CALCULUS I (MATH 205)
FALL 2012
MTTH 1:00 - 2:15 NATURAL SCIENCES 130

1. Important Information

Instructor: Stephen J. Young
Office: Natural Sciences 114
Office Hours: M 2:30pm – 3:30pm, TTh 11:00am – 12:00 pm, or by appointment.
E-mail: stephen.young@louisville.edu (**Please** include "Math205" in the subject)
Office Phone: (502)-852-3338
Course Webpage www.math.louisville.edu/~syoung/teaching/math205/fall12/
Textbook *Calculus: Early Transcendentals,* 7th *edition* Stewart

2. Learning Outcomes

Students who complete this course will be expected to describe the concept of the limit of a function and calculate limits both graphically and analytically; recognize the definition of the derivative as a limit and identify the relationship between derivatives and graphs of functions; describe the definition of the definite integral as a limit of Riemann sums and interpret the definition as an area; demonstrate understanding of the relationship between the definite integral and antiderivatives via the fundamental theorem of calculus; master the standard formulas for computing derivatives and antiderivatives of functions.

3. General Education Content

MATH 205 is a general education course and may not be taken pass/fail. This course satisfies the university general education requirement in the mathematics content area. Students who satisfy this requirement will demonstrate that they are able to do all of the following: represent mathematical information symbolically, visually, and numerically; use arithmetic and geometric models to solve problems; interpret mathematical models such as formulas, graphs, and tables; estimate and check answers to mathematical problems, determining reasonableness and correctness of solutions.

4. Grading System

All exams and quizzes will be graded on the following holistic five-point scale:

5   Well written and complete work. ($\sim$ A+)
4   Good work with minor errors or small gaps in explanation. ($\sim$ A)
3   Good work with more serious errors or insufficiently clear explanation .($\sim$ B)
2   Significant, but incomplete, explanation that will clearly lead to the correct answer. ($\sim$ C)
1   Some ideas that might lead to the correct answer are presented. ($\sim$ D)
0   No work, work that will not lead to a correct result, or illegible. ($\sim$ F)

5. Grading Breakdown

Final grades in this course will be determined according following, with the proviso that in order to pass the class you must pass (C- or better) the final exam. At the judgement of the instructor and on an individual basis, course grades may be higher than the numerical calculation would yield.

Diagnostic Exam *(5%)*: The diagnostic exam will be given the first day of classes and covers prerequisite material for Calculus I. Full credit on this "exam" will be awarded for completing the assessment and grading it by the beginning of class August 28.

Quizzes *(1.5%) × 10*: In lieu of graded homework, quizzes will be administered throughout the course of of the semester, with the 10 highest quiz scores counting towards your final grade. The quizzes will be based on the most recent set of "assigned" homework problems.

Exams *(15%) × 3*: There will be three in class exams taking the entire 75 minutes. These exams are tentatively schedule for September 27, November 1, and December 4. No calculator, notes, or books will be permitted on any exam.

Final Exam *(35%)*: The final exam will be on December 7, from 2:30 pm – 5:00 pm and will be comprehensive. Note that you must pass the final in order to pass the class.

Grade Distribution

A+	A	A-	B+	B	B-	C+	C	C-	D	F
95	85	80	75	65	60	55	45	40	30	0

6. American Disabilities Act

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you have a disability requiring an accommodation, please contact the Disability Resource Center (852-6938).

7. Course Policies

◆ Unless otherwise specified in writing, all tests and quizzes are closed book and closed notes. In order to receive credit all work must be shown and complete sentences must be used where appropriate.

◆ Please silence all cell phones and noise making devices during class. Note that some models of cell phone when put on vibrate make a significant amount of noise.

◆ If you believe an exam or quiz has been graded incorrectly do not mark it in any way. Submit to me, in writing, along with exam or a quiz, a short statement of why your think a *particular* problem, or set of problems was graded incorrectly. Regrade requests will not be accepted later than the end of the class period after they are returned. I reserve the right to photocopy any or all of your exams in order to prevent regrade abuse.

◆ In order to receive full credit on exams and quizzes you must show all work in a clear and coherent manner. In particular, correct answers not fully supported by explanations using complete sentences, where appropriate, will not receive full credit. It is your responsibility to present your solutions in an easily understood manner.

