Math 4023, Introduction to Analysis

Syllabus: In-class Section   Summer 2016

Professor: Dr. Lisa Mantini, 410 Math Sciences
  ▷ Telephone 405–744–5777,
  ▷ Email: lisa.mantini@okstate.edu,
  ▷ FAX number: 405–744–8275.
  ▷ Course Times: MTWR 10:30–11:45 AM in AGH 201.
  ▷ Instructor's office hours: TWR 1:30–2:30 PM and by appointment.

MLSC: There will be drop-in tutoring hours for this course at the MLSC, located on the fifth floor of Edmon Low Library, held by tutor Kameron McCombs, TR 2:30–5:00 PM.

Prerequisites: Calculus III (MATH 2163), and either a background in theoretical mathematics 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

- help students learn preliminary content in proof techniques, sets, relations, and functions, as it is needed to develop a deeper understanding of (a) sequences and convergence, and (b) functions of a real variable, limits, and continuity. This content is required for further study in mathematics including Advanced Calculus.

- help students learn the thought processes and techniques used in mathematical reading, writing and problem solving, such as the structure and importance of mathematical definitions, the deductive logic used in mathematical proof, and the techniques used in reading and writing rigorous mathematics.

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	Thursday 23 June	150 pts	23%
Exam 2	Tuesday 12 July	150 pts	23%
Homework	various	150 pts	23%
Class work, quizzes	various	50 pts	8%
Final Exam	Thursday 28 July	150 pts	23%
TOTAL		650 pts	100%

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

- 582 points (89.5%) guarantees an A in the course;

- 517 points (79.5%) guarantees a B;

- 452 points (69.5%) guarantees a C;

- 387 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.

HOMEWORK In this course you will complete 10 written assignments that cover computational and theoretical aspects of topics we cover, with an emphasis on the theoretical. The quality of your writing matters! Please write your solutions neatly in the space allowed on the assignment sheets distributed in class or posted on our D2L page.

    ▷ Homework is due at 4:00 PM on its due date with no grade penalty, though submitting it in class is preferred. Homework turned in later than this may incur a penalty of up to 2 points per day unless prior arrangements are made. No late homework is accepted once solutions are posted on D2L.

    ▷ Electronic homework submissions generally will be by uploading a single pdf into the Dropbox for that assignment on D2L. Apps such as Turboscan for your phone can create multi-page pdf files. Your file should have the title 4023Asn03_YourLastName.pdf

D2L I will post course information, assignments, exam review problems, and homework solutions on our D2L page. The course will be video-recorded for the online this summer, and links to the video recordings will also be uploaded into D2L. These will be available for all students in the course to use as a study aid.

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 The availability of video recordings of lecture does not remove your obligation to attend class. I expect that all students will be present unless you have made prior arrangements with me.

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 Wednesday, June 8. The last day to drop with a partial refund is Friday, June 10. The last day to drop with an automatic grade of W is Friday, July 15. The last day to withdraw from all classes with a grade of W or F is Friday, July 22.

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 an approximate course calendar which will be adjusted as needed.

Week	Date	Mon	Tues	Weds	Thurs
1	Jun 6	Intro, 1.1–1.2	1.3–1.4	2.1	3.1, 2.1 [Asn01]
2	Jun 13	2.1, 2.2	2.2, 2.3 [Asn02]	2.3	2.3, 2.4 [Asn03]
3	Jun 20	2.3, 2.4	2.4 [Asn04]	**Review**	**Exam 1**
4	Jun 27	2.4	2.4	3.2[Asn05]	3.3
5	Jul 4	Holiday	3.3[Asn06]	3.3/3.4	3.4/3.5[Asn07]
6	Jul 11	**Review**	**Exam 2**	3.5	4.1
7	Jul 18	4.1, 4.4	4.2, 5.1 [Asn08]	4.2, 5.1	4.3, 5.2 [Asn09]
8	Jul 25	4.3, 5.2	5.2 [Asn10]	**Review**	**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!), or being suspended from the University. Sanctions are much more severe for graduate students — see 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!

▷ You may certainly help your classmates but you should not show your written solutions to other students.

▷ Any published, reputable sources 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.