

Math 141 (Calculus I) Sections 1 – 4, Fall 2012

Syllabus and Homework

Course Information:

Instructor: Prof. Fernando Schwartz

Email: fernando@math.utk.edu

Office Hours: M & W 1:30-2:30, or by appointment

Office: 204 Ayres Hall

Phone: 865-974-4308

Webpage: <http://www.math.utk.edu/~fernando>

Course Description: First-semester course in single variable differential calculus. Intended for students of the sciences, engineering, mathematics, and computer science.

Prerequisites: High school trigonometry and satisfactory placement score, or Math 130. (Students who earn a grade of C or better in 141 or 151 may not subsequently receive credit for 130.)

We will assume that you have had sufficient pre-calculus 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 (pre-calculus) first.

Textbook: *Calculus – Early Transcendentals*, 2nd edition, by Jon Rogawski, W.H. Freeman Publishing Company.

Textbook Website: <http://www.whfreeman.com/catalog/static/whf/customstore/UTK/Collins/>

Calculator Policy: *Calculators are not allowed in exams, and are not required for the class.*

Nevertheless, a graphing calculator may be used for working on homework --but not one with advanced alphanumeric capabilities, such as the TI-89. The Mathematics Department highly recommends (and provides support for) the TI-83+ and TI-84+ models for this class.

Class Score: You will get a final score for the class, worth up to 600 points. It is computed as follows:

Midterms (3 @ up to 100 pts. each)	300
Homework, up to	100
Final Exam, up to	200
Maximum possible	600

Homework: *You are encouraged to work in groups, but the final product should be your own work (i.e. do not copy).*

Exercises will be assigned daily. Homework is collected before the end of each Section class on Thursdays. Late homework is not accepted. Your homework score is the average of all but your worst assignment grade.

Class Grade: Your final grade will be determined by the percentage of your final score to the maximum possible of 600. (i.e. your percentage score is your final class score divided by 6.) Letter grades are determined using the following scale:

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

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/>.

Special Accommodations & Make-up Policy: Any student who feels that s/he may need an accommodation based on the impact of a disability should contact me privately to discuss your specific needs. Please contact the Office of Disability Services at 974-6087, or go to 2227 Dunford Hall, to coordinate reasonable accommodations for students with documented disabilities.

If you find that circumstances will cause you to miss an exam, you **must notify me prior to the exam**. Besides email, you can leave a message for me at the departmental office 974-2461.

Classroom Etiquette: To maintain an appropriate learning environment in our large lecture hall please be considerate to the instructor and those around you. Come to class on time and stay the entire period, or ask to be excused if you need to leave early or arrive late.

Please turn off/silent all cell phones, and put them away. (No texting please.)

Laptops and music/video players must be stored during class as well. Do not talk to classmates at inappropriate times. Refrain from reading newspapers or working on other coursework during class.

Academic Integrity: We trust you will be committed to maintaining an atmosphere of intellectual integrity and academic honesty throughout this class. All students are expected to abide by the University Honor Statement¹:

“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.”

<u>Important Dates</u>	
Exam 1	Monday 9/24 Sections 2.1-2.9, 3.1-3.3
Exam 2	Wednesday 10/24 Sections 3.4-3.11, 11.1
Exam 3	Wednesday 11/21 Sections 11.3, 4.1-4.8
Final Exam (required to pass)	Monday 12/10, 8-10am Comprehensive (all the material tested)
Add/drop without W deadline	August 31
Drop with W deadline	November 13

¹ To familiarize yourself with it you may want to read pages 11 and 41 from the 2010/2011 Hilltopics. Also, you should be aware of the Classroom Behavior Expectations, which can be found at <http://www.math.utk.edu/Courses/Expectations.pdf>.

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. A report of all offenses will be sent to appropriate deans and the Office of Student Judicial Affairs for possible further action.

