Math 106 Analytic Geometry and Calculus I
Section 550

Lecture: MWF 11:30-12:20   Avery Hall (AVH) 115
Recitations: TR 11:30-12:20
[551] Hamilton Hall [HAH] 133, Katherine Field
[552] Henzlik Hall [HENZ] 203, Sarah Tekansik
[553] Military and Naval [M&N] 203, Amanda Fricke
[554] Ferguson [FERG] 113, Amanda Croll
[555] Military and Naval [M&N] B5, Anne Donahue

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WWW pages for this class: http://www.math.unl.edu/~mbrittenham2/classwk/106f07/
(There you will find copies of every handout from class, dates for exams, review materials, etc.)

Office Hours: (tentatively) Mo 2:00 - 3:00, We 1:30-2:30, and Th 1:00 - 2:00, and whenever you can find me in my office and I'm not horrendously busy. You are also quite welcome to make an appointment for any other time; this is easiest to arrange by email or just before or after class. Any alteration of these hours will be announced in class.

Text: *University Calculus*, by Hass, Weir, and Thomas (Addison-Wesley, 2007).

This course, as the name is intended to imply, is the first of several where you learn the basics of what we call calculus. Our goal for the semester is to cover approximately the first third of the text. In particular, we will cover the following chapters of the book (although not necessarily in this order):

Ch. 2, Limits and Continuity: sections 2.1 thru 2.7
Ch. 3, Differentiation: sections 3.1 thru 3.10
Ch. 4, Applications of Derivatives: sections 4.1 thru 4.8
Ch. 5, Integration: sections 5.1 thru 5.6
Ch. 6, Applications of Definite Integrals: sections 6.1 thru 6.3

Homework will be assigned from each section, as we finish it. It is an essential ingredient to the course - as with almost all of mathematics, we learn best by doing (again and again and ...). Cooperation with other students on these assignments is acceptable, and even encouraged. Homework assigned in class from the text will not be collected; they will, however, serve as a model for the weekly quizzes described below (and, therefore, will help you to prepare for an important component of your grade). You should treat the list of assigned problems as an <u>absolute</u> <u>minimum</u> collection of problems to work to help you to review the material. For any problem that gives you difficulty you should work problems in its vicinity, since they will focus on similar skills.

Online Homework will be assigned once or twice each week. Each typically consists of one to four problem types; to receive a perfect score you must successfully complete one of each type in a single session. You may attempt each homework as many times as you wish until the due date for the set. These assignments will contribute (up to) 100 points toward your final total. The online homework system for this class can be accessed from any internet-capable computer with a graphical web browser at

http://calculus.unl.edu/edu/classes/106fa07br/

Quizzes will be given in recitation section every Thursday that we do not have a scheduled exam. These will typically consist of one problem modelled on the homework assignments from the sections covered up until the Monday prior to the quiz. The quizzes will contribute up to 100 of the points toward your total. No make-up quizzes will be allowed, but your lowest two quiz grades will be dropped before computing your score; a missed quiz will be counted as a 0 for this purpose.

Midterm exams will be given three times during the semester, in recitation class, approximately every five weeks - the specific dates are (currently) September 27, November 1, and December 6. Any deviation from this schedule will be announced well in advance. Each exam will contribute up to 100 points toward your grade. You can take a make-up exam only if there are compelling reasons (a doctor SAYS you were sick, jury duty, etc.) for you to miss an exam. Make-up exams tend to be harder than the originals (because make-up exams are harder to write!).

A **Gateway Exam** will test your ability to do basic algebraic calculus computations. It consists of 10 questions, and you must pass it with a score of 8 out of 10 or better to receive full credit for the exam. You will take the exam on paper in recitation class on Thursday October 18. If you do not pass it the first time you take it (or wish to improve your score), you may retake the exam, up to once a day, at the College Testing Center (Burnett 127), until November 8. The gateway exam will contribute (0 or) 50 points towards your total. No calculator is permitted on the gateway exam.

A **Project** will be assigned for you to work in small groups of no fewer than 3 and no more than 5 people. Students from different recitation sections in our course are welcome to form a group. The project will explore a longer and more open-ended question than a typical homework or exam problem. The goal of the project is two-fold: you and your fellow group-members will solve a more challenging problem, and you will write a report on your work, describing background, methods, and conclusions. Your group will submit a written report on the project and you will be graded on both the quality of both the mathematical solution and of the exposition. The project will contribute up to 50 points towards your total.

Finally, there will be a regularly scheduled **Final Exam** on Wednesday, December 19, from 6:00 to 8:00pm. [Note: that this time is <u>not</u> based on the time that the course meets; it is common to all sections of Math 106.] The final will cover the entire course, with a slight emphasis on material covered after the last midterm exam. It will contribute up to 200 points toward your final grade. In accordance with department policy, you will be allowed to bring one 3×5 card with your own hand-written notes to the final exam.

Your course grade will be calculated numerically using the above amounts, to give a total out of 800 points ($= 100 + 100 + 3 \times 100 + 50 + 50 + 200$), and will be converted to a letter grade based partly on the overall average of the class. However, a score of 90% or better will guarantee some kind of **A**, 80% or better some sort of **B**, 70% or better a flavor of **C**, and 60% or better a **D**.

