

PHYSICS 5100 Math Methods - Fall 2016

TIME (for lectures): M, W, F from 1:55- 2:50 PM. Room: 177 Physics

TEXT: *Mathematical Methods in the Physical Sciences* by Mary L. Boas. Wiley. 3rd Ed.

ISBN: 978-0-471-19826-0

REFERENCE: *Mathematical Methods for Physics and Engineering*, Riley, Hobson, & Bence, Cambridge;

Advanced Engineering Mathematics, 8th Edition, by Erwin Kreyszig

LECTURER: Professor J. Huang

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COURSE WEB PAGE: WSU Blackboard

OFFICE HOURS: Wednesdays & Fridays 11 AM - 12 PM @ 385- Physics Building.

Pre-requisites: PHY2140 /PHY2180, MAT2030 or PHY3700; co-requisites.

Readings

The single most important thing that you as a student can do to obtain a good understanding and hence a good grade is to read and reread the text (as well as the reference book) until comprehension is obtained. The lectures can help toward this goal, but they are not by themselves sufficient. For one thing, there is simply not enough time in the lectures to cover the material with as much thoroughness as the text does. Also, the lectures will often follow a different line of discussion than the text so that you can see more applications.

Homework assignments

A few problems from the text will be assigned each week and will be collected one week later. At that time solutions will be posted on bb. Thereafter no late homework will be accepted. Your homework will be marked on a scale with two points being given for each complete and correct answer and one point for each reasonable attempt. No credit will be given for minimal efforts or for work that is obviously copied from another student.

Oral Presentations:

You will be assigned into groups of two and perform a ppt presentation on given topics/problems.

Exams and grading scales

Your grade in the course will be determined by your performance on the homework, the two hourly exams, and the final exam. Lab will be graded separately and is not part of the final grade of this course.

Homework, Quizzes, Presentation	1 unit
First Hourly Examination	1 unit
Second Hourly Examination	1 unit
Final Examination	2 units
<hr/> TOTAL	<hr/> 5 units

Percent	Grade
80-100	A/A-
70-80	B+/B/B-
60-70	C+/C/C-
50-60	D+/D/D-
0-50	E

The final exam will be comprehensive. There are no make-ups for any of exams.

[Note for graduate students: different evaluation standards apply]

Office Hours:

I encourage you to take advantage of the office hours from early on. If it is impossible for you to make it to the listed hours, you can contact me through email so that a time can be set to meet.

In-class policies

Out of consideration for the other students in the lecture please abide by the following rules of conduct: (1) Turn off all cell phones while in lecture, (2) Please arrive on time for lecture and do not leave early, (3) Please be mindful of your classmates.

Academic dishonesty

All of the graded assignments are designed to measure your individual understanding of the material. No forms of cheating on these graded assignments will be tolerated (working together on the homework assignments is not considered cheating but copying of someone else's homework is). Anyone found cheating on any graded activity will receive a grade of zero for that part of their grade, and may receive a failing grade for the course. Use of a cell phone or texting device during an exam will be considered to be prima-facie evidence of cheating.

Students with disabilities

If you have a documented disability that requires accommodations, you will need to register with Student Disability Services (SDS) for coordination of your academic accommodations. The Student Disability Services (SDS) office is located at 1600 David Adamany Undergraduate Library in the Student Academic Success Services department. SDS telephone number is 313-577-1851 or 313-577-3365 (TDD only). Once you have your accommodations in place, I will be glad to meet with you privately during my office hours to discuss your special needs. Student Disability Services' mission is to assist the university in creating an accessible community where students with disabilities have an equal opportunity to fully participate in their educational experience at Wayne State University.

Please be aware that a delay in getting SDS accommodation letters for the current semester may hinder the availability or facilitation of those accommodations in a timely manner. Therefore, it is in your best interest to get your accommodation letters as early in the semester as possible.

Wk	Date	Day	Lecture Topic	Reading Assignment
1				
	08/31	W	Review of complex numbers	Chp 2
	09/02	F	Vector Algebra and Vector Calculus - I	Chp 6
2	09/05	M	Labor Day - No Class	
	09/07	W	Vector Algebra and Vector Calculus - II	
	09/09	F		
3	09/12	M	Vector Algebra and Vector Calculus - III	
	09/14	W		
	09/16	F		O. P. Assignment
4	09/19	M	Matrices and Linear Algebra - I	Chp 3
	09/21	W		
	09/23	F	Oral Presentation	
5	09/26	M	Matrices and Linear Algebra - II	
	09/28	W		
	09/30	F	Review	
6	10/03	M	First Exam 90 minutes	
	10/05	W	Matrices and Linear Algebra - III	
	10/07	F		
7	10/10	M	Fourier Analysis and Transforms - I	Chp 7
	10/12	W		
	10/14	F		
8	10/17	M	Fourier Analysis and Transforms - II	
	10/19	W		
	10/21	F		
9	10/24	M	Fourier Analysis and Transforms - III	
	10/26	W		
	10/28	F		
10	10/31	M	Partial Differential Equations - I	Chp 13
	11/02	W		
	11/04	F	Review	
11	11/07	M	Second Exam 90 minutes (Chapters 4-6)	
	11/09	W		
	11/11	F		
12	11/14	M	Partial Differential Equations - II	
	11/16	W		
	11/18	F		
13	11/21	M	Partial Differential Equations - III	
	11/23	W		
	11/25	F		
14	11/28	M	Thanksgiving-No class	O. P. Assignment
	11/30	W	Thanksgiving-No class	
	12/02	F		
15	12/05	M	Calculus of Variations	Chp 9
	12/07	W	Oral Presentation	
	12/09	F		
16	12/12	M	Review - Class End	

Final Exam: ?? (Physics)