

Syllabus For Math 640:463/645:575

Spring 2021
Rutgers University-Camden

COURSE TITLE: Partial Differential Equations and Boundary value problems/Applied Partial Differential Equations.

TEXTBOOKS: *Applied Partial Differential Equations* (3th edition), by J. David Logan, Springer, 2015.

COURSE DESCRIPTION: This three-credit course introduces the student to theory and applications of partial differential equations (PDE). Topics include: (1) Conservation laws, PDE models of diffusion, vibration, heat conduction. (2) Cauchy problems for heat and wave equations on unbounded domains, Duhamel's principle, Laplace and Fourier transforms. (3) Orthogonal expansions and Fourier series. (4) Separation of variables, Sturm-Liouville problem, Laplace equation. (5) Applications of PDE in life sciences. (6) Numerical methods. We will cover most of the material in the textbook.

REMOTE INSTRUCTION PLAN: Remote instruction will be conducted synchronously with Canvas and Zoom serve as the primary platform for instruction and communication. Lectures will be recorded and posted on Canvas along with other relevant course materials so that students can also study these materials asynchronously.

Students are expected to have access to: (1) high speed internet; (2) a laptop, a desktop computer, an iPad, or a tablet; together with a built-in microphone and camera or a separate webcam and a mic; (3) a scanner, or a phone camera with an app for producing PDF documents.

Students are encouraged to study the course materials before classes. Live lectures will be presented during the regular class hours using Zoom through Canvas. Students are required to make an effort to participate in these live remote-lectures. They can ask questions during the lectures using texts and/or microphones. Office hours will also be conducted using Zoom through Canvas. If for some reasons a student cannot participate in a live lecture, the student should promptly study the recorded lecture on the course Canvas site.

COURSE INFORMATION:

- Instructor: Siqu Fu
- Office: BSB 426
- Office hours: MW 2:00 pm–3:00 pm on Zoom or by appointments
- Phone: 856 225-2349.
- E-mail: sfu@camden.rutgers.edu
- Web page: <http://people.camden.rutgers.edu/sfu/>
- Lectures: M 6:00 pm-8:50 pm

ASSESSMENT: Homework and projects will be assigned and collected regularly. Students are asked to submit their work through Canvas. There will be two midterm tests, taking place on Mondays, March 8 and April 5. It will be on Monday, May 10, 6:00 pm-9:00 pm as specified in the campus-wide final exam schedule. The tests will be open book tests and students will be given additional time than usual to complete the tests, scan their work into PDF files, and submit them through Canvas. However, you must complete the tests independently with no helps from other people or web sources except the textbook, your notes, and course Canvas site.

Grades will be assigned based on students' performance in the homework and project assignments, mid-term tests, and the final exam. Your course grade will be determined according to the following weights:

- Homework and projects: 30%
- Test I (March 8): 20%
- Test II (April 5): 20%
- Final (May 10): 30%

ATTENDANCE POLICY: Attendance is expected for every class period with exception for illness, court appearance, and other legitimate emergency. See the Rutgers University attendance policy at <http://policies.rutgers.edu/1027-currentpdf>.

ACADEMIC INTEGRITY: All Rutgers students are expected to be familiar with and abide by the academic integrity policy:
<https://policies.rutgers.edu/sites/default/files/10.2.13%20-%20current.pdf>.
Violations of the policy are taken very seriously.

UNIVERSITY DISABILITY STATEMENT: Rutgers University welcomes students with disabilities into all of the University's educational programs. In order to receive consideration for reasonable accommodations, a student with a disability must contact the appropriate disability services office at the campus where you are officially enrolled, participate in an intake interview, and provide documentation:

<https://ods.rutgers.edu/students/documentation-guidelines>.

If the documentation supports your request for reasonable accommodations, your campus disability services office will provide you with a Letter of Accommodations. Please share this letter with your instructors and discuss the accommodations with them as early in your courses as possible. To begin this process, please complete the Registration form at: <https://webapps.rutgers.edu/student-ods/forms/registration>.