

# Math 211 – Analytic Geometry and Calculus III

## Kevin Hartshorn – Spring 2006

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### Vital Information

#### Class Meeting

MWF 11:25am – 12:30pm  
PPHAC 113

#### Required Text

*Calculus, Early Transcendentals*  
(5th Edition), by James Stewart  
Note that the text should include chapters 11–17.

#### Recommended Text

Student Solution Manual to Stewart's *Calculus*

#### Computer Application

*Maple* is available on all campus computers

### Contact Information

#### Office

PPHAC 222

#### Office hours

Mon 2:30–4:00pm  
Tue 8:30–10:00am  
Thu 1:30–3:00pm

#### e-mail

[hartshorn@moravian.edu](mailto:hartshorn@moravian.edu)

#### Class Web-page

<http://www.math.moravian.edu/hartshorn/math211>

### Other Resources

Calculus help on-line  
<http://www.calculus.org>

Columns by the MAA  
<http://www.maa.org/news/columns.html>

Interactive articles on math  
<http://www.cut-the-knot.com/>

Biographies of mathematicians  
<http://www-groups.dcs.st-and.ac.uk/~history/>

### Goals and Objectives

In this class, I hope to meet the following goals:

- To help you gain an understanding and appreciation of *linearization* as a central technique in calculus
- To develop in the class facility visualizing and working with multi-dimensional objects (particularly 3-dimensional)
- To build problem-solving techniques
- To enhance technical writing skills
- To develop an appreciation of the role of calculus and mathematics in the liberal art education.

To help measure our progress toward these goals, the course shall involve the following activities:

- Three exams (two take-home exams and an in-class exam), as well as a cumulative final exam
- Regular problem sets and quizzes
- Regular worksheets exploring *Maple*
- Several group projects
- Culture points

### Homework and Quizzes

As you surely know by now, calculus is not a spectator sport. Your only chance to learn the subject is to practice on a daily basis. It is expected that you spend **7 to 8 hours per week** outside of class working on calculus.

Homework problems are for your benefit, and it are your responsibility. Thus I will **not** be collecting homework. Instead, there will be quizzes at least twice a week. Quizzes may take one of several forms:

- Testing your reading of the text (see “Reading the Text” below)
- Testing your ability with a specific technique from class
- Checking to see that you have managed to complete the homework.

Quizzes will generally take the first 10 minutes of class. **You will not be given additional time for quizzes if you are late.** If you miss a quiz, **there are no make-up quizzes.**

### Maple

In continuation from Math 171, we will be using *Maple* in this class. Worksheets will be given sporadically throughout the semester to help see how *Maple* helps work with calculus. At the end of each worksheet will be a short problem-set to provide an opportunity to practice the techniques of the worksheet.

The problem sets are to be completed by the date given and handed in at the beginning of class. **If you have difficulty printing**, then send the *Maple* file to me by e-mail before the beginning of class. Be sure that your subject line includes a description of the assignment you are submitting.

## Projects

To help develop problem-solving, team work, technical writing, and to generally make the subject more interesting, I will assign several group projects throughout the semester. Each project will require a carefully written response to the problem. Details on the group projects will be provided with the first assignment.

## Attendance

Although I will not be taking attendance, you are expected to come to each and every class. If you miss a quiz or exam, **I do not allow make-up quizzes/exams** as a general rule. Otherwise, you have sole responsibility for all work and information you may miss by not attending class, regardless the reason.

**If you know you will be missing class:** Let me know as soon as possible in case special arrangements need to be made.

**If you miss class for an unforeseen reason** (sudden illness, car breakdown, etc.): Send me e-mail as soon as possible ([hartshorn@moravian.edu](mailto:hartshorn@moravian.edu)). Generally if you miss a quiz for a legitimate reason, I can give you an excused miss so that you are not penalized. Otherwise, I can send you a reply e-mail with any handouts I passed out in class.

## Culture Points

To help provide perspective of the role of calculus within mathematics and of mathematics within the general liberal education, you will complete a sequence of “cultural activities.” There are no specific assignment, but your activities might include mathematical conversations, tutoring experiences, attendance at talks, reading papers, or solving interesting problems. For each activity you attend, you will be awarded “culture points” based on the summary/reflection you submit for the activity.

To get a full 100% score for culture points, you will need to acquire 18 culture points over the course of the semester. Details on culture points will be provided in a separate handout.

## Exams

There will be three exams in addition to the final exam. Because of the increasingly complex nature of calculus in this course, two of the exams will be take-home exams. The in-class exam will be on **Friday, March 3**, and the take-home exams are scheduled for the weeks of **February 6 – 10** and **April 10 – 13**.

Details on the exams and the date of the final exam will be provided later.

## Grading Policy

When assigning letter grades at the end of the course, I generally use the 4 point scale from the student handbook as a baseline for grading. This means that (generally speaking), 85% or better is an A (+ or –), 65% or better is a B (+ or –), 50% or better is a C (+ or –). Note that these are only guidelines and are subject to change. Also note that I do not assign letter grades to exams or homework, but you can get a feel for how well you did by measuring your percentage score to this scale. To determine your numeric grade at the end of the course, I will use the following distribution:

15%	Homework and quizzes (average of quiz scores)
10%	Maple worksheets (average of worksheet scores)
15%	Group projects (average of project scores)
5%	Culture points
10%	First midterm (take-home, week of February 6 – 10)
10%	Second midterm (in-class on Friday, March 3)
10%	Third midterm (take-home, week of April 10 – 13)
25%	Final Exam (in-class, time and place to be announced)

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100 % Total possible score for the class

## Academic Honesty

Students will be expected to adhere to the standard of the Academic Honesty policy as described in the Student Handbook (pages 51-53). Any violations of this will result in severe penalties on the assignment, a report to the Dean, and the very real possibility of failing the course. For specific application to this course, note the following:

- **Honesty in Homework:** I believe that mathematics must be a group effort. Your work with classmates will do wonders in helping you internalize the new information. Thus you are encouraged to work with your fellow students on all problem sets and general homework problems. Use the solution manual to check your work and take any advantage you can to ensure that you know how to do the problems.
  - **Honesty with Maple Assignments:** These assignments should be your own work. While you may discuss difficulties with your classmates, each person should complete the assignment on their own.
  - **Honesty on the Group Projects:** When working on the group projects, each group will submit a single response to the problem. Obviously, you must collaborate with the other members of your group in order to complete the assignment. You may use Stewart's *Calculus*, as well as a graphing calculator or *Maple*. You may **not** use any other sources or reference tools without specific permission from the instructor. You may not consult with anyone outside the group, other than the instructor.
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