PHYSICS 5200: Classical Mechanics I (Fall 2012)

Room 177, Physics Building, MWF, 3:00 – 3:55 p.m.

Pre-requisites and co-requisites:
This course requires PHY2170, 2180 as a pre-requisite and PHY5100 as a co-requisite.

LECTURER: Prof. Joern Putschke
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OFFICE HOURS: MW, 1:30 – 2:55 p.m.; and by appointment (just send an email)

TEXT: *Classical Mechanics by John R. Taylor, University Science Books, (2005);*
ISBN 1-891389-22-X. We will be using this text for both PHY5200 and PHY5210. The course will follow the text.
(To get a slightly different view and explanations I recommend *Classical Mechanics by R. D. Gregory*)

Lectures and reading assignments
The Lecture Schedule given below shows what sections of the text will be covered in each day's lecture. You should read the appropriate sections of the text before coming to class if you want to obtain the maximum benefit from the lecture. The lecture will consist of a combination of explanations of the material and illustrated examples.

Homework assignments
A few problems will be assigned each week (except for the weeks with an examination) and will be collected one week later. We will discuss some of the homework problems in class if appropriate. You are welcome to form group studies.
Computer assisted homework problems
Some of the homework problems are intended to be solved numerically with the help of a computer. Learning how to use computer programs/frameworks to solve problems numerically is a very important skill for any Physicist and will be extremely valuable in your further scientific career. There are several programs/framework one could use, the most common one is Mathematica (and probably a very good starting point). There are alternatives like Maple/MatLab and of course C++ with the help of the GNU Scientific Library (GSL) which could be utilized. too We will discuss this in class and of course feel free to contact me beforehand.
Preliminary Exam (Exam 0) will recap material of PHY2170 and will be part of the homework (more details in class).

Exams
Each hourly exam (two in total) will typically consist of three to five problems similar in spirit to the homework problems. The final exam will cover all the material of this course and will contain (slightly) more and longer problems; however, there will be slightly more emphasis on material not covered by the two hourly exams. All exams will be closed book.

Grading
Your grade in the course will be determined by your performance on the homework, the two hourly exams, and the final exam:

Homework	40%
Two Hourly Examination	30%
Final Examination	30%

Grading Scale:
A/A-: 80%-100%; B+/B/B-: 70%-80%; C+/C/C-: 60%-70%; D+/D/D-: 50%-60%; E 0%-50%.

Academic dishonesty
All of the graded assignments are designed to measure your individual understanding of the material. Working together on the homework assignments is not considered cheating but blindly copying of someone else's homework is. Remember, you are only cheating yourself and it won't help you in the examinations!

I will post my notes on Blackboard (following notes originally prepared by Prof. R. Harr)

Date	*Material (Chap. in Taylor)*	*Notes*
29-Aug	Introduction	Lec. 1
31-Aug	1.1-1.2	Lec. 2
5-Sep	1.3-1.4	Lec. 3
7-Sep	1.5-1.6	Lec. 4
10-Sep	1.6-1.7	Lec. 5
12-Sep	2.1	Lec. 6
14-Sep	2.2	Lec. 7
17-Sep	2.3	Lec. 8
19-Sep	2.4	Lec. 9
21-Sep	2.5	Lec. 10
24-Sep	2.6-2.7	Lec. 11
26-Sep	3.1-3.2	Lec. 12
28-Sep	Review	Review 1
1-Oct	Exam 1	-----
3-Oct	3.2	Lec. 14
5-Oct	3.4-3.5	Lec. 15
8-Oct	3.5	Lec. 16
10-Oct	3.5-4.1	Lec. 17
12-Oct	4.1 (and parts of 4.10)	Lec. 18
15-Oct	4.2	Lec. 19
17-Oct	4.3	Lec. 20
19-Oct	4.4-4.5	Lec. 21
22-Oct	4.6	Lec. 22
24-Oct	4.7	Lec. 23
26-Oct	4.8	Lec. 24
29-Oct	4.9	Lec. 25
31-Oct	5.1	Lec. 26
2-Nov	Review	Review 2
5-Nov	Exam 2	-----
7-Nov	5.2	Lec. 28
9-Nov	5.3	Lec. 29
12-Nov	5.4	Lec. 30
14-Nov	5.5	Lec. 31
16-Nov	5.6	Lec. 32
19-Nov	5.7-5.8	Lec. 33
26-Nov	8.1-8.2	Lec. 34
28-Nov	8.3	Lec. 35
30-Nov	8.4	Lec. 36
3-Dec	8.5	Lec. 37
5-Dec	8.6	Lec. 38
7-Dec	Special Lecture	Lec. 39
10-Dec	Review	Lec. 40
	Final Exam TBC	

Students with disabilities

If you have a documented disability that requires accommodations, you will need to register with Student Disability Services 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.