Syllabus - Math 174 Section 6 Spring 2009

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Office Hours: Monday & Wednesday 12-1, Tuesday & Thursday 11-12

Time: Monday 1:00-1:50, Tuesday & Thursday 12:00-1:15
Room: 309 Fitzelle Hall
Text: James Stewart, Calculus, Early Transcendentals, 6^{th} edition, Brooks/Cole

Catalog Description: Math 173 and 174 constitute the first two-thirds of the standard 12-credit calculus sequence. Topics include functions and their graphs, limits, differentiation, integration, derivatives and integrals of the elementary functions, polar coordinates, parametric equations, and infinite series.

Goals: Students will learn the the basic theory of integration, including the precise and intuitive meanings of the integral of a function, develop competence in integration techniques and apply the integral calculus to problems in mathematics, the physical and social sciences, and engineering. Students will analyze the convergence of infinite sequences and series and apply these to scientific problems.

Attributes: LA,CPA,M2

SUNY Learning Outcome: Students will show competence in the following quantitative reasoning skills: arithmetic, algebra, geometry, data analysis, and quantitative reasoning.

Grading Policy: Your grade will be determined by the following:

- Two midterm exams, each worth 15% of your grade. Tentative dates for these are:
  - Exam 1: Thursday, 12 February
  - Exam 2: Monday, 19 March
- Homework and quizzes, worth a total of 40% of your grade. Quizzes will be based on weekly homework assignments.
- Class participation, worth 10% of your grade.
- The final exam, cumulative and worth 20% of your grade.

Your final grade will be determined from the numerical grade x above according to the following scheme:

A	$92 \leq x \leq 100$	B^-	$82 \leq x < 80$	D^+	$67 \leq x < 70$
A^-	$90 \leq x < 92$	C^+	$77 \leq x < 80$	D	$62 \leq x < 67$
B^+	$87 \leq x < 90$	C	$72 \leq x < 77$	D^-	$60 \leq x < 62$
B	$87 \leq x < 82$	C^-	$70 \leq x < 72$	E	$0 \leq x < 60$

Course Outline: We will cover selected topics from Chapters 5 through 11 in the text. The main themes of each chapter are as follows:

Chapter 5 Integrals: Basic definition and interpretations of integrals, the Fundamental Theorem of Calculus, the substitution rule.

Chapter 6 Applications of Integration: Computing areas and volumes using integrals, work (in the sense of physics), average values.

Chapter 7 Techniques of Integration: Integration by parts, trigonometric integrals/substitution, integrals of rational functions.

Chapter 8 Further Applications of Integration: Arclength, area of a surface of revolution, applications to the sciences and engineering.

Chapter 9 Differential Equations: Modeling with differential equations, techniques for solving differential equations, and applications.

Chapter 10 Parametric and Polar Coordinates: Parametrized curves, polar coordinates, conic sections.

Chapter 11 Infinite sequences and series: Convergence of sequences and series, power series representations of functions, and applications.

Calculators: You are allowed to use a calculator on all homework and exams, although no problems requiring the use of a calculator will be given. You may use *only your own* calculator on exams.

Attendance: Please come to class regularly and on time. Any material missed due to an unexcused absence is the responsibility of the student.

Students missing 25% or more of class, any time from the second week of class up until the last day to withdraw from an individual course may be removed from the course by the instructor.