### Fall 2017 Math 122L Syllabus (Friday Lab)


“**AHP**” = “Math 122L Additional Homework Problems, “**CP**”=Coursepack

<table>
<thead>
<tr>
<th>Day</th>
<th>Date</th>
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<td>1-1</td>
<td>29-Aug</td>
<td>Review of AP AB Differentiation Topics</td>
<td>p.165(bottom): 1,3,9,10,13; p.166: 23,29,33; p.167: 42,43,45; <strong>AHP</strong>: Review of AP Differentiation. Topics</td>
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<tr>
<td>1-2</td>
<td>30-Aug</td>
<td><strong>Lab</strong>: L'Hopital's Rule and Relative Rates of Growth</td>
<td>4.5: 1,5,6,11,12,15-17,22,31,42,43,61,63,64; <strong>AHP</strong>: L'Hopital's Rule and Relative Rates of Growth.</td>
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<td>1-3</td>
<td>31-Aug</td>
<td>Riemann Sums</td>
<td>4.1: 2,13,15; 5.9: 3,14(a,b),15(a,b),37; <strong>AHP</strong>: Riemann Sums.</td>
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<td>1-4</td>
<td>1-Sep</td>
<td><strong>Lab</strong>: Riemann Sums</td>
<td>5.1: 2,13,15; 5.9: 3,14(a,b),15(a,b),37; <strong>AHP</strong>: Riemann Sums.</td>
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#### 2-1 5-Sep
- **Definition of the integral**

#### 2-2 6-Sep
- **Mean Value Thm and the Fund Thm of Calculus Pt. I**
- **AHP**: MVT and FTC Part I.

#### 2-3 7-Sep
- **Fund Thm of Calculus Pt. II**

#### 2-4 8-Sep
- **Lab**: Review of AP AB Integration Topics

#### 3-1 12-Sep
- **U-Substitution**

#### 3-2 13-Sep
- **Integration By Parts**

#### 3-3 14-Sep
- **Improper Integrals**

#### 3-4 15-Sep
- **Lab**: Varying Density

#### 4-1 19-Sep
- **Partial Fractions**

#### 4-2 20-Sep
- **Problem Solving Practice**

#### 4-3 21-Sep
- **Review**

#### 4-4 22-Sep
- **Exam 1**

#### 5-1 26-Sep
- **Introduction to Probability**

#### 5-2 27-Sep
- **Expected Value**

#### 5-3 28-Sep
- **Introduction to Sequences and Series**

#### 5-4 29-Sep
- **Lab**: Probability and Geometric Series

#### 6-1 3-Oct
- **Integral Test**

#### 6-2 4-Oct
- **Comparison Tests**

#### 6-3 5-Oct
- **Alternating Series and Absolute Convergence**

#### 6-4 6-Oct
- **Gateway Test**

#### 7-1 10-Oct
- **Fall Break**

#### 7-2 11-Oct
- **Ratio Test**

#### 7-3 12-Oct
- **Probability Distributions and Expected Value**

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7-4  13-Oct  **Lab:** Using Series to Solve Problems

8-1  17-Oct  Normal Distributions
8-2  18-Oct  Power Series  **6.8:** 12-17; **AHP:** Normal Distributions.
8-3  19-Oct  **Lab:** Centers of Mass
8-4  20-Oct  **Lab:** Centers of Mass

9-1  24-Oct  Representing Functions as Power Series  **8.6:** 1-5,7,11,12,14,16,21,24,26,29,30,37, 38a,b; **AHP:** Representing Functions as Power Series.
9-2  25-Oct  **Lab:** Series Practice
9-3  26-Oct  Review
9-4  27-Oct  Exam 2

10-1  31-Oct  Taylor Polynomials  **AHP:** Taylor Polynomials.
10-2  1-Nov  Taylor Series  **8.7:** 1-5,7,10,11,14,15,18,25,27,29,30,33,44,50,52,60-63, 65; **AHP:** Taylor Series.
10-3  2-Nov  **Lab:** Remainder Estimates for Taylor Series  **8.8:** 14-18,26; **AHP:** Fourier Series Preparation.
10-4  3-Nov  **Lab:** Remainder Estimates for Taylor Series

11-1  7-Nov  Fourier Series: Day 1  online supplement 1-6.
11-2  8-Nov  Fourier Series Day 2  online supplement 7-11.
11-3  9-Nov  Fourier Series Day 3  online supplement 13-18,20; **AHP:** Fourier Series.
11-4  10-Nov  **Lab:** Fourier Series

12-1  14-Nov  Introduction to Differential Equations  **7.1:** 1-5,7,9-15;  **AHP:** Introduction to Differential Equations.
12-2  15-Nov  Separation of Variables  **7.3:** 1,3,4,10,14,16,19,21,39,42,45;  **AHP:** Separation of Variables.
12-3  16-Nov  Applications of Differential Equations  **7.4:** 3,8,13,14,22.
12-4  17-Nov  **Lab:** Chemical Rate Equations

13-1  21-Nov  **Lab:** Chemical Rate Equations
13-2  22-Nov  Thanksgiving break
13-3  23-Nov  Thanksgiving break
13-4  24-Nov  Thanksgiving break

14-1  28-Nov  Slope Fields and Euler's Method  **7.2:** 1,3-6,11,19,21-25(a)(i,ii),(b);  **AHP:** Slope Fields and Euler's Method.
14-2  29-Nov  Catch Up Day
14-3  30-Nov  Review
14-4  1-Dec  Exam 3

15-1  5-Dec  Population Growth Models and Logistic Growth  **7.5:** 1,2,4,6,9,11,15;  **AHP:** Population Growth Models and Logistic Growth.
15-2  6-Dec  **Lab:** Series Solutions to Differential Equations
15-3  7-Dec  **Lab:** Net Worth
15-4  8-Dec  **Lab:** Net Worth