Math 211 Analytic Geometry and Calculus III Fall 2009

Instructor: Fred Schultheis

Office: PPHAC 218

Office Hours: MW 10:30 am - 11:30 pm, W 2:30-3:30, and by appointment

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Required Text: Calculus: Early Transcendentals, James Stewart, sixth edition or Multivariable Calculus: Early Transcendentals (Stewart's Calculus Series), James Stewart

After a brief review of some algebra and analytic geometry, we will study 4 of the basic concepts of calculus. One may think of calculus as the mathematics of infinite quantities and to deal with infinite things mathematically one uses the concept of a limit. The concept of limit is central to all of calculus. Third semester calculus deals with two main topics which are just special types of limits; infinite sequences and series and the integral and differential calculus of functions of several variables. The main content of the course is contained in Chapters 11-15.

Course Description

The course meets MWF from 11:45 to 12:55 in PPHAC 113. Homework assignments will be given at each class meeting. Students are expected to complete these assignments by the next class meeting, where they will be discussed. No one can learn mathematics without doing it themselves and so, to the student, homework is the most important part of the course. Since class participation is important, students are expected to attend every class.

Course Goals

In this course you will be learning the basic notions of infinite sequences, infinite series, the geometry of $3-space$, and the calculus of functions of several variables. Upon completing the course, successful students will

1. be able to work algebraically and analytically with infinite sequences and series,
2. be able to visualize and solve geometric problems using vector analysis,
3. understand the higher dimensional calculus conceptually and be able to compute the corresponding objects using the various techniques studied in class.

Grading

Your final grade will be based on 3 hourly exams (100 points each), Maple projects (100 points), cultural awareness points (50 points), class participation (50 points), and a comprehensive final exam (200 points). I reserve the right to give weekly quiz if it appears to be necessary. The following grading scale is used for assigning your final grade.

		$86-89$	$B+$	$76-79$	$C+$	$66-69$	$D+$	≤ 59 F
$93-100$	A	$83-85$	B	$73-75$	C	$63-65$	D	
$90-92$	$A-$	$80-82$	$B-$	$70-72$	$C-$	$60-62$	$D-$	

Cultural Awareness

One goal for this course is to develop an appreciation of the beauty and utility of mathematics. To help foster this appreciation you are encouraged to spend some time outside of class thinking and discussing mathematics.

There are no specific assignments for this portion of the course but many opportunities for you to satisfy the requirements. Some examples of activities that foster cultural awareness include: attending talks, giving a talk, reading a paper, or solving a problem.

Some typical cultural events include, but are not limited to

- attending an epsilon talk (5 points)
- attending a Mathematics Colloquium at Moravian (7 points)
- attending a math talk at another LVAIC school (9 points)
- attending the EPADEL conference in April (10 points)
- review an article on mathematics related to the course (5 points)
- solving a problem outside the scope of the class ($5-\infty$ points) with 5 additional points available for presenting the solution to the class

If you attend an event relevant to your mathematical growth you need to write a short paper that explains what the event was and how it deepened your appreciation of mathematics. At most 3 epsilon talks and 3 Mathematics Colloquiums may count towards your cultural awareness grade. However, once you have reached the 50 points for your cultural awareness grade, you may do additional cultural events for extra credit. For any talks you attend a write up is due within one week of when the talk was given. No culture points will be accepted after the second last Friday of the term.

ACADEMIC HONESTY POLICY GUIDELINES-MATHEMATICS COURSES

The Mathematics and Computer Science Department supports and is governed by the Academic Honesty Policy of Moravian College as stated in the Moravian College Student Handbook. The following statements will help clarify the policies of members of the Mathematics faculty.

In all homework assignments which are to be graded, you may use your class notes and any books or library sources. When you use the ideas or thoughts of others, however, you must acknowledge the source. For graded homework assignments, you may not use a solution manual or the help, orally or in written form, of an individual other than your instructor. If you receive help from anyone other than your instructor or if you fail to reference your sources you will be violating the Academic Honesty Policy of Moravian College. For homework which is not to be graded, if you choose, you may work with your fellow students. You are responsible for understanding and being able to explain the solution

of all assigned problems, both graded and ungraded. All in-class or take-home tests and quizzes are to be completed by you alone without the aid of books, study sheets, or formula sheets unless specifically allowed by your instructor for a particular test.