

Math 141 Calculus I Sample Syllabus

Spring 2012

Instructor:

Office:

Phone:

Email:

Webpage:

Office Hours:

Course Description: Standard first-semester course in single variable, differential calculus with applications, especially for students of science, engineering, mathematics, and computer science. Prereq: high school trigonometry and satisfactory placement score or Math 130. Students who have earned a grade of C or better in 141 or 151 may not subsequently receive credit for 130. **(QR)** 4 credit hours.

Text: *Calculus – Early Transcendentals (ET)*, 2nd edition, by Rogawski, W.H. Freeman Publishing Company. **Textbook website:** <http://www.whfreeman.com/catalog/static/whf/customstore/UTK/Collins/>

Calculator: A graphing calculator is required for this course. The Math Department highly recommends and provides support for the TI-83+ and TI-84+ models. Use of cell phones and calculators with advanced alpha-numeric capabilities, such as the TI-89, is forbidden in this course.

Grades: Grades will be determined using the grading scale below. Your letter grade is a measure of your mastery of course material and your fulfillment of course objectives. Letter grades are not assigned on the basis of a curve or the class average. Homework will be assigned daily – quiz problems will be based on the homework. A record of all assignments can be found at the course website.

4 Exams	60%
Homework Quizzes	15%
<u>Final Exam</u>	<u>25%</u>
Total possible	100%

letter	A	A-	B+	B	B-	C+	C	C-	D+	D	D-	F
points	90-100	87-89	83-86	80-82	77-79	73-76	70-72	67-69	63-66	60-62	57-59	0-56

Attendance & Make-up Policy:

Assumed Prerequisite Knowledge: It is assumed that you have had sufficient precalculus preparation before enrolling in this course. In particular, you should know your trig identities and exact values and inverse trig functions and their graphs. If you have not mastered these topics, it is recommended that you drop this course and take Math 130, Precalculus, first.

Important Dates:	Exam Dates (tentative):
Add/drop without W deadline	
Drop with W deadline	
Comprehensive Final (required to pass)	

Disability Services: If you need course adaptations or accommodations because of a documented disability or if you have emergency information to share, please contact the Office of Disability Services at 2227 Dunford Hall at 974-6087.

Classroom Etiquette: Please be considerate of the instructor and those around you. Your behavior in class displays your attitude and respect for your teacher and the class. Come to class on time and stay the entire period or ask to be excused if you need to leave early or arrive late. **Turn off and put away all cell phones (no texting)**, laptops and ipods during class. Do not talk to classmates at inappropriate times. Refrain from reading newspapers or working on other coursework during class.

Academic Standards of Conduct:

All students are expected to abide by the University **Honor Statement**. In mathematics classes, violations of the honor statement include copying another person's work on any graded assignment or test, collaborating on a graded assignment without the instructor's approval, using unauthorized "cheat sheets" or technical devices such as calculators, cell phones or computers for graded tests or assignments, or other infractions listed in "**Hilltopics**". These violations are serious offenses, subject to disciplinary action that may include failure in a course and/or dismissal from the University. The instructor has full authority to suspend a student from his/her class, to assign an "F" in an exercise or examination, or to assign an "F" in the course. See "**Hilltopics**" for more complete information. A report of all offenses will be sent to appropriate deans and the Office of Student Judicial Affairs for possible further action.

The Honor Statement

An essential feature of the University of Tennessee is a commitment to maintaining an atmosphere of intellectual integrity and academic honesty. As a student of the University, I pledge that I will neither knowingly give nor receive any inappropriate assistance in academic work, thus affirming my own personal commitment to honor and integrity.

Math Tutorial Center: The Math Tutorial Center is in Ayres Hall G012 (basement, east end). It provides free tutoring. Hours of operation are posted at <http://www.math.utk.edu/MTC/>.

Lectures per topic	Section	Topic: Homework exercises
2	2.1	Limits, Rates of Change, and Tangent Lines 1, 2, 5, 6, 8, 19, 22, 25, 32; 4, 7, 9, 10, 11 - 17 odd, 21, 24, 27, 31, 35
1	2.2	Limits: A Numerical and Graphical Approach 1 - 7 odd, 17 - 29 odd, 39, 43, 47 - 57 odd, 69
1	2.3	Basic Limit Laws: 1 - 31 odd, 35, 37
1	2.4	Limits and Continuity 1, 5, 7, 11, 13, 23, 27, 29, 37, 41, 47, 49, 51, 55, 63 - 79 odd
1	2.5	Evaluating Limits Algebraically 1 - 21 odd, 14, 27, 30, 32, 37, 41, 45, 49
1	2.6	Trigonometric Limits: 1, 5, 7, 9, 15 - 41 odd
2	2.7	Limits at Infinity: 1, 6, 7 - 17 odd; 19 - 25 odd, 31, 34, 35 - 41 odd
1	2.8	Intermediate Value Theorem: 1 - 15 odd, 17 - 21 all, 23
2	2.9	The Formal Definition of Limit: 8 - 12 all; 1 - 5 all
1	3.1	Definition of the Derivative 1, 3, 6, 7 - 23 odd, 29, 31, 33, 37, 41, 51 - 57 odd
1		Review
1		Exam 1
2	3.2	The Derivative as a Function: 2 - 5, 43, 45, 47, 66, 67, 70, 79; 7 - 41 odd, 49, 51, 73
1	3.3	Product and Quotient Rules: 1 - 33 odd, 39, 53, 55, 57
2	3.4	Rates of Change: 1, 2, 6, 7, 8, 11, 14, 17, 18; 21, 22, 23, 25, 26, 33, 35, 41, 43, 46

