

Calendar

Combinatorics

Fall 2026

I will put all deadlines on the [Blackboard Calendar](#). Please check it regularly.

0.1 Key university dates

For official University dates, see the [Fall 2026 academic calendar](#) and the [Registrar's final-exam schedule](#).

Date	Event
Monday, August 17	Classes begin
Monday, September 7	Labor Day holiday
Tuesday, November 24–Friday, November 27	Thanksgiving holiday
Wednesday, December 9	Final exam: Wednesday, December 9, 2026, 8:00-10:00

0.2 Exams

Date	Assessment
Friday, September 18	Midterm 1
Friday, October 16 TENTATIVE	Midterm 2
Friday, November 13 TENTATIVE	Midterm 3
Wednesday, December 9, 2026, 8:00-10:00	Exam 4 and mastery reassessment

0.3 Daily lecture log

The public daily log below contains the lectures currently released. Later planning entries remain in the instructor's private lecture log and do not appear in this navigation.

Wk	Lec
	L1: Set notation and basic counting
2026-08-17	Sets, cardinality, Cartesian products, and the sum rule.
	L2: Product rule and strings
2026-08-19	Product rule; strings with and without repetition.
	L3: More counting techniques
2026-08-21	Subtraction, division, permutations, combinations, and counting models.
	L4: Applications of combinations and combinations with repetition
2026-08-22	Lattice paths. Repeated-letter anagrams and multinomial coefficients. Combinations with repetition.
	L5: Review of choice models, increasing sequences, and basic binomial expansions
2026-08-26	Choosing the correct model: does order matter and are repetitions allowed. A second bijection.
	L6: Polynomials, paths, Pascal recursion and restricted lattice paths, intro to inclusion-exclusion
2026-08-28	Multinomial formula and polynomial expansions Coefficient extraction from powers of multivariate polynomials.
	L7: Catalan paths and the inclusion–exclusion principle
2026-08-30	Reflection argument and Catalan numbers. Inclusion–exclusion for two, three, and finitely many sets.
	L8: Applications of inclusion–exclusion
2026-09-02	Characteristic functions. Conclusion of the proof of the inclusion–exclusion principle. Combinatorial interpretation.
	L9: Applications of inclusion–exclusion
2026-09-04	Applications to bounded integer solutions and strings without repeated letters that avoid certain substrings.
	L10: Applications of inclusion–exclusion
2026-09-09 ⁴	Review of counting strings that avoid specified substrings. The inclusion–exclusion formula for strings.
	L11: Applications of inclusion–exclusion
2026-09-11	Strings that use every symbol, surjective functions, and Stirling numbers. Graphs without isolated vertices.
	L12: Rook polynomials and forbidden positions
2026-09-14 ⁵	Review of rook numbers and rook polynomials, including examples of their computation and applications.
	L13: Midterm 1
2026-09-18	Midterm 1.
	L14: Ordinary generating functions: definitions and series multiplication
2026-09-20	Ordinary generating functions; encoding finite and unlimited selections; substitution to track additional constraints.
	L15: Ordinary generating functions: advanced techniques
2026-09-23	Infinite formal power series and rational functions; constrained integer equations; combinatorial interpretation.
	L16: TODO: Friday 9/25
2026-09-25	TENTATIVE
	L17: TODO: Monday 9/28
2026-09-28	TENTATIVE
	L18: TODO: Wednesday 9/30
2026-09-30	TENTATIVE
	L19: Solving homogeneous linear recurrences with constant coefficients
2026-10-02	Introduction to solving homogeneous linear recurrences with constant coefficients: classification and solution.
	No class
2026-10-05 ⁸	No class.
	L20: Characteristic polynomials, repeated roots, and nonhomogeneous recurrences
2026-10-07	The characteristic polynomial of a linear recurrence with constant coefficients. Solutions of nonhomogeneous recurrences.
TENTATIVE	Lecture topics and assessment dates may change.

0.4 Week and unit overview

Weeks	Unit	Topic
1–4	Unit I: Enumeration	Counting models, bijections, double counting, and incl
4–5	Unit II: Generating-function foundations	Formal power series and ordinary generating-function
6–8 TENTATIVE	Unit III: Recurrences	State models, linear recurrences, recursive evaluation,
9–16 TENTATIVE	Further topics	To be announced