Staff responsible: Dr. Taryn Flock (Professor Taryn) flock@math.umass.edu
Email preferred, emails sent M-F can expect a response within 24hrs 413-545-7693
Office hours: 2:30-3:30 Tu, 10:30-12:30 Wed or by appointment LGRT 1344
Lecture: TuTh 1:00PM - 2:15PM LGRT 1234
Homework: Due weekly on Thursday by 4:00pm LGRT 1623D
Midterm: Wednesday, February 28th 7:00-9:00pm TBA
Project: due Thursday, April 5th LGRT 1623D
Final: Tuesday, May 8th 10:30-12:30 LGRT 1234
Website: Moodle Course - I will post homework as well various announcements here, please be sure your receiving them.
Textbooks:
The text is intended to be a resource/reference. Find a book whose style works for you. Feel free to talk to me about the books (or about reading mathematics more generally) in office hours.
Official course text:
Other recommended texts:

Course description
This course is the second part of the Introduction to Analysis sequence (Math 523 and Math 524). The central idea is completeness. We will first extend the notations of convergence developed for real numbers in 523 to more general settings. This will reveal the need for a deeper theory of integration – measure theory – which we will then explore. Finally we apply our understanding to develop Fourier Analysis.

"Many ideas that took their beginnings and motivation from Fourier series research became disciplines in their own right. Set theory (Cantor) and measure theory (Lebesgue) are clear examples, but others, such as functional analysis (Hilbert and Banach spaces), the spectral theory of operators, and the theory of compact and locally compact groups and their representations, all exhibit clear an immediate connections with Fourier series and integrals."
from Classical and Multilinear Harmonic Analysis by Muscalu and Schlag
Topics covered.

- **Metric Spaces:**
- **Measure Theory:**
- **Fourier Analysis:**

\footnote{Note per university policy: There is no class Tuesday April 17th because of Patriots day on Monday.}
**Assessment Structure**

**Homework (20%)**: Problem sets will be assigned weekly due Thursday, in class or by 4:00 pm in my mailbox (in 1623D). Late work will only be accepted in exceptional circumstances with my permission. I will drop the lowest homework score.

**Class participation (10%)**: Worksheets will be handed out daily in class. They will be graded for completeness rather than accuracy. Make-up worksheets will be accepted when the absence is due to religious observance or “extenuating circumstances-including jury duty, military obligations, scheduled activities for other classes, the death of a family member, or verifiable health-related incapacity” as per academic regulations.

**Midterm (25%)**: If you have a documented conflict with the exam, please give me two weeks written (email) notice. If you have an emergent situation, please let me know as soon as possible (expect that your score on the final will replace the midterm grade).

**Project (20%)**: Covering the material on measure theory. More details to follow.

**Final Exam (25%)**: If you have a documented conflict with the exam, please give me two weeks written (email) notice. If you have an emergent situation, please let me know as soon as possible.

**Academic Honesty**

Working on problems is how we learn mathematics. Spend some time struggling. If you get stuck (and I expect that you will) or just want to deepen your understanding, come to office hours!

Feel free to discuss the homework problems with your classmates. However, I strongly recommend writing up your solutions without looking at notes from said discussions. (This will help you understand how much of the material you understand.)

If you do use the internet or a textbook in your work for this class, please cite your sources and again, write up your solution without looking at what you’ve referenced.

No collaboration will be allowed on exams.

Since the integrity of the academic enterprise of any institution of higher education requires honesty in scholarship and research, academic honesty is required of all students at the University of Massachusetts Amherst.

Academic dishonesty is prohibited in all programs of the University. Academic dishonesty includes but is not limited to: cheating, fabrication, plagiarism, and facilitating dishonesty. Appropriate sanctions may be imposed on any student who has committed an act of academic dishonesty. Instructors should take reasonable steps to address academic misconduct. Any person who has reason to believe that a student has committed academic dishonesty should bring such information to the attention of the appropriate course instructor as soon as possible. Instances of academic dishonesty not related to a specific course should be brought to the attention of the appropriate department Head or Chair. The procedures outlined below are intended to provide an efficient and orderly process by which action may be taken if it appears that academic dishonesty has occurred and by which students may appeal such actions.

Since students are expected to be familiar with this policy and the commonly accepted standards of academic integrity, ignorance of such standards is not normally sufficient evidence of lack of intent. For more information about what constitutes academic dishonesty, please see the Dean of Students website:

[http://umass.edu/dean_students/codeofconduct/acadhonesty/](http://umass.edu/dean_students/codeofconduct/acadhonesty/)

**Accommodations**

Please let me know if there are extenuating circumstances affecting your attendance and/or performance in this class. The earlier you get in touch with me, the earlier we can plan solutions. Note that in all cases, you will be held responsible for the material in course.

The University of Massachusetts Amherst is committed to making reasonable, effective and appropriate accommodations to meet the needs of students with disabilities and help create a barrier-free campus. If you are in need of accommodation for a documented disability, register with Disability Services to have an accommodation letter sent to your faculty. It is your responsibility to initiate these services and to communicate with faculty ahead of time to manage accommodations in a timely manner. For more information, consult the Disability Services website at [http://www.umass.edu/disability/](http://www.umass.edu/disability/).