MATH 4163: Introduction to Partial Differential Equations
Course Syllabus
Spring 2014

Section 002
TTH: 1:30 - 2:45 pm
PHSC 356

Instructor: Dr. Matt McBride
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Offic Hours: TTH: $12:30 - 1:30$ pm or by appointment
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Textbook: Richard Haberman, *Applied Partial Differential Equations*, 5th Edition

Prerequisites: MATH 2443 and MATH 3113

Objective: We will learn how solve partial differential equations via two very different methods: separation of variables and the Fourier transform. One major difference between ODEs and PDEs is that solutions will be more general than the standard examples in ODEs. Being the case, we will also be concerned with uniqueness and existence of the solutions to the PDEs and their proofs. We will also study a special type of ODE that arises quite often in PDEs called the Sturm-Liouville eigenvalue problem.

Withdrawl Date: Through March 28th, you may drop the course and receive a W grade. Dropping the course after March 28th requires a petition to the Dean, and will result in a grade of either W or F.

Academic Honesty: The University of Oklahoma takes great pride in academic honesty, thus cheating of any kind will not be tolerated. If cheating is suspected, bad actions will be taken.

Students with disabilities: The University of Oklahoma is committed to providing reasonable accomodation for all students with disabilities. If you require special accomodation in this course you are requested to speak with the instructor as early in the semester as possible. Students with disabilities must be registered with the Office of Disability Services prior to receiving accomodations in this course. For further information please see `http://drc.ou.edu`.

Homework: As with any math course, homework is a vital component. One must practice newly learned facts, theorems, etc. through the assigned homework. Homework will be assigned daily, however it will be collected only once a week except during exam weeks. See the due dates in the schedule.

Exams: There will be three closed book, closed notes, and closed homework in-class exams. Students will have the whole class period to take the exams. All three exams will cover roughly seven lessons, though this may be modified due to time and is left up to the discretion of the instructor. See the schedule for exact sections covered.

Final Exam: The final exam is a comprehensive exam and will be held on **Thursday, May 8th** in the usual class location at **1:30 - 3:30 pm**. This date can **not** be modified, so make sure one's calendar is free.

Make-up Policy: Make-up exams will be given **only** for reasons deemed acceptable by the instructor, and **only** with written documentation. Make-up exams must be taken within one week of the original date, and no make-ups may be taken after the final exam. Make-up exams are never easier than the original.

Calculator Policy: You may use any type of calculator when working on the homework assignments. In class and when taking exams, a calculator is not really needed, but you may, if you wish, use a simple calculator that does not have graphics capability while taking exams, just to check your arithmetic. The reason for the exclusion of graphics capability to make sure that you have the graphs of the fundamental functions like such as trigonometric, lograrithm, and exponential in your head. Given the nature of the problems you really won't need a calculator.

Grading Distribution:

Homework.................25%
Exams......................45%
Final Exam...............30%
Total.......................100%

Grading Scale:

A:....100% - 90%
B:......89% - 80%
C:......79% - 70%
D:......69% - 60%
F:......59% and below

Spring 2014 Tentative Schedule

Note: this may be modified and is left to the discretion of the instructor.

Date	Sections Covered	Homework
Tues, Jan. 14	1.1, 1.2	**1.2:** 7
Thurs, Jan. 16	2.2, 2.3	**2.2:** 2
Tues, Jan. 21	2.3, 2.4	**2.3:** 1,2(a),(c),(d),(g),3(a),(d),6,7(b)-(e)
Thurs, Jan. 23	2.4, 2.5 (**1.2,2.2 due**)	**2.4:** 1(a),(c),2,3
Tues, Jan. 28	2.5, 3.2	**2.5:** 1(a),(g),3(a),4,5(d)
Thurs, Jan. 30	3.2, 3.6 (**2.3,2.4 due**)	**3.2:** 1(a),(d),(g),2(a),(b),(e) no sketching **3.6:** 1,2
Tues, Feb. 4	4.2, 4.4	none
Thurs, Feb. 6	4.4, 5.2 (**2.5,3.2,3.6 due**)	**4.4:** 3(b),4,8,9,12
Tues, Feb. 11	Review for Exam 1	none
Thurs, Feb. 13	**Exam 1**	**Covering: 1.2,2.2-2.5,3.2,3.6**
Tues, Feb. 18	5.3, 5.4	**5.3:** 4,5,8,9 **5.4:** 1,3
Thurs, Feb. 20	5.5 (**4.4 due**)	**5.5:** 1(a),(d),(e),2,9,17
Tues, Feb. 25	5.6, 7.2	**5.6:** 2
Thurs, Feb. 27	7.3 (**5.3,5.4,5.5 due**)	**7.3:** 1(a),(c),3,4(a)
Tues, Mar. 4	7.4, 7.5	**7.4:** 1,2,3 **7.5:** 1,2(a),(b)
Thurs, Mar. 6	7.7 (**5.6,7.3**)	**7.7:** 1(a),(b),12(a),(c),(d),(e)
Tues, Mar. 11	Review for Exam 2	none
Thurs, Mar. 13	**Exam 2**	**Covering: 4.2,4.4,5.2-5.6,7.2,7.3**
Tues, Mar. 25	8.2, 8.3	**8.2:** 1(a),(d),(f),2(a),(c) **8.3:** 1(a),(e),6,7
Thurs, Mar. 27	8.4 (**7.4,7.5,7.7 due**)	**8.4:** 1,2,3
Tues, Apr. 1	8.6	**8.6:** 1,6
Thurs, Apr. 3	10.2 (**8.2,8.3,8.4 due**)	**10.2:** 1,2
Tues, Apr. 8	10.3	**10.3:** 1,5,6,7,8,13,14,15
Thurs, Apr. 10	10.4 (**8.6,10.2 due**)	**10.4:** 3(a),4(a),6,7
Tues, Apr. 15	Review for Exam 3	none
Thurs, Apr. 17	**Exam 3**	**Covering: 7.4,7.5,7.7,8.2-8.4,8.6,10.2**
Tues, Apr. 22	10.6	**10.6:** 1,9,10,13
Thurs, Apr. 24	10.7 (**10.3,10.4 due**)	**10.7:** 1,2,3,4
Tues, Apr. 29	Review for the Final Exam	none
Thurs, May 1	Review for the Final Exam (**10.6,10.7 due**)	none
Thurs, May 8	**Final Exam**	**1:30-3:30 pm in PHSC 356**