## Mathematical Methods of Physics MA/PHY506 Fall 2012

Instructor	P. D. Hislop, Mathematics
Office:	753 POT 7-5637 or hislop@ms.uky.edu
Text:	Arfken, Weber, and Harris: Mathematical Methods for Physicists Elsevier, seventh edition
Class Meetings:	MWF 12:00–12:50 CP 183
Office Hours:	MW 3:00-4:00

The purpose of this two semester course is to develop a collection of mathematical methods useful in solving physical problems in fluids and mechanics, electricity and magnetism, and quantum mechanics. We will cover ordinary differential equations, linear algebra, partial differential equations, special functions, and complex variable theory.

**Grading Policy** There will be 10 homework sets collectively worth 30% of the course grade, one in-class hour exam worth 30%, and an in-class final exam worth 40%. Letter grades will be assigned on the standard scale: A: 90 and above; B 80–89; C: 70–79. You may discuss the homework problems, but each student is expected to write the solutions individually. Homework will be assigned at least one week before it is due.

## **Course Content**

This course will have three units:

- Unit 1: Ordinary differential equations, Chapter 7
- Unit 2: Linear algebra, Chapters 2, 3, and 5
- Unit 3: Sturm-Liouville Theory, Chapter 8

The second semester course MA/PHY507 is devoted to complex variable theory, partial differential equations, special functions, and Fourier series and transforms.

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## Special Dates for Fall 2012

28 August	Last day to add a class
3 September	Labor Day-No classes
12 September	Last day to drop a class without penalty
15 October	Semester Midterm
19 October	Target date for the hour exam
2 November	Last day to withdraw and receive a W grade
6 November	Presidential Elections Day-no classes
21–23 November	Thanksgiving Holiday - No classes
7 December	Last day of classes
14 December	Final exam at 10:30 AM in class