Tentative Course Outline

FEB	3	4 Lecture 1: Administrivia. Proofs. PSET 1 out.	5	6 Lecture 2: Mathematical induction.	7 Recitation 1
FEB	10 Tutorial 1	11 Lecture 3: More induction. Strong induction. Well ordering. PSET 1 due. PSET 2 out.	12	13 Lecture 4: Number theory. Euclid's GCD. RSA.	14 Recitation 2
FEB	17 President's Day.	18 Monday Classes Tutorial 2 PSET 2 due. PSET 3 out.	19	20 Lecture 5: State machines. Algorithm verification.	21 Recitation 3
FEB	24 Tutorial 3	25 Lecture 6: More state machines and algorithm verification. PSET 3 due. PSET 4 out.	26	27 Lecture 7: Sets. Relations. Equivalence relations.	28 Recitation 4

MAR	3 Tutorial 4	4 Lecture 8: Functions. Pigeonhole Principle. PSET 4 due. PSET 5 out.	5	6 Lecture 9: Cardinality. Countability. Infinities.	7 Recitation 5
MAR	10 Tutorial 5	11 Lecture 10: Posets. Dilworth's Theorem. PSET 5 due. PSET 6 out.	12	13 Lecture 11: Graphs.	14 Recitation 6
MAR	17 Tutorial 6	18 Lecture 12: Summations. Stirling's Formula. Asymptotics. PSET 6 due.	19 Quiz 1	20 Lecture 13: Recurrences: substitution method.	21 Recitation 7
APRIL	31 Tutorial 7	1 Lecture 14: Recurrences: characteristic equation method. PSET 7 out.	2	3 Lecture 15: Counting. Permutations. Combinations.	4 Recitation 8
APRIL	7 Tutorial 8	8 Lecture 16: Binomial coefficients. Binomial theorem. Inclusion-exclusion. PSET 7 due. PSET 8 out.	9	10 Lecture 17: Permutations and combinations of multisets.	11 Recitation 9

APRIL	14 Tutorial 9	15 Lecture 18: Generating functions. PSET 8 due.	16	17 Lecture 19: Introduction to probability. Sample points and spaces.	18 Recitation 10
APRIL	21 Patriot's Day.	22 Patriot's Day.	23 Quiz 2	24 Lecture 20: Probability laws. Events. Conditional probability. PSET 9 out.	25 Recitation 11
APRIL	28 Tutorial 10	29 Lecture 21: Independence. Birthday paradox. Failure analysis. PSET 9 due. PSET 10 out.	30	1 Lecture 22: Random variables. Binomial distributions. Asymptotics.	2 Recitation 12
MAY	5 Tutorial 11	6 Lecture 23: Functions of random variables. Expectation. PSET 10 due. PSET 11 out.	7	8 Lecture 24: Markov's Theorem. Laws for expectation.	9 Recitation 13
MAY	12 Tutorial 12	13 Lecture 25: Variance. Moments. Chebyshev's Theorem. PSET 11 due.	14	15 Lecture 26: Gambler's ruin. Random walks.	16