

# Syllabus for MATH 3345 – Introduction to Analysis

## Instructor

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**Office Hours:** M,W 4:00 - 5:00

## Text

*Elementary Analysis: The Theory of Calculus* by Kenneth A. Ross

## Prerequisites

You may enroll in MATH 3345 if you have successfully completed MATH 2414 (Calculus II) and MATH 3425 (Foundations of Mathematics).

## Course Description

This course is concerned with the rigorous proofs underlying the theory of calculus. We will carefully examine such topics as limits, continuity, differentiation and integration. Eventually we will have built enough theory to prove some of the deeper results presented in calculus such as the Mean Value Theorem and the Fundamental Theorem of Calculus.

## Grades

The focus of this course is not *what* is true, but *why* it is true. Accordingly, your grade will not be based on how many facts you know, but whether you can prove those facts. Your grade will be determined by percentage from the following categories:

Participation	5%
Homework	35%
Midterm Exams	40%
Final Exam	20%

## Attendance

It is vital that you attend every class and take careful notes. Some lecture material will not appear in the textbook. I also encourage you to ask lots of questions and participate in class. Your participation score will reflect both class attendance and participation.

## Homework

Homework will be assigned each week. It will usually be due on Monday. Some of the assigned problems will be graded carefully out of 10 points according to the attached rubric, some work will be graded with less feedback, and some will not be graded at all. The real purpose of homework is practice. While it may be useful to discuss the problems with other students, every student should write his or her own work independently. The majority of your grade comes from test performance. If you do not practice solving problems and writing those solutions independently, you will probably not be able to pass the exams.

## Midterm Exams

There will be three midterm exams. The dates will be announced at least one week prior to the exam. The tests will assess your ability to prove things, not how well you have memorized facts.

## **Final Exam**

A final comprehensive exam is scheduled for **Friday, December 19, 10:15 am - 12:15 pm**. No alternative times will be scheduled to accommodate travel plans or work schedules.

## **Disability Statement**

If you have a disability, including a learning disability, for which you request disability support services and/or accommodation(s), please contact Ida MacDonald in the Disability Support Services office so that the appropriate arrangements may be made. In accordance with federal law, a student requesting disability support services/accommodation(s) must provide appropriate documentation of his/her disability to the Disability Support Services counselor. For more information, call or visit the Student Services Center located in the University Center, Room 282. The telephone number is 566-7079 (TDD 565-5579). Additional information may also be obtained at the following UT Tyler Web address: <http://www.uttyler.edu/disabilityservices>.

## **Social Security Statement**

It is the policy of The University of Texas at Tyler to protect the confidential nature of social security numbers. The University has changed its computer programming so that all students have an identification number.

## **Note Regarding Student Absence due to Religious Observance**

Students who anticipate being absent from class due to a religious observance are requested to inform the instructor by the second class meeting of such absences.

## **Grade Replacement**

If you are repeating this course for a grade replacement, you must file an intent to receive grade forgiveness with the registrar by the Census date (September 10). Failure to file an intent to use grade forgiveness will result in both the original and repeated grade being used to calculate your overall grade point average. A student will receive grade forgiveness (grade replacement) for only three (undergraduate student) or two (graduate student) course repeats during his/her career at UT Tyler. (2006-08 Catalog, p. 35)

## **Student learning objectives**

By the end of this course, the student will be able to do the following:

- Prove facts about convergence and divergence of sequences of real numbers
- Prove facts about continuity, differentiation, and integration of functions.
- Construct examples and counterexamples displaying basic properties concerning continuity, differentiation, and integration.