◆ If you need help outside of normal office hours, please feel free to stop by my office. I may not be able to help at that moment, but we will at least be able to arrange another time to meet.

◆ Please keep all your exams and quizzes; if you believe there has been an error in the recording of your grades they are the only way to validate your claim. Also, grades will be placed on Blackboard, so please periodically check the grades posted there so we can resolve any issues quickly.

◆ As a general rule the questions on the quizzes will be harder than the average question on the homework and the questions on the exams will be on average harder than the questions on the quizzes.

◆ Make up exams will be only guaranteed to be given as required by university policy (i.e, a conflicting university sanctioned events), all other situations, such as medical procedures or emergencies, will be considered on a case by case basis. All make up exams will be taken through University Testing Services. Note that University Testing Services charges a fee to administer an exam. There will be no make up quizzes.

◆ Academic dishonesty is prohibited at the University of Louisville. It is a serious offense because it diminishes the quality of scholarship, makes accurate evaluation of student progress impossible, and defrauds those in society who must ultimately depend upon the knowledge and integrity of the institution and its students and faculty. Any instances of academic dishonesty in this course will be taken extremely seriously.

◆ All content in this syllabus is subject to change in order to accommodate unforeseen circumstances and achieve the learning outcomes. Any changes in the syllabus will be announced in class, via email, and on the class website.

8. Class Schedule

Date	Sections Covered	Notes
Aug. 20	Diagnostic	
Aug. 21	2.1: Tangent and Velocity	
Aug. 23	2.2: Limits of Functions	
Aug. 27	2.3: Limit Laws	*Quiz 1*
Aug. 28	2.4: Definition of a Limit	
Aug. 30	2.5: Continuity	
Sept. 3	**No Class: Labor Day**	
Sept. 4	2.6: Limits and Infinity	*Quiz 2*
Sept. 6	2.7: Derivatives and Rate of Change	
Sept. 10	2.8: The Derivative as a Function	*Quiz 3*
Sept. 11	3.1: Derivatives of Polynomials and Exponential	
Sept. 13	3.2: Product and Quotient Rules	
Sept. 17	3.3: Derivatives of Trigonometric Functions	*Quiz 4*
Sept. 18	3.4: The Chain Rule	
Sept. 20	3.4: The Chair Rule, (cont.)	
Sept. 24	3.5: Implicit Differentiation	*Quiz 5*
Sept. 25	3.5: Implicit Differentiation, (cont.)	
Sept. 27	**Exam 1**	Sections: 2.1 – 3.4
Oct. 1	3.6: Derivatives of Logarithmic Functions	*Quiz 6*
Oct. 2	3.7: Rates of Change in Sciences	
Oct. 4	3.8: Exponential Growth and Decay	
Oct. 8	**No Class: Fall Break**	
Oct. 9	**No Class: Fall Break**	
Oct. 11	3.9: Related Rates	Last day to withdraw
Oct. 15	3.9: Related Rates, (cont.)	*Quiz 7*
Oct. 16	3.10: Linear Approximation	
Oct. 18	3.11: Hyperbolic Functions	
Oct. 22	4.1: Maximum and Minimum Values	*Quiz 8*
Oct. 23	4.2: Mean Value Theorem	
Oct. 25	4.3: Derivatives and Graph Shape	
Oct. 29	4.4: Indeterminate Forms	*Quiz 9*
Oct. 30	4.5: Curve Sketching	
Nov. 1	**Exam 2**	Sections: 3.5 – 4.3
Nov. 5	4.5: Curve Sketching, (cont.)	*Quiz 10*
Nov. 6	**No Class: Election Day**	
Nov. 8	4.7: Optimization	
Nov. 12	4.7: Optimization, (cont.)	*Quiz 11*
Nov. 13	4.8: Netwon's Method	
Nov. 15	4.9: Antiderivatives	
Nov. 19	5.1: Area and Distance	*Quiz 12*
Nov. 20	5.2: Definite Integral	
Nov. 22	**No Class: Thanksgiving**	
Nov. 26	5.3: Fundamental Theorem of Calculus	*Quiz 13*
Nov. 27	5.4: Indefinite Integrals	
Nov. 29	5.5: Substitution	
Dec. 3	5.5: Substitution	
Dec. 4	**Exam 3**	Sections: 4.4 – 5.5
Dec. 7	**Final Exam − 2:30pm - 5:00 pm**	