

# Math 226 – Multivariable Calculus

## Spring 2007

### Course Procedures

**Professor:** Josh Laison

Old Music Hall 100, x3480, [laison@stolaf.edu](mailto:laison@stolaf.edu)

**Office Hours:**

Monday 3:00–4:00

Tuesday 2:30–3:30

Wednesday 3:00–4:00

Thursday 1:30–2:30

Friday 9:30–10:30

**Class Meetings:** Science Center 182

10:45–11:40 Monday, Wednesday, Friday

**Text:** Multivariable Calculus, McCallum, Hughes-Hallet, Gleason, et al.

**Course Web Page:** <http://www.stolaf.edu/people/jlaison/multi.htm>

**Grading:**

Homework Assignments (approx. 25)	25%
Group Projects (5)	20%
Quizzes (3)	25%
Final Exam (1)	25%
Class Attendance and Participation	5%
<b>Total</b>	<b>100%</b>

**Material Covered:**

We will cover most of Chapters 12, 14–18 of the text, and as much of Chapters 19 and 20 as we can get to in the time we have. We will cover approximately one section a day. In order to get to later topics, a few sections may be omitted; for example, Sections 15.3, 16.6, and 16.7. The material is roughly organized into the following topics:

- Chapter 12 introduces functions with multiple inputs and one output, so-called *functions of several variables*.
- Chapters 14 and 15 cover derivatives of functions of several variables.
- Chapter 16 covers integrals of functions of several variables.
- Chapter 17 introduces functions with multiple inputs and multiple outputs, which can be thought of as *parameterized curves and surfaces* or as *vector fields*, and covers derivatives of these functions.
- Chapters 18, 19, and 20 cover integrals of vector fields, and the “fundamental theorems of multivariable calculus,” Green’s Theorem, the Divergence Theorem, and Stokes’ Theorem.

## Important Dates:

- Friday March 2: Quiz #1 covering up to around Section 14.3 (more precise information closer to the date)
- Friday March 23: Quiz #2 covering up to around Section 16.3 (non-cumulative)
- Friday April 27: Quiz #3 covering up to around Section 18.3 (non-cumulative)
- Monday May 14: Review for the final exam
- Wednesday, May 16, 2:30-4:30: Final exam (cumulative)

## Homework Assignments:

Homework will be due every Monday, Wednesday, and Friday by 4:30 PM, starting Wednesday, February 7, and should be turned in to the class homework box adjacent to my office.

I encourage you to talk to me, to the evening mathematics tutors, and to each other about the homework problems. However, I ask that when it comes time to write down your solutions to the homework problems, you do so on your own. Failure to do this constitutes a violation of the honor code (see below).

## Group Projects:

The group projects will give you a chance to apply your newly acquired calculus skills to slightly larger and more involved problems than those found in the homework. In addition, they will give you a chance to develop your ability to use Maple, a computer algebra system that, if you take the time to learn it now, will prove invaluable to you in future mathematical endeavors.

Be sure to *write in complete sentences*, and *explain* all accompanying mathematics and computer computation in a clear, concise, and convincing manner. **Your grade will be based on both presentation and mathematical correctness.** For each of these projects you will be working with one or two partners. Your group will turn in a single project and each member of the group will receive the same grade.

## Late Assignments and Missed Classes:

1. Do not turn in late assignments.
2. Do not miss class.
3. If for some reason you are unable to attend class or turn in an assignment, please let me know *as soon as possible*, preferably *before* the missed class or assignment. The longer you wait to tell me, the less sympathetic I will become. The worst is to never tell me about it at all. (This doesn't mean that I don't accept late homeworks— it means that I'd like to hear about them from you first.)

## **Honor Code:**

**on homework:** You may, and are encouraged to, discuss the homework with anyone, get help from Mathematica, graphing calculators, your textbook, etc. However, your submitted written work should be your own.

**on group projects:** The members of the group should contribute equally to producing the final product. Do not put your name on a paper written by others.

**on quizzes and exams:** The resources that you may use on each quiz/exam will be different, and will be specified on the quiz/exam and earlier in class by me. You will never be allowed to receive aid from others. You will be asked to sign the honor code on each quiz and exam.

## **Disabilities:**

If you have a documented disability for which accommodations may be required in this class, please contact me to discuss your needs. Additionally, you will need to register with Student Disability Services (see Ruth Bolstad, Student Disability Services Specialist) in the Academic Support Center. All such discussions will be confidential.