1	3.5	Higher Derivatives: 1 - 25 odd, 37, 39 – 41 all
2	3.6	Trigonometric Functions: 1 - 24 all, 35, 36; 25 - 33 odd, 39 - 51 odd
2	3.7	The Chain Rule: 11 - 21 odd, 29 - 51 odd; 53 - 61 odd, 73 - 81 odd, 85, 86, 87, 89, 91
1	3.8	Derivatives of Inverse Functions: 9, 11, 19, 20, 23 – 35 odd
2	3.9	Derivatives of General Exponential and Logarithmic Functions 1 - 19 odd, 25, 31, 41, 43, 44; 45 - 65 odd, 79
1		Review
1		Exam 2
2	3.10	Implicit Differentiation: 1 – 25 odd; 29 - 45 odd, 55, 57
2	3.11	Related Rates: 1 - 11 odd, 15, 19, 25, 31; 13, 20, 21, 23, 29, 33
2	11.1	Parametric Equations: 1, 5 - 21 odd, 45; 23 - 35 odd, 49 - 61 odd, 71
2	11.3	Polar Coordinates: 2, 3, 5, 6, 11, 13, 21; 27, 29, 31, 32, 51, 52, 53
1	4.1	Linear Approximation and Applications 1 - 29 odd, 33, 41, 45 - 53 odd, 57, 59, 63, 67
1		Review
1		Exam 3
2	4.2	Extreme Values: 1 – 19 odd; 21 - 25 odd, 29 - 37 odd, 39, 41, 44, 47, 48, 50, 51, 53, 54, 55, 58
1	4.3	The Mean Value Theorem and Monotonicity 1, 5, 11, 15 - 39 odd, 43, 45, 51
1	4.4	The Shape of a Graph: 1, 2, 3 - 19 odd, 20 - 23 all, 25, 27, 31 – 47 odd
2	4.5	L'Hôpital's Rule: 1 – 53 odd
2	4.6	Graph Sketching and Asymptotes: 1 – 33 odd; 41, 43, 45, 49 - 52 all, 53 - 67 odd
2	4.7	Applied Optimization: 1, 3, 5, 6, 7, 9, 11, 19, 20, 23, 33, 35; 39, 41, 43, 44, 45, 47, 54, 59, 61
1	4.8	Newton's Method: 1 - 9 odd, 15 - 21 odd, 28 – 30 all
1		Review
1		Exam 4
2-3	Wrap-up	

Instructor notes:

Schedule: There are usually 42 MWF meetings, 14 T meetings, and 15 R meetings. Depending on your schedule you'll have 47-49 instruction days, 3 or 4 exam days, and 4-5 review/extra days.

In terms of homework and/or quizzes, you should assign a collection of problems from each section that give the students opportunity to practice the basic skills on algebraic, trigonometric, and exp/log functions. You should also include some applications and a few more advanced problems. Note that each section has Preliminary Questions which are a good check of a student's conceptual understanding.

You can choose how to distribute your points/percentages with typically 10-20% for HW/Quizzes and 20-30% for the final.

You can also choose your own grading scale. If you have no particular preference, you can use the same schedule that we use for the other 100-level courses:

A = 90+, A- = 87-89, B+ = 83-86, B = 80-82, B- = 77-79, C+ = 73-76, C = 70-72, C- = 67-69, D+ = 63-66, D = 60-62, D- = 57-59, F = 56-

Cover all of Chapter 2 (2.1-2.9), Chapter 3 (3.1-3.11), Chapter 4 (4.1-4.8) and parts of Chapter 11 (11.1, 11.3).

If you have 3 exams, Exam 1 will be on approximately 2.1-2.9, 3.1-3.3, Exam 2 on 3.4-3.11, 11.1, 11.3, and Exam 3 on 4.1-4.8.

If you have 4 exams, Exam 1 will be on approximately 2.1-2.9, Exam 2 on 3.1-3.7, Exam 3 on 3.8-3.11, 11.1, 11.3 and Exam 4 on 4.1-4.8.

In terms of pacing for the course, you'll need at least one day per section, with sections 2.1, 2.7, 3.2, 3.4, 3.6, 3.7, 3.10, 3.11, 4.2, 4.5, and 4.7 each needing 2 class periods (4.7 may need 3). You should have time to include short reviews of precalculus material at the appropriate time in the schedule (not more than 2 days total), and days to review for the tests and final.

If you've not taught 141 before, it is the slowest paced of the 3 calculus course and usually has the highest success rate of the them as well (around 75% of the students make C or better).

If you've taught 141 before with Stewart, you'll find that this order is very similar.