Calculators: You are required to have a graphing calculator for this course. The TI-86 is recommended, but the TI-84, 85, 89, and 92 are all reasonable options. Calculators may be used during the quizzes and exams (although it is not necessarily recommended); however, calculators other than those above require the approval of the instructor prior to use. A cell phone calculator cannot be used during a quiz or exam.

Cell phones should be silenced for the duration of all classes, and extreme restraint should be exercised in answering a call during class. If you feel that you must answer a call, please excuse yourself from the room before beginning to take the call.

The **Math Resource Center** is located in Avery 013B, and students in Math 106 are encouraged to use this resource if they have questions related to this course, or as a place to meet and discuss group projects. Hours for the MRC are MTWR 12:30 - 8:30 pm, F 12:30 - 2:30 pm, and Su 1:00 - 5:00pm.

Stay current! In mathematics, new concepts continually rely upon the mastery of old ones; it is therefore essential that you thoroughly understand each new topic before moving on. Our classes are an important opportunity for you to ask questions; to make sure that you are understanding concepts correctly. Speak up! It's your education at stake. Make every effort to resist the temptation to put off work, and to fall behind. Every topic has to be gotten through, not around. And it's a lot easier to read 50 pages in a week than it is in a day. Try to do some mathematics every single day. **Class attendance** is probably your best way to insure that you will keep up with the material, and make sure that you understand all of the concepts. [And on a more pragmatic note, the intructor writes the exams, so it pays to know what the instructor said!] Even more, **stay ahead!** You are strongly encouraged to read the section to be covered in class prior to its presentation in lecture; this will both improve your ability to follow the lecture and help to focus your attention on any areas where extra effort on your part will be required.

Some important academic dates

Aug. 27	:	First day of classes.
Sept. 3	:	Labor Day - no classes.
Sept. 7	:	Last day to withdraw from a course without a **'W'**.
Sept. 17,18,19,20	:	Mid-Semester Check (7:00 to 8:30pm, Nebraska Union)
Oct. 19	:	Last day to change to or from P/NP.
Oct. 22-23	:	Fall break - no classes.
Nov. 16	:	Last day to withdraw from a course.
Nov. 21	:	Student holiday - no classes.
Nov. 22-25	:	Thanksgiving Vacation - no classes.
Dec. 15	:	Last day of classes.
Dec. 19	:	Math 106 Final examination.

Departmental Grading Appeals Policy: The Department of Mathematics does not tolerate discrimination or harassment on the basis of race, gender, religion or sexual orientation. If you believe you have been subject to such d iscrimination or harassment, in this or any math course, please contact the Department. If, for this or any other reason, you believe your grade was assigned incorrectly or capriciously, appeals may be made (in order) to the instructor, the Department Chair, the Departmental Grading Appeals Committee, the College Grading Appeals Committee, and the University Grading Appeals Committee.

Homework Problems, by section

Section 1.1: 5,9,21,25,55
Section 1.2: 5,15,17,19,29,45,57
Section 1.3: 21,31,37,41,43
Section 1.4: 13,17,19,23

Section 2.1: 2,4,7,11,12,15
Section 2.2: 3,4,5,6,7,9,18,19,25,31,37,38,44,51,57,59,64,73
Section 2.4: 4,5,13,17,19,28,29,35,43,47,54,55,63
Section 2.5: 7,8,11,19,20,29,31,39,43,59
Section 2.6: 5,6,7,8,9,10,14,17,19,22,25,35,40
Section 2.7: 8,9,15,17,21,26,29
Section 3.1: 9,10,17,21,27,28,29,30,31,35,41,43
Section 3.2: 7,9,15,20,21,25,31,41,44,47
Section 3.3: 7,9,12,17,22,25,29
Section 3.4: 5,8,9,17,25,28,37,42,45,49
Section 3.5: 13,19,29,38,41,54,57,59,73,78,81,87,89,93,96,97,101,105,106
Section 3.6: 3,4,15,23,25,28,31,34,35
Section 1.5: 15,21,26,27,36,37,41,45,52,63
Section 3.7: 6,7,9,15,17,20,33,55,60,63
Section 3.8: 5,19,23,25,33,34,39
Section 3.9: 7,8,11,13,17,18,21
Section 3.10: 3,11,12,17,23,34,41,47,49,55,61
Section 4.1: 7,11,12,13,14,18,19,29,35,42,47,64,65
Section 4.2: 4,5,7,9,11
Section 4.3: 3,6,7,14,17,23,26,31,39,48,49
Section 4.4: 3,5,13,16,25,30,35,41,46,53,59,63
Section 4.7: 3,5,17,20,21
Section 4.5: 2,5,8,11,15,20,21
Section 4.6: 13,16,19,29,31,40,49,63
Section 4.8: 9,12,19,23,42,51,57,76,79,88,91,99,105,114,119
Section 5.1: 3,6,9,19
Section 5.2: 3,8,13,17,19,29,36,37
Section 5.3: 9,10,18,21,25,57,59,63
Section 5.4: 5,7,8,10,23,25,28,31,33,37,44,47,54,59,63,74
Section 5.5: 5,6,9,13,17,21,28,33,37,44,45,51,55
Section 5.6: 7,14,23,32,43,51,53,55,63,66,69,77,83,89,99
Section 6.1: 5,6,15,19,24,33,39,40,49
Section 6.2: 3,8,9,15,20,23,29
Section 6.3: 3,6,9,13,17,29