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Course Objectives: Applied Calculus is an elementary calculus course in which students will develop knowledge about key topics, and includes both skills and applications in business, economics, and the social and life sciences. Students will model ideas from functions and graphs and connect those ideas to limits, derivatives and integrals, and understand their connections to real world applications. The successful student will develop an appreciation of the subject and will be prepared to enter an Applied Calculus II course.


Course Requirements: Read the assigned materials as listed within the Modules. Required readings consist of sections of the Stewart textbook, PowerPoint slides and posted notes. The notes in particular are a valuable study guide for quizzes and exams. There are also short videos spread across the course on each topic which will help you to better understand material and reinforce topics. On this syllabus, you will find an outline of the chapters from textbook that we will be covered. For each chapter section, there are suggested problems for you to solve as an assignment. Each week there will be a quiz on the material covered during the preceding week. You will be able to start these tests as of each Tuesday morning but they must be completed by Tuesday evening. There will also be midterm and final examinations, with reviews posted to help you prepare for the exams.

The discussion board will be used for you to ask questions and comment on difficulties with assignments. I will offer some additional problems for you to explore as well, and you will also have the opportunity to comment on your fellow students’ solutions.

If you have questions about any problems or topics, please do not hesitate to email me.

Examinations and Course Grade: Weekly quizzes will be given. In addition, there will be a midterm after completion of Chapters 1 & 2 and will cover Functions and Limits. The final exam during the last week will cover Chapters 3, 4, and 5. The weekly quizzes will count for 40 percent of your grade and the midterm and final exam count 25 percent each. The discussion board will count for 10 percent of your grade.
CHEATING in any manner on an exam will result in a failing grade for the course. Any suspicious actions during an exam will be construed as cheating. A person being copied from will receive the same penalty as the one who is copying answers on an exam.

Assignment Problems:
Problems from Stewart are listed in this course outline. I will suggest a number of these problems that you should attempt to solve. Solutions for all problems in a chapter will be available after each section(s) is/are completed. However, I strongly recommend that you attempt to solve the problems independently of the solutions first and use the solutions as a check on your work. These problems are for your own practice and not for a grade, although they must be posted in the discussion board. Quiz and exam questions may be based on problems from the text, so it is to your advantage to attempt all problems.

Calculator use:
Students should use scientific calculators at minimum capable of addition, subtraction, multiplication, division, exponentiation and square roots. A TI83/84 graphing calculator can also be used.

Class Outline & Assignments
Orientation

Week 1
Math Review for Calculus
Problems will be posted

Week 2
Chapter 1: Functions, Transformations and Linear Models
Section 1.1 Problems 1, 7, 11, 21, 31 pages 13-15 text
Section 1.2 Problems 2,9,11,15,21,33,41,44 pages 25-27 text
Section 1.3 Problems 5,7,11,25,27,43 pages 37-38 text

Week 3
Chapter 1: Polynomial, Power, Exponential and Logarithmic Functions
Section 1.4 Problems 3, 5, 15, 23 pages 49-52 text
Section 1.5 Problems 13, 17, 21, 25, 29, 35 pages 61-62 text
Section 1.6 Problems 3, 5, 7, 9, 11, 27, 35, 37, 43, 47 pages 69-71 text
Week 4
Chapter 2: Limits, Rates of Change and Derivatives
Section 2.1 Problems 1, 3, 5, 9, 11, 15 pages 82-83 text
Section 2.2 Problems 11, 13, 19, 23, 25, 33, 35 page 93 text
Section 2.3 Problems 5, 9, 11, 17, 19, 31, 37 page 109 text

Week 5
Chapter 3: Differentiation Techniques- Product and Quotient Rules
Midterm Exam Chapters 1 & 2
Section 3.1 Problems 1-23 odd page 143 text
Section 3.3 Problems 3, 5, 7, 11, 13, 17, 21, 27 pages 164-165 text

Week 6
Chapter 3: More Differentiation Techniques; Application Problems
Section 3.4 Problems 1-17 odd pages 175-176 text
Section 3.2 Problems 3, 5, 17, 19 page 156 text
Section 3.6 Problems 1, 3, 5, 17, 19 pages 199-200 text

Week 7
Chapter 4: Curves and Graphs; Maximization & Minimization
Section 4.2 Problems 23, 25, 27, 36, 37 page 226 text
Section 4.3 Problem 5, 7, 11, 13, 15 page 236 text

Week 8
Chapter 4: Optimization & Intro to Fundamental Theorem of Calculus
Section 4.6 Problems 2, 3, 5, 9 page 261 text
Section 4.7 Problems 5, 9, 11 pages 273 & 274 text

Week 9
Chapter 5: The Definite Integral and Integration Techniques
Section 5.2 Problems 1, 3, 5, 11, 17, 21, 23, 25, 27, 29, 35 pages 306-307 text
Section 5.4 Problems 1, 3, 5, 7, 30 pages 321-322 text

Week 10
Chapter 6: Applications of Integration
Final Exam Chapters 3, 4, 5
Section 6.1 Problems 5, 7, 9 page 338