## Calculus I MA113:00

Lecturer: Russell Brown, POT 741, 257-3951, rbrown@uky.edu. Office hours: M1–2 in the Mathematics Resource Center, WF 1-2 in POT741 and by appointment.

Rooms: Lectures are MWF 10-10:50 in CB

Textbook: The textbook for this course will be Calculus, 5th edition, by James Stewart.

*Material to be covered:* In Calculus I, we will learn about derivatives, integrals and the fundamental theorems of calculus, which give the connection between integrals and derivatives. We begin by introducing the notion of a limit which is essential to defining derivatives and integrals. By the end of the semester students should know precise definitions of the limit, the derivative and the integral. We will illustrate the methods and ideas of calculus by studying several physical and geometric problems. Students will study the interpretation of the derivative as velocity or slope of a tangent line, the trajectory of a body falling under the influence of gravity, the integral as area or distance traveled and the use of the integral in computing volumes of familiar solids such as a sphere or a cone.

The material we study is found in Chapters 1 to 6 of Stewart. See the course calendar for a more detailed outline.

Homework: The bulk of homework for this course will be completed using the web-based homework system at http://www.mathclass.org. Most students should already have an account at this site. Your user id and password are both equal to your student id number. Students who registered late or changed sections will not have an account and should go to this site, create an account and request registration in the class titled MA113-nnn where nnn is your section number. Be sure that you are a registered student and not just browsing. Information on using this website is available by clicking the link titled "For students" and then following the link for the tutorial or by following the Help link which appears on many WHS pages.

Homework will be discussed in recitation on Tueday and Thursday and submitted by 12 midnight on the following Monday. Students should attempt homework as soon as the corresponding material is discussed in lecture. Students who wait till Monday to begin an assignment will likely not complete the work on time.

Each student will have an individual version of the homework. Students should plan to print out their assignment, complete the problems on a separate piece of paper or in a notebook, submit their answers and then rework or seek assistance on the problems that were marked incorrect. Your teaching assistants will be instructed to ask to see your work before providing assistance. In addition, there is a common version of each homework set. The problems from the common version will be discussed in recitation.

Many of the problems in these sets were were written over the last summer. There will be mistakes. If you feel you have worked a problem correctly and WHS marks it incorrect, please let Brown know (by e-mail to russell.brown@uky.edu or by submitting the form at http://www.math.uky.edu/~rbrown/whs/report.html). Your grade for the web homework will be the minimum of 90 or the percentage of problems that you answer correctly. This grading scheme will allow you to earn a perfect score while working imperfect homework sets. In addition to the web homework, a small number of problems will be collected for grading by humans. These problems will be graded for mathematical correctness and for clarity of exposition. Students who wish to receive full credit should write in complete sentences and use mathematical notation correctly.

There are optional homework assignments from the textbook listed in the course calendar. These are intended for students who feel they need more practice to master a topic.

Late homework: No late submissions of web homework will be accepted. If an emergency or illness takes you away from school, please meet with Brown to discuss your situation and ask to be excused from an assignment, if appropriate. If you have a scheduled absence (travel or authorized university absence) you must still submit the homework by the deadline. Written assignments are due at the beginning of lecture. If an emergency or unexpected absence prevents you from turning in the assignment, please see Brown to request permission to turn in the assignment late. If you have a scheduled absence (travel or authorized university absence) you should arrange to turn in your paper before leaving school. Unexcused and late submissions will be penalized 10% if the paper is turned in on the due date and an additional 20% for each day that it is late.

Mathematics resource center: Teaching assistants and tutors are available in Mathskeller to help with Calculus. This resource center is located in the basement of the Classroom Building. A schedule will be circulated early in the semester and will eventually be located at http://www.mathskeller.com. In addition to tutoring, Mathskeller is a convenient place to print out homework assignments.

*Exams:* There will be three exams and a final. These exams are scheduled in the evening as indicated in the course calendar. Please be sure that you have these dates free. The final exam will be cumulative, but with an emphasis on the material covered since the last test.

*MA193:* In addition, to the 4 hours of credit for MA113, the department offers one additional hour of credit as MA193 on a pass/fail basis. You will pass MA193 if you have 0, 1 or 2 unexcused absences and if you pass MA113. If you have three or more unexcused absences or if you fail MA 113, you will fail MA193. Your section number for MA193 should equal your section number for MA113. If you drop or change sections of MA113, please make sure to also drop or change sections of MA193.

*Grading:* Students need an average of 90% for an A, 80% for a B, 70% for a C and 60% for a D. Grades may be curved by making small adjustments to these percentages. Your grade will be based on the activities in the table below.

3 hour exams	300
Final exam	100
Web Homework	90
Written Homework	60
TOTAL	550

*Calculators:* Students may use a graphing calculator on exams and homework. Students may not use a machine with symbolic manipulation capabilities on exams. Thus, no TI-89's, TI-92's, no HP-48's or laptop computers may be used on exams. Please see the lecturer if you have any questions as to whether a particular machine may be used on a test.

*Absences:* You should attend class. If you must miss a recitation and are registered for MA193, you must explain your absence to your teaching assistant. Otherwise, your absence will be marked as unexcused and this may lead to failing MA193.

Web page: A primitive web page for this course is at http://www.math.uky.edu/~rbrown/courses/ma113.f.05 Any handouts will be available at this address.