MAT 517 M002 – Partial Differential Equations and Fourier Series, Fall '13

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Office Hours: Su,Tu,Th 3-4 pm and Mo,We 2-3 pm. You can also see me at other times by appointment, or whenever the office door is open.

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Course Description: We will study partial differential equations of first and second order. A number of methods, including the Fourier series, will be used to solve such equations and to understand the behavior of solutions. Applications in sciences and engineering will also be considered. Detailed class schedule will be posted on Blackboard.

Prerequisites: MAT 414 or 485. In addition, the mastery of calculus, including multivariable, is essential for working with partial differential equations. For example, you should be able to use the multivariable chain rule and integrate by parts.

Textbook: "Partial Differential Equations" by Strauss, 2nd ed., Wiley. ISBN 9780470005467

Class Time and Location: MWF 11:40–12:35 in Carnegie 311.

Calculators of any kind are allowed.

Grading: The grades will be based on homework (10%), computational projects (10%), four midterm exams (15% each), and final exam (20%). The grading curve will be no stricter than

| A 93-100 | A- 90-92 | B+ 87-89 | B 83-86 | B- 80-82 |
| C+ 77-79 | C 73-76 | C- 70-72 | D 60-69 | F 00-59 |

Homework will be assigned in almost every class, and due at the beginning of the following class. Two lowest homework scores will be dropped.

Computational projects will be assigned and collected online through Blackboard. The lowest project score will be dropped.

Midterm Exams will be given in class on **September 11, September 30, October 23**, and **November 15**. The cumulative **Final Exam** is scheduled for **Monday, December 9, 3:00–5:00 PM**. Unexcused absence from an exam counts as zero. If the absence is excused, in most cases the final exam will be counted extra. Make-up exams will be given only in very exceptional circumstances.

Learning outcomes:

✓ Students will be able to use and understand the usage of mathematical notation

✓ Students will be able to select an appropriate mathematical model for a given real world problem

✓ Students will be able to do hand calculations accurately and appropriately

✓ Students will be able to do calculations with the aid of appropriate software

✓ Students will be able to apprehend and enunciate the limitations of conclusions drawn from mathematical models

Tips for success in this course:

➤ It is absolutely essential that you understand how to solve all the assigned problems. Once you understand how to solve a problem, write your solution down neatly and in full detail with explanations that make your reasoning clear.

➤ Don't fall behind. If you are having difficulties keeping up with the material, see me immediately to discuss the problem.

➤ Ask questions: in class, during office hours, by email, and via instant messaging.

➤ Discussing problems with a classmate is very useful.

➤ Expect to work hard. Don't get discouraged if you find some of the material difficult. Be persistent and patient.

Students with disabilities. If you believe that you need accommodations for a disability, please contact the Office of Disability Services (ODS), http://disabilityservices.syr.edu, located in Room 309 of 804 University Avenue, or call (315) 443-4498 for an appointment to discuss your needs and the process for requesting accommodations. ODS is responsible for coordinating disability-related accommodations and will issue students with documented Disabilities Accommodation Authorization Letters, as appropriate. Since accommodations may require early planning and generally are not provided retroactively, please contact ODS as soon as possible. *[Read more](#)*

Religious observances policy. SU religious observances policy recognizes the diversity of faiths represented among the campus community and protects the rights of students, faculty, and staff to observe religious holidays according to their tradition. Under the policy, students are provided an opportunity to make up any examination, study, or work requirements that may be missed due to are religious observance provided they notify their instructors before the end of the second week of classes. For fall and spring semesters, an online notification process is available through MySlice (Student Services -> Enrollment -> My Religious Observances) from the first day of class until the end of the second week of class. *[Read more](#)*

Academic Integrity. Syracuse University sets high standards for academic integrity. Those standards are supported and enforced by students, including those who serve as academic integrity hearing panel members and hearing officers. The presumptive sanction for a first offense is course failure, accompanied by the transcript notation "Violation of the Academic Integrity Policy". The standard sanction for a first offense by graduate students is suspension or expulsion. Students should review the Office of Academic Integrity online resource "Twenty Questions and Answers About the Syracuse University Academic Integrity Policy" and confer with instructors about course-specific citation methods, permitted collaboration (if any), and rules for examinations. The Policy also governs the veracity of signatures on attendance sheets and other verification of participation in class activities. Additional guidance for students can be found in the Office of Academic Integrity resource: "What does academic integrity mean?"

Read more: [Academic Integrity Policy](#), [20 Questions and Answers](#), [What does academic integrity mean?](#)