

COURSE CALENDAR

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"> Variable scope Rules of inference Validity of arguments Proofs 	2 <div>Recitation</div>	3 <div>ZF Set Theory</div> <ul style="list-style-type: none"> What is a set? Well-formed formulæ Ax. Existence Ax. Extensionality
6 <div>Problem Set 2</div> <div>ZF Set Theory</div> <ul style="list-style-type: none"> Ax. Pairing Ax. Union Ax. Separation Ax. Power Set 	7	8 <div>ZF Set Theory</div> <ul style="list-style-type: none"> Ax. Regularity Ax. Infinity v. Neumann ordinals \mathbb{Z}, \mathbb{Q}, and \mathbb{R} 	9 <div>Recitation</div>	10 <div>Problem Set 3</div> <div>ZF Set Theory</div> <ul style="list-style-type: none"> Arithmetic on \mathbb{N} Functions, lists, matrices, sequences
13 <div>Induction</div> <ul style="list-style-type: none"> L.E.P. of \mathbb{N} Weak induction 	14	15 <div>Induction</div> <ul style="list-style-type: none"> Weak induction Strong induction 	16 <div>Recitation</div>	17 <div>Problem Set 4</div> <div>Recurrences</div> <ul style="list-style-type: none"> Recursion Recurrence relations
20 <div>Recurrences</div> <ul style="list-style-type: none"> Algorithms 	21	22 <div>Asymp. Analysis</div> <ul style="list-style-type: none"> More algorithms Big-\mathcal{O} Big-Ω \preceq-ordering 	23 <div>Recitation</div>	24 <div>Midterm 1</div>
27 <div>Functions</div> <ul style="list-style-type: none"> Injections Surjections Bijections 	28	Mar. 1 2023 <div>Functions</div> <ul style="list-style-type: none"> Monomorphisms Epimorphisms Isomorphisms 	2 <div>Recitation</div>	3 <div>Problem Set 5</div> <div>Functions</div> <ul style="list-style-type: none"> Schröder-Bernstein Permutations

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6 <div>Cardinality</div> <ul style="list-style-type: none"> • Finite sets • Countable sets • Ax. Choice 	7	8 <div>Cardinality</div> <ul style="list-style-type: none"> • Some theorems 	9 <div>Recitation</div>	10 <div>Problem Set 6</div> <div>Cardinality</div> <ul style="list-style-type: none"> • Uncountable sets
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"> • Strings • Sequences 	21	22 <div>Relations</div> <ul style="list-style-type: none"> • Properties • Preorders • Partial orders 	23 <div>Recitation</div>	24 <div>Problem Set 7</div> <div>Relations</div> <ul style="list-style-type: none"> • Equiv. Relations
27 <div>Number Theory</div>	28	29 <div>Number Theory</div>	30 <div>Recitation</div>	31 <div>Problem Set 8</div> <div>Number Theory</div>
<i>Apr. 3 2023</i> <div>Number Theory</div>	4	5 <div>Number Theory</div>	6 <div>Recitation</div> <div>Problem Set 9</div>	7 <div>Easter Holiday</div>
10 <div>Easter Holiday</div>	11	12 <div>???</div>	13 <div>Recitation</div>	14 <div>Midterm 2</div>
17 <div>Graph Theory</div>	18	19 <div>Graph Theory</div>	20 <div>Recitation</div>	21 <div>Problem Set 10</div> <div>Graph Theory</div>
24 <div>Graph Theory</div>	25	26 <div>Graph Theory</div>	27 <div>Recitation</div>	28 <div>Problem Set 11</div> <div>Graph Theory</div>

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<div>May. 1 2023</div> <div>???</div>	2	<div>3</div> <div>Review</div>	<div>4</div> <div>Reading Days</div>	<div>5</div> <div>Reading Days</div>
8	9	<div>10</div> <div>Final Exam 4:15pm – 6:15pm</div>	11	12
<div>15</div> <div>Final Grades Due</div>	16	17	18	19