

Information Sheet
MATH634 Fall 2021
Harmonic Analysis

Instructor: Radu Balan

Lectures: Tuesday, Thursday, 9:30am-10:45pm, in CSCAMM, CSIC 4122

Office Hours: Mondays 5:00pm-6:00pm, ONLINE or otherwise by APPOINTMENT.

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MATH 634 Harmonic Analysis is the graduate level course in mathematics that continuous MATH 630 Real Analysis I, MATH 631 Real Analysis II and MATH 632 Functional Analysis. Topics include: Fourier series and Fourier transform: L1 theory: Dirichlet and Fejer theorems, inversion theorem L2 theory: Plancherel-Parseval theorems, Paley-Wiener theorem. Lp theory: Hausdorff-Young theorem. Distribution theory - Schwartz theory, almost periodic functions. Square integrable group representations: Windowed Fourier transforms and Wavelets; Gabor frames; Wavelet frames/ONB.

Prerequisite: MATH 630

Recommended Textbooks:

1. Harmonic Analysis, B. Simon (vol. 3 of the 5-volume set)
2. Harmonic Analysis and Applications, J. Benedetto
3. Fourier Analysis, Stein and Shakarchi (one volume from the set of 4 books).
4. A First Course in Fourier Analysis, Kammler

Grading. There will be one IN-CLASS mid-term exam (100 points), homework assignments (for a total of 100 points), and a final exam (200 points - cumulative).

Homeworks. Homework must be submitted on the date assigned. Homework must be prepared without consulting any other person. You may however consult any written reference. In this case you should cite the reference. Results taken from the reference should be (re)stated to the notation used in the course. Explanations should be given in complete English sentences. Written work must be legible and clear.

Academic Integrity. You are expected to adhere to the University's Code of Academic Integrity, available online at: <https://www.faculty.umd.edu/teach/integrity.html>

Students with Disabilities: If you have a documented disability and wish to discuss academic accommodations with me, please contact me as soon as possible.

Religious Observances. If you will be absent from class because of religious observances, please submit a list of the dates of your absences within a couple of days.

08/31/2021

President Pines provided clear expectations to the University about the wearing of masks for unvaccinated students. Face coverings over the nose and mouth are required while you are indoors at all times. There are no exceptions. Students not wearing a mask will be given a warning and asked to wear one, or will be asked to leave the classroom immediately. Students who have additional issues with the mask expectation after a first warning will be referred to the Office of Student Conduct for failure to comply with a directive of University officials.