

# Calculus II Syllabus

## Math 330.001 – Fall 2009

**Instructor:** Dr. Adrian Gentle

**Class Times:** 8:00 – 8:50am MTWF

**Class Room:** SC 3221

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**Course Description:** We continue to develop the ideas introduced in Calculus I. Topics include the integration and differentiation of transcendental functions, applications of the integral, exact and numerical integration techniques, together with infinite sequences and series.

**Office Hours:** 9-11 MTF. Other times by appointment. My schedule and office hours are also listed on the webpage.

**Text Book:** *Single Variable Calculus*, 6th Edition, 2008, by James Stewart.

**Prerequisite:** Grade of C or better in Calculus I, Math 230.

**Mathematica:** *Mathematica* will be used throughout the semester; the software is available in ED2102, OC2004, OC3076, LA0115, and the Rice Library. Intro sessions will be announced.

**Practice Problems:** To learn mathematics effectively you must solve problems. It is expected that you will read the textbook and work through a significant number of the suggested practice problems to reinforce and expand upon the material covered in lectures. You should consider this the *absolute minimum* amount of work required to succeed in the course.

**Online Homework:** Homework problems will be set via WebAssign ([www.webassign.net](http://www.webassign.net)). There is a fee of \$35 per student. During the first week of class we will get everyone “up and running”.

**Exams & Quizzes:** A short in-class quiz will be held each week to “encourage” you to keep up with the course. Exams will be held in class on Wednesdays September 23rd, October 21st, and November 18th. The Final Exam will be held on Monday December 14th, 8-10am.

**Written Work:** Mathematics is a language; your work should read as such! You must show full work and justify all answers in your homework, quizzes and tests. Your solutions should be modeled on the examples I give in class.

**Attendance:** Students are expected to be present at every class. Success in this course requires regular attendance. This is not a joke. Seriously. Ask your friends. ☺

**Grading:** Grades will be based on 3 one-hour exams (a total of 300 points), a final comprehensive exam (150 points), online homework (scaled to 50 points) and in-class quizzes (scaled to 25 points, with the lowest quiz dropped). A total of 525 points are available, and the cut-offs for the final letter grade are as follows:

A	85%	B	70%	C	60%	D	50%
B+	80%	C+	67%	D+	57%	F	Below 50%

**Makeup Exams:** Departmental policy dictates that make-up exams are to be given under extenuating circumstances only. No make-up quizzes will be given.

Wk	Date	Section	Material
1	Aug 31	§6.1	Areas between curves
		§6.2	Volumes
		§6.3	Volumes using Cylindrical shells
2	Sep 7	§6.4	Work
		§7.1	Inverse functions
3	Sep 14	§7.2*	The natural logarithm function
		§7.3*	The natural exponential function
4	Sep 21	§7.4*	General log and exponential functions
		§7.5	Exponential growth and decay
5	Sep 28	§7.6	Inverse trig functions
		§7.7	Hyperbolic functions
6	Oct 5	§7.8	Indeterminate forms and l'Hopital's rule
		§8.1	Integration by parts
7	Oct 12	§8.2	Trigonometric integrals
		§8.3	Trigonometric substitutions
8	Oct 19	§8.4	Integration using partial fractions
		§8.8	Improper integrals
9	Oct 26	§12.1	Sequences
		§12.2	Series
10	Nov 2	§12.3	The Integral test and estimates of sums
		§12.4	The comparison tests
		§12.5	Alternating series
11	Nov 9	§12.6	Absolute convergence; ratio and root tests
		§12.8	Power series
12	Nov 16	§12.9	Power series representations of functions
		§12.10	Taylor and Maclaurin series
13	Nov 23	§11.3	Polar coordinates
		§11.4	Areas and lengths in polar coordinates
14	Nov 30	§9.1	Arc length along a curve
		§9.2	Area of surface of revolution
		§9.3	Applications in physics and engineering
15	Dec 7	§4.8	Newton's method
		§8.7	Approximate integration
		-	Review
	May 8	Final	Monday December 14th, 8am – 10am.