

Syllabus of “Combinatorics”, 2020 Fall, USTC

Lecture Time: Tuesday 2:00PM–3:35PM, Thursday 9:45AM–11:20AM

Lecture Location: 5301

Instructor: Jie MA

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Office: 1603, School of Math

Teaching assistants:

- Jun GAO, email: gj0211@mail.ustc.edu.cn
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We will also have a discussion group at QQ 1060162542.

Covered Materials:

Our course will give a broad introduction to combinatorics. The materials loosely can be divided into the following topics:

- (1). Enumeration (including elementary counting, inclusion-exclusion, generating functions and recursive relations),
- (2). Basic graph theory,
- (3). Double counting and pigeonhole principle (including Ramsey theory),
- (4). Extremal combinatorics (including Posets, Sperner’s Lemma and Turan’s Theorem),
- (5). If time permits, we will also talk about probabilistic methods and algebra methods in combinatorics as well as discrete geometry.

Course Home Page: <http://staff.ustc.edu.cn/~jiema/Comb2020/>

Homeworks and course announcements will be posted in the Course Home Page. Lecture notes also will be updated there during the semester.

Homeworks:

There will be weekly assignments during the term. Students are required to submit homework in the beginning of class on **every Tuesday**. It is highly recommended to submit written English solutions using latex.

Tests and Final:

There will be one midterm. Closed book, closed notes and NO calculator for all exams.

Grading Scheme:

Homeworks (20%)+ Midterm (30%)+ Final (50%).