

# Math 113/EGR 199

## Fall 2008 Syllabus

### General Information

*Web page:* A web page for this course is at <http://www.math.uky.edu/~ma113>. Any handouts will be available at this address. Solutions to exams and written assignments will be posted at this website.

*Schedule:* For most sections, lectures take place MWF and recitations take place TR. There will be three midterm exams and one final exam, on the following dates:

- Exam 1: Tuesday, September 23, 7:30-9:30 PM, Room TBA
- Exam 2: Tuesday, October 21, 7:30-9:30 PM, Room TBA
- Exam 3: Tuesday, November 18, 7:30-9:30 PM, Room TBA
- Final Exam: Thursday, December 18, 6:00-8:00 PM, Room TBA

*Textbook:* The textbook for this course will be Calculus (Early Transcendentals), 6th edition, by James Stewart, ISBN 978-0-495-01166-8 or 0-495-01166-5

*Material to be covered:* In Calculus I, we will learn about derivatives, integrals, and the Fundamental Theorem of Calculus that relates these two basic operations on functions. We'll begin by introducing the notion of limit which is essential to defining derivatives and integrals. By the end of the semester, students should know precise definitions of the derivative and integral, understand some of their important applications, and understand the Fundamental Theorem of Calculus which relates the two. We will cover most of Chapters 1 to 5 of Stewart. Please see the course calendar for a detailed listing of sections.

*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 you pass MA113. If you have three or more unexcused absences or you fail MA 113, you will fail MA193. Your section number for MA193 should equal your section number for MA113 (except for MA 113 021 which is paired with MA 193 027). If you drop or change sections of MA113, please make sure to also drop or change sections of MA193.

*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. We may clear the memory of calculators before or during an examination.

*Cheating:* Students are encouraged to work together to understand homework problems and develop a solution. However, the solution they submit for credit must be their own

We recommend the following approach to web-based homework assignments:

- Start to work on the assignment as soon as the corresponding material is discussed in class
- Print out copies of your personal and common assignments (it is free in the Mathskeller and the assistants there can help you), and put them in your notebook.
- Get together with classmates to work on the problems using the printouts. However, please write up and enter the solutions completely on your own.
- Write down the solutions in your notebook and then enter your solutions on the web-page. Only correct solutions to your personal version of the homework will count toward your homework grade! Note that for each web-based homework problem you may resubmit your answer as often as you wish before the due date. Only your final answer will be counted toward your homework grade.
- Bring your notebook with you when you go to office hours
- Bring copies of the common problems to your recitation. They will be discussed there.

*Written Assignments:* In order to help you learn to write mathematics and present clear, well-written solutions to problems, there will be six written assignments. Your solutions to these assignments are expected to be carefully written in complete sentences and grammatically correct English. You should give clear reasoning and present the steps of your solution in logical order.

*Late homework:* No late submissions of *web homework* will be accepted. If an emergency or illness takes you away from school, please meet with your lecturer 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 web 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 your lecturer 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 late on the due date and an additional 20% for each day that it is late.

*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.

Attendance will be taken in lecture. If you miss lecture, please speak with your lecturer to see if an absence can be excused.

discussed in lecture. Students who wait till the due date 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 in a notebook, submit their answers and then rework problems or seek assistance for problems that were marked incorrect. Your instructors will want to see the progress you have made in order to provide assistance. In addition, there is a common version of each homework set. The problems from the common version will be discussed in recitation.

If you feel you have worked a problem correctly and the web homework system marks it incorrect, please contact Peter Perry ([perry@ms.uky.edu](mailto:perry@ms.uky.edu)).

