MATH 176-022: Topics in Calculus
Fall Semester 2009
MWF 8:00 – 8:50
Location: Ross Hall 1090

Course Instructor: Lee Roberson
Office: Ross Hall 2246
Email: lee.roberson@unco.edu
Office Hours: Ross Hall 1250 M 1:25 – 2:15
Ross Hall 2246 WF 1:25 – 2:15

Prerequisites: MATH 124 or two years of HS algebra with a grade of C or better.

Course Description: This calculus course is designed specifically for students majoring in the areas of business, social sciences, and the life sciences. In this course we will collect data and analyze straight-line and curved using graphing calculators. These graphs model a variety of real-world dynamic relationships, that is, relationships in which change is an essential feature, such as supply & demand relations; the growth of a bank account earning compound interest; the depreciation of an automobile; decay of drug concentrations in the bloodstream; population growth models; and the motion of a car as it races down a highway. Calculus is a mathematical language invented specifically to deal with dynamic situations. The primary objective of calculus is to describe rate of change, typically by interpreting this rate in geometrical terms, such as slope on a graph. Calculus applications include depreciation analysis, compound growth calculations, and profit maximization strategies.


Calculator: A graphing calculator can be very beneficial to have for this class, such as the TI-83 Plus or TI-84 Plus. Please bring your calculator to each class session.

Course Objectives:
1. Develop skill in discussing quantitative relations, using four fundamental techniques: graphs, numerical tables, mathematical formulas, and verbal summaries.
2. Acquire an intuitive interpretation of local and instantaneous rates of change (derivatives) using each of the four techniques.
3. Develop computational skills that permit the efficient determination of rates of change.
4. Apply calculus theory to analyze significant problems in the social sciences.

Grading: Letter grades will be determined by the following scale:
- 90 – 100% A
- 80 – 89% B
- 70 – 79% C
- 60 – 69% D
- Below 60% F
After averaging all grades for the semester, I will round up all grades 0.5 and higher and round down all grades below 0.5. (i.e. 89.5% rounds to a 90%, and 89.49% rounds down to an 89%)

Exams: There will be four exams during the semester, including the final exam. The three in-class exams will each comprise 15% of your final grade in the course. The final exam is worth 20% of your final grade. Below are tentative dates for each in-class exam, these dates will be set as we progress through the semester with at least one weeks’ notice.

<table>
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<tr>
<th>Exam</th>
<th>Date</th>
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<tr>
<td>First Exam</td>
<td>Wednesday</td>
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<tr>
<td>Second Exam</td>
<td>Wednesday</td>
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<tr>
<td>Third Exam</td>
<td>Wednesday</td>
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<tr>
<td>Final Exam</td>
<td>Monday December 7th at 8:00am</td>
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Quizzes: There will a short quiz at least once a week. These quizzes will comprise 15% of your final grade in the course. To score well on the quizzes it is strongly recommended that you work through the suggested homework problems since the problems on the quizzes will come directly from them. Note: Your total quiz score is worth the equivalent of one in-class exam score.

Making Up Quizzes and Exams: No one will be able to make up a quiz or exam without documented extenuating circumstance (i.e. death in the family, sickness).

Collaborative Assignments: Since many of the students enrolled in this course are planning to pursue jobs in the field of business, this course will provide many opportunities for you to work in groups to complete a project or assignment. This collaborative learning environment will allow you to learn concepts in collaboration with your peers. These collaborative assignments will require you to work with your fellow students in-class and therefore it is vital that you attend all classes, not only to benefit from the interactions with your peers, but also because you will not receive credit for assignments (in most cases) if you are not present in class to work on it. Preparing for class beforehand will benefit your group’s knowledge and understanding of the material. These collaborative assignments will comprise 20% of your final grade in the course. Note: Your total collaborative assignment grade is worth the equivalent of your final exam score.

Important Dates:

<table>
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<tr>
<th>Event</th>
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<tr>
<td>Course Add deadline</td>
<td>Aug 28</td>
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<tr>
<td>Course Drop deadline</td>
<td>Sept 4</td>
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<td>Labor Day holiday (University Closed)</td>
<td>Sept 7</td>
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<tr>
<td>Withdrawal deadline for individual 15-week courses</td>
<td>Oct 16</td>
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<td>Complete schedule withdrawal deadline</td>
<td>Nov 13</td>
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<td>Fall Break (No classes)</td>
<td>Nov 25-29</td>
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<td>Thanksgiving Holiday (University Closed)</td>
<td>Nov 26-29</td>
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Course Assistance: If you are in need of any kind of help with the course during the semester please stop by my office or seek assistance through the tutoring services that UNC offers:

The Math Lab in Ross Hall 1250 offers walk-in tutoring. Times are posted on the door. Academic Support and Advising also offer tutoring in Michener L149. You need to make an appointment for each one tutoring session. Private Tutors are available. There is a list in Ross Hall 2239 of tutors that will assist you for a fee.

UNC Honor Code: All members of the University of Northern Colorado community are entrusted with the responsibility to uphold and promote five fundamental values: Honesty, Trust, Respect, Fairness, and Responsibility. These core elements foster an atmosphere, inside, and outside of the classroom, which serves as a foundation and guides the UNC community’s academic, professional, and personal growth. Endorsement of these core elements by students, faculty, staff, administration, and trustees strengthens the integrity and value of our academic climate.

Academic Freedom: Your student handbook outlines the university policies on student conduct in the classroom, cheating, plagiarism, and other academic expectations (www.unco.edu/dos/handbook/stuhndbk.htm#008283). Take responsibility for your own learning.

Accommodations: Any student requesting disability accommodation for this class must inform the instructor giving appropriate notice. Students are encouraged to contact Disability Support Services at (970) 351-2289 to certify documentation of disability and to ensure appropriate accommodations are implemented in a timely manner.

Amendments: The instructor reserves the right to amend, adjust, or otherwise modify the outline and syllabus at anytime throughout the course. These changes will be announced during class.