

APPM 5450, Applied Analysis II, Spring 2017

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Meeting times: MWF 13.00 - 13.50, ECST 1B21.

Text: The main text is *Applied Analysis* by John K. Hunter and Bruno Nachtergaele. I would also recommend *Introductory Real Analysis* by Kolmogorov and Fomin; it is a beautifully written, very readable book (and cheap, about \$13 on Amazon).

Office hours: TBD.

Exams and grading: There will be three section exams and a final (closed books exams). The final is worth 40% of the grade, and the section exams are worth 20% each.

Home work: A home work will be assigned each Monday. It will not be collected or graded, but the midterms will consist mostly of problems very similar to the home work problems.

Web-resources: There is a class website with up-to-date information about the syllabus, homework assignments, class handouts, and so on. You can find it at:

http://amath.colorado.edu/faculty/martinss/Teaching/APPM5450_2017s/

Pre-requisites: This class will be taught as a direct continuation of APPM5440. It will be assumed that all students know the material covered in that class. If you wish to join the class, but did not take APPM5440, you will probably want to look over Chapters 1 – 6 of the text book and make sure that you are comfortable with that material. It would probably also be a good idea to talk to the instructor.

Remark: It is very important that you not fall behind in this class. Almost all material that will be covered will draw on results that were presented earlier in the semester. If you find that you do not understand, please ask for help as early as possible!

Principal topics to be covered: Fourier series, bounded linear operators on Hilbert space, spectral theory for (some) bounded linear operators, Sturm-Liouville problems, the Fourier transform, distributions, measure theory and L^p spaces, Sobolev spaces. Very roughly speaking, the class will cover chapters 7 – 12 of the text book. Some sections will be skipped, including most of chapter 10.

Disability: If you qualify for accommodations because of a disability, please submit to your professor a letter from Disability Services in a timely manner (for exam accommodations provide your letter at least one week prior to the exam) so that your needs can be addressed. Disability Services determines accommodations based on documented disabilities. Contact Disability Services at 303-492-8671 or by e-mail at dsinfo@colorado.edu. If you have a temporary medical condition or injury, see Temporary Injuries guidelines under the Quick Links at the Disability Services website and discuss your needs with your professor.

Religious observances: Campus policy regarding religious observances requires that faculty make every effort to deal reasonably and fairly with all students who, because of religious obligations, have conflicts with scheduled exams, assignments or required attendance. In this class, please see the instructor in case of a conflict at least 10 days in advance (preferably earlier).

Classroom behavior: Students and faculty each have responsibility for maintaining an appropriate learning environment. Those who fail to adhere to such behavioral standards may be subject to discipline. Professional courtesy and sensitivity are especially important with respect to individuals and topics dealing with differences of race, color, culture, religion, creed, politics, veterans status, sexual orientation, gender, gender identity and gender expression, age, disability, and nationalities. Class rosters are provided to the instructor with the student's legal name. I will gladly honor your request to address you by an alternate name or gender pronoun. Please advise me of this preference early in the semester so that I may make appropriate changes to my records. For more information, see the policies on classroom behavior and the student code.

Sexual harassment: The University of Colorado Boulder (CU Boulder) is committed to maintaining a positive learning, working, and living environment. CU Boulder will not tolerate acts of sexual misconduct, discrimination, harassment or related retaliation against or by any employee or student. CU's Sexual Misconduct Policy prohibits sexual assault, sexual exploitation, sexual harassment, intimate partner abuse (dating or domestic violence), stalking or related retaliation. CU Boulder's Discrimination and Harassment Policy prohibits discrimination, harassment or related retaliation based on race, color, national origin, sex, pregnancy, age, disability, creed, religion, sexual orientation, gender identity, gender expression, veteran status, political affiliation or political philosophy. Individuals who believe they have been subject to misconduct under either policy should contact the Office of Institutional Equity and Compliance (OIEC) at 303-492-2127. Information about the OIEC, the above referenced policies, and the campus resources available to assist individuals regarding sexual misconduct, discrimination, harassment or related retaliation can be found at the OIEC website: <http://www.colorado.edu/institutionalequity/>.

Honor code: All students enrolled in a University of Colorado Boulder course are responsible for knowing and adhering to the academic integrity policy of the institution. Violations of the policy may include: plagiarism, cheating, fabrication, lying, bribery, threat, unauthorized access, clicker fraud, resubmission, and aiding academic dishonesty. All incidents of academic misconduct will be reported to the Honor Code Council (honor@colorado.edu; 303-735-2273). Students who are found responsible for violating the academic integrity policy will be subject to nonacademic sanctions from the Honor Code Council as well as academic sanctions from the faculty member. Additional information regarding the academic integrity policy can be found at honorcode.colorado.edu.