Lecture <i>Recitation</i>	In-Class Activities	Due Dates
27-Aug	Overview	
28-Aug	Pretest, Assignment A0 (not graded)	
29-Aug	Appendices B, C: Linear and Quadratic Functions	
1-Sep	Labor Day, academic holiday	
2-Sep	Worksheet 1 Assignment A1: Lines and parabolas	
3-Sep	§1.6: Inverse functions	
4-Sep	Assignment A2: Functions and inverse functions, practice quiz 1	
5-Sep	§2.1 The tangent and velocity problem	A1 due by Midnight
8-Sep	§2.2 The limit of a function	A2 due by Midnight
9-Sep	Assignment A3: Introduction to limits	
10-Sep	§2.3 Calculating limits using the limit laws	Worksheet 1 due in class
11-Sep	Worksheet 2 Assignment A4: Limits, practice quiz 2	
12-Sep	§2.5 Continuity	
15-Sep	§2.7 Derivatives and rates of change	A3, A4 due by Midnight
16-Sep	Assignment A5: Continuous functions Assignment A6: Tangent Lines	
17-Sep	§2.8 The derivative as a function	Last day to drop Worksheet 2 due in class
18-Sep	Assignment A7: The derivative as a function, practice quiz 3	
19-Sep	Review	A5 due by Midnight
22-Sep	Review	A6, A7 due by Midnight
23-Sep	Assignment AR: Exam 1 Review (not graded)	
23-Sep	Exam 1, 7:30-9:30 PM, room TBA.	
24-Sep	§3.1 Derivatives of polynomial and exponential functions	
25-Sep	Worksheet 3 Assignment B1: Derivatives of polynomial and exponential functions	
26-Sep	§3.2 The Product and Quotient rules	
29-Sep	Appendix D, §1.6: Review of trigonometric functions	B1 due by Midnight
30-Sep	Assignment B2: The Product and Quotient rules Assignment B3: Review of Trigonometry	
1-Oct	§3.3 Derivatives of trigonometric functions	Worksheet 3 due in class
2-Oct	Assignment B4: Derivatives of trigonometric functions, practice quiz 4	
3-Oct	§3.4 Chain rule	
6-Oct	§3.5 Implicit differentiation	B2, B3 due by Midnight
7-Oct	Worksheet 4 Assignment B5: The Chain Rule Assignment B6: Implicit Differentiation	
8-Oct	§3.6 Derivatives of logarithms	B4, B5 due by Midnight
9-Oct	Assignment B7: Derivative of the logarithm, practice quiz 5	
10-Oct	§3.7 Rates of change	
13-Oct	§3.8 Exponential growth and decay	B6, B7 due by Midnight
14-Oct	Assignment B8: Rates of change	
15-Oct	§3.9 Related rates	Worksheet 4 due in class
16-Oct	Assignment B9: Related rates, practice quiz 6	
17-Oct	Review	
20-Oct	Review	B8, B9 due at Midnight
21-Oct	Assignment BR: Exam 2 Review (Not graded)	
21-Oct	Exam 2, 7:30-9:30 PM, room TBA	

27-Aug	Review: p. 74, 1,3,5,6,10,11,19
29-Aug	p. A15 # 1, 7,17,18,21,37 p. A23 #11,14,29,33
4-Sep	§1.6: #1-13 odd, 21, 27, 29, 33, 35, 37
5-Sep	§2.1 #1,3,5,7
8-Sep	§2.2 #1, 5, 7, 9,13, 15, 25, 27, 33
10-Sep	§2.3, #1-15 odd, 21, 25, 29
12-Sep	§2.5, #3-19 odd, 21, 23, 35, 37, 41, 47
15-Sep	§2.7 #1-9 odd, 13, 17, 19, 25, 27, 31
17-Sep	§2.8 #1, 3, 5, 9, 19, 23, 25, 35
24-Sep	§3.1, #1, 3, 5, 7, 15, 17, 21, 23, 31, 33, 39, 47
26-Sep	§3.2 #1, 3, 7, 11, 15, 23, 27
29-Sep	Appendix D: #1, 7, 13, 19, 20, 29, 31, 33, 35, 43, 51, 59, 65, §1.6 #59, 61, 63, 65
1-Oct	§3.3 #1, 5, 9, 15, 17, 21, 33, 35, 39
3-Oct	§3.4 #1, 5, 9, 19, 23, 35, 47
6-Oct	§3.5 #1, 5, 11, 19, 21, 27, 33
8-Oct	§3.6 #3, 7, 13, 19, 33, 37, 43
10-Oct	§3.7 #1, 5, 9, 15, 21, 23
13-Oct	§3.8 #3, 5, 7, 11, 13
15-Oct	§3.9 #3, 7, 13, 15, 17, 25, 31, 37, 43
22-Oct	§4.1 #5, 9, 11, 13, 17, 21, 25, 29, 33, 34, 41, 49, 51, 57, 61
24-Oct	§4.2 #3, 5, 7, 11, 15, 19, 23, 25
27-Oct	§4.3 #3, 5, 7, 11, 17, 19, 25, 31
29-Oct	§2.6 #3, 5, 7, 13, 17, 19, 25, 33, 41, 49, 53(a)
31-Oct	§4.4 #1, 3, 5, 9, 17, 21, 29, 43, 55
3-Nov	§4.5 #5, 9, 17, 19, 33, 41
5-Nov	§4.7 #3, 5, 11, 13, 17
7-Nov	§4.7 #19, 33, 55
10-Nov	§4.8 #3, 5, 11, 17, 21, 31, 33 §3.10 #1, 3, 9, 23, 29
12-Nov	§4.9 #3, 7, 15, 15, 21, 23, 31, 39
19-Nov	§5.1 #3, 11, 15, 17, 21
21-Nov	§5.2 #1, 5, 9, 19, 21, 23, 33, 37, 49, 53, 55
24-Nov	§5.3 #3, 5, 9, 13, 17, 19, 27, 31, 39, 51, 53
3-Dec	§5.4, #3, 5, 9, 15, 23, 31, 37, 43
5-Dec	§5.5 #3, 7, 13, 19, 21, 25, 33, 43, 59, 67, 75