

MATH 556: ADVANCED CALCULUS II, SECTION 1, SPRING 2020

SYLLABUS

Course Information

Instructor: Dr. Thái Hoàng Lê.

Office: Hume Hall 337.

Office hours: MW 11:00A – 12:00P, T 2:00P–3:00P, or by appointment.

Email: leth@olemiss.edu. If you want to contact me by email, make sure to put the **name and section** of the class on the subject of your email. If not, your email may be skipped.

Text: *Calculus*, 4th edition by M. Spivak. ISBN: 9780914098911 (main text)

Methods of Real Analysis by Richard Goldberg, 2nd edition, out-of-print. (PDF copies of Goldberg's book can easily be found online.)

Time/Place: MWF 12:00P–12:50P, Hume Hall 111.

Course Description

Math 556 is a continuation of the advanced calculus series. We will cover the following topics:

- Integrals (Chapters 13 and 14)
- Infinite sequences (Chapter 22)
- Infinite series (Chapter 23)
- Metric spaces (Goldberg's Chapter 4)
- Sequences and series of functions, including power series (Chapter 24)

Course Learning Objectives

Our course objectives will be to master the rigorous definitions of integral, convergence of infinite sequences and series. You will be expected to expand on your current ability to construct and write complete and rigorous proofs.

Exams and quizzes

1. There are two midterms. The final exam is on **Friday, May 8 at noon**. Your lowest midterm score will be replaced by $(\text{lowest midterm score} + \text{final exam score})/2$, if the latter is higher.
2. There will be three quizzes throughout the semester. The lowest quiz score will be dropped.
3. There are no make-up quizzes or exams.

Grading

1. Your final grade is determined by homework (10%), participation (10%), quizzes (10%), midterms (40%, each worth 20%), final exam (30%).
2. Your letter grade is based on the following scheme: F for below 60, D for 60 or above, C- for 70 or above, C for 73 or above, C+ for 77 or above, B- for 80 or above, B for 83 or above, B+ for 87 or above, A- for 90 or above, A for 93 or above.

Homework

Homework will be due on a nearly weekly basis. Homework assignments will be collected at the **beginning** of the lecture. **No late homework will be accepted.** Each homework assignment will consist of several problems, though **only a portion** of it is graded. The problems will be posted on Blackboard. It is imperative that you get plenty of proof practice by working through the homework problems.

- Proofs should be thorough and written in **complete sentences** rather than being merely a sequence of unexplained symbolic mathematical statements.
- You are encouraged to work jointly on the homework sets, but you should attempt each problem on your own first.
- Copying solutions from online sources is a bad idea since it will not help you develop your proof writing skills.

Attendance and participation

Your participation score will be determined by how actively engaged you are in class, such as asking or answering questions. Each student will have to **present a solution** to a homework problem in front of blackboard, and this will be an important factor of your participation score. While I do not take attendance, it is extremely important that you attend. I won't reply to questions asking what is announced or covered in classes you miss. It is your responsibility to know these and you must have contacts of some other students in class so that you may inquire them.

Additional Policies

1. Each student is responsible for work missed due to absences. If a test is missed, a grade of zero will be given.
2. Any person who must miss a scheduled test or quiz because of an official university function must reschedule with the instructor to take the test at a time *before* the test is scheduled to be given. No other rescheduling will be allowed. If asked for by the instructor, official documentation must be provided.
3. A student who wishes to discuss the grading policy, testing policy, or wishes to have a conversation regarding the instructor of the course should make an appointment with the course supervisor in the Department of Mathematics.
4. Any student having three or more final exams scheduled for the same day may arrange with the instructor to take either the 12:00 noon or 7:30p.m. exam at another time. This is the only reason that a final exam may be rescheduled. The student is required to take the final exam at the time scheduled.

Course Withdrawal

Withdrawal deadline for the 2020 Spring semester is **Monday, March 2nd**. After the course withdrawal deadline, courses dropped will be recorded on University records and the W grade will be recorded if the student is not failing the course at the time of withdrawal; otherwise the grade recorded will be F. After the course withdrawal deadline, a student may drop a course only in cases of extreme and unavoidable emergency as determined by the student's academic dean. Dropping the course after the deadline will not be permitted because of dissatisfaction over an expected grade or because the student has changed his or her major.

Academic Needs

It is the responsibility of any student with a disability who requests a reasonable accommodation to contact the Office of Student Disability Services (915-7128). Any request for extended testing time made through that office must be made prior to the date of the test.

Academic Honesty

The following statement is the policy of Department of Mathematics regarding academic honesty: Cheating on any exam, quiz, classwork, or homework, theft of exam questions or possession of exam questions prior to the time for the exam shall all be offenses subject to the appropriate penalties. The penalty for commission of any offense set out above is failure in the course, and subject to the approval of the Chancellor, dismissal or suspension from the university.

Schedule of lectures

The following is a tentative schedule of lectures. It is subject to change (depending on our actual pace in class).

Weekly Date Range	Monday	Wednesday	Friday
1/20 → 1/24	No class	Overview, Ch. 13	Ch. 13
1/27 → 1/31	Ch. 13	Ch. 13	Ch. 14
2/3 → 2/7	Ch. 14	Ch. 22	Ch. 22
2/10 → 2/14	Ch. 22	Ch. 22	Ch. 22
2/17 → 2/21	Quiz #1	Ch. 23	Ch. 23
2/24 → 2/28	Ch. 23	Review	Midterm #1
3/2 → 3/6	Ch. 23	Ch. 23	Ch. 23
3/9 → 3/13	No class	No class	No class
3/16 → 3/20	Ch. 23	Ch. 24	Ch. 24
3/23 → 3/27	Ch. 24	Ch. 24	Quiz #2
3/30 → 4/3	Ch. 4 (G)	Ch. 4 (G)	Ch. 4 (G)
4/6 → 4/10	Ch. 4 (G)	Review	No class
4/13 → 4/17	Midterm #2	Ch. 24	Ch. 24
4/20 → 4/24	Ch. 24	Ch. 24	Ch. 24
4/27 → 5/1	Quiz #3	Review	Review
5/4 → 5/8			Final exam at 8:00 a.m.