

Mathematical Methods of Physics  
MA/PHY 506  
Fall 2018

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 307
Course Web Page:	<a href="http://www.ms.uky.edu/~hislop/">http : //www.ms.uky.edu/ ~ hislop/</a> 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** The grading policy for undergraduates and graduates enrolled in the course is the same. There will be 10 homework sets collectively worth 33% of the course grade, one in-class hour exam worth 33%, and a final exam worth 34%. 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 2018**

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
24 October	Target date for the hour exam
2 November	Last day to withdraw and receive a W grade
21–24 November	Thanksgiving Holiday - No classes
7 December	Last day of classes
12 December	Final exam 10:30 AM – 12:30 PM in CB 307