

CALCULUS I: MATH 151
MTWRF 10:00 am – 10:50 am in HT 110
Spring 2009 Syllabus and Schedule

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HT 105
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Course: The main topics of Calculus I involve the differentiation and integration of one variable. Calculus forms the foundation for most, if not all, of the physical sciences in addition to most social sciences.

Prereqs: All students should have had the equivalent of two years of high school algebra, one year of geometry, and one year of trigonometry.

Textbook: You are required to have either the 6th edition of Calculus: Early Transcendentals or Single Variable Calculus: Early Transcendentals by Stewart published by Brookes-Cole 2007.

Office Hours: MTWRF 11:00 am – 12:00 pm. Office hours are a valuable resource and I hope you take advantage of them early and often. I want to help you learn this material, so do not be shy about seeing me outside of class. If you need to see me at a time other than an office hour, feel free to “drop in” or make an appointment.

Grading: Your grade is determined by your understanding of mathematics and your ability to communicate this knowledge to me on exams and other assignments.

60% points – Four mid-semester exams (15% each)

15% points – Final Exam

25% points – Quizzes & Mathematica Labs

Mathematics Department Grading Scale:

100 ← A → 94 ← A- → 91 ← B+ → 88 ← B → 82 ← B- → 79 ← C+ → 76

76 ← C → 70 ← C- → 67 ← D+ → 64 ← D → 58 ← D- → 55 ← F → 0

Homework: Working through the assigned readings, examples, and problems is extremely important to your success in this course. You should have a homework binder where you neatly work through all of the assigned work. At a minimum, you should be spending at least 10 hours per week outside of class on these assignments. Every quiz problem will be taken directly from the assigned homework.

Computers: HT 110 has 14 computers which we will use to supplement our calculus course with the software programs *Mathematica* and *Excel*. The computers should not be used for activities unrelated to this class.

Attendance: Students are expected to attend all classes. A student missing a class, due to valid reasons, is expected to find out the material discussed in class and make up any work that has been missed. Repeated tardiness or unexcused absences may lower your grade.

Note: The Academic Dishonesty Policy as explained in Scots Guide will be strictly enforced. Plagiarism could result in the failure of the course and possible suspension from the college. See Academic Dishonesty@in Scots Guide and Planner.

Math 151-01 Tentative Schedule

Monday	Tuesday	Wednesday	Thursday	Friday
1/12 Winter Break No Classes	1/13 Winter Break No Classes	1/14 Course Introduction	1/15 Algebra Review	1/16 Geometry Review
1/19 MLK Jr. Day No Classes	1/20 Trig Review	1/21 Functions	1/22 Functions	1/23 Composite Functions
1/26 Inverse Functions	1/27 Log Functions	1/28 Tangent & Velocity Problems	1/29 Tangent & Velocity Problems	1/30 Limits
2/2 Limit Laws	2/3 Limits	2/4 Continuity	2/5 Review	2/6 Exam 1
2/9 Tangent Lines	2/10 Velocity Rates of Change	2/11 Derivatives	2/12 Derivative as a Function	2/13 Power Rule
2/16 Derivatives of Exp. Function	2/17 Derivatives of $\sin(x)$ and $\cos(x)$	2/18 Derivatives of Linear Combinations	2/19 Product Rule Quotient Rule	2/20 Product Rule Quotient Rule
2/23 Derivatives of Trig Functions	2/24 Derivatives of Trig Functions	2/25 Chain Rule	2/26 Chain Rule	2/27 Derivatives of Log Functions
3/2 Review	3/3 Exam 2	3/4 Rates of Change	3/5 Exponential Growth and Decay	3/6 Exponential Growth and Decay
Spring Break	Spring Break	Spring Break	Spring Break	Spring Break
3/16 Linear Approximations	3/17 Differentials	3/18 Absolute Extrema	3/19 Absolute Extrema	3/20 Mean Value Theorem
3/23 Increasing/Decreasing Local Extrema	3/24 Increasing/Decreasing Local Extrema	3/25 Concavity Inflection Points	3/26 Concavity Inflection Points	3/27 Limits at Infinity Horiz. Asymptotes
3/30 Curve Sketching	3/31 Curve Sketching	4/1 Review	4/2 Exam 3	4/3 No Calculus I
4/6 Optimization	4/7 Optimization	4/8 Optimization	4/9 Antiderivatives	4/10 No Classes Easter Break
4/13 No Classes Easter Break	4/14 Antiderivatives	4/15 Area Approximation	4/16 Area Approximation	4/17 Distance Traveled
4/20 Definite Integral	4/21 No Classes Founders Day	4/22 Fundamental Theorem of Calculus	4/23 Fundamental Theorem of Calculus	4/24 Fundamental Theorem of Calculus
4/27 Fundamental Theorem of Calculus	4/28 Indefinite Integrals	4/29 Net Change Theorem	4/30 Review	5/1 Exam 4
5/4 Integration by Substitution	5/5 Integration by Substitution	5/6 Course Review	5/7 Reading Day No Classes	5/8 Finals Week Begins

Final Exam: Monday, May 11 from 8am – 11am