

# Math 100, Spring 2010

## Instructor

The instructor is Dr. Jason Grout, Howard 235, (515) 271-3113, [jason.grout@drake.edu](mailto:jason.grout@drake.edu). Office hours are MWF: 10-10:50AM, and MW: 12:20-1:10PM. If you need to come see me at another time, please schedule an appointment or stop by my office.

## The Course

### Textbook

*Calculus: Early Transcendental Functions*, 4<sup>th</sup> edition by Larson, Hostetler, and Edwards. ISBN 978-0-618-60624-5. (There is a version of the textbook for just this class as well—see me for details). We will cover almost all of the material in chapters 10-14. If time permits, we may cover additional topics. We will be following a set of notes which I will give you. These notes present the topics in a way that is designed to help you understand the material more deeply. The order of the material in the notes is also designed to give you time to thoroughly understand a topic before building another topic on it.

We currently plan to have 12 units:

1. Review, Matrices, and Polar and Parametric equations
2. Parametric Equations
3. Polar Coordinates
4. Vectors
5. Functions
6. Derivatives
7. Motion
8. Line Integrals
9. Optimization
10. Double Integrals
11. Surface Integrals
12. Triple Integrals

## Time Management

An average college student in this class should expect to spend an average of 2 hours outside of class for every hour in the classroom. You may need to spend more time to earn an A.

## Expectations

### You can expect me to:

- Prepare class material that will help you learn this subject

- Be available during office hours and other times as arranged, and respond promptly (by the next class day) to inquiries
- Prepare challenging assignments, quizzes, and exams that help you learn the material and technology
- Communicate changes to this syllabus or other course policies on the website, through email, or in class

### **I expect you to:**

- Prepare for class by doing assignments and reading course notes or the book, as needed
- Be in class on time and ready to learn; ask questions and participate in class
- Be respectful of others and follow high standards of honesty and integrity
- Do as much homework as you need to in order to master the material, making sure that you do at *least* the minimum number of problems requested
- Learn to use technology to help you solve problems, including special technology assignments
- Create one-page lesson plans and teach all of these to someone that is either in this course or has taken this course
- Take quizzes and exams and promptly review and correct them
- Talk with me as soon as possible if there is something I can do to help you learn the material better

## **Coursework**

### **Lesson Plans**

To really learn a subject deeply, you need to be able to teach it to others. For each unit, one of your assignments is to prepare a one-page (front and back) written lesson plan for a 20-30 minute lesson on the unit. The audience is someone who has been through this course before, but needs a review of the material.

The lesson plan should start with the objectives (i.e., what should be true about a participant after the lesson). I strongly recommend that you include several illustrative examples or homework problems that you have worked out fully. You might also summarize important concepts, facts, and theorems, note shortcuts, include pictures that illustrate the main points, and anticipate questions that might be asked.

Your lesson plan must be your own work in your own words. You do not need to write down every word you would say. Take this assignment seriously—you will most likely see a direct correlation between how careful you are in your lesson plan and how well you learn the material.

You will have the opportunity to teach classmates from some of your lesson plans during

review days in class. I strongly encourage you to find another classmate that you can regularly teach all of your lesson plans to soon after you make them; you will know the material much better after presenting it to someone else, leading a discussion, and answering questions.

## Assignments

Specific homework instructions will be given in class, on the course website, or in handouts.

## Quizzes

The quiz policy is designed to help you deeply understand the material, recognize your own mistakes, correct habits that cause you to make errors, and help you know how to double-check your own work.

