MATH 4163: Introduction to Partial Differential Equations
Course Syllabus
Summer I 2015

Section 170
MTWRF: 10:30 - 11:45 am
PHSC 416

Instructor: Dr. Matt McBride
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Offic Hours: TRF: 12:00 − 1:00 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 June 5th, you may drop the course and receive a W grade. Dropping the course after June 5th 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, there will be consequences.

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. 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 eight 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.

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-up exams may be taken after the third 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.....40%
Exams.....60%
Total.....100%

Grading Scale:

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

Summer I 2015 Tentative Schedule

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

Date	**Sections Covered/ HW Due**	**Homework**
Mon, May 11	1.1,1.2	**1.2:** 7
Tue, May 12	2.2	**2.2:** 2
Wed, May 13	2.3	**2.3:** 1,2(d),(g),3(d),7(b)
Thu, May 14	2.4	**2.4:** 2,3
Fri, May 15	2.5	**2.5:** 1(a),4,5(d)
Mon, May 18	3.2 (**1.2,2.2-2.5 due**)	**3.2:** 1(g),2(e) no sketching
Tue, May 19	3.6	**3.6:** 1,2
Wed, May 20	4.2	none
Thu, May 21	4.4	**4.4:** 3(b),9,12
Fri, May 22	Review for Exam 1	none
Mon, May 25	no class	none
Tue, May 26	**Exam 1**	**Covering 1.2,2.2-2.5,3.2,3.6**
Wed, May 27	5.2 (**3.2,3.6,4.4 due**)	none
Thu, May 28	5.3	**5.3:** 5,8
Fri, May 29	5.4	**5.4:** 1
Mon, June 1	5.5 (**5.2-5.4 due**)	**5.5:** 1(a),(d),9
Tue, June 2	5.6	**5.6:** 2
Wed, June 3	7.2	none
Thu, June 4	7.3	**7.3:** 1(a),3
Fri, June 5	Review for Exam 2	none
Mon, June 8	**Exam 2**	**Covering: 4.2,4.4,5.2-5.6,7.2.7.3**
Tue, June 9	7.4 (**5.5,5.6,7.3 due**)	**7.4:** 1,2
Wed, June 10	7.5	**7.5:** 2(a),(b)
Thu, June 11	7.7	**7.7:** 2(b),12
Fri, June 12	8.2	**8.2:** 1(a),(d),2(a)
Mon, June 15	8.3 (**7.4,7.5,7.7,8.2 due**)	**8.3:** 1(e),7
Tue, June 16	8.4	**8.4:** 1,2,3
Wed, June 17	8.6	**8.6:** 1
Thu, June 18	10.2	**10.2:** 2
Fri, June 19	10.3	**10.3:** 5,6,8,14,15
Mon, June 22	10.4 (**8.3,8.4,8.6,10.2,10.3 due**)	**10.4:** 3(a),4(a),6
Tue, June 23	10.6	**10.6:** 9,10
Wed, June 24	10.7	**10.7:** 1,4
Thu, June 25	Review for Exam 3 (**10.4,10.6,10.7**)	none
Fri, June 26	**Exam 3**	**Covering: 7.4,7.5,8.2-8.4,8.6,10.2-10.7**