

MATH 2144 INFORMATION, SECTION 003

“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.”

— *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 1:00–3:00 PM, and by appointment. Please feel free to 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, or MATH 1715. You must have achieved a C or better in MATH 1613. If you have any doubts about your background, please follow the instructions and take the placement exam at:

OSU Calculus Readiness Exam

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. Much of this material is taken from the prerequisites *and should seem familiar to you*.
- 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 in our normal classroom on the dates **Feb. 8, Mar. 14, and Apr. 18.**

A comprehensive final exam will be given on

Tuesday, May 1, 12:00–1:50 PM in AGH 275

Students with extremely serious conflicts with exam dates must warn me well more than one week in advance than one week) of the exams, and we may be able to 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 to $\sqrt{2}$.

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 assignments.

You should enroll at www.webassign.net using the class code **okstate 9558 7816**

If you have not registered with WebAssign before, please give your full name and Campus Wide ID in the enrollment form.

It is strongly recommended that you use the **Notifications** service within WebAssign to send you an email 24 hours in advance of assignment due dates as a reminder. The deadline is usually at 6AM, which means that you should complete the assignment by the previous evening.

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. The WebAssign scores will be scaled to fit within the 200 point framework.

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.

Attendance Policy: There will be a 20 point bonus, added to your course score, for good class attendance. To earn this bonus, you are allowed to have at most 4 unexcused absences after the second week of term. Each unexcused absence after 4 will reduce the bonus by 5 points. Excuses may be granted for documented university activities, but not for illness or other accidental reasons; the latter should be accounted for by the 4 allowed absences. To record your attendance, sign the roll form by your name when it is passed out during class. You may not sign for another student; doing so would be an academic integrity violation.

General Advice:

- Mathematics is more of a skill than just a body of knowledge. Practice reading and solving as many problems as possible to develop that skill. Keep a notebook where you write out how you solved the WebAssign problems in detail. Buy the student solutions manual and compare your work against the printed solutions.

- *Really read the textbook.* You may survive the course and even get an A if you're quick enough without doing so, but your education will be significantly improved by learning how to learn from technical reading.

Keep an eye out for techniques for solving the homework 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. Compare the problems you are assigned against the examples worked out in the text.

- 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.
- Take advantage of the resources on WebAssign, including "Master-it" instructions, "Watch-it" videos, and electronic book access.

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 involves one student solving problems for another.