Quizzes will be given periodically in class. Each quiz will have two scores: an original score and a corrected score. Only correct solutions will receive credit—partial credit is effectively earned through corrections. The corrected score defaults to the original score and can be raised to 100% by correcting the problems as outlined below. For each quiz problem, possible grades are:

Situation	Original Score	Corrected Score	Effective Weighted Grade
Originally answer the question correctly	2	2	100.00%
Originally answer incorrectly, correct the entire quiz within one week on the first try	1	2	83.33%
Originally answer incorrectly, correct within three weeks	0	2	66.66%
Originally answer incorrectly, do not correct (or do not follow instructions for correction)	0	0	0.00%

- You generally have three weeks from the date on the quiz to submit corrections. If you correct every problem on a quiz on the first try within one week of the quiz date, you will receive  $\frac{1}{2}$  of the points you missed on the original score back. This means that if you originally get a 0 on the quiz, but you correct every problem within a week on the first try, you effectively earn an 83.3% on the quiz.
- Use a clean sheet of paper with your original quiz stapled behind your correction. Label each problem clearly. Do not change anything on your original quiz. If you lose your original quiz, contact me for another one.
- For each problem for which you did not receive full credit:
  - Write in complete sentences the errors you made and what you will do to ensure

that you don't make that kind of error again. Be specific and explain exactly where and what mistake was made. You will not receive correction credit if you do not explain your mistakes sufficiently.

- Correctly and neatly rework the problem. If you just made a minor error, you do not need to show all of the work for the problem—it is sufficient to start your work at the first error (but be sure to indicate when you are doing this).
- When doing corrections, you may use any outside resource. However, remember that your submitted correction must be your work. Plagiarism is considered cheating.

In order to get the most out of corrections and to avoid plagiarism and cheating (for example, copying or paraphrasing another student's correction), I suggest that you:

1. First, try to carefully find your error by yourself. Rework the problem from scratch if you do not see the error right away. Try working the problem at a blackboard, on a clean sheet of paper, or explaining it out loud to yourself to give your brain a chance to see the problem in a fresh light.
2. Make sure that you find all of your errors. Often there is more than one error, and I may only point out one of them.
3. If you've spent more than 20 minutes trying to find your error(s) and you are not making any progress, get help. Come talk with me, your classmates, a tutor, or others. Rather than asking them to tell you what you did wrong, explain to the other person each step of your solution and why you did it. Have the other person ask you questions about anything they do not understand. Often you will realize your error as you try to explain your work to others. If the other person merely tells you what you did wrong and how to do the work correctly, you will most likely not learn the material as well.
4. Again, please come talk with me if you don't see what is wrong.
5. When you understand what you did wrong, then go away and write up your correction *by yourself* without referencing any notes you may have taken in a group conversation. Make your correction your *own* work.

## Exams

There will be 3-4 exams (depending on how much time there is at the end of the course) and a comprehensive final exam. These exams are tentatively scheduled following the unit on polar coordinates, the unit on derivatives, the unit on optimization, and possibly the unit on triple integrals. There is an exam correction policy that will be explained after the first exam.

## Late Assignments

Late work will not be accepted, except possibly in extreme circumstances.

## Grading

Your scores are weighted as follows.

Component	Percentage
Exams and Final	40%
Lesson Plans	10%
Original Quiz scores	8%
Quiz Corrections	16%
Assignments	26%

A score above 90% will earn an A, between 80% and 90% will earn a B, etc. There may also be a curve applied at the end of the semester.

## Policies

### Academic Honesty

See <http://www.drake.edu/dos/handbook/academic.php#as> for details of what constitutes cheating, plagiarism, or other forms of academic dishonesty. For example:

- Plagiarism is the misrepresentation, either by intent or negligence, of another's ideas, phrases, discourse, or works as one's own.
- Cheating is the act, or attempted act, of giving or obtaining aid and/or information by illicit means in meeting any academic requirement, including examinations.

Cases of academic dishonesty will result in at least a failing grade on the assignment and may also result in a failing grade in the course.

### Disability

If you have a disability and will require academic accommodations in this course, I would be happy to discuss your needs. Accommodations are coordinated through Student Disability Services (first floor Old Main).

Please contact Michelle Laughlin, Director of Student Disability Service, at 271-1835 or [michelle.laughlin@drake.edu](mailto:michelle.laughlin@drake.edu).

This syllabus is subject to change. Changes will be communicated via at least one of the course website, email, or in class.