Phys 801 (ref. 22020)

Fall 2006 Math Methods Prof. Mick O'Shea

Office: Cardwell 331
E-mail: mjoshea@phys.ksu.edu
Office hours: Wed. Fri., 2:30 - 4:00 p.m
Class times: M W F, 11:30-12:20, CW 146

Textbook: Arfken and Weber, 'Mathematical Methods for Physicists',
Mathews and Walker**, '**Mathematical Methods of Physics'

This class will introduce mathematical methods at the graduate level in a wide range of areas and should provide a good grounding for other graduate level course. We will apply various mathematical methods to analyze as many physics problems as possible during the semester.

Homework: Homework is listed overleaf. Solutions to selected problems will be posted on my notice board. Exam solutions will be posted (exam 1,2) or e-mailed (Final Exam) to you.
Mathcad13: Available in room 34 on several of the computers. I encourage you to use Mathcad to solve some problems. I will distribute templates for solving several problems during the course of the semester. Note that you will not have access to Mathcad during exams!
Exams: There will be 2 one hour exams and a final exam – see schedule overleaf. No books or notes (except for an equation I will distribute) can be used in these exams.
Disabilities: If you have any condition such as a physical or learning disability, which will make it difficult for you to carry out the work as I have outlined it or which will require academic accommodations, please notify me and contact the Disabled Students Office (Holton 202), in the first two weeks of the course.
Plagiarism: Plagiarism and cheating are serious offenses and may be punished by failure on the exam, paper or project; failure in the course; and/or expulsion from the University. For more information refer to the "Academic Dishonesty" policy in K-State Undergraduate Catalog and the Undergraduate Honor System Policy on the Provost's web page at http://www.ksu.edu/honor/

Assignment	Worth(%)
2 Exams	2 x 20
Homework	30
Final Exam	30
Total	100

Grade Scale	Score (%)
A	90-100
B	80-89.9
C	70-79.9
D	60-69.9
F	Less than 60

Date	**Class, Exam**	**HW (turn in boldface problems at start of class)**
Mon. Aug 21st	Chap. 1 Review	**See uploaded HW assignments (for 4th ed of text)**
23		
25	Chap. 2 Review	1.3.4, **1.5.5**, 1.6.2, **1.8.3, 1.8.7**, 1.8.8, 1.8.16, 1.9.2, 1.9.5, **1.10.4**, 1.12.3, 1.13.11, 1.15.3. **Due Aug. 25th**
Mon. 28		
30	Chap.3 Matrices	**2.2.2**, 2.4.7, 2.4.8, **2.4.11**, 2.5.9, 2.5.11, **2.5.14. Due Aug. 30th**
Sept. 1		
Mon. 4	**No class**	
6	Chap. 5 Infinite series	**3.2.4,** 3.2.15**, 3.2.19, 3.2.20, 3.3.1, 3.3.12, 3.4.15, 3.5.30,** 3.6.2 Due Sept. 6th

8		
Mon. 11		
13		
15	Chap. 6 Complex var 1	5.1.1, **5.2.6**, **5.2.8**, 5.2.14, 5.2.19, 5.4.2, 5.6.2, **5.6.15**, 5.6.23 **Due Sep. 15th**
Mon. 18		
20		
22		
Mon. 25		
27	Chap. 7 Complex var II	**6.1.3, 6.1.8, 6.1.15, 6.1.16,** 6.2.5**, 6.3.3, 6.4.3,** 6.5.10**,** Due Sep. 27th
29		
Mon.Oct.2nd	**No class**	
4		
6	**Exam1(Chaps1-7)Oct5th**	7.1.4, **7.2.1**, 7.2.5, **7.2.8**, 7.2.13 **Due Oct. 3rd**
Mon. 9		
11		
13	Chap. 8 Differential Equ	7.2.16,7.2.18, 7.2.20,**7.2.22, 7.3.2,** 7.3.4 **Due Oct. 13th**
Mon. 16		
18		
20		
Mon. 23		
25		8.2.2, 8.2.5, 8.3.2, **8.3.8**, 8.4.1, **8.5.12** **Due Oct. 25th**
27	Chap. 9 Sturm-Liouville Theory	
Mon. 30	(sec 1,2,3)	
Nov. 1st		
3	Chap 8/9, other materials on Green's Functions (A. Chakrabarti)	**8.5.6**, 8.5.14, 8.6.3, 9.1.1, 9.1.8, **9.2.6** **Nov. 3rd**
Mon. 5		
8		
10		
Mon. 13		
15	Chap. 11 Bessel fns (sec. 1,2,3)	**Greens function HW to be announced**
17	(sec. 1,2,3)	
Mon. 20th (no class22nd 24th)	Chap. 12 Legendre fns (sec. 1,2,3)	
Mon. 27	Chap 13 Hermite, Laguerre fn	
30	(sec1,2)	**11.1.16,**11.2.2,**12.1.6,** 12.3.15, 13.2.4,13.2.9 **Nov.29th**
Dec. 1st	**Exam 2 (chap 8-13)**	
Mon. 54	Chap. 14 Fourier Series	
6		
8	**Last day of class**	14.1.5, 14.3.4, 14.3.6, 14.4.9 **Dec. 8th**
Mon.Dec.11th	**Final Exam** 11:50 a.m. – 1:40 p.m.	