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**Prerequisites:** Grade of C or better in MAT 125 or satisfactory placement.

**Description:** Calculus I (4). Calculus of one variable; basic concepts, interpretations, techniques, and applications of differentiation and integration. Certified First Year Learning Initiative course.

**Course web page:** <http://jan.ucc.nau.edu/136/136.html>

**Textbook:** The main source of information should be your own handwritten notes from class. We are going to use: *Calculus I Lecture Notes*. It is available for purchase at Alphagraphics for less than \$10. Visit <http://jan.ucc.nau.edu/ns46/CLN/> for details. Online resources are also available at the course web page. Any standard printed calculus book you already own can be beneficial as well.

**Learning outcomes:** Upon completion of the course, students should be able to calculate limits by a variety of methods, apply these methods to the calculation of derivatives from the definition of derivative, be able to take derivatives of the basic algebraic and transcendental functions and to use the chain rule to take derivatives of more complex functions. She will be able to apply her knowledge of the derivatives of functions to find tangent lines and rates of change in a variety of circumstances and to find maximums and minimums of functions. He will be able to find higher derivatives and use them to investigate concavity and the application of concavity to maximum and minimum problems and to acceleration. She will be able to take derivatives in complicated situations by use of logarithmic differentiation and implicit differentiation. In addition, he will be able to find easy antiderivatives and apply this knowledge to the calculation of areas using the fundamental theorem of Calculus and to do some more complex integrals by the use of tables and substitution.

**Attendance:** Class attendance is mandatory. You are responsible for material covered in class whether or not it is in the text book. It is important to take notes, and review them after class.

**Grading:** A : 90.00%, B : 80.00%, C : 70.00%, D : 60.00% Check the accuracy of your scores regularly on the grade sheet posted on the web. Grades are not negotiable based on personal reasons like scholarships, graduation time, job offers etc. Cutoff levels are firm.

- Weights: 20% homework, quizzes, attendance; 60% tests; 20% final
- Tests: There will be 4 in-class tests. The exact dates will be announced at least a week before the tests in class and on the course web page. Use of electronic devices (advanced calculators, ipods, cell phones, etc.) and cheat sheets will not be allowed on the tests. Simple calculators only capable of the 4 basic operations are allowed (but not required) on tests and quizzes. Borrowing calculators from other students on tests are forbidden.

Coming to class in not sufficient preparation for taking the tests. The problems on the tests are not always routine calculations. You need to have a deep understanding of the material. You need to spend a considerable amount of time preparing for the tests. Review your notes, make sure you understand the theory and examples we do in class. Review the handouts, test each other with questions.

- Comprehensive final exam: A final exam is scheduled on finals week. Exact dates and times are available on the NAU academic calendar on the NAU web site.
- Quiz: A quiz may be given at any time without announcement. There may be group and individual quizzes.
- Homework: Homework will be assigned regularly on WeBWorK or on paper. Try to log in to WeBWorK as soon as possible to make sure you have an account. Let me know immediately if you experience difficulties logging in. Check WeBWorK regularly for new assignments. Make sure your email address on WeBWorK is current. I am going to send out announcements to this email address. I recommend that you collect your solutions to the WeBWorK problems in a notebook. Check the course web page regularly for announcements. Homework is the foundation of your learning. You cannot expect to solve the assigned problems easily. Some problems require a great deal of effort and time. Even if you are unable to solve a problem, the time spent on trying is not wasted. The only way to build mathematical skills is to think about problems. The more you think the more you know. Do not spend your time on memorization. Try to understand everything as deeply as possible. The emphasis in this class, like in any mathematics class, is on understanding. Your questions are always appreciated. No late homework is accepted. It is recommended to create study groups and discuss the assigned problems but you need to solve your homework sets on your own. The discussion forum on BbLearn is a convenient way to communicate with other students in the class. I encourage you to discuss the homework problems on the discussion forum.

**Resources:** Free tutoring is available in our Resource Room (AMB 137) and in the Student Learning Center <http://classlist.nau.edu>. Computers are available in the Resource Room and in AMB 222.

**Portfolio:** Please collect and save all handouts and graded material in a portfolio.

**Activities:** You can earn extra credit by attending FAMUS (Friday Afternoon Undergraduate Seminar) meetings and by submitting solutions to the problem of the week. Links are available on the course web page.

**Dates:** Last day to drop/add: September 8 (no W appears on transcript).

Last day to withdraw: October 28

**Make up** tests will be given only in case of verified medical or other emergency which must be documented. You must make a reasonable effort to notify me as soon as you can. Let me know before a missed test is given if possible. The best way to contact me is by email. Tell me your name and class time if you send me an email.

**Classroom Etiquette:** Laptop and cell phone use (including texting) during classes is inappropriate.

**Other policies:** Please read the **Department Policies** document on the course web site. All the information on this syllabus are subject to change and any class announcements regarding the syllabus are considered official amendments to it. This syllabus and other information is available on the course web page.