

# Math 240 Spring 2009

March 17, 2009

Day	Monday	Wednesday	Friday
Date	Feb 2	Feb 4	Feb 6
Topic	<b>Intro, Logical Form and Equivalence</b>	<b>Conditional Statements</b>	<b>Conditional Statements</b>
Text	<b>1.1</b>	<b>1.1, 1.2</b>	<b>1.2</b>
Topics	Logical Equivalence, Compound Statements, Statements, Truth Tables, DeMorgan's Laws,	Conditional, Negations, Contrapositive, Converse, Inverse, Biconditional,	Conditionals continued
Date	Feb 9	Feb 11	Feb 13
Topic	<b>Arguments</b>	<b>Digital Logic Circuits</b>	<b>Circuits for Addition</b>
Text	<b>1.3</b>	<b>1.4</b>	<b>1.5</b>
Topics	Modus Ponens, Modus Tollens, Other Rules of Inference, Fallacies, Contradiction	Combinational Circuits, Disjunctive Normal Form	Half-Adder, Full-Adder, Parallel Adder
Date	Feb 16	Feb 18	Feb 20
Topic	<b>Predicates and Quantified Statements</b>	<b>More Predicates and Quantified Statements</b>	<b>Statements with Multiple Quantifiers</b>
Text	<b>2.1</b>	<b>2.2</b>	<b>2.3</b>
Topics	Predicate, Truth Set, Universal Quantifier, Existential Quantifier, Formal and Informal Language	Negating Universal and Existential Statements, Contrapositive, Converse, Inverse,	Practice and Application with Multiple Quantifiers
Date	Feb 23	Feb 25	Feb 27
Topic	<b>Arguments with Quantified Statements</b>	<b>Direct Proof and Counterexample</b>	<b>Mike in N.J.</b>
Text	<b>2.4</b>	<b>3.1</b>	<b>No Class</b>
Topics	Universal Instantiation, Universal Modus Ponens, Universal Modus Tollens, Using Diagrams to test validity,	Even/Odd Numbers, Prime/Composite Numbers, Direct Proof, Disproof by Counterexample	
Date	Mar 2	Mar 4	Mar 6
Topic	<b>Direct Proof and Counterexample, Rational Numbers</b>	<b>Exam 1</b>	<b>Divisibility</b>
Text	<b>3.2</b>		<b>3.3</b>
Topics	Properties of Rational Numbers		Properties of Divisibility, Unique Factorization Property,
Date	Mar 9	Mar 11	Mar 13
Topic	<b>Division into Cases: Quotient-Remainder Theorem</b>	<b>Floor and Ceiling</b>	<b>Indirect Argument</b>
Text	<b>3.4</b>	<b>3.5</b>	<b>3.6</b>
Topics	Div, Mod, Additional Properties of Modular Arithmetic	Properties of Floor and Ceiling	Contradiction, Contraposition,
Date	Mar 16	Mar 18	Mar 20
Topic	<b>Two Classical Theorems</b>	<b>Sequences</b>	<b>Mathematical Induction</b>
Text	<b>3.7</b>	<b>4.1</b>	<b>4.2</b>
Topics	Irrationality of square root 2, Infinitude of Primes	Summation and Product Notation, Properties of Summation and Products, Change of Variable	Principle of Mathematical Induction, Geometric Sums,
Date	Mar 23	Mar 25	Mar 27
Topic	<b>SPRING BREAK</b>		
Text			
Topics			
Date	Mar 30	Apr 1	Apr 3
Topic	<b>Mathematical Induction</b>	<b>More Mathematical Induction</b>	<b>More Mathematical Induction</b>
Text	<b>4.2</b>	<b>4.3</b>	<b>4.3</b>
Topics	Principle of Mathematical Induction,	More Examples Using Induction	More Examples Using Induction
Date	Apr 6	Apr 8	Apr 10
Topic	<b>Counting Techniques</b>	<b>Exam 2</b>	<b>More Counting</b>
Text	<b>6.1, 6.2</b>		<b>6.3</b>
Topics	Sample Space, Possibility Trees, Multiplication Rule, Permutations		Addition Rule, Principle of Inclusion/Exclusion,
Date	Apr 13	Apr 15	Apr 17
Topic	<b>Combinations</b>	<b>Binomial Theorem</b>	<b>Relations</b>
Text	<b>6.4, 6.6</b>	<b>6.7</b>	<b>10.1, 10.2</b>
Topics	Combinations, Algebra of Combinations	Binomial Theorem	Relations, Inverse Relation Binary Relations,
Date	Apr 20	Apr 22	Apr 24
Topic	<b>Equivalence Relations</b>	<b>Senior Projects Day</b>	<b>Mike in D.C.</b>
Text	<b>10.3</b>		<b>No Class</b>
Topics	Partitions, Equivalence Classes		
Date	Apr 27	Apr 29	May 1
Topic	<b>Introduction to Graphs</b>	<b>Paths and Circuits</b>	<b>Matrix Representations</b>
Text	<b>11.1</b>	<b>11.2</b>	<b>11.3</b>
Topics	Basic terminology, Special Graphs, Degree	Defintions, Euler Circuits, Hamiltonian Circuits	Matrices and Directed Graphs, Matrices and undirected graphs, Counting Walks of Length n
Date	May 4	May 6	May 8
Topic	<b>Isomorphisms of Graphs</b>	<b>Exam 3</b>	<b>Trees</b>
Text	<b>11.4</b>		<b>11.5</b>
Topics	Isomorphic Invariants, Graph Isomorphism		Characterizing Trees, Rooted Trees, Binary
Date	May 11	May 13	
Topic	<b>Spanning Trees</b>	<b>Catch Up Day</b>	
Text	<b>11.6</b>		
Topics	Minimum Spanning Trees, Kruskal's		
Date	May 18	May 20	
Topic		<b>Final Exam 8:30-11</b>	