

## **MAT 241: INTRODUCTION TO CALCULUS, Part I (4 credits)**

**Goals:** To learn some fundamental concepts of calculus, some techniques for applying the concepts, and to transfer this knowledge to formulating and solving problems. The language of mathematics is powerful; a major thrust of this course is to help you build a base for communicating mathematical ideas.

A graphing calculator is required. (The **TI-84 Plus** is recommended.)

### **Course Outline**

#### **Week Topic**

- 0 What is calculus about?
- 1-2 Limits, and Continuity
- 3-4 Derivatives: concept and definition
- 5-7 Developing and understanding the “shortcuts”
- 8-11 Applications of differentiation (and its undoing)
- 12-13 Revisiting concepts and strengthening problem solving skill

**Homework:** For every lesson, problems will be assigned that you will either discuss or hand in. Class will proceed on the assumption that you have done and understood these problems. Do not, however, limit yourself to those assigned. Doing more problems can hone your skill. Be ready to discuss your ideas on assigned problems in class. Visit your professor in office hours if you have additional questions.

**Regular and on-time attendance** in this class is imperative because much of your learning will develop through class activities and discourse. A classmate’s notes will not be an adequate substitute.

**Quizzes:** There will be weekly quizzes, usually in the first 15 minutes of class. Missed quizzes cannot be made up. Your 2 lowest quiz grades will be dropped at the end of the semester.

**Gateway quizzes:** There will be 2 ‘gateway quizzes’ in the semester on which you are required to score at least 90%. These are intended to establish proficiency in the basic skills of calculus.

Gateway quiz 1: Foundations, definitions & interpretations of the derivative

Gateway quiz 2: Differentiation

If you score less than 90%, then you will replace this requirement with Critical Skills Quizzes. Critical Skills quizzes will be taken outside class time, you must score 100% on each one; they may be repeated (in variation) as necessary.

**Exams:** There will be three hour-exams and a Final Exam. Excuses for missed exams will not be accepted unless accompanied by a doctor's note or similar official document.

**Projects:** Projects will be assigned during the semester to deepen your learning. Groups will be assigned for project submission. Every group member must participate fully in project work.

All assignments must be submitted on time.

**Grading:**

Points will be assigned on the following basis:

Exam 1	150
Exam 2	150
Exam 3	150
Homework, write-ups, project	150
Quizzes	100
Final exam	300
<i>Total</i>	<i>1000</i>

**Academic integrity:** No collaboration is permitted on quizzes and examinations. Please refer to UVI's student handbook for the policy on academic honesty, and remember that no grade is worth the sacrifice of your academic reputation.