Math 3357 **Spring 2015**

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

Course URL: `http://www.trinity.edu/rdaileda/pde`

Office Hours and Contact Information: Consult either of the above web pages.

Textbook: *Partial Differential Equations with Fourier Series and Boundary Value Problems* (2nd or 3rd ed.) by Nakhlé H. Asmar.

Course Content: This course will be an introduction to the theory of partial differential equations and its applications. Ideally, we will cover the bulk of chapters 1 through 7 of our textbook. Core topics will include separation of variables, Fourier series, Sturm-Liouville theory, and the Fourier transform. These general techniques will be applied to study a number of classical second order equations of mathematical physics, including the wave equation, the heat equation and Laplace's equation.

Homework: Homework will be assigned daily and will consist of reading as well as problem solving. All assignments will be posted on the course homework web page. Reading assignments are to be completed daily while written work will typically be turned in once a week. Due dates for written work will be clearly indicated as the work is assigned. Please do not hand in late assignments without consulting me *prior* to their due dates. **I reserve the right to penalize or refuse to accept late assignments.**

Homework exercises are to be written *neatly* using *one side* of 8.5×11 inch paper, and multiple pages should be stapled or paper-clipped together. Do not use paper from a spiral notebook unless you remove the ragged edge. **Failure to adhere to these guidelines may be penalized.**

All written homework assignments will carry equal weight toward the homework component of each student's grade (see "Grades" below), with the exception that **each student will have his or her lowest homework score dropped.**

Collaboration on homework assignments is permitted and encouraged, but **NO COPYING**. In other words, you should feel free to talk to other students while you are in the process of thinking about a problem. However, when it comes time to write up your solution, you should do this by yourself without outside assistance. **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: During the semester you will be assigned projects that will require the use of the computer software package Maple. Guidelines and due dates for these projects will be announced as they are assigned.

Exams: There will be three in-class midterm exams during the semester, as well as a cumulative final exam. The dates and times for the exams are as follows:

First Midterm Exam	Thursday, February 12
Second Midterm Exam	Thursday, March 26
Third Midterm Exam	Tuesday, April 28
Final Exam	Saturday, May 9, 3:30 - 6:30 PM

Use of Previous Exams: Students are permitted to obtain and study exams given in previous

offerings of this course. 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, projects, midterm exams, and the final exam as follows:

Homework	15 %
Projects	10 %
Midterm Exams	15 % (each)
Final Exam	30 %

So you can gauge your performance throughout the semester, a score distribution will be posted online following each exam.

Expectations: Each student is expected to invest a significant amount of work and thought outside the classroom for every hour of lecture. Even though written work will not be collected daily, **you are strongly encouraged to keep up with reading and problems as they are assigned.** I have no sympathy for students who routinely save all of their work for the night before it is due.

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. The 2.5 hours we spend in class each week should be dedicated to learning mathematics, and is not a forum for expressing general frustrations with the course. Please bring any such concerns directly to me during office hours.

Technology: You may use a calculator or computer to assist you in working through homework problems, if needed, and calculators will be permitted during exams.

Academic Integrity: All students are covered by the Trinity University Honor Code that 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 who are under the Honor Code 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:

`http://www.trinity.edu/departments/academic_affairs/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 Disability Services for Students, contact the office at 999-7411. You must be registered with DSS before I can provide accommodations.