

APPM 5450, Applied Analysis II, Spring 2011

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Meeting times: MWF 9.00 - 9.50, DUAN G2B21.

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 \$11 on Amazon).

Office hours: Monday 3pm – 5pm and Wednesday 10am – 11am.

Exams and grading: There will be three midterms and a final (closed books exams). The final is worth 40% of the grade, and the midterms 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_2011s/

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 feel 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 utilize 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 me a letter from Disability Services in a timely manner so that your needs may be addressed. Disability Services determines accommodations based on documented disabilities. Contact: 303-492-8671, Willard 322, and www.Colorado.EDU/disabilityservices.

Religious holidays: Campus policy regarding religious observances requires that faculty make every effort to reasonably and fairly deal with all students who, because of religious obligations, have conflicts with scheduled exams, assignments or required attendance. See full details at http://www.colorado.edu/policies/fac_relig.html.

Classroom behavior: Students and faculty each have responsibility for maintaining an appropriate learning environment. Students who fail to adhere to such behavioral standards may be subject to discipline. Faculty have the professional responsibility to treat all students with understanding, dignity and respect, to guide classroom discussion and to set reasonable limits on the manner in which they and their students express opinions. Professional courtesy and sensitivity are especially important with respect to individuals and topics dealing with differences of race, culture, religion, politics, sexual orientation, gender variance, 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. See policies at <http://www.colorado.edu/policies/classbehavior.html> and at http://www.colorado.edu/studentaffairs/judicialaffairs/code.html#student_code.

Sexual harassment: The University of Colorado at Boulder policy on Discrimination and Harassment (<http://www.colorado.edu/policies/discrimination.html>), the University of Colorado policy on Sexual Harassment and the University of Colorado policy on Amorous Relationships applies to all students, staff and faculty. Any student, staff or faculty member who believes s/he has been the subject of discrimination or harassment based upon race, color, national origin, sex, age, disability, religion, sexual orientation, or veteran status should contact the Office of Discrimination and Harassment (ODH) at 303-492-2127 or the Office of Judicial Affairs at 303-492-5550. Information about the ODH and the campus resources available to assist individuals regarding discrimination or harassment can be obtained at <http://www.colorado.edu/odh>.

Honor code: All students of the University of Colorado at Boulder are responsible for knowing and adhering to the academic integrity policy of this institution. Violations of this policy may include: cheating, plagiarism, aid of academic dishonesty, fabrication, lying, bribery, and threatening behavior. All incidents of academic misconduct shall be reported to the Honor Code Council (honor@colorado.edu; 303-725-2273). Students who are found to be in violation of the academic integrity policy will be subject to both academic sanctions from the faculty member and non-academic sanctions (including but not limited to university probation, suspension, or expulsion). Other information on the Honor Code can be found at <http://www.colorado.edu/policies/honor.html> and at <http://www.colorado.edu/academics/honorcode/>.