# $\begin{array}{c} {\rm MAT~301:~Calculus~III} \\ {\rm ~Fall~2009} \\ {\rm MWF~10:30~am~-~11:20~am,~Hubbard~213} \end{array}$

Instructor: Dr. Brad EmmonsOffice: 209 Faculty Center

**Telephone:** 792-3413 (Don't Leave Voicemail)

Office Hours: 10:30 - 11:30 Tuesdays and Thursdays, or by appointment

Email: bemmons@utica.edu

Homepage: http://www.utica.edu/faculty\_staff/bemmons

#### **Course Materials**

Calculus, 3rd Edition by Strauss, Bradley, Smith (required)

#### Introduction

In this course, mathematics begins. While the first two semesters of Calculus gave you a nice introduction to the limit, the derivative, and the anti-derivative, in this course we will attempt to introduce a higher level of rigor. As you know, the introduction of these concepts enhanced our understanding of the universe and motion. And you have perhaps been exposed to applications of calculus to economics, the social sciences, computer science, or other disciplines. But what exactly is the nature of a limit? Were we careful enough in our treatment of it in Calculus I? We will begin the semester by investigating limits of sequences and series, and learn some cool things along the way.

After that we will begin our study calculus in higher dimensions. The calculus that you have been exposed to so far has dealt with functions of one variable. But for most phenomena in nature there are several variables at work. For instance, can you think of what variables might come into play when you are considering what temperature it is outside? What does the derivative mean now in this case? Can we integrate a function of several variables? We will explore these questions over the next two semesters.

#### Exams

There will be two in-class exams as well as a final cumulative exam. The exams will test your understanding of concepts, your ability to work through some of the computations, as well as your ability to apply the techniques to certain applications. The first exam is scheduled for Friday, October 2, the second exam is scheduled for Friday, November 6. The final exam will be held on Saturday, December 19 from 11:30 - 2:00. All exams will count for 20 percent of your final grade. There will be NO make-ups for missed exams. Please look over your schedule as soon as possible. If you see a potential conflict, inform me immediately.

#### Homework

The best way to learn Mathematics is to solve problems. Homework will be assigned at the end of each class period and collected the following class period. I will choose 4 or 5 problems to grade in each assignment. To earn full credit for a problem, a complete solution to the problem must be submitted. Just writing down the answer will not earn full credit. In addition to points for each graded problem, 5 points on each assignment will count for completeness and neatness of the graded assignment. Late assignments will not be graded, but they will be eligible for the 5 completion points. If you are not in class the day an assignment is collected, you may turn in your assignment into my office later that day. However, your assignment will be considered late. The homework is designed to help you identify where you might have difficulties. If you encounter any trouble with an assignment or a concept, seek help! The homework will count for 20% of your final grade.

#### Quizzes

Every other Friday, starting with September 11th, we will have an in-class quiz. There will be a total of 6 quizzes throughout the semester. You should treat the quizzes as mini-exams, covering material from approximately 2 weeks worth of course work. The quizzes will consists of 4 or 5 problems similar to problems from your graded homework, and they are to make sure that you are keeping up with the concepts presented in class, and to identify where you are having problems before you take the exams. The quizzes will count for 20% of your final grade.

#### Attendance

Attendance in MAT 112 is extremely important. Although there is no official attendance policy, note that if you are not in class on a particular day, your homework will not be graded for a score. I will also

require that you be in class at 10:30 am and no later. If you are late to class, you may stay to enjoy the wonderful learning experience. However, your homework assignment for the day will be considered late.

#### Grading

Your grade in this course will be based on three main factors: homework, quizzes and exams. The homework will be worth 20% of your final grade, the quizzes 20%, and the exams 60%. In addition to these factors, minor ethereal factors such attendance, class participation, attitude, and improvement over the course of the semester can also affect your grade. To determine your final grade, 90-100% = A, 80-89% = B, 70-79% = C, 60-69% = D, 59 and below = F, with the top two percents receiving a + and the bottom two percents receiving a -.

### **Important Dates**

Friday, September 11 – Quiz I

Friday, September 25 – Quiz II

Friday, October 2 – Exam I

Monday, October 12 - Fall Break

Friday, October 16 – Quiz III

Friday, October 30 - Quiz IV

Friday, November 6 – Exam II

Friday, November 20 – Quiz V

Wednesday, November 25 - Sunday, November 29 - Thanksgiving Break

Friday, December 11 - Quiz VI

Monday, December 14 – Last Day of Classes

Saturday, December 19, 11:30 - 2:00 - Final Exam

#### Suggestions

Come to class with your homework assignment completed every day

Study for at least 30 minutes each day in addition to completing your homework assignment

Read the section we will be covering in class before arriving to class

Do not fall behind!

Come to office hours to discuss homework and concepts. I am here to help!

## Syllabus

MAT 301: Calculus III

Fall 2009

September 4   Section 8.1 - Sequences and their Limits	Week 1	September 2	Course Policies, Syllabus, Basic Terms
September 9   Section 8.3 - The Integral Test; p. Series		September 4	Section 8.1 – Sequences and their Limits
September 14   Section 8.4 - Comparison Test, Quiz I	Week 2	September 7	Section 8.2 – Infinite Series ; Geometric Series
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