MAT 301 : Calculus III
Fall 2007
TR 1:00 pm - 2:15 pm, FAC 104

Instructor: Dr. Brad Emmons
Office: DePerno Hall 121
Telephone: 792-3413
Office Hours: Tuesday, 9:30 - 10:30, Thursday 9:30 - 11:30, 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. We will begin the semester by studying limits of sequences and series, before studying calculus in higher dimensions. As this class meets only twice a week, it is your responsibility to make an effort to look over the material at least 30 minutes every day in addition to the time you spend on course work.

Exams

There will be two in-class exams as well as a final cumulative exam. The exams will test 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 Thursday, September 27, the second exam is scheduled for Thursday, November 1, and the final exam will be held on Monday, December 17 from 9:00 to 11:30. 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 Thursday, starting with September 6th, 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 1:00 pm 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

Thursday, September 6 – Quiz I
Thursday, September 20 – Quiz II
Thursday, September 27 – Exam I
Thursday, October 11 – Quiz III
Thursday, November 1 – Exam II
Thursday, November 15 – Quiz V
Thursday, December 6 – Quiz VI
Monday, December 17, 9:00 - 11:30 – 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
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Week 1	August 28	Section 8.1 – Sequences and their Limits
	August 30	Section 8.2 – Infinite Series ; Geometric Series
Week 2	September 4	Section 8.3 – The Integral Test; p-Series
	September 6	Section 8.4 – Comparison Test, **Quiz I**
Week 3	September 11	Section 8.5 – The Ratio Test and the Root Test
	September 13	Section 8.6 – Alternating Series; Absolute and Conditional Convergence
Week 4	September 18	Section 8.7 – Power Series
	September 20	Section 8.8 – Taylor and Maclaurin Series, **Quiz II**
Week 5	September 25	Review
	September 27	**Exam I**
Week 6	October 2	Section 9.1 – Vectors in $\mathbb{R}^2$
	October 4	Section 9.2 – Coordinates and Vectors in $\mathbb{R}^3$
Week 7	October 9	Section 9.3 – The Dot Product
	October 11	Section 9.4 – The Cross Product , **Quiz III**
Week 8	October 16	Section 9.4 – (continued)
	October 18	Section 9.5 – Parametric Representation of Curves; Lines in $\mathbb{R}^3$
Week 9	October 23	Section 9.6 – Planes in $\mathbb{R}^3$
	October 25	Section 9.6 – (continued), **Quiz IV**
Week 10	October 30	Review
	November 1	**Exam II**
Week 11	November 6	Section 10.1 – Introduction to Vector Functions
	November 8	Section 10.1 – (continued)
Week 12	November 13	Section 10.2 – Differentiation and Integration of Vector Functions
	November 15	Section 10.2 – (continued), **Quiz V**
Week 13	November 20	Section 10.3 – Modelling Ballistics and Planetary Motion
	November 22	`NO CLASS`
Week 14	November 27	Section 10.3 – (continued)
	November 29	Section 10.4 – Unit Tangent and Principle Unit Normal Vectors; Curvature
Week 15	December 4	Section 10.5 – Tangential and Normal Components of Acceleration , **Quiz VI**
	December 6	Review