

# Syllabus

## Professor

John R. Hubbard  
Office: 201 Jepson Hall.  
Hours: Mon & Wed 3:00-4:00; Fri 2:00-3:00; other times by appointment.  
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## Required Textbook

*Single Variable Calculus: Concepts and Contexts*, Third Edition, by James E. Stewart, Brooks/Cole, 2005.

## Schedule

29 Functions (1.1)	31 Math models (1.2)	2 Composite functions (1.3)
5 Exponential functions (1.5)	7 Logarithmic functions (1.6)	9 Tangents (2.1)
12 Limits (2.2)	14 Limit theorems (2.3)	16 Continuity (2.4)
19 Limits at infinity (2.5)	21 Review	23 <b>Preliminary Test 1</b>
26 Rates of change (2.6)	28 Derivatives (2.7)	30 Derivative functions (2.8)
3 Antiderivatives (2.9)	5 Derivative rules (3.1)	7 Products and quotients (3.2)
10 Derivatives in science (3.3)	12 Review	14 <b>Preliminary Test 2</b>
17	19 Trig. derivatives (3.4)	21 The Chain Rule (3.5)
24 Implicit differentiation (3.6)	26 Logarithmic derivatives (3.7)	28 Differentials (3.8)
31 Related rate problems (4.1)	2 Review	4 <b>Preliminary Test 3</b>
7 Max-min problems (4.2)	9 Derivative tests (4.3)	11 l'Hospital's Rule (4.5)
14 Optimization problems (4.6)	16 Newton's method (4.8)	18 Antiderivatives (4.9)
21 The area problem (5.1)	23	25
28 Integrals (5.2)	30 Review	2 <b>Preliminary Test 4</b>
5 Evaluating integrals (5.3)	7 Fundamental Theorem (5.4)	9 Review
<b>Final Examination: Fri Dec 16 at 9:00 a.m. or Tue Dec 20 at 9:00</b>		

## Homework

The homework assignments are attached. Papers are due at the beginning of each class. Please:

- Use ordinary 8.5"×11" paper (not torn from a notebook).
- Use pencil (and eraser).
- Leave plenty of white space for comments.
- Staple your pages together.

## Tests

The four preliminary tests and final exam will be given only at the times specified in the schedule above.

## Grades

Grades will be posted online at our Blackboard course website. Final grades will be computed from:

Homework	10 %
Preliminary tests	60 %
Final examination	30 %

## Attendance Policy

Don't miss class. If you do, consult with your professor about how to recover from your absence.

## Academic Integrity

The Richmond Honor Council has the following written policy:

*All academic work, written or otherwise, submitted by a student to fulfill a course requirement is expected to be the result of the student's own thought, research, or self-expression. A student will have committed plagiarism if the student has reproduced someone else's work without acknowledging its source. Plagiarism is no more and no less a violation of the Honor Code than lying, cheating, or academic theft.*

This professor regards this Honor Code as essential to the academic integrity of the university.

**The Symbolic Reasoning Field of Study Requirement (FSSR)**

The objectives of this course include the ability to formulate and solve a variety of problems in mathematics and the sciences, and to express those solutions in written form. These solutions are expressed with mathematical symbols, and they are obtained through the application of deductive logic. Consequently, this course satisfies the Symbolic Reasoning Field of Study requirement for the B.A. and B.S. degrees.

The primary topics of this course are the derivative, the integral, and their reciprocal relationship expressed by the Fundamental Theorem of Calculus. In addition, a large number of applications in astronomy, physics, chemistry, biology, psychology, and economics are studied.

Problems are analyzed from graphical, numerical, and analytical perspectives.