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PHYS 250-01, Mathematical Methods in Physics, Spring 2008

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PHYSICS 250 COURSE SYLLABUS

Course Information

Course Title: Mathematical Methods in Physics
Meeting Time: TR 11:00-12:15
Instructor: Brent Hoffmeister
Office Phone: 843-3913
Office Hours: 1:00-3:00 M-R, other times by appointment

Spring Semester, 2008
Meeting Place: 510 RT
CRN: 28472
Office: 313 RT

Course Objective

To provide students with a survey of mathematical methods used in upper level physics courses.

Text

Mary L. Boas, *Mathematical Methods in The Physical Sciences*, 3rd Edition, Wiley, ISBN 0-471-19826-9

Course Requirements

1. Test 1	20%
2. Test 2	30%
3. Test 3	20%
4. Homework	30%

Grading Procedures

- All graded work will be assigned a numerical score. You may estimate the corresponding letter grade by computing a percentage score and comparing it with the table below:

Percentage Score	Letter Grade	Percentage Score	Letter Grade	Percentage Score	Letter Grade
95-100	A	80-82	B-	67-69	D+
90-94	A-	77-79	C+	63-66	D
87-89	B+	73-76	C	60-63	D-
83-86	B	70-72	C-	Below 60	F

- Late homework assignments will not be accepted.
- Make up opportunities for exams may be arranged on the condition that you receive my approval *before* missing the exam. Unapproved absences will result in a zero.
- The conditions of the Honor Code described in the Rhodes College Student Hand Book apply to all assignments in this course unless otherwise specified by the instructor.

Course Calendar

Date	Subject	Reading	HW Due
Th. Jan. 10	Ch. 1 Infinite Series	1.1-1.4	
Tu. Jan. 15	Ch. 1 Power Series	1.10-1.15	1a
Th. Jan. 17	Ch. 2 Complex Numbers	2.1-2.4	1b
Tu. Jan. 22	(AAPT Meeting)		
Th. Jan. 24	Ch. 2 Complex Algebra	2.5, 2.8-2.10	2a
Tu. Jan. 29	Ch. 2 Functions of Complex Numbers	2.11-2.16	2b
Th. Jan. 31	Ch. 3 Eigenvectors & Eigenvalues	3.11	2c
Tu. Feb. 5	Ch. 3 Diagonalization	3.12	3a
Th. Feb. 7	Ch. 4 Chain Rule	4.5-4.7	3b
Tu. Feb. 12	Test 1 (Ch. 1-3)		
Th. Feb. 14	Ch. 4 Maximum and minimum problems	4.8-4.9	4a
Tu. Feb. 19	Ch. 5 Double and Triple Integrals	5.1-5.2	4b
Th. Feb. 21	Ch. 5 Applications of Integration	5.3	5a
Tu. Feb. 26	Ch. 5 Applications of Integration		5b
Th. Feb. 28	Ch. 5 Change of variables in Integrals	5.4	5c
Tu. Mar. 4	(Spring Recess)		
Th. Mar. 6	(Spring Recess)		
Tu. Mar. 11	Ch. 5 Surface Integrals	5.5	5d
Th. Mar. 13	Ch. 6 Vectors and Fields	6.1-6.5	5e
Tu. Mar. 18	Ch. 6 Del Operator	6.6-6.7	6a
Th. Mar. 20	(Easter Recess)		
Tu. Mar. 25	Ch. 6 Line Integrals	6.8	6b
Th. Mar. 27	Ch. 6 Divergence and the Divergence Theorem	6.9-6.10	6c
Tu. Apr. 1	Ch. 6 Curl and Stokes' Theorem	6.11	6d
Th. Apr. 3	Ch. 7 Fourier Series	7.1-7.5	6e
Tu. Apr. 8	Test 2 (Ch. 4-6)		
Th. Apr. 10	Ch. 7 Fourier Transforms	7.12	7a
Tu. Apr. 15	Ch. 15 Probability	15.1-15.3	7b
Th. Apr. 17	Ch. 15 Methods of Counting	15.4-15.5	15a
Tu. Apr. 22	Ch. 15 Probability Distributions	15.6-15.8	15b
Th. Apr. 24	Ch. 15 Experimental Analysis of Data	15.10	15c
Mon. Apr 28	Test 3 (Ch. 7-15) 1:00		