

Lei Zhang

Department of Mathematics

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# Course 1 (Spring 2021 ) MAP 4413 Fourier Series and Transformations

## Time and Location

MWF 6, Little Hall 219 and online 12:50pm-1:40pm

Office Hour: Thursday 11:00-12:00.

## Credit: 3

## Prerequisites: Calculus, Linear Algebra and Elementary Differential Equations

## Description and Goals

This course covers the basic theory of Fourier Analysis assuming little mathematical maturity of students. I will present basic properties of Fourier series followed by the discussion of convergence, transform on  $\mathbb{R}$  and  $\mathbb{R}^d$ . Finally I will explain the Finite Fourier Analysis.

## Homework/Textbook

Homework will be regularly assigned.

The textbook we shall use is Fourier Analysis: An Introduction (Princeton Lectures in Analysis, Volume 1)

by Elias M. Stein and Rami Shakarchi

**Final Grades:** There will be two mid-term exams ( 25% each) and a comprehensive final exam (30%), all based on suggested homework problems. All the homework grades will be factored as 20% of the total grade.

The tentative arrangement for the four exams is

Exam 1 February 22 (Monday)

Exam 2 March 29 (Monday)

Final exam: April 28 Wednesday, 12:30pm-2:30pm

Course 2 (Spring  
2020) MAP6357  
Partial Differential  
Equations 2  
/23426

Course 1 (Summer,  
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Course 2 (Spring  
2019) Linear  
Algebra MAS  
4105 Section  
3169, 17637

Course 1  
(Spring 2019)  
MAP6357  
Partial  
Differential  
Equations 1  
/Section 366A  
Class # 17291

Course 1  
(Spring 2019 )  
MAP 2302  
Elementary  
Differential  
Equations  
section 022F  
15646

Course 1 (Spring  
2018) MAP6357  
Partial Differential  
Equations 2  
/Section 2410

Course 2  
(Spring 2018)  
Linear Algebra  
MAS 4105  
Section 14G8

## A weekly schedule of topics and assignments:

Weeks 1 Chapter 1. week 2-5 Chapter 2, Week 6-8 Chapter 3, Week 8-11 Chapter 4, Week 12: Chapter 5, Week 13-16 Chapter 7.

## Grading Scale:

Grades will then be assigned based upon the following scale: A 88% – 100% B+ 83% – 87% B 77% – 82% C+ 72% – 76% C 67% – 71% D 55% – 66% E 0% – 54%

## Attendance and Late Policy

Attendance of lectures is voluntary. Make-up exams can be allowed if the student can provide documents to verify the EXTREMELY urgent nature of his/her absence.

ABSOLUTELY NO MAKEUPS WITHOUT MEDICAL DOCUMENTATION.

Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policies that can be found at :

<https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>

## Students that need accommodation

Students with disabilities requesting accommodations should first register with the Disability Resource Center (352-392-8565, [www.dso.ufl.edu/drc/](http://www.dso.ufl.edu/drc/)) by providing appropriate documentation. Once registered, students will receive an accommodation letter which must be presented to the instructor when requesting accommodation. Students with disabilities should follow this procedure as early as possible in the semester.

## Information on current UF grading policies for assigning grade points:

<https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>

## Information on course evaluation

Students are expected to provide feedback on the quality of instruction in this course by completing online evaluations at <https://evaluations.ufl.edu>. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at <https://evaluations.ufl.edu/results/>.

## Requirements on class attendance, make-up exams and other things:

Students are required to attend all the lectures. Two worst quiz grades will be dropped and no make-up quiz will be given. Make-up exams can only be given under extremely rare situations and the students must provide convincing documents to

show the extremely urgent nature of absence. Look at the following link for guidance:

<https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>

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2017) MAP6356  
Partial Differential  
Equations 1  
/Section 1762

Course 2 (Fall  
2017) Linear  
Algebra MAS  
4105 Section  
1071

Course 2 (Spring  
2017) Elementary  
PDEs. MAP  
4341/5345  
Sections  
2780/2844

### Teaching

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2019) MAP6357  
Partial Differential  
Equations 1  
/Section 366A  
Class # 17291

Course 1 (Spring  
2020 ) MAP 4413  
Fourier Series and  
Transformations  
section 7521

Course 2 (Spring  
2020) MAP6357  
Partial Differential  
Equations 2 /23426

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