

MAS575 Combinatorics, Spring 2009

Syllabus

Overview

This is a graduate-level course on Combinatorics. Since the area of Combinatorics is so wide, we will study various theorems as well as useful methods for approaching combinatorial problems. It is strongly recommended that you have certain knowledge of materials covered in Discrete Mathematics (MAS275). Some elementary knowledge of graph theory and probability theory will be helpful.

The following topics are currently being considered to be included in this course:

- Extremal Set Theory
- Ramsey Theory
- Probabilistic Method
- Linear Algebra Method

Lecture

T,Th 9:00AM-10:20AM, E6-1 (Natural Science Bldg 자연과학동), 2413

General Information

- Professor: Sang-il Oum (엄상일)
- Email: sangil. Add @kaist.edu
- Course website: <http://mathsci.kaist.ac.kr/~sangil/spring08mas575/>
- Office: E6-1 bldg, Room 3403 (Telephone 350-2728)
- Office Hours: Tuesday 4:30PM-5:30PM (tentative), or by appointments
- Textbook: Unfortunately no single book seems suitable for this course.
- References: The list is not complete.
 - Extremal Combinatorics (Jukna)
 - The Probabilistic Method (Alon, Spencer)
 - Handbook of Combinatorics (Graham, Grötschel, Lovász)
 - Additive Combinatorics (Tao, Vu)

Grading

- 30% Homework, 30% Presentation, 40% Final Exam.
- Homework: Homework will be given mostly biweekly in class on Thursday and it is due at the following Tuesday. It is allowed to collaborate with other students. But the solution has to be written by yourself independently and you must understand your solution.
- Presentation: Each student will be asked to select one of the several choices and give a presentation for 15~60 minutes. Each choice can be a section of a book, or a paper, or a theorem. No two presentations will be on the same topic.
- Final Exam: (Tentative) Tuesday 9:00AM-12:AM of the final exam week.