

COURSE CALENDAR

Current as of April 11, 2023.

MON.	TUES.	WED.	THURS.	FRI.
Jan. 16 2023 <div>Martin Luther King Jr. Day</div>	17	18 <div>Motivation</div> <ul style="list-style-type: none"> Syllabus 19c. – 20c. revolution 	19	20 <div>Prerequisite Survey</div> <div>Motivation</div> <ul style="list-style-type: none"> Argumentation Truth values
23 <div>Propositional Logic</div> <ul style="list-style-type: none"> Propositions Connectives Truth tables 	24	25 <div>Propositional Logic</div> <ul style="list-style-type: none"> Sufficiency Necessity Boolean algebras 	26 <div>Recitation</div>	27 <div>Problem Set 1</div> <div>Propositional Logic</div> <ul style="list-style-type: none"> Equivalence proofs Boolean theorems
30 <div>First-Order Logic</div> <ul style="list-style-type: none"> Predicates Quantifiers 	31	Feb. 1 2023 <div>First-Order Logic</div> <ul style="list-style-type: none"> Rules of inference Proofs 	2 <div>Recitation</div>	3 <div>First-Order Logic</div> <ul style="list-style-type: none"> Validity of arguments Church's Theorem
6 <div>Problem Set 2</div> <div>ZF Set Theory</div> <ul style="list-style-type: none"> Well-formed formulæ What is a set? Why set theory? 	7	8 <div>ZF Set Theory</div> <ul style="list-style-type: none"> Ax. Existence Ax. Extensionality Ax. Pairing Ax. Union 	9 <div>Recitation</div>	10 <div>ZF Set Theory</div> <ul style="list-style-type: none"> Unions of sets Ax. Separation
13 <div>Set Theory</div> <ul style="list-style-type: none"> Ax. Regularity Ax. Power Set The empty set 	14	15 <div>Problem Set 3</div> <div>Set Theory</div> <ul style="list-style-type: none"> v. Neumann ordinals Ax. Infinity Arithmetic 	16 <div>Recitation</div>	17 <div>Induction</div> <ul style="list-style-type: none"> \mathbb{Z}, \mathbb{Q}, and \mathbb{R} L.E.P. of \mathbb{N} Weak induction
20 <div>Induction</div> <ul style="list-style-type: none"> Weak induction Strong induction 	21	22 <div>Complexity</div> <ul style="list-style-type: none"> Fibonacci Sequence Recurrence relations 	23 <div>Recitation</div>	24 <div>Problem Set 4</div> <div>Complexity</div> <ul style="list-style-type: none"> Solving recurrences Searching algorithms
27 <div>Complexity</div> <ul style="list-style-type: none"> Solving recurrences Sorting algorithms 	28	Mar. 1 2023 <div>Problem Set 5</div> <div>Complexity</div> <ul style="list-style-type: none"> What is a function? 	2 <div>Recitation</div>	3 <div>Midterm 1</div>

MON.	TUES.	WED.	THURS.	FRI.
6 <div>Complexity</div> <ul style="list-style-type: none"> Landau notation 	7	8 <div>Complexity</div> <ul style="list-style-type: none"> Big-\mathcal{O} examples 	9 <div>Recitation</div>	10 <div>Complexity</div> <ul style="list-style-type: none"> Big-\mathcal{O} examples
13 <div>Spring Break</div> <div>Midterm Grades Due</div>	14 <div>Spring Break</div>	15 <div>Spring Break</div>	16 <div>Spring Break</div>	17 <div>Spring Break</div>
20 <div>Cardinality</div> <ul style="list-style-type: none"> Injections Surjections Bijections 	21	22 <div>Cardinality</div> <ul style="list-style-type: none"> Cardinality Examples Hilbert's Hotel 	23 <div>Recitation</div>	24 <div>Cardinality</div> <ul style="list-style-type: none"> Examples Proof of $\mathbb{N} = \mathbb{Z}$
27 <div>Cardinality</div> <ul style="list-style-type: none"> Proof of $\mathbb{N} = \mathbb{Q}$ 	28	29 <div>Problem Set 6</div> <div>Cardinality</div> <ul style="list-style-type: none"> Strings & Sequences Finite Sets Countable Sets 	30 <div>Recitation</div>	31 <div>Cardinality</div> <ul style="list-style-type: none"> Cantor's Diag. Arg. Cantor's Theorem
<i>Apr. 3 2023</i> <div>Number Theory</div> <ul style="list-style-type: none"> Divisibility Prime Numbers Fund. Thm. of Arith. Euclid's Theorem 	4	5 <div>Number Theory</div> <ul style="list-style-type: none"> Co-primality GCD Euclidian Division 	6 <div>Recitation</div>	7 <div>Easter Holiday</div>
10 <div>Easter Holiday</div>	11 <div>Problem Set 7</div>	12 <div>Number Theory</div> <ul style="list-style-type: none"> Modular Arithmetic 	13 <div>Recitation</div>	14 <div>Number Theory</div>
17 <div>Number Theory</div>	18	19 <div>Graph Theory</div>	20 <div>Recitation</div>	21 <div>Midterm 2</div>
24 <div>Graph Theory</div>	25	26 <div>Problem Set 8</div> <div>Graph Theory</div>	27 <div>Recitation</div>	28 <div>Graph Theory</div>

MON.	TUES.	WED.	THURS.	FRI.
<i>May. 1 2023</i> Graph Theory	2	3 Problem Set 9 Review	4 Reading Days	5 Reading Days
8	9	10 Final Exam 4:15pm – 6:15pm	11	12
15 Final Grades Due	16	17	18	19