

# Math 211      Analytic Geometry and Calculus III      Fall 2012

**Class Meeting:** MWF 11:45 - 12:55 Room 232

**Instructor:** Nathan Shank

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**Office Phone:** 610-861-1373

**Office Location:** PPHAC 219

**Office Hours:** Monday 2:30 - 3:30, Wednesday 2:30 - 4:00, Thursday 2:30 - 4:00 (other times by appointment)

**Text:** *Vector Calculus* Susan Jane Colley, 2012, Fourth Edition, Pearson. We will cover most of the first 7 chapters of the text. You are also encouraged to have a copy of a calc I and II text available for your reference.

**Course Goals:** This course is a continuation of Math 170/171. We will focus on calculus of several variables. Thus we will revisit many of the techniques and ideas from first year calculus (limits, derivatives, optimization, integration), but in the context of higher-dimensional vector spaces.

This course will focus on developing reading and communication skills in mathematics. Much of the learning will be done *outside the classroom*, as you carefully read and practice the material from the book. We will make a clear distinction between exercises and problems. This class will serve as a transition into ‘problem solving’ rather than routine exercises. Time in class will be spent exploring the ideas presented in the reading and developing problem-solving strategies for the homework problems.

Through I work in the course, we will progress toward the following goals:

- Be able to read new material critically and apply the reading to new problems.
- Be able to express complete solutions and small proofs both orally and in writing.
- Be able to bring multiple ideas and techniques together to solve problems.
- Develop the capacity to utilize *Maple* in an effective manner, recognizing when it is and when it is not helpful.

## **Assignments/Assessment:**

- **Homework:** As you know math is not a spectator sport. You need to practice what you learn. Homework will be assigned daily and it will be collected at the beginning of class. Two problems/exercises will be chosen from each section to be turned in and graded for correctness. Eight other problems/exercises will be selected and graded for completeness. These homework problems/exercises must be done individually. If two or more graded homework sets look similar, no points will be awarded for the entire homework set (with no warning). Other ungraded homework will also be assigned and students are encouraged work on these problems

together. However, acquiring an entire solution from a classmate is not acceptable. Please see the section on academic honesty policy for more information. You are always welcome to come to office hours to see the instructor. Homework not turned in at the beginning of class is considered late. **Late homework will not be accepted for a grade.** Homework is considered late if it is not turned in before class begins.

- Quizzes: Periodic quizzes may be given at any time. Be prepared for a quiz every day.
- Computer Program and Calculators: Some class time will be devoted to computer activities using the program MAPLE. Most of these activities as well as occasional assignments that use Maple will be collected and graded. In addition, students are expected to bring a graphing calculator to class. Graphing calculators will be used frequently in class to illustrate concepts and to solve problems. There will be some activities and quizzes that will be "no technology". (You will be told in advance when a quiz will be "no technology".) Unless otherwise directed, you are encouraged to use Maple and/or a graphing calculator as a resource for homework.
- Tests: You will have **three** tests and a two part final. The tests are tentatively scheduled for Monday, September 17, Monday, October 15, and Monday, November 19. The final exam will be Thursday, December 13, 8:30 - 11:30.

**Grading:** You are responsible to keep track of your own grade. Grades will be computed as follows:

Homework and Quizzes	35%
MAPLE and Group Work	15%
Test	30% Total
Final Exam	20%

**Class Structure:** Class will consist of lecture, group work, individual work, and problem sessions. Please come to class prepared with your text, notes, and calculator everyday. Please be prepared to participate in class. Class will start promptly at the start time, and class will not end early. Please turn off your cell phones prior to the start of class.

**Attendance:** Attendance will be taken everyday. There is a very strong correlation between attendance and grades. In order to understand the material, you need to be present in class. If you are going to be absent, you must notify me ahead of time and have a classmate turn in your homework. You should also get the assignment from a classmate. Every absence over 3 during the semester results in a 2% point deduction on your final grade, regardless of the reason. I understand that there are circumstances that you must miss class so the lowest homework grade will be dropped when computing the final grade. Remember that no late homework is accepted.

**Academic Honesty:** For graded homework assignments and projects, you may use your class notes and any books or library sources except a solutions manual. Any resources

you use must be documented at the top of the homework assignment. As an example if you get help from the Tutor Center for problem 4 only, please write "Help with problem 4 from Tutor Center". No points will be deducted for honestly acknowledging help. However if you do not document any appropriate resource this is considered cheating.

The College academic honesty policy appears in your Student Handbook; you are expected to be familiar with it. The Academic Honesty Policy Guidelines specific to mathematics classes are reiterated at the end of the syllabus. They apply to work done outside of class as well as to in-class quizzes and tests. Please read them carefully. If you are unsure about the propriety of a particular procedure or approach, please consult with your instructor before continuing with the assignment.

**Special Accommodations:** Students who wish to request accommodations in this class for a disability should contact Elaine Mara, assistant director of learning services for academic and disability support at 1307 Main Street, or by calling 610-861-1510. Accommodations cannot be provided until authorization is received from the Academic Support Center.

### **Academic Honesty Policy Guidelines Mathematics Courses**

The Department of Mathematics and Computer Science supports and is governed by the Academic Honesty Policy of Moravian College as stated in the Moravian College Students 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 thought 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.