

*Calculus* is about:

**Change**  
*change*

**Motion**

**Economics**

**Area under a curve**  
*Area under a curve*

**Physics**

**Engineering**

**Tangent lines to curves**  
*Tangent lines to curves*

**Statistics**

**Nature**

**Business**  
**Profits & Costs**

**Course: Mathematics 115—Applied Calculus**

CRN 10409 Section 02

Monday, Wednesday, and Friday: 9-9:50 Kennedy 205

**Prerequisite:** High school algebra and geometry—Chapters R, 1, and 2 are a summary of some of the prerequisite concepts. We will refer to these as necessary.

**Instructor:** Sybil MacBeth

**Semester:** Fall Semester 2004—August 25-December 8, 2004

Final Exam: Wednesday, December 15: 8:30

No class: Monday, September 6--Labor Day

Saturday, October 16-Tuesday, October 19--Fall Recess

Wednesday, November 24-Sunday, November 28--Thanksgiving

October 30: Daylight Savings Time ends—set clocks back 1 hour

**Phone:** Office: 843-3723

E-mail: macbeths@rhodes.edu

**Office Hours:** 317 Ohlendorf

Monday: 10-12, Wednesday: 10-12

### **Course Objectives:**

This course serves as an introduction to calculus for students interested in business, economics, sciences, traffic, population growth and decay, and even baseball. We will study the two important concepts of calculus—motion and change. These two ideas can describe the many situations in which calculus models real world problems. The powerful tools called the derivative and the integral will be the focus of our attention.

Students who think they want to study calculus beyond the introductory level should take Math 121.

### **Text and Instructional Aids:**

**Calculus With Applications**, 7<sup>th</sup> edition by Lial, Greenwell, and Ritchey.  
ISBN 0-321-06713, Addison Wesley, 2002.

Programmable Graphing Calculator recommended (ex:TI-81, TI-82, TI-85, TI-86). No TI-92, 96 (or the equivalent calculators that perform symbolic manipulation) may be used on quizzes or tests. There may be tests on which a graphing calculator is not permitted.

Addison Wesley, web site: <http://www.aw.com/LGR>

### **Policies:**

1. Attendance is expected and recorded.
2. Proficiency in mathematics is gained by working problems. I will assign homework problems during each class for the next class meeting. There will be an opportunity to ask questions. Discussion of homework, however, will be limited due to the pace and amount of content of the course. I will not collect daily homework, but will sporadically collect problems for grading. Please give yourself the time to prepare for class and to do the homework problems. Two hours is not an unreasonable expectation for daily homework. Studying for mathematics can include reviewing your notes (even rewriting them), reading the text, and completing the assigned problems. Even if you studied calculus in high school, do not assume that the subject has nothing new to teach you. Calculus is full of nuances and nooks that reveal themselves as we study the subject more.

When you do the homework, write the problem, show the process, and include notes to explain steps that are not obvious to you or me. Please do all graded, computational work in pencil.

3. Be prepared for class. Bring your text and all assigned work from the previous class.
4. Find a study partner. You are responsible for finding out about missed notes or assignments if you are absent.

### **Tests and Quizzes:**

1. There will be announced and unannounced quizzes. A missed quiz = 0. There will be no make-ups on quizzes.

2. I will give assignments or projects to be completed outside of class. Some of these assignments will require the use of the computer software such as MATHEMATICA. Some assignments will be done in groups. Late assignments and projects will not be accepted (or may be accepted with a daily score deduction.) One of these assignments will be a 1-2 page paper.

3. Three or four regular tests will be given. The final exam, scheduled by the college, **Wednesday, December 15 at 8:30 A.M.** Tests will be announced at least a week in advance. No makeup tests will be given unless I am notified in advance via phone or e-mail and if the situation calls for it in my opinion. Only one makeup test will be given in the semester.

4. Solutions to test and quiz problems are graded on the basis of work that demonstrates an understanding of the problem. The primary focus is the method and process of the solution. Unless otherwise specified, all solutions are EXACT (i.e.  $1/3$ , not 3.333).

**Grading:** I will total the number of points from all homework, assignments, projects, quizzes, and tests to compute a percentage grade. In general, quizzes are about 10-15 points, assignments 15-40 points, tests 100 points. The *cumulative* final exam is worth about 20% of the grade.

The breakdown is *approximately*:

Tests	55%
Assignments, Homework, Quizzes	25%
Final Exam	20%

A -- 90-100%    B -- 80-89%    C -- 70-79%    D -- 60-69%    F -- Below 60%

Attendance may be used to decide a borderline grade.

**Tentative Schedule:**

Week 1: 3.1, 3.2, 3.3	Week 6: 5.3, 5.4	Week 11: 7.6, 8.1
Week 2: 3.4, 3.5, 4.1	Week 7: 6.1, 6.2, 6.3	Week 12: 8.2, 8.3
Week 3: 4.2, 4.3,	Week 8: 6.4, 6.5, 6.6	Week 13: 8.4, 9.1
Week 4: 4.4, 4.5	Week 9: 7.1, 7.2	Week 14: 9.2, 9.3
Week 5: 5.1, 5.2, 5.3	Week 10: 7.3, 7.4, 7.5	

**Academic Integrity** The Honor Code provides students and faculty with the assurance that honesty and integrity are the connectors of their work. With the pledge you signed, you are acknowledging that you have neither given nor received help from another person in any form on graded work. I assume that your name, written or typed, on any work is in accord with this pledge. Evidence of dishonesty or cheating obligates me to bring the violation to the Honors Council. You also have a responsibility to report violations of the Honor Code, in connection with this class, to me and the Honor Council.

**Student Resources:** Do not wait until you are completely lost to get help. Please come to see me during office hours. **MathHelp** is a free, peer tutoring service in the evenings. Times TBA.

***This course outline may be amended at my discretion.***