**Math 3357** **Spring 2018**

**Partial Differential Equations** **Dr. Ryan C. Daileda**

**Course URL:** `http://ramanujan.math.trinity.edu/rdaileda/PDE`

**Office Hours and Contact Information:** Consult the course web page.

**Textbook:** *Partial Differential Equations with Fourier Series and Boundary Value Problems* (3rd ed.) by Nakhlé H. Asmar

**Course Content:** An introduction to the theory of partial differential equations and its applications. Core topics will include separation of variables, Fourier series, Sturm-Liouville theory, and the Fourier transform. Applications will include the study of several classical second order equations arising from mathematical physics, including the wave equation, the heat equation and Laplace's equation.

**Homework:** Homework assignments will be posted to the course homework page following each lecture and will consist of reading and problem solving. It is highly recommended that you complete any assigned reading before attempting to solve any problems.

All homework is to be completed prior to the beginning of the lecture when it is due. Late homework will not be accepted in the absence of divine intervention or matters of similar weight, and will be penalized as I see fit. All homework assignments will carry equal weight toward the homework component of your grade (see below), with the exception that your lowest homework assignment score will be dropped.

Homework is to be written neatly, and multiple pages should be stapled together before you come to class. Do not use paper from a spiral notebook. Failure to adhere to these guidelines will be penalized. Unorganized, sloppy or illegible work will not be graded!

Collaboration on homework assignments is permitted and encouraged, and you are free to consult any individual or source that you find helpful. However, simply copying the work of another is unacceptable. Attempting to pass off the work of others (regardless of the source) as your own will be considered a violation of the honor code.

**Projects:** You will be assigned two computational projects during the semester that will require the use of the computer algebra system Maple. Guidelines and due dates for these projects will be announced when they are assigned.

**Exams:** There will be three evening midterm exams during the semester, as well as a cumulative final exam. The dates and times of the exams are given below.

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|---|---|
| **First Midterm Exam** | Thursday, February 8, 7–9 pm |
| **Second Midterm Exam** | Thursday, March 22, 7–9 pm |
| **Third Midterm Exam** | Thursday, April 19, 7–9 pm |
| **Final Exam** | Wednesday, May 2, 3:30–6:30 pm |

Although I may adjust the dates of the midterms to suit the needs of the class, please be aware that the date and time for the final exam have been set by the registrar and are non-negotiable.

Students are permitted to obtain and study exams given in previous semesters. However, previous exams should not be used to judge the content or difficulty of the exams that will be given in this course.

**Attendance:** Attendance is expected but is not mandatory. Roll will not be taken, but excessive absences should be explained to me.

**Grades:** Your course grade will be based upon the scores on the homework, midterm exams, and the final exam as follows:

| | |
|---|---|
| **Homework** | 20 % |
| **Projects** | 10 % |
| **Midterm Exams** | 15 % (each) |
| **Final Exam** | 25 % |

**Technology:** You may use a calculator or computer to assist you throughout the course, and you will be expected to become familiar with the computer algebra system Maple. Calculators will be permitted during exams.

**Classroom Decorum:** Please be respectful of your classmates and myself. Although I encourage everyone to ask me questions as needed, and would like to foster classroom discussion, talking or texting between students during a lecture can be extremely distracting and should be kept to a minimum.

**Academic Integrity:** All students are covered by the Trinity University Honor Code which prohibits dishonesty in academic work. Under the Honor Code, a faculty member will (or a student may) report an alleged violation to the Academic Honor Council. It is the task of the Council to investigate, adjudicate, and assign a punishment within certain guidelines if a violation has been verified. Students are required to pledge all written work that is submitted for a grade: "On my honor, I have neither given nor received any unauthorized assistance on this work" and their signature. The pledge may be abbreviated "pledged" with a signature.

The specifics of the Honor Code, its underlying philosophy, and the norms for sanctioning can all be found on the Academic Honor Council website, accessed through the Trinity Homepage:

`https://inside.trinity.edu/academics/academic-honor-code`

**Special Needs:** If you have a documented disability and will need accommodations in this class, please speak with me privately early in the semester so I may be prepared to meet your needs. If you have not already registered with Student Accessibility Services, contact the office at 999-7411 or `SAS@trinity.edu`. You must be registered with SAS before I can provide accommodations.