

## Course Information

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*Office hours:* *Primary:* M13, T11 *Secondary:* W16, R14, and by appointment

### Course Websites:

[http://blackboard.louisville.edu/bin/redirect\\_temp.pl?course\\_id=MATH-387-01-4158](http://blackboard.louisville.edu/bin/redirect_temp.pl?course_id=MATH-387-01-4158)  
<http://aleph.math.louisville.edu/teaching/2015FA-387>

**Lecture:** MWF 12:00–12:50 in Natural Sciences Building 317

**Prerequisites:** MATH 206 or EAC 102, and MATH 325.

**Description:** Pigeon-hole principle, counting techniques, binomial coefficients, generating functions, Stirling and Catalan numbers, permutations and graphs.

**Textbook:** *Applied Combinatorics, Preliminary Edition*, by Keller and Trotter. This book is available as a free download at <http://people.math.gatech.edu/~trotter/book.pdf>.

**Objectives:** In this class, we will study the fundamentals of discrete mathematics, including deductive proof, inductive proof, counting techniques, binomial coefficients, the pigeonhole principle, the inclusion-excluding principle, recurrence relations, generating functions, and graphs.

**Responsibilities:** You are responsible for attending class on a regular basis and maintaining comprehension of the scheduled class objectives for each day. You are expected to be active participants in class, to turn in assignments promptly, and to attend examinations. Except in case of emergency, late assignments will only be accepted for half credit within one week of the original due date. It is important that you show your work or outline the process of discovery for each problem on the homework assignments. No credit will be given for answers which do not include work, unless otherwise stated.

**Special needs:** Any scheduled absence during an examination, or any other special needs, *must* be brought to my attention before the end of the second week of class. Unscheduled absences will be handled on a case-by-case basis, with exceptions generally made only for documented emergencies.

**Honesty:** There are many resources available to help you succeed in this class, including consultation during office hours, secondary texts, and cooperation with other students. It is important, however, that all papers handed in be the result of your individual comprehension of the course material. Duplication of others' work is both a disservice to your own education and a serious violation of the university's academic honesty policy.

**Grades:** Homework problems account for 40% of your grade. Each of the two midterm examinations will be 15% of your grade, and the final examination will contribute 30%. A 90% overall guarantees a grade of A–, 80% guarantees a B–, 70% guarantees a C–, and 60% guarantees a D–. Grade cutoffs may be lower than those indicated here, but will not be higher.

**Title IX/Clery Act Notification:** Sexual misconduct (including sexual harassment, sexual assault, and any other nonconsensual behavior of a sexual nature) and sex discrimination violate University policies. Students experiencing such behavior may obtain confidential support from the PEACC Program (502-852-2663), Counseling Center (502-852-6585), and Campus Health Services (502-852-6479). To report sexual misconduct or sex discrimination, contact the Dean

of Students (502-852-5787) or University of Louisville Police (502-852-6111). Disclosure to University faculty or instructors of sexual misconduct, domestic violence, dating violence, or sex discrimination occurring on campus, in a University-sponsored program, or involving a campus visitor or University student or employee (whether current or former) is not confidential under Title IX. Faculty and instructors must forward such reports, including names and circumstances, to the University's Title IX officer. For more information, see the Sexual Misconduct Resource Guide (<http://louisville.edu/hr/employeerelations/sexual-misconduct-brochure>).

**Changes:** The syllabus is subject to change. Changes will be announced in class and updated online.

## Course Schedule

This schedule is tentative and subject to change.

Week	Monday	Wednesday	Friday
1	August 24th The Big Picture	August 26th Chapter 1	August 28th Drop date Chapter 1
2	August 31st Section 2.1	September 2nd Section 2.2	September 4th Section 2.3
3	September 7th MLK, Jr. day	September 9th Section 2.4	September 11th Section 2.4
4	September 14th Section 2.5	September 16th Section 2.6	September 18th Section 2.7
5	September 21st Sections 3.1, 3.2	September 23rd Sections 3.3, 3.4	September 25th Sections 3.5, 3.6
6	September 28th Section 7.1, 7.2	September 30th Section 7.3	October 2nd Exam #1
7	October 5th Midterm break	October 7th Section 7.4	October 9th Section 7.5
8	October 12th Section 4.1	October 14th Section 4.1	October 16th Sections 4.2, 4.3
9	October 19th Sections 4.2, 4.3	October 21st Section 8.1	October 23rd Section 8.2
10	October 26th Withdrawl date Sections 8.3, 8.4	October 28th Section 8.5	October 30th Section 8.6
11	November 2nd Sections 9.1, 9.2	November 4th Section 9.2	November 6th Sections 9.3, 9.4
12	November 9th Section 9.5	November 11th Section 9.6	November 13th Section 9.6
13	November 16th Section 15.1	November 18th Section 15.2	November 20th Section 15.3
14	November 23rd Exam #2	November 25th Thanksgiving break	November 27th Thanksgiving break
15	November 30th Chapters 5 and 6	December 2nd Chapters 5 and 6	December 4th Chapters 5 and 6
16	December 7th Chapters 5 and 6	December 9th No class	December 11 Final exam, 11:30–14:00