

**MATHEMATICS 270 - MATHEMATICS FOR COMPUTING
WEEKLY SCHEDULE**

Week	Topics
1	<ul style="list-style-type: none"> • Introduction to course • Discrete Probability Distributions • Continuous Density Functions
2	<ul style="list-style-type: none"> • Counting techniques, Permutations & Combinations • Binomial Distributions • Conditional Probability
3	<ul style="list-style-type: none"> • Conditional Probability, Independent Events • Discrete Uniform Distributions • Geometric Distributions • Poisson Distributions
4	<ul style="list-style-type: none"> • Expected Value and Variance of Discrete and Continuous Random Variables
5	<ul style="list-style-type: none"> • Additional Applications, Simulation Demonstrations, & Requested topics • Exam I Review • Exam I
6	<ul style="list-style-type: none"> • Introduction to linear algebra • Solving linear equations • Review of vectors and matrix arithmetic
7	<ul style="list-style-type: none"> • Elementary row operations & Gaussian Elimination • Solutions sets <ul style="list-style-type: none"> – Homogeneous and non-homogeneous systems – geometry of solution sets
8	<ul style="list-style-type: none"> • Vector spaces & Subspaces • Linear independence • Basis
9	<ul style="list-style-type: none"> • Linear transformations • Matrix representation of linear transformations • Bijective transformations and invertible matrices

Week	Topics
10	<ul style="list-style-type: none">• Additional Applications, Programming Demonstrations, & Requested topics• Exam II Review• Exam II
11	<ul style="list-style-type: none">• Introduction to Computational Theory• Real-valued Functions• Big-\mathcal{O}, Big-Ω, Big-Θ Notations
12	<ul style="list-style-type: none">• Analysis of Algorithm Efficiency I• Exponential and Logarithmic Functions
13	<ul style="list-style-type: none">• Analysis of Algorithm Efficiency II<ul style="list-style-type: none">– Binary Search, Merge Sort, Insertion Sort
14	<ul style="list-style-type: none">• Formal Languages• Regular Expressions
15	<ul style="list-style-type: none">• Regular Expressions• Simplifying Finite State Automata
16	<ul style="list-style-type: none">• Additional applications & programming demonstrations• Review for final exam