

MATH 245-2: Discrete Mathematics

Spring 2010 (TR 11-12:15pm, EBA-258)

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Office hours: Mondays and Wednesdays 9:30-11:30am, and by appointment

No class on: Feb. 2, Feb. 4, Mar. 25 (furloughs), Mar. 30, Apr. 1 (spring break)

No office hours on: Mar. 10, Apr. 14, Apr. 28 (furloughs)

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. There will also be a brief introduction to set theory, relations, functions, complexity, combinatorics, probability, and graph theory.

Textbook:

Lecture Notes in Discrete Mathematics, by Marcel B. Finan

Students are required to buy the coursepack, which includes supplementary material. Any typos in the text should be brought to the instructor's attention immediately; extra credit is awarded for this. This course will cover the entire text, at a pace of approximately three sections per week.

Homework:

Students are expected to solve *all* problems in the text, together with any supplementary problems given in class. Homework will not be collected or checked; however quizzes are often based on problems in the text.

Attendance:

Students are expected to attend every class; otherwise, they are personally responsible for copying notes from a classmate. *Makeup exams or quizzes are not given under any circumstances.*

Course Mechanics:

The daily quizzes will be scaled to be worth 20% of the course grade; each one will therefore count about 1%. Three in-class exams will be worth 15% each. The final will be worth 30%, and class participation will be worth the remaining 5%.

The grading policy is as follows: A 92-100, B 82-87, C 72-77, D 62-67, \pm as obvious

Calendar:

Feb. 2,4: No class

Feb. 16: Exam 1

Mar. 9: Exam 2

Mar. 10: No OH

Mar. 25: No class

Mar. 29-Apr.2: Holiday

Apr. 14: No OH

Apr. 20: Exam 3

Apr. 28: No OH

May 20: Final

Quizzes:

Each class day, other than exam days, there will be a 5 minute quiz on recent material. Students must complete these quizzes on 3×5 cards which they must bring. All quizzes are closed book, closed notes, with no calculators or other aids permitted. Students whose quizzes are collected will receive 5-10 points; students that missed the quiz will receive 0.

Exams:

The three in-class exams are open book, open notes; it is particularly helpful to have complete solutions to the exercises. Calculators or other aids are not permitted. The final exam will be cumulative, with additional emphasis on material not covered on earlier exams. All four exams will be graded on a 50-100 scale.

In-Class Exams: Tue. Feb. 16 (Chap.1) Tue. Mar. 9 (Chap.2) Tue. Apr.20 (Chap. 3,4)

Final Exam: Tuesday, May 20, 10:30-12:30pm.

Learning Objectives:

Students are expected to understand elementary mathematical syntax, identifying and constructing well-formed arguments. Students are also expected to understand elementary mathematical semantics, interpreting and constructing meaningful mathematical statements. These are the primary objectives.

Students are expected to learn a list of mathematical definitions, as provided on the “Vocabulary list” portion of the text. For each definition, students are expected to not only memorize the statement, but be able to distinguish objects that do or do not satisfy the definition. Students are expected to learn several mathematical theorems and algorithms, as given throughout the text, such as De Morgan’s Laws or finite state machines. For each, students are expected to correctly apply these tools in the right contexts. These are secondary objectives.

Finally, students are expected to appreciate the limitations of the material of this course, to identify how it connects to other fields of mathematics and how to further investigate each of the topics covered via further study. This is the tertiary objective.

Extra Credit:

At most *three times* during the semester (though not the first day), you may mark “Count this double” on your quiz before handing it in. A quiz that counts double will count both as itself and as replacing the lowest quiz grade.

Academic Integrity Policy:

It is encouraged and extremely helpful to cooperate on homework problems. However, absolutely no collaboration or cheating is permitted during quizzes and exams. Any violations will lead to an SDSU Academic Dishonesty Incident Report, as well as serious sanctions.

Professor Contact Info:

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