MATH 2144 INFORMATION
SECTION 003, MWRF 10:30 AM, HES 316

> "It is not a narrative. It is a mathematical technique so advanced that only two people in the world understand it," the Doctor said. "When published, it will bring about enormous changes in not only mathematics, but all forms of natural philosophy and engineering. People will use it to build machines that fly through the air like birds, and that travel to other planets, and its very power and brilliance will sweep old, tottering, worn-out systems of thought into the dustbin."
> "And you invented it, Doctor?" Eliza asked, as Jack was occupied making finger-twirling movements in the vicinity of his ear."
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> — *Quicksilver*, by Neal Stephenson, 2003.

Instructor: David Wright, MS 527, 744-5775 or 744-5688,
Email: `wrightd@math.okstate.edu`
Online Classroom (D2L): `oc.okstate.edu` (Main location of class resources and grades)
WebAssign: `www.webassign.net` (For homework)
URL: `www.math.okstate.edu/~wrightd/2144` (Small website outside D2L)

Office hours: MWRF 1:30 PM–3:00 PM, and by appointment. Please feel free to call or drop by and see if I am available at any time. If I seem busy or harried, please ignore that (it's a normal state) and sit in my office and start asking questions. If I am absolutely too busy or harried, we will make arrangements to meet at a later time. Also, be sure to take advantage of the assistance available at the Math Learning Resources Center in the Classroom Building, 4th floor.

Text: *Calculus, Early Transcendentals*, 6th and OSU ed., by James Stewart.

Prerequisites: Two years of high school algebra and one year of high school trigonometry, or MATH 1513 and 1613 at the college level.

Syllabus: **Calculus** is the name of that part of mathematics that is concerned with the examination of functions with regard to their rates of change and accumulation.

- In Chapter 1, we review mathematical functions used to model many different phenomena.
- Chapter 2 introduces the concepts of limits of functions and the instantaneous rate of change of a function, a special limit which is called the **derivative**.
- Chapter 3 explores many basic properties of differentiation.
- Chapter 4 is concerned with applications of derivatives, particularly the theory of **optimization**, that is, finding the absolute best ways to do things.
- Complementary to the notion of rate of change is the notion of the accumulation of a function. In calculus, this is called **integration**, and this is introduced in Chapter 5.
- Chapter 6 describes some applications of integration: area, volume, work, average values.

EXAMINATIONS: There will be three exams given during class on the dates **Feb. 9**, **Mar. 30**, and **Apr. 22**. A comprehensive final exam will be given on **Wednesday, May 4, from 10:00 AM to 11:50 AM**. Students with extremely serious conflicts must warn me well in advance (more than one week) of the exams, and we will work out some alternative arrangement.
You are allowed to use a calculator no more powerful than a TI-89 graphing calculator. No palmtop or laptop PC's are allowed. You are required to show all steps in your solutions. If the answer is required to be **exact**, for full credit you must give simplified exact formulas for the answer. For example, $\sqrt{2}$ is an exact formula while 1.414 is only a numerical approximation.
No access to notes or books will be allowed during exams.

Homework: All regular homework must be completed in the online system WebAssign. The online homework is on a per section schedule and you must devote regular efforts to complete this homework. That will mean about 2 or 3 assignments a week. If you miss an assignment or miss some problems on an assignment deadline, there are no extensions, but there will be opportunities to make up some lost points on later and bonus assignments.

You should enroll at www.webassign.net using the class code **okstate 9107 0065**
Please use your OSU short O-key as your login name when you enroll. To find your short O-key, login to okey.okstate.edu.

Some sites you may find useful are below:

- Self Enrollment Instructions
- Student's Guide to WebAssign

Working problems in the textbook is also strongly recommended. Answers to the odd-numbered questions are in the back of the text, and should be read carefully. It is your responsibility to complete enough problems to be prepared for the exams. Please take note of problems you would like to discuss in class and be sure to press me to go over them.

Grading: Each in-class exam will be worth 100 points, and the final will be worth 200 points. You may earn a maximum of 200 points homework. There will be more than 200 points of homework offered; therefore, no late homework will be accepted. The course total is then 700 points.

Students who achieve a course total of at least 630 points will receive an A, 560 will merit at least a B, 490 will merit at least a C, and 420 will assure passing. Some discretion may be used in deciding borderline cases, based on my subjective judgment of students' effort and performance.

General Advice:

- Mathematics is more a skill than just a body of knowledge. Practice solving as many problems as possible to develop that skill. Buy the student solutions manual and compare your work against the printed solutions.
- Read the textbook with an eye to techniques for solving problems. Take notes on the formulas and theorems, and be sure to include the wording of all conditions. Reading mathematics is not always linear. Sometimes you need to look ahead at the examples and problems in order to understand the theory.
- When you are working on problems, and you don't recognize the terminology, use the index in the book to locate pages on which the definitions and relevant examples may be found.

Academic Honesty: It is a cornerstone of academic integrity that academic work submitted under your own name should be prepared entirely by yourself. Informal discussion between students is permitted. You are also encouraged to seek help on the homework from myself during office hours. However, academic misconduct includes organized collaboration between students on homework assignments that involve one student solving problems for another.

Attendance Policy: Attendance of lectures is mandatory in the sense that you are responsible for all announcements of changes in schedule made during class, as well as all material covered during lectures. Roll will periodically be taken, but not every class. If you're missing a lot of classes, you can expect to be contacted.