Math 104 – Calculus II – Course Policies

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And by appointment (Really!)
TEXT: *Calculus, Early Transcendental Functions, Third Edition*
by Smith and Minton

Overview

This course is a continuation of the topics covered in Calculus I. One of the most fundamental, and most slippery, topics in mathematics is the relationship between the finite and the infinite. A recurring theme throughout the semester will be the relationship between an approximation and the exact value. One of the most beautiful aspects of calculus is that by taking better and better approximations and extending from the finite to the infinite, we will often be able to find a precise solution.

Many of the topics we will cover this semester allow us to solve problems that do not seem to be immediately related to calculus. Here are just a few:

1. How much foam goes into a Nerf football?
2. If you look in the front cover of the text, it will tell you that the volume of a sphere of radius r is $\frac{4}{3}\pi r^3$. Why is this correct?
3. If you ask Maple (or your calculator) for the value of π , it will tell you that π is approximately 3.141592654. How does it know that?
4. We will show how to design an apartment building that has a center wall which is infinitely long (and has infinite area), but the building itself has finite volume. In other words, all the tenants can move into the building, but the workers will never finish painting the hallway!

Course Goals and Expectations

Two of the goals of this course are that you learn to read a math text and that you learn to communicate mathematics with other students. Mathematics is a very personal discipline that is best learned by *doing* rather than by observing.

Therefore, the class will be structured with some lectures to emphasize particular topics, but much of the time will be spent on in-class work. You will have a reading assignment for nearly every class meeting, and it is **extremely** important that you complete the reading before the next class meeting! The class meetings are not intended to be a complete encapsulation of the course material, but instead will focus on the major concepts from the reading and clarifying the more subtle ideas in the course.

You should expect to put in approximately 2 hours outside of class for each hour in class. In other words, expect to spend at least 8 hours per week on calculus outside of class. There will be some weeks where you spend more time (e.g. working on projects or preparing for exams), and there may be some weeks where you do not spend the full 8 hours.

Evaluation

Your final grade will be determined by

Reading Assignments	5%
Two Group Projects	15%
Three In-Class Exams	40%
Comprehensive Final Exam	15%
Antidifferentiation Exam	8%
Homework	17%

The Honor Code

Remember that we are operating under the Honor Code for all of your academic work while you are at Wheaton. I take this quite seriously. This carries freedoms and responsibilities for both you as students and me as the professor. The best approach is to avoid any situation where there is a temptation to violate the Honor Code. Or if you find yourself in such a position, you should remove yourself from it.

Remember that you should write out, and sign, the following statement on all course work:

> "I have abided by the Wheaton College Honor Code in this work."

Working with Other Students

I strongly encourage you to work with other students outside of class – This can be one of the best ways to learn mathematics! However, the answers that you give to the homework assignments should represent your own work. The two projects will be group assignments where you will work in groups of two or three (of your choosing). Each assignment will receive a grade, and the group will determine how the points are allocated to each member. For example, if a group of three receives an 85 on a project, then the group will have $3 \times 85 = 255$ points to distribute among them. I will be available to mediate this process, if necessary.

Reading Assignments

I will put a copy of each reading assignment on the course homepage. Each assignment will indicate which parts of the section are especially important and which can be skipped. Each assignment will also have two or three questions that you should be able to answer after you have read the section. You will submit your answers through Wheaton onCourse.

See the *Suggestions for Reading a Math Book* on the course web page for more information.

Group Projects

There will be two group projects assigned during the semester. You will have two class periods to work together on each project, and your written report will be due a week or so later (see the syllabus for specific dates).

One of the main goals of the projects is that you learn to communicate mathematics *precisely*, both verbally with your group and in writing. The reports should be written in complete sentences explaining the results and major ideas involved. You may divide the writing of the report in whatever way is agreeable to the group, but everyone should completely understand the whole of the paper. Further, each member should proofread the entire paper for consistency and typos.

You can submit a first draft to me, and I will make comments on it before the final version is due. I will give you a handout that explains my expectations for the written reports in more detail.

Exams

The dates for the exams are given on the syllabus on the course web page. I will give you a set of sample problems before each exam, and we will have a question and answer session before each exam. For each exam, you will be allowed to bring an 8.5"×11" piece of paper, handwritten on one side, which you will turn in with the exam. The Final Exam will be comprehensive and may have a takehome component in addition to the inclass part.

Antidifferentiation Exam

One of the fundamental skills you will learn this semester is antidifferentiation, or finding an antiderivative of a function. The Antidifferentiation Exam will consist of a set problems and is graded with no partial credit. You either get every problem correct, or you get no credit for the exam. However, you may retake a similar exam as many times as you need until you pass.

The Antidifferentiation Exam will be given in class on March 8. If you pass the Exam (or any version of it) by March 26, you will receive the full 8% credit. After that date (until the end of classes, May 7) you will receive 4%. You are not allowed to take the exam after May 7.

Homework

The purpose of the homework assignments is to help you understand the concepts of the course and master the computational aspects of calculus. The homework will be the most beneficial to you if you work on it throughout the week, not just on the few days before it is due.

We will use the online system WebWork for submitting most of your homework, although I may ask for you to turn in certain problems on paper. More details will be forthcoming.

I strongly encourage you to discuss the homework with other students, but the answers you turn in should represent your own work. Not all of the homework will be straightforward or obvious. You will almost certainly have questions about some of the problems from every assignment. Please plan to come to my office hours and the tutoring hours in the Kollett Learning Center.

You will be allowed to drop ***one*** homework assignment at the end of the semester.

Class Attendance

Although class attendance is not a specified percentage of your grade, I will keep a class roll to help me determine borderline grades at the end of the semester. If you do miss class, you are responsible for the material that was covered.

Getting Help

Please come see me during my office hours! If you have a conflict and cannot make my office hours, please call or email me and we can set up an appointment for another time.