

MATH 4023 - Introduction to Modern Analysis - Fall 2012

INSTRUCTOR: Dr. Roger Zierau
OFFICE: MS502A
OFFICE HOURS: MWF 9:30-10:20 and by appointment
PHONE: 744-6296
E-MAIL: zierau@math.okstate.edu
TIME and PLACE: MWF 10:30-11:20 in HSCI 316

TEXT: *Elementary Analysis: The Theory of Calculus*, by K. A. Ross is the textbook.

PREREQUISITES: MATH 2163 (Differential Equations) and MATH 3613 (Linear Algebra).

COURSE CONTENT: This course has two goals:

- To enhance students' abilities to write, analyze and understand mathematical proofs in the context of calculus.
- To provide precise and rigorous understanding of the basic ideas (such as convergence, limits and continuity) of calculus.

The topics covered will be: methods of proof, functions, the real numbers, sequences, sequences of functions, series, continuous functions and derivatives. We will cover parts of Chapters 1-5; some additional material on logic and proof writing will be presented.

GRADUATE CREDIT: Students enrolled in MATH 4023 01G (for graduate credit) are required by the university to complete some work beyond that required of those enrolled in MATH 4023 001 (for undergraduate credit). For this course that additional work is one additional assignment.

HOMEWORK: Homework is extremely important; it provides the practice and feedback needed to become proficient at writing proofs and become fluent in using the concepts from calculus in a rigorous way. Homework will be assigned (roughly) each week. Much of the homework will be collected and carefully graded. Homework assignments will be posted on D2L and announced in class.

It is expected that students will do all homework exercises. Students are permitted to discuss homework problems with others in the class, however:

- (a) all written work handed in must be your own;
- (b) it is not permitted to read other students written solutions;
- (c) it is not permitted to write solutions jointly with another student;
- (d) it is not permitted to read or reproduce solutions to homework problems which have been posted on the internet or made available in other ways.

Violation of this policy will be considered as academic dishonesty.

EXAMS: There will be three inclass exams throughout the semester. They will occur on the weeks of Sept. 3, Oct. 8 and Nov. 12. There will also be a final exam on Friday Dec. 14, 10:00-11:50am.

GRADES: The first inclass exam is worth 50 points, the last two are worth 100 points and the final is worth 150 points. The homework will be (scaled to) 150 points, giving a total of 550 possible points. There will be some opportunities for a small amount of extra credit.

Letter grades will be assigned as follows:

at least 495 points: guaranteed A

440-494 points: at least a B

350-439 points: at least a C

320-349 points: at least a D

0-319 points: probable F.

MISSED WORK: Students shall be offered reasonable accommodation in the event that he or she misses an exam or is unable to turn in a homework assignment on time for a valid and documented reason. Valid reasons include official University activities, activities associated with military service, illness and family emergencies. Appropriate documentation shall be provided by the student in a timely fashion, preferably in advance, to support his or her request for accommodation.

D2L: Students are required to use and regularly check D2L since announcements and assignments will be posted on there. Students should be sure to set their email on D2L to an address that they regularly use; certain announcements and reminders will be emailed to students using this address.

ATTACHMENT: See the attached University 'syllabus attachment' for additional information, policies and dates.