<table>
<thead>
<tr>
<th>Week</th>
<th>Topics</th>
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| 1    | • Introduction to course  
      | • Discrete Probability Distributions  
      | • Continuous Density Functions |
| 2    | • Counting techniques, Permutations & Combinations  
      | • Binomial Distributions  
      | • Conditional Probability |
| 3    | • Conditional Probability, Independent Events  
      | • Discrete Uniform Distributions  
      | • Geometric Distributions  
      | • Poisson Distributions |
| 4    | • Expected Value and Variance of Discrete and Continuous Random Variables |
| 5    | • Additional Applications, Simulation Demonstrations, & Requested topics  
      | • Exam I Review  
      | • Exam I |
| 6    | • Introduction to linear algebra  
      | • Solving linear equations  
      | • Review of vectors and matrix arithmetic |
| 7    | • Elementary row operations & Gaussian Elimination  
      | • Solutions sets  
      | – Homogeneous and non-homogeneous systems  
      | – geometry of solution sets |
| 8    | • Vector spaces & Subspaces  
      | • Linear independence  
      | • Basis |
| 9    | • Linear transformations  
      | • Matrix representation of linear transformations  
<pre><code>  | • Bijective transformations and invertible matrices |
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| 10   | • Additional Applications, Programming Demonstrations, & Requested topics  
      • Exam II Review  
      • Exam II |
| 11   | • Introduction to Computational Theory  
      • Real-valued Functions  
      • Big-$\mathcal{O}$, Big-$\Omega$, Big-$\Theta$ Notations |
| 12   | • Analysis of Algorithm Efficiency I  
      • Exponential and Logarithmic Functions |
| 13   | • Analysis of Algorithm Efficiency II  
      – Binary Search, Merge Sort, Insertion Sort |
| 14   | • Formal Languages  
      • Regular Expressions |
| 15   | • Regular Expressions  
      • Simplifying Finite State Automata |
| 16   | • Additional applications & programming demonstrations  
      • Review for final exam |