

Math 4023, Introduction to Modern Analysis

Course Information

Fall 2014

Professor: Dr. Lisa Mantini, 410 Math Sciences

- Telephone 405-744-5777,
- Email: mantini@math.okstate.edu or lisa.mantini@okstate.edu,
- FAX number: 405-744-8275.
- Office hours: MW 2:30-3:20 PM, R 1:30-2:20 PM, and by appointment.

Course Times: MWF 10:30-11:20 AM in MSCS 509.

Prerequisites: Calculus III (OSU's MATH 2163), and either some background in reading and writing proofs from Introduction to Modern Algebra (MATH 3613) or permission of instructor.

Course Objectives: The aim of this course is to revisit our study of calculus from a theoretical viewpoint. Our goals are to

- refine and improve your ability to read and write mathematical proofs as begun in Math 3613 and to develop a feeling for why they are so essential in mathematics;
- develop a logical, deep understanding of functions, the real numbers, sequences, limits and continuity, to complement the intuition that you gained in your prior courses.

Text: *Analysis: With an Introduction to Proof*, fifth edition, by Steven R. Lay.

Course Requirements: Students enrolled in this course will complete the following:

ITEM	DATE	POINTS	WEIGHT
Exam 1	Wednesday 24 Sept	125 pts	18%
Exam 2	Friday 31 Oct	125 pts	18%
Homework	various	180 pts	25%
In-class work	various	70 pts	10%
Final Exam	Wednesday 10 Dec 10:00-11:50 AM	200 pts	29%
TOTAL		700 pts	100%

Grading: Preliminary grade cutoffs, which may be curved very slightly if circumstances warrant, are:

- 627 points (89.5%) guarantees an A in the course;
- 557 points (79.5%) guarantees a B;
- 487 points (69.5%) guarantees a C;
- 417 points (59.5%) guarantees a D.

Graduate Credit: Graduate students wishing to earn graduate credit will complete the worksheets I assign individually; undergraduates will complete these with a partner. Any curve applied to the undergraduate and/or graduate sections will be determined independently.

Course Policies: The following policies will be followed in this course.

D2L I will post course information, assignments, exam review problems, and homework solutions on our D2L page.

EMAIL COMMUNICATION I will use the Class List in D2L to email students with news about the course, schedule changes, or other items. Please set your email address in D2L to one you check *daily*.

ATTENDANCE POLICY One of the components of your course grade, worth 10% of your grade, will be determined by your participation in class discussion or problem-solving sessions and completion of various worksheets done in class. I will post the worksheets on our D2L page, but you are guaranteed full credit only if you are present in class when we do the work. You should come to class prepared to participate, which means that you should likely read each section of the text before we cover it. Please start the homework as soon as it is assigned so that you have time to ask questions on problems as they arise. I do answer questions by email, but reaching me the night before an assignment is due is not guaranteed. Worksheets or quizzes need not be announced in advance.

HOMEWORK Homework is assigned from every text section we cover. Assignment sheets will be posted on our D2L page or distributed in class. Much of each assignment will include your writing proofs for various mathematical statements on topics we cover. I expect you to write in full sentences and to try to adopt good mathematical writing strategies. We will discuss those strategies in class.

- ▷ Please write your answers as neatly as possible in the space provided on the assignment sheets on our D2L page. This assists me greatly in reading your work. Credit is not guaranteed if I cannot read or make sense of your submission.
- ▷ Submitting homework by FAX, emailing homework as a pdf attachment, or uploading homework into the drop box on our D2L page are acceptable methods of submission, though submitting assignments in class is preferred. If you must email an assignment to me, scan it and give it the file name: M4023_Asn03_YourLastName.pdf
- ▷ Homework is due at 5:00 PM on its due date, though submitting it in class is preferred. No late homework is accepted after solutions are posted on D2L.

MAKEUP EXAMS Makeup exams will be given only for serious and unavoidable conflicts. You must notify me before or as soon as possible after a missed exam.

WITHDRAWAL The last day to drop the course with no fees encumbered and no grade is Monday, August 25. The last day to drop with an automatic grade of W is Friday, November 7. The last day to withdraw from all classes with an assigned grade of W or F is Friday, November 21.

Special Accommodations: If you have a qualified disability and need special accommodations, you should notify me as soon as possible and request verification of eligibility for accommodations from the Office of Student Disability Services.

Class Calendar: Here is a rough calendar of dates on which each section of the text will be covered. Note that the first two assignments (week 1) cover roughly 18–19 pages of reading; later assignments cover roughly 12–13 pages each.

Week	Date	Mon	Weds	Fri
1	Aug 18	Intro, 1.1	1.2	1.3
2	Aug 25	1.4	3.1	2.1 (Asn 1)
3	Sept 1	Holiday	2.1	2.2 (Asn 2)
4	Sept 8	2.2	2.3	2.3 (Asn 3)
5	Sept 15	2.3	2.4	2.3, 2.4 (Asn 4)
6	Sept 22	Review	Exam 1	2.4
7	Sept 29	2.4	2.4	2.4 (Asn 5)
8	Oct 6	3.2	3.3	3.3 (Asn 6)
9	Oct 13	3.3	3.4	3.4 (Asn 7)
10	Oct 20	3.4	3.4	Holiday
11	Oct 27	3.5 (Asn 8)	Review	Exam 2
12	Nov 3	4.1	4.1	4.2 (Asn 9)
13	Nov 10	4.2	4.3	4.3 (Asn 10)
14	Nov 17	4.4	4.4	5.1 (Asn 11)
15	Nov 24	5.1	Holiday	Holiday
16	Dec 1	5.2	5.2	Review (Asn 12)
17	Dec 8	Final Exam		

Academic Integrity: Oklahoma State University is committed to the maintenance of the highest standards of integrity and ethical conduct of its members. This level of ethical behavior and integrity will be maintained in this course. Participating in a behavior that violates academic integrity will result in your being sanctioned. These behaviors include, but are not limited to, unauthorized collaboration or plagiarism, cheating on examinations, or helping another person cheat. Violations may subject you to disciplinary action including the following: receiving a failing grade on an assignment, examination or course, receiving a notation of a violation of academic integrity on your transcript (F!), and being suspended from the University. Carefully read the OSU policy at academicintegrity.okstate.edu.

With regard to the homework in this course, I encourage the formation of study groups and the discussion of homework solutions. However, you must write up your homework solutions and other assessments *yourself* unless an assignment is specifically listed as a group assignment. You must never claim ideas that are not your own as your own.

- ▷ If you don't understand it or could not explain it to me, don't write it down!
- ▷ Any published or internet source that you consult other than our textbook must be cited (include a comment in parentheses giving the author's name and title)

of book or URL). Material influenced by sources other than our textbook should not be copied verbatim but should be written in your own words.

- ▷ Collaborations with other individuals other than me must be cited in parentheses as well (help received from A. Tutor).
- ▷ You may certainly help your classmates but not show your written solutions to other students.