Undergraduate Seminar in Discrete Mathematics

MIT Course 18.304 – Spring 2013

Thomas Rothvoss

SYLLABUS

Class schedule: MWF 3pm   (Room 2-151)

Office hours: W 4-6pm   (Room 2-363A)

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Goals and description of the course. The main object of this seminar course is to prepare students to **successfully read, present, discuss and write mathematical research**. The focus will be on several areas of combinatorics and discrete mathematics.

(1) Students will give **two 45-50 minute talks** each during the course of the semester, on a topic to be decided at least one week in advance. Ideally both talks are on the same topic, with the second talk being more advanced than the first one. The material can either be selected either from a book in the reference list or any other book dealing with discrete mathematics (or any survey paper or research paper in this field). The talk can be either a black board talk or a talk using slides.

At least 48 hours before a presentation, students will email me an **abstract** of their talk; after that, they will send me **two quizz questions and solutions** on the topic of their presentation, which might be part of the quizzes described at point 2)[1]. The talks together with the talk about the term paper (see (3)) determine **determine 40% of the final grade**.

(2) There will be two, 50-minute in-class quizzes, scheduled on dates Q1 and Q2 below. Their focus will be on the topics of the talks up until the previous class meeting. The quizzes determine **20**% (10% each) of the **final grade**.

(3) Finally, there will be **one term paper**. The topic is to be decided and approved by date P1 below. One first draft and one possible revision must be submitted by dates P2 and P3. The final version, to be 8 to 12 pages in length has to be written in Latex and is due by date P4.

The papers do not necessarily need to contain original results, must be successfully written in the style of an actual research or expository journal article. The paper determine **30% of the final grade**.

Each student will give a **25-minute talk** on the topic of his term paper. Considering the short time slot, students are highly encouraged to give at least this talk using **slides**. This talk contributes to the 40% mentioned in (1).

4) **Attendance** is mandatory for this course (no more than one unexcused absence is permitted during the semester). Attendance, together with the quality of the **abstracts** submitted before the talks, determine **10% of the final grade**.

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[1]Needless to say that these questions should not be communicated to your class mates.

Important dates. Below are the main dates and deadlines. No exceptions, delays, or make-ups are allowed. These dates may be subject to change.

- Q1. Quiz 1: March 15, 2013

- Q2. Quiz 2: May 8, 2013

- P1. Selection and approval of term paper topic: March 18, 2013

- P2. First draft of term paper: April 12, 2013

- P3. Second draft of term paper (if necessary): April 26, 2013

- P4. Final version of term paper: May 15, 2013