

Mathematical Methods of Physics
MA/PHY 506
Fall 2017

Instructor	P. D. Hislop, Mathematics
Office:	753 POT 7-5637 or peter.hislop@uky.edu
Text:	Arfken, Weber, and Harris: <i>Mathematical Methods for Physicists</i> Elsevier, seventh edition
Class Meetings:	MWF 12:00–12:50 CB 339
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 of Arfken
- Unit 2: Linear algebra, Chapters 2, 3, and 5 of Arfken
- Unit 3: Sturm-Liouville Theory, Chapter 8 of Arfken

The second semester course MA/PHY 507 is devoted to complex variable theory, partial differential equations, special functions, and Fourier series and transforms.

Special Dates for Fall 2017

29 August	Last day to add a class
4 September	Labor Day-No classes
13 September	Last day to drop a class without penalty
16 October	Semester Midterm
25 October	Target date for the hour exam
13 November	Last day to withdraw and receive a W grade
22–26 November	Thanksgiving Holiday - No classes
8 December	Last day of classes
13 December	Final exam 10:30 AM – 12:30 PM in CB 339