

## COURSE SYLLABUS - FALL 2015

### MATH 304 COMBINATORICS (3 credits)

**Section A: 9:30am-10:50am TR, 0128 Carver Hall**

Final Exam: 9:45am-11:45am, Wed, Dec 16 2015

**Instructor:** Bernard Lidický, 422 Carver Hall, lidicky@iastate.edu

Web page: <http://orion.math.iastate.edu/lidicky/201/>

Office hours: 10:00am - 10:50am MW

Grader: Dai Dong, 244 Carver Hall, timdai@iastate.edu

**Brief description of goals and objectives:** The aim of this course is to give an introduction to finite mathematics, like enumerations, binomial coefficients, inclusion-exclusion principle, recurrence relations, generating functions, designs and other symmetric configurations, (no or very little about graphs). We emphasize techniques, but also present proofs of theorems. We will follow the textbook by Brualdi closely.

**Prerequisites:** MATH 166 or MATH 166H; MATH 201

**Textbook:**

**R. A. Brualdi: Introductory Combinatorics (5th edition)**

Older editions of the book may serve well too, but use at your own risk.

**Topics to be covered:** Math 304 will cover chapters Chapters 1–3,5–8. If time permits, also parts of Chapters 9,10,14.

**Study habits:** This course does require considerable work. You should be devoting time to reading the book, thinking about the ideas, concepts, and techniques, talking with some of your classmates about them, doing all the assigned homework problems. It is expected that you will read the book - not everything you should learn and know will be discussed in class. Regular attendance and participation in class activities are the prerequisites for success.

**Online resources:** The class has a webpage <http://orion.math.iastate.edu/lidicky/304/> and a page in Blackboard. The webpage contains basic information about the class and class log, which serves as a tentative schedule of the course as well as list of what was done in class. The Blackboard contains grades as well as a forum where you can seek help.

**Homework assignments:** The assignments will be given weekly. They will be always due Thursday BEFORE the class begins, including the Thursday of the dead week. The homework assignment does not cover all exercises in the chapters in the book. You are strongly encouraged to read all the exercises in the book and try to solve them. You will get the most knowledge if you try to solve as many exercises as possible. No late assignments will be accepted. If you cannot make it to class on some Thursday, you can scan your work and email it to the instructor. The email must ARRIVE to the instructor before the class begins. Your work on any assignments should be well-presented in good English, and not written carelessly. While you can discuss the assignments with classmates, the work you hand in should be your own write-up and not copied from someone else. The homework assignments will be 30% of your final grade. You are required to type all your assignments in latex.

**Exams:** There will be three in-class exams during the semester, each worth 15% of the final grade, and a final exam, worth 25% of the final grade. The exams will occur during regular class meeting times and are scheduled for Dec 3, Oct 29 and Oct 1. These dates are unlikely to change but any such change will be announced both in class and on Blackboard.

There will be no make-up exam unless you have “excusable absence”. Please check <http://www.math.iastate.edu/Faculty/ClassPolicies.html> for the university policy on “excusable absences”. The only possible excuses are medical excuse, extra curricular activities as a representative of Iowa State University, armed forces deployment, or officially mandated court appearances, including jury duty. Official documentation is required in all cases (if you feel sick, go to a doctor).

**Quizzes:** There might be occasional quizzes. The quizzes will not negatively affect your grade.

**Grading policy:** Your final grade will be 30% for homework, 15% for each of the three midterms and 25% for the final exam. Grades thresholds are 90% for A, 80% for B, 70% for C and 60% for D. Below 60% is F.

Because of this absolute standard, you are not in competition with your classmates nor does their performance influence positively or negatively your performance. You are encouraged to form study/problem groups with your classmates; things not clear to you may become obvious when you try to explain them to others or when you hear other points of view. Sometimes just verbalizing your mathematical thoughts can deepen your understanding.

As already mentioned, if you discuss with others the exercises, each person should write up her/his own version of the solution.

If you do not have a anybody in class to talk to, you are welcome to use the forum on Blackboard to ask questions. Anybody from the course can answer. Please, never post a complete solution of any homework assignment to the Blackboard.

**Classroom etiquette:** Communication devices must remain switched off during the class periods and final. Laptops or iPads are allowed only for textbook reading or taking notes.

**Attendance:** Although attendance will not be taken, it is required. Office hours are for those of you who need additional help beyond that given in the class; they are not substitutes for class.

**Academic dishonesty:** The class will follow Iowa State University's policy on academic dishonesty. Anyone suspected of academic dishonesty will be reported to the Dean of Students Office. <http://www.dso.iastate.edu/ja/academic/misconduct.html>

**Disability accommodation:** Iowa State University complies with the Americans with Disabilities Act and Sect 504 of the Rehabilitation Act. If you have a disability and anticipate needing accommodations in this course, please contact instructor to set up a meeting within the first two weeks of the semester or as soon as you become aware of your need. Before meeting with the instructor, you will need to obtain a SAAR form with recommendations for accommodations from the Disability Resources Office, located in Room 1076 on the main floor of the Student Services Building. Their telephone number is 515-294-7220 or email [disabilityresources@iastate.edu](mailto:disabilityresources@iastate.edu). Retroactive requests for accommodations will not be honored.

**Dead week:** There will be a homework assignment due Thursday of the dead week.