

Math 579: Combinatorics
Fall 2019
Lecture Schedule

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Below is a list of the topics we intend to cover, along with a rough schedule. Actual schedule is subject to change without notice. Last updated October 31, 2019.

Week	Topic	Chapters
8/26 – 8/30	Introduction to Combinatorics	
	The Pigeon-Hole Principle	1.1–1.2
	Review Mathematical Induction	2.1–2.2
9/2	<i>Labor Day: No Classes</i>	
9/3 – 9/6	Permutations	3.1
	Words and Alphabets	3.2
	Binomial Coefficients	3.3
9/9 – 9/13	The Binomial Theorem	4.1
	The Multinomial Theorem	4.2
	Inclusion-Exclusion and the Sieve Formula	7.1
9/16 – 9/20	Compositions	5.1
	Set Partitions	5.2
	Integer Partitions	5.3
9/23 – 9/27	Review for Midterm Exam 1	
	Midterm Exam 1: Thursday, September 26	
9/30 – 10/4	Directed and Undirected Graphs	9.1–9.3
	Hamiltonian Cycles	9.2
	Graph Isomorphisms	9.4
10/7 – 10/11	Trees	10.1
	Adjacency and Incidence Matrices	10.3
	Counting Spanning Trees	10.4
10/14 – 10/18	Bipartite Graphs	11.1–11.2
	Coloring and Matching	11.3–11.4
10/21 – 10/25	Planar Graphs	12.1
	Dual Graphs	12.2
10/28 – 11/1	Review for Midterm Exam 2	
	Midterm Exam 2: Thursday, October 31	
11/4 – 11/8	Recurrence Relations	
	Introduction to Generating Functions	
11/11	<i>Veteran's Day: No Classes</i>	
11/12 – 11/15	Generating Functions for Enumeration	
	Ordinary Generating Functions	8.1
11/18 – 11/22	Generating Functions for Enumeration (Week 2)	
	Exponential Generating Functions	8.2
11/25 – 11/27	The Sensitivity Conjecture	
11/28 – 11/29	<i>Thanksgiving Break: No Classes</i>	
12/2 – 12/6	Extra Topics (To Be Determined)	
12/9 – 12/11	Review for Final Exam	
12/18	Final Exam: Tuesday, December 17	