Course Syllabus and Homework

Date	Section	Topic: Homework exercises
8/22	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
8/24	2.2	Limits: A Numerical and Graphical Approach 1 - 7 odd, 17 - 29 odd, 39, 43, 47 - 57 odd, 69
8/27	2.3	Basic Limit Laws: 1 - 31 odd, 35, 37
8/29	2.4	Limits and Continuity 1, 5, 7, 11, 13, 23, 27, 29, 37, 41, 47, 49, 51, 55, 63 - 79 odd
8/31	2.5	Evaluating Limits Algebraically 1 - 21 odd, 14, 27, 30, 32, 37, 41, 45, 49
9/3		<i>Labor day – no class</i>
9/5	2.6	Trigonometric Limits: 1, 5, 7, 9, 15 - 41 odd
9/7	2.7	Limits at Infinity: 1, 6, 7 - 17 odd; 19 - 25 odd, 31, 34, 35 - 41 odd
9/10	2.8	Intermediate Value Theorem: 1 - 15 odd, 17 - 21 all, 23
9/12	2.9	The Formal Definition of Limit: 8 - 12 all; 1 - 5 all
9/14	3.1	Definition of the Derivative 1, 3, 6, 7 - 23 odd, 29, 31, 33, 37, 41, 51 - 57 odd
9/17	3.2	The Derivative as a Function: 2 - 5, 43, 45, 47, 66, 67, 70, 79; 7 - 41 odd, 49, 51, 73
9/19	3.3	Product and Quotient Rules: 1 - 33 odd, 39, 53, 55, 57
9/21		Buffer / Review
Mon 9/24		<u>Exam 1</u>
9/26	3.4	Rates of Change: 1, 2, 6, 7, 8, 11, 14, 17, 18; 21, 22, 23, 25, 26, 33, 35, 41, 43, 46
9/28	3.5	Higher Derivatives: 1 - 25 odd, 37, 39 - 41 all
10/1	3.6	Trigonometric Functions: 1-24 all, 35, 36; 25 - 33 odd, 39-51 odd
10/3	3.7	The Chain Rule: 11 - 21 odd, 29 - 51 odd; 53 - 61 odd, 73 - 81 odd, 85, 86, 87, 89, 91
10/5	3.8	Derivatives of Inverse Functions: 9, 11, 19, 20, 23 - 35 odd
10/8	3.9	Derivatives of General Exponential and Logarithmic Functions 1 - 19 odd, 25, 31, 41, 43, 44; 45 - 65 odd, 79

10/10	3.10	Implicit Differentiation: 1 - 25 odd; 29 - 45 odd, 55, 57
10/12		<i>Fall break – no class</i>
10/15	3.11	Related Rates: 1 - 11 odd, 15, 19, 25, 31; 13, 20, 21, 23, 29, 33
10/17	11.1	Parametric Equations: 1, 5 - 21 odd, 45; 23 - 35 odd, 49 - 61 odd, 71
10/19		Buffer / Review
10/22		Buffer / Review
Wed 10/24		<u>Exam 2</u>
10/26	11.3	Polar Coordinates: 2, 3, 5, 6, 11, 13, 21; 27, 29, 31, 32, 51, 52, 53
10/29	4.1	Linear Approximation and Applications 1 - 29 odd, 33, 41, 45 - 53 odd, 57, 59, 63, 67
10/31	4.2	Extreme Values: 1 - 19 odd; 21 - 25 odd, 29 - 37 odd, 39, 41, 44, 47, 48, 50, 51, 53, 54, 55, 58
11/2	4.3	The Mean Value Theorem and Monotonicity 1, 5, 11, 15 - 39 odd, 43, 45, 51
11/5	4.4	The Shape of a Graph: 1, 2, 3 - 19 odd, 20 - 23 all, 25, 27, 31 - 47 odd
11/7	4.5	L'Hôpital's Rule: 1 - 53 odd
11/9	4.6	Graph Sketching and Asymptotes: 1 - 33 odd; 41, 43, 45, 49 - 52 all, 53 - 67 odd
11/12	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
11/14	4.8	Newton's Method: 1 - 9 odd, 15 - 21 odd, 28 - 30 all
11/16		Buffer / Review
11/19		Buffer / Review
Wed 11/21		<u>Exam 3</u>
11/23		<i>Thanksgiving – no class</i>
11/26		Review for final
11/28		Review for final
11/30		Review for final
12/3		Review for final