

MAT 341 APPLIED REAL ANALYSIS – FALL 2016
GENERAL INFORMATION

Instructor. Leon Takhtajan

Email: leontak@math.stonybrook.edu

Office: Math Tower 5-111, Phone: (631) 632-8287

Office Hours: Tu 3:00pm-4:00pm and Wed 2:30pm-3:30pm in 5-111.

Teaching Assistants. Yuan Gao

Email: ygao@math.stonybrook.edu

Office: Math Tower 2-106

Office Hours: Mon 12:00pm-2:00pm in MLC and Mon 2:00pm-3:00pm in 2-106.

Jaroslav Jaracz

Email: jjaracz@math.stonybrook.edu

Office: Physics D-107

Office Hours: Mon 12:00pm-1:00pm and 2:00pm-3:00pm in MLC and F 12:00pm-1:00pm in D-107.

Lectures. TuTh 10:00-11:20am in Library E4320.

Blackboard. Grades & course administration will take place on the Blackboard. A detailed weekly schedule of the lectures and homework assignments and solutions will be posted on the Blackboard. Please login using your NetID at <http://blackboard.stonybrook.edu>.

Course Description. This course is an introduction to the Fourier series and to their use in solving partial differential equations (PDEs). We will discuss in detail the three main types of linear PDEs: the heat equation, the wave equation and Laplace's equation. These equations are fundamental in numerous applications (mathematics, physics, engineering, economics, etc.) and illustrate important properties of PDEs in general.

Prerequisites. C or higher in the following: MAT 203 or 205 or 307 or AMS 261; MAT 303 or 305 or AMS 361. Advisory Prerequisite: MAT 200. It is important to be familiar with the basic techniques in ordinary differential equations.

Textbook. The following textbook is required:

David L. Powers, *Boundary Value Problems and Partial Differential Equations*, 6th ed., Elsevier (Academic Press), 2010.

Exams. There will be two midterms and a final exam, scheduled as follows:

- Midterm 1 – Thursday, October 6, 10:00-1:20am, Library E4320.
- Midterm 2 – Thursday, November 3, 10:00-11:20am, Library E4320.
- Final Exam – Friday, December 16, 11:15am-1:45pm, Library E4320.

There will be no make-up exams. If a midterm exam is missed because of a serious (documented) illness or emergency, your semester grade will be determined on the basis of other work done in the course. Exams missed for other reasons will be counted as failures.

Grading policy. Grades will be computed using the following scheme: Homework 20%, Midterm 1 20%, Midterm 2 20% Final Exam 40%. Students are expected to attend class regularly and to keep up with the material presented in the lecture and the assigned reading. It is very useful to read the corresponding section in the book before the lecture. There will be weekly homework assignments; the lowest homework score will be dropped. Late homework will not be accepted unless there is a valid reason (e.g. a documented illness or emergency).

Extra Help. You are welcome to attend the office hours and ask questions about the lectures and the homework assignments. In addition, math tutors are available at the MLC: <http://www.math.sunysb.edu/MLC>.

Information for students with disabilities. If you have a physical, psychological, medical or learning disability that may impact your course work, please contact Disability Support Services, ECC (Educational Communications Center) Building, Room 128, (631) 632-6748, or at the following website <http://studentaffairs.stonybrook.edu/dss/index.shtml>. They will determine with you what accommodations, if any, are necessary and appropriate. All information and documentation is confidential.

Academic integrity. Each student must pursue his or her academic goals honestly and be personally accountable for all submitted work. Representing another person's work as your own is always wrong. Faculty is required to report any suspected instances of academic dishonesty to the Academic Judiciary. Faculty in the Health Sciences Center (School of Health Technology & Management, Nursing, Social Welfare, Dental Medicine) and School of Medicine are required to follow their school-specific procedures. For more comprehensive information on academic integrity, including categories of academic dishonesty please refer to the academic judiciary website at <http://www.stonybrook.edu/uaa/academicjudiciary>.

Critical Incident Management. Stony Brook University expects students to respect the rights, privileges, and property of other people. Faculty are required to report to the Office of University Community Standards any disruptive behavior that interrupts their ability to teach, compromises the safety of the learning environment, or inhibits students' ability to learn. Faculty in the HSC Schools and the School of Medicine are required to follow

their school-specific procedures. Further information about most academic matters can be found in the Undergraduate Bulletin, the Undergraduate Class Schedule, and the Faculty-Employee Handbook.