

MATH 245: Discrete Mathematics

Fall 2015 TR 9:30-10:45 NE 60

Overview:

This course is a rigorous introduction to many of the tools useful in higher mathematics and computer science. The major topics to be covered will be logic and proof techniques. Also included will be a brief introduction to set theory, number theory, relations, functions, complexity, combinatorics, and graph theory.

Learning Objectives:

Students will carefully state all definitions relevant to the course, and apply these definitions to objects and determine whether or not the definition applies. This will often involve a calculation.

Students will have a ready supply of examples and non-examples to these definitions, and will be able to justify why these are examples or non-examples.

Students will prove and disprove statements using the methods of discrete mathematics. They will construct rigorous proofs following the rules of logic.

Students will learn several mathematical theorems and algorithms, as found in the text, and apply these tools in the right contexts.

Coursepack:

Lecture Notes in Discrete Mathematics, by Marcel B. Finan

Students are expected to own and read the coursepack; it is inexpensive (free if downloaded), clearly written, and brief. Students are expected to solve *all* the problems in the text (answers can be checked in the back). Homework is not collected, and is generally not discussed in class due to time constraints – please bring homework questions to office hours, or ask via email.

Attendance:

Students are expected to attend every class, and are responsible for any missed material. Makeup quizzes and exams are not given under any circumstances. Under extraordinary circumstances (e.g. hospitalization), an alternate grading policy may be arranged.

Quizzes:

On all class days except exam days, there is a 5 minute quiz on recent material. Students must complete these quizzes on 3×5 index cards which they must bring. All quizzes are closed book, closed notes, with no calculators or other aids permitted. Quizzes turned in (even blank ones) will receive 5-10 points; quizzes not turned in will receive 0 points. The three lowest quiz scores will be dropped. Note that there will be quizzes on the days before and after the exams; the latter will typically be a second chance on one of the exam questions.

Exams:

The two in-class exams and final are closed book, closed notes, with no calculators or other aids permitted. Many questions will be similar to homework questions. The final exam is cumulative, with additional emphasis on material not covered on earlier exams. All three exams are graded on a 50-100 scale.

Course Mechanics:

The course proceeds at the pace of roughly one section per course meeting (Sections 10 and 11 will be combined). Special dates:

Tue Aug. 25: first meeting Tue Sep. 29: catchup/review Thu Oct. 1: Exam 1 (§1-9)
 Tue Nov. 3: catchup/review Thu Nov. 5: Exam 2 (§10-18) Nov. 24,26: no class
 Thu Dec. 10: last meeting Thu Dec. 17 8-10am: Final Exam (in usual classroom)

Grading:

The 25 daily quizzes (after dropping three) are worth 1% of the course grade each. The two in-class exams are worth 20% each, and the final is worth the remaining 35%. All grades are normalized to lie between 50% (blank but present) and 100% (perfect score). Missing grades are still worth 0%. The grading policy is as follows:

A	A-	B+	B	B-	C+	C	C-	D+	D	F
92.0	90.0	88.0	82.0	80.0	78.0	72.0	70.0	68.0	62.0	0

Collaboration:

Students are strongly encouraged to study together, and to work together to solve exercises. Quizzes and exams must be taken without assistance, however.

Extra Credit:

Unfortunately due to the large enrollment of this course no extra credit will be possible.

SDS:

If you are a student with a disability and believe you will need accommodations for this class, it is your responsibility to contact Student Disability Services at (619) 594-6473. To avoid any delay in the receipt of your accommodations, you should contact Student Disability Services as soon as possible. Please note that accommodations are not retroactive, and that accommodations based upon disability cannot be provided until you have presented your instructor with an accommodation letter from Student Disability Services. Your cooperation is appreciated.

Professor:

Vadim Ponomarenko

<http://rohan.sdsu.edu/~vadim/> (all old materials may be found here, under “teaching”)
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Office hours: GMCS 511, Mondays, Wednesday, Fridays 11:00-11:45am, and by appt.

Teaching Assistant:

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Office hours: GMCS 528, Mondays 2-3:45pm, Wednesdays 3-5pm.