

MATH 2040: CALCULUS I

UVa-Wise. Department of Mathematics and Computer Science. Fall 2016.

BASIC INFORMATION

Class meetings: Monday and Friday, 11:00–11:50; Tuesday and Thursday, 11:00–12:15. In Darden 220.

Instructor: Dr. Matthew Harvey

Office: Darden Hall 235

Office phone: 276-376-4571

Office hours:

- Monday 9:00–11:00
- Tuesday 8:00–11:00
- Wednesday 9:00–12:00
- Thursday 8:00–11:00
- Friday 9:00–11:00

Email: msh3e@uvawise.edu

Web: www.mcs.uvawise.edu/msh3e/

COURSE DESCRIPTION

The prerequisite for this course is satisfactory performance on the placement test or successful completion of Math 1210 with a grade of C or better.

This is the first course in the calculus sequence. All the topics in the course revolve around two central ideas, the limit and the derivative. In more detail, course topics will include:

- calculating and interpreting limits
- the precise definition of the limit
- continuity of functions
- the definition of the derivative
- tangent and secant lines
- velocity and acceleration
- calculating derivatives
- implicit differentiation
- related rates problems
- differentials

- l'Hôpital's rule
- curve sketching
- optimization problems

By the end of the course, you should have developed a conceptual understanding of the limit and derivative, and know what they represent. You should be comfortable calculating limits and derivatives, and have an understanding of how they arise in and can be used to solve a variety of problems. The textbook for this course is *Calculus, Early Transcendentals*, 8th ed., by James Stewart. We will cover the material in chapters 2–4 of this book.

THE EVERYDAY CLASS

Your presence in class is expected. In class, you are expected to pay attention and contribute. At the very least, you must not be a distraction to your fellow classmates. Please silence all electronic devices. Disruptive behavior will not be tolerated. If I feel that you are a distraction to the rest of the class, I will ask you to leave.

GRADES

You are expected to work daily on problems assigned through WebAssign, the online component included with your textbook. In addition, we will have quizzes approximately once a week to make sure that you are staying on top of your work. You should do as many of the homework problems as possible. It is by solving problems that you will truly learn the required material for this class. You should use these problems as a chance to make sure that you understand the material, and ulti-

mately to prepare you for the tests. During the semester there will be four in-class tests (see the attached schedule). They are tentatively scheduled for the weeks of September 12, October 3, November 7, and December 5, although the exact dates are still to be decided. A typical test will consist of approximately 15 short answer questions.

- No make-up exams will be given unless you can present a valid documented excuse. In this case, you will either take a make-up exam or be given a grade based on other assignments, whichever I feel is more appropriate.
- Your final exam grade may be used to replace your lowest test grade.
- At the end of the semester you will have a comprehensive final exam.
- Course grades will be assigned according to these percentages:
 - homework and quizzes: 20%
 - tests: 60%
 - final exam: 20%

DISABILITY SERVICES

If you need course adaptation or accommodation because of a disability or if you have emergency medical information to share with me, please make an appointment to talk with me as soon as possible. To make inquiries regarding disability services, please contact Whitney Wells, Director of Disability Services, at 276-328-0265 or wew3x@uvawise.edu, or visit the Aca-

demic Support Center in Zehmer Hall.

TITLE IX

The University of Virginia's College at Wise strives to provide a working and educational environment for all faculty, staff and students that is free from sexual misconduct and harassment. Sexual harassment, sexual assault and other acts of sexual misconduct are forms of sex discrimination prohibited by Title IX. The College reaffirms its commitment to maintain a campus environment emphasizing the dignity and worth of all members of the college community. To view UVa-Wise's sexual misconduct and harassment policy visit: www.uvawise.edu/compliance/TitleIX. If you have questions or concerns, please immediately contact:

Tabitha Smith, Title IX Coordinator
Office of Compliance and Conduct
1 College Avenue, Wise, VA 24293
Office: 276-328-0131
Cell: 276-870-5065
Fax: 276-376-4876
Email: tabitha.smith@uvawise.edu

CHEATING

Cheating will not be tolerated. Any student caught cheating will receive a zero on the assignment, will be reported to the Honor Court, and if found guilty may receive an F for the course.

MATH 2040 FALL 2016 TENTATIVE SCHEDULE

Week Starting	Topics	Sections
22-Aug	Tangent and velocity problems Limits	2.1, 2.2
29-Aug	Limits, continued	2.2, 2.3
5-Sep	The precise definition of the limit Continuity	2.4, 2.5
12-Sep	Derivative as rate of change Test 1	2.7
19-Sep	Derivative as a function Calculating derivatives	2.8, 3.1
26-Sep	Product and quotient rules Derivatives of trig. functions	3.2, 3.3
3-Oct	Chain rule Test 2	3.4
10-Oct	Fall Break	
17-Oct	Implicit differentiation Logarithmic derivatives	3.5, 3.6
24-Oct	Rates of change in sciences Exponential growth	3.7, 3.8
31-Oct	Related rates Max and min values	3.9, 4.1
7-Nov	Mean value theorem Test 3	4.2
14-Nov	Graphing with derivatives Limits at infinity	4.3, 2.6
21-Nov	L'Hôpital's rule	4.4
28-Nov	Curve sketching Optimization	4.5, 4.7
5-Dec	Optimization Test 4	4.7