

**Math 442-001**

**Spring 2010**

Course: **Partial Differential Equations**  
Professor: Andrew Christlieb  
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Office Hours: 10:30-12:00 MW

**OR BY APPOINTMENT**

Book 1: *Applied Partial Differential Equations, 4th*  
By: Richard Haberman

Time: 1:50-2:40 M,W,F  
Location: C212 Wells Hall  
Prerequisites: MTH 235 or MTH 255H or MTH 340  
Web: <http://www.math.msu.edu/~andrewch/mth442.html>

**Course Topics:**

- The Heat Equation (Ch 1)
- Separation of Variables (Ch 2)
- Fourier Series (Ch 3)
- The Wave Equation (Ch 4)
- Sturm-Liouville Eigenvalue Problems (Ch 5)
- Higher-Dimensional PDEs (Ch 7)
- Nonhomogeneous Problems (Ch 8)
- Fourier Transforms (Ch 10)

**Goals:** The students will gain a fundamental understanding of: some classic PDEs (such as the wave and heat equation), techniques for solving PDEs, and expanding functions in orthogonal expansions such as Fourier series.

**Homework:** There will be 8 to 10 homework assignments. Most assignments will be given over a two week period. Home work is due by 4pm on the specified date. Each day an assignment is late, a 10% penalty will be assessed.

**Quizzes:** No Quizzes

**Exams:** One in class exam and one final exam.

**Course Grade:**

Homework	50% of final grade
In class Mid-Term	20% of final grade
In class Final Exam	30% of final grade

**Grade Review Policy:** No grades will be discussed immediately before class, in class or immediately following class. I am happy to discuss questions about a particular grade assigned during office hours, or by appointment.

**Unclaimed Assignment Policy:** Assignments not retrieved on the day of return can be picked up during office hours only.

**E-mail Policy:** I will respond to e-mail during office hours.

	Mon.		Wed.		Fri.
Week 1	Jan. 11		Jan. 13		Jan. 15
Week 2	Jan. 18	HW1 Due	Jan. 20		Jan. 22
Week 3	Jan. 25		Jan. 27		Jan. 29 HW2 Due
Week 4	Feb. 1		Feb. 3	End of Ref. 4th	Feb. 5
Week 5	<b>Feb. 8</b>		<b>Feb. 10</b>		<b>Feb. 11</b>
Week 6	Feb. 15		Feb. 17		Feb. 19
Week 7	Feb. 22		Feb. 24		Feb. 26
Week 8	Mar. 1	<b>Midterm</b>	Mar. 3		Mar. 5
Week 9	Mar. 8	Spring Brake	Mar. 10	Spring Brake	Mar. 12 Spring Brake
Week 10	Mar. 15		Mar. 17		Mar. 19
Week 11	Mar. 22		Mar. 24		Mar. 26
Week 12	Mar. 29		Mar. 31		Apr. 2
Week 13	Apr. 5		Apr. 7		Apr. 9
Week 14	Apr. 12		Apr. 14		Apr. 16
Week 15	Apr. 19		Apr. 21		Apr. 23
Week 16	Apr. 26		Apr. 28		Apr. 30 Last Class

**Final Exam Monday May 3rd 12:45-2:45 pm**