

Course Guide Introduction to Proofs: Spring 2025:

Date	Topic	Text	Collected	In-class
T: 1-14	propositional logic: negation, and, or, implication, biconditional	Logic and Proofs		
R: 1-16	predicate logic: open sentences, quantifiers, negation	Logic and Proofs		Quiz 1
M: 1-20	No Class on January 20			
T: 1-21	proof examples: basic methods illustrated	Logic and Proofs	Mission 1	
R: 1-23	proof examples: basic methods illustrated	Logic and Proofs		Quiz 2
T: 1-28	proof examples: basic methods illustrated	Logic and Proofs	Mission 2	
R: 1-30	set theory: examples, union, intersection, subset, set equality	Sets		Quiz 3
T: 2-4	set theory: examples, union, intersection, subset, set equality	Sets	Mission 3	
R: 2-6	set theory: complements, indexed unions and intersections, Cartesian Product	Sets		Quiz 4
T: 2-11	set theory: further examples	Sets	Mission 4	
R: 2-13	examples			Quiz 5
T: 2-18	Test 1			
R: 2-20	Proof by mathematical induction	Induction		
T: 2-25	Proof by mathematical induction	Induction		Quiz 6
R: 2-27	relations	Equivalence Relations	Mission 5	
T: 3-4	equivalence relations and partitions	Equivalence Relations		
R: 3-6	equivalence relations and partitions	Equivalence Relations		Quiz 7
	March 10-14, Spring Break			
T : 3-18	well ordering principle & the division algorithm	Modular Arithmetic	Mission 6	
R: 3-20	gcd, the Euclidean Algorithm, Bezout's Theorem	Modular Arithmetic		Quiz 8
T : 3-25	modular arithmetic	Modular Arithmetic	Mission 7	
W: 3-26	Assessment Day: no classes			
R: 3-27	functions, injectivity and surjectivity	Functions		Quiz 9
T: 4-1	functions, restriction, extension, bijection	Functions	Mission 8	
R: 4-3	functions, images and preimages of sets	Functions		Quiz 10
T: 4-8	Examples		Mission 9	
R: 4-10	Test 2			
T: 4-15	cardinality	Cardinality		
R: 4-17	countable and uncountable sets	Cardinality		Quiz 11
T: 4-22	proofs from calculus	Analysis		
R: 4-24	proofs from calculus	Analysis	Mission 10	
T: 4-29	algebra overview	Algebra		Quiz 12
W: 4-30	Reading Day			
	Final Exams Friday May 2, 8:00-10:00am			

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Grading: usual 1000pt scale with:

Test 1 = 200pts,

Test 2 = 200pts,

Missions = 200pts (each is worth 20pts, note the date of collection is three days after the due date)

Quizzes = 100pts, (each is worth 10pts, these are usually very short and definition based)

Final = 300pts.