, 9.4 3.8	Thurs	27-Sep	HW 3 due
9	Properties of graphs		Tues	2-Oct	HW 5 assigned
10	Sequences and sums	2.4	Thurs	4-Oct	HW 4 due
11	Exam 1 Review		Tues	9-Oct	
	Exam 1		Wed	10-Oct	
12	Mathematical induction	4.1, 4.2	Thurs	11-Oct	HW 5 due
	FALL BREAK		Tues	16-Oct	
13	Recursive definitions and structural induction	4.3	Thurs	18-Oct	
14	Algorithms, growth of functions	3.1, 3.2	Tues	23-Oct	HW 6 assigned
15	Analysis of algorithms, recurrence relations	3.3, 4.4	Thurs	25-Oct	
16	Counting and the pigeonhole principle	5.1, 5.2	Tues	30-Oct	HW 7 assigned
17	Permutations and combinations	5.3	Thurs	1-Nov	HW 6 due
18	Binomial Coefficients	5.4	Tues	6-Nov	HW 8 assigned
19	Generalized permutations and combinations	5.5	Thurs	8-Nov	HW 7 due
20	Exam 2 Review		Tues	13-Nov	HW 9 assigned
	Exam 2		Wed	14-Nov	
21	Relations	8.1, 8.2	Thurs	15-Nov	HW 8 due
22	Closure relations, equivalence relations	8.4, 8.5	Tues	20-Nov	HW 10 assigned
	THANKSGIVING		Thurs	22-Nov	
23	Partial orders	8.6	Tues	27-Nov	
24	Modular arithmetic	3.4	Thurs	29-Nov	HW 9 due
25	Algorithms for integers	3.6	Tues	4-Dec	
26	Applications of number theory	3.7	Thurs	6-Dec	HW 10 due
27	* Grade school revisited: How to multiply two numbers		Tues	11-Dec	

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	<i>Final Exam</i>		<i>Wed</i>	<i>12-Dec</i>	
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