Math 2331: Calculus I  
Spring 2018 Syllabus

Disclaimer
This syllabus is current and accurate as of its posting date, but will not be updated. For the most complete and up-to-date course information, contact the instructor.

Instructor Information
Shayla Hoffman  
Office: Glen Rose High School, Room 106  
Phone: (254) 898-3822  
Email: hoffsh@grisd.net

Office Hours
<table>
<thead>
<tr>
<th>Monday: 7:15 am-7:45 am, 3:35 pm -4:10 pm</th>
<th>Tuesday: 7:15 am-7:45 am, 3:35 pm -4:10 pm</th>
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<tr>
<td>Wednesday: 7:15 am-7:45 am, 3:35 pm -4:10 pm</td>
<td>Thursday: 7:15 am-7:45 am, 3:35 pm -4:10 pm</td>
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<td>Friday: 7:15 am-7:45 am</td>
<td>(or by appointment)</td>
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Major Course Requirements

Tests
We will have four tests and a cumulative final examination. The exact dates and coverage of these tests will be announced in class, however, as a planning guide, you may expect to take the first test the fourth week of the semester, the second test the seventh week of the semester, the third test the tenth week of the semester, and the fourth test the fourteenth week of the semester. The final exam will be the week of May 8th. Makeup exams must be discussed before the test date.

Daily Work
Daily work will consist primarily of traditional homework problems from the textbook. Late work is not accepted. Quizzes will be given over daily work.

Calculations
Your homework average will count 10%, each test 15%, and the final exam 30% (45% if it replaces your lowest test grade). Then 90 and above is an A, 80-89 is a B, 70-79 is a C, 60-69 is a D, and less than 60 is an F.
**Student Learning Outcomes**

1. **The students will demonstrate factual knowledge including the mathematical notation and terminology used in this course.** Students will read, interpret, and use the vocabulary, symbolism, and basic definitions used in Calculus I as they pertain to functions, limits, and derivatives.

2. **The students will describe the fundamental principles including the laws and theorems arising from the concepts covered in this course.** Students will identify and apply the laws and formulas that result directly from the definitions; for example, domain and range of a function, operations on functions, the limit laws, and the differentiation formulas.

3. **The students will apply course material along with techniques and procedures covered in this course to solve problems.** Students will use the facts, formulas, and techniques learned in this course to sketch graphs of functions, to study position-velocity-acceleration problems, to solve related rate and optimization (“max-min”) problems.

4. **The students will develop specific skills, competencies, and thought processes sufficient to support further study or work in this field or related fields.** Students will acquire a level of proficiency in the fundamental concepts and applications necessary for further study in academic areas requiring Calculus I as a prerequisite, or for work in occupational fields requiring a background in Calculus I. These fields might include computer science, engineering, the physical and natural sciences as well as mathematics.

**Required Texts or Readings**
*Calculus of a Single Variable, 8th edition* by Larson, Hostetler, Edwards

**Chapter P Preparing for Calculus**
P.1 Graphs and Models  
P.2 Linear Models and Rates of Change  
P.3 Functions and their Graphs

**Chapter 1 Limits and their Properties**
1.1 A Preview of Calculus  
1.2 Finding Limits Graphically and Numerically  
1.3 Evaluating Limits Analytically  
1.4 Continuity and One-Sided Limits  
1.5 Infinite Limits

**Chapter 2 Differentiation**
2.1 The Derivative and the Tangent Line Problem  
2.2 Basic Differentiation Rules and Rates of Change  
2.3 Product and Quotient Rules and Higher-Order Derivatives  
2.4 The Chain Rule  
2.5 Implicit Differentiation
Chapter 3 Applications of Differentiation
3.1 Extrema on an Interval
3.2 Rolle’s Theorem and the Mean Value Theorem
3.3 Increasing and Decreasing Functions and the First Derivative Test
3.4 Concavity and the Second Derivative Test
3.5 Limits at Infinity
3.6 A summary of Curve Sketching
3.7 Optimization Problems

Chapter 4 Integration
4.1 Antiderivatives and Indefinite Integration
4.2 Area
4.3 Riemann Sums and Definite Integrals
4.4 The Fundamental Theorem of Calculus
4.5 Integration by Substitution
4.6 Numerical Integration

Chapter 5 Logarithmic, Exponential, and other Transcendental Functions
5.1 the Natural Logarithmic Function: Differentiation
5.2 The Natural Logarithmic Function: Integration
5.3 Inverse Functions
5.4 Exponential Functions: Differentiation and Integration
5.5 Bases Other than e and Applications
5.6 Inverse Trigonometric Functions: Differentiation
5.7 Inverse Trigonometric Functions: Integration

Subject Matter
We will be studying differential calculus for functions of one variable including a study of limits, continuity, derivatives of different classes of functions, indeterminate forms, maxima and minima, concavity, related rates, and optimization problems. We will also cover the basics of integration

The subject matter schedule listed below is tentative, and subject to change and adaptation. For current, updated information about course topics, contact the instructor.

<table>
<thead>
<tr>
<th>Week</th>
<th>Sections</th>
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<tr>
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<td>P.1, P.2, P.3</td>
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<tr>
<td>2</td>
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<tr>
<td>3</td>
<td>1.4, 1.5, Test 1</td>
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<tr>
<td>4</td>
<td>2.1, 2.2, 2.3</td>
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<td>5</td>
<td>2.4, 2.5 Test</td>
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<td>7</td>
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<td>8</td>
<td>3.7, Test</td>
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<td>9</td>
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<td>10</td>
<td>4.3, 4.4</td>
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Accommodations for Disabilities
Persons with disabilities which may warrant academic accommodations must contact the Office of Student Services in Suite 112, Houston Harte University Center (325) 942-2047 (studentservices@angelo.edu) in order to request such accommodations prior to any accommodations being implemented. You are encouraged to make this request early in the semester so that appropriate arrangements can be made.

Absences for Religious Holy Days
Any student who intends to observe a religious holy day should make that intention known in writing to the instructor prior to the absence.

Honor Code
Angelo State University expects its students to maintain complete honesty and integrity in their academic pursuits. Students are responsible for understanding the Academic Honor Code, which is available on the web at http://www.angelo.edu/forms/pdf/honorcode5.pdf