

Mathematical Methods of Physics
MA/PHY506
Fall 2015

Instructor P. D. Hislop, Mathematics

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Text: Arfken, Weber, and Harris: *Mathematical Methods for Physicists*
Elsevier, seventh edition

Class Meetings: MWF 12:00–12:50 CB 347

Course Web Page: <http://www.ms.uky.edu/~hislop/> Homework and solutions are posted there.

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 a 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

MA/PHY 506 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 2015

1 September	Last day to add a class
7 September	Labor Day-No classes
16 September	Last day to drop a class without penalty
19 October	Semester Midterm
21 October	Target date for the hour exam
13 November	Last day to withdraw and receive a W grade
6 November	Presidential Elections Day-no classes
25–28 November	Thanksgiving Holiday - No classes
11 December	Last day of classes
14 December	Final exam 3:30–5:30 PM in CB 347