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March 24, 2016 Hans P. Paar

4A SYLLABUS

NEWS ITEMS, LAST ON TOP

3/24/2016: The scores for the Final and for the course as a whole have been posted with their histograms as well as the letter grades. The letter grades are assigned as follows: $600 \le \text{grade}$: A+, $525 \le \text{grade} < 600$: A, $475 \le \text{grade} < 525$ A-, $450 \le \text{grade} < 475$: B+, $425 \le \text{grade} < 450$: B, $400 \le \text{grade} < 425$: B-, $375 \le \text{grade} < 400$: C+, $350 \le \text{grade} < 375$: C, $300 \le \text{grade} < 350$: C-, $250 \le \text{grade} < 300$: D, $\text{grade} \le 300$: F. If you are not completely happy with your letter grade: 4A is considered by many more difficult then the first half of 4B. The second half of 4B will be on the level of 4A.

The Finals and some quizzes will be ready for pickup outside my CASS office by next Monday 3/28/16. The solutions to the Final have been posted.

3/16/2016: Section 11-7 should have been listed in the news items of 3/11/16. It is *not* required material for the Final.

3/14/2016: The TA's Final Review has been posted as well as the solutions to the Homework of Chapters 10 and 11.

Due to an unforeseen scheduling conflict I will not be able to attend the Tuesday 3/15 Discussion Session. It will take place though as scheduled.

Reminder: Extra office "hour" today, Monday 3/14 starting at 5:00 pm and ending no later than 7:00 pm.

3/11/2016: The homework assignment for Chapter 11 has been posted. The solutions the Chapter 10 and 11 Homework will be posted by next Tuesday 3/15.

The following sections and chapters are not required material for the Final: 3-9, 5-5, 5-6, 6-8, 8-1, 9-10, 11-8, 11-9, and Chapter 12. That is not to say that that material is not important, on the contrary, but we did not have enough time to cover it.

The Tuesday 3/15 Homework session has been moved by the Registrar from York 2622 to HSS 1330 (HSS = Humanities and Social Sciences) and will be at the same 5:00 pm - 6:00 pm time. I expect to attend and the TA and I will stay longer if there is a need and the room is available.

I will have an office hour today as normal and an extra office hour next Monday 3/14 starting at 5:00 pm in my CASS office.

3/10/2016: The homework assignment for Chapter 10 has been posted as well as the scores for Quiz #4 and its solutions.

2/28/2016: The scores for Quiz #3, their histogram, and the solutions to the homework of Chapters 8 and 9 have been posted.

2/24/2016: Additional homework has been assigned for Chapter 8 and homework has been assigned to Chapter 9.

2/21/2016: Quiz #3 and its solutions have been posted.

2/17/2016: The date and time of the Final has been set by the Registrar as Thursday 3/17/2016 at 11:30 am - 2:30 pm. The location is yet to be announced. Please plan your travels during final's week and Spring break accordingly.

2/16/2016: The solutions to the homework of Chapters 7 and 8 have been posted.

2/14/2016: The scores for Quiz #2 have been posted. The spreadsheet has two pages, one with the scores and one with the histogram. You can select either one by clicking on the icons along the bottom of the spreadsheet.

2/13/2016: A histogram of the scores for Quiz #2 have been posted. The spreadsheet with scores is on the way.

2/12/2016: I have presented this week some material from Chapter 8 even though Chapter 8 is listed for next week. This happened because the Chapter 8 material is logically connected to that of Chapter 7 which is listed for this week. Not all of Chapter 8 will be required for Quiz #3, only what has been presented in this week's lectures. That material is covered in Sections up to, but not including, Section 8-6.

2/10/2016: Homework assignments for Chapters 7 and 8 have been added below. There will be more problems added to the list for Chapter 8 next week.

2/8/2016: We will need the Math in the document titled "somemath.pdf" that resides in the 4A website. Only sections 1, 2, and 3 are needed this Wednesday and beyond.

Quiz #2 and its solutions have been posted.

2/1/2016: The solutions to the homework of Chapters 4, 5, and 6 have been posted.

1/27/2016: The scores for Quiz #1 have been posted.

1/26/2016: Homework problems have been assigned for Chapters 4, 5, and 6.

1/25/2016: The solutions to Quiz #1 have been posted.

1/18/2016: The solutions to the homework of Chapters 1, 2, and 3 have been posted. The solutions to Chapter 5, Section 2 are on the way.

1/14/2016: Circular motion was discussed today as another example of a two-dimensional motion. It is treated in Section 5-2 of Chapter 5, in other words out of order. It will be on the next Quiz so I have assigned some homework problems for this topic, see the Syllabus.

1/13/2016: The homework assignments for Chapter 3 have been posted.

1/10/2016: A page with "How to"s has been posted, see problem.pdf.

1/7/2016: Homework problems have been assigned for Chapters 1 and 2. Also information on TA, grader, and Homework and Discussion Sessions has been entered.

12/23/2015: A document called somemath.pdf has been posted on the 4A website. We will not need its material until we discuss potential energy but it won't hurt if you have a look at Sec.1, 2, and 3 in the meantime. Sec.4 is not needed until we discuss rotations much later in the course.

12/19/2015: Welcome to Physics 4A in the Winter 2016 quarter.

This is a first version of the 4A Syllabus. More information will be added in the future.

COURSE ORGANZATION

Course instructor:	Hans P. Paar
	hpaar@ucsd.edu (e-mail)
	SERF 322A (office)
	858 246 0405 (office phone)
Teaching assistant:	Alex Georges
	ageorges@ucsd.edu (e-mail)
	Mayer Hall 4430 (office)
	760-519-5604 (mobile phone)
Grader:	Thyagarajan Venkatanarayanan

	tvenkata@eng.ucsd.edu (e-mail)	
Lectures:	Tuesdays and Thursdays 11:00 am - 12:20 pm in CH 212 Wednesdays 8:00 am - 8:50 am in CH 105	
Discussion sessions:	Thursdays 7:00 - 8:50 pm CH 222	
Homework sessions:	Tuesdays 5:00 - 5:50 pm York 2622	
Final:	Thursday $3/17$ from 11:30 am - 2:30 pm in CH 212	
Office hour:	Fridays 5:00 pm in SERF 322A (instructor)	
	Tuesdays, 7:00 pm in Mayer Hall 4430 (TA)	
Course URL:	See Physics Department's website	
Textbook:	Douglas C. Giancoli, Physics for Scientists and Engineers (2008)	
	We will cover Chapter 1 through Chapter 12	
Prerequisite:	Mathematics 20A	
Coreqisite:	Mathematics 20B	

There will be homework assignments each week and four Quizzes during the quarter. The first Quizz is on 1/20. The others are on 2/3, 2/17, and 3/2. You are encouraged to work together on the homework. The homework will not be collected or graded. Some solutions will be posted on the 4A website, usually the day before a Quiz (why so late?).

COURSE OUTLINE

The Physics 4ABCDE sequence is a calculus based five quarter sequence covering classical mechanics, electricity and magnetism, waves, optics, special relativity, quantum physics, and modern physics. Physics 4A covers Mechanics using vector algebra and calculus as taught in Math 20A (prerequisite) and Math 20B (corequisite). We will cover Chapter 1 through Chapter 12 of the textbook listed above.

This course is a challenging course that requires your full commitment. Contrary to the Physics 1 and 2 sequences your keeping up with the material is not checked weekly by Quizzes. It is assumed that your choice of Physics 4 over Physics 2 is motivated by a real interest to learn Physics well and that it causes you keep up with the material.

It is recommended that you purchase Volume I alone rather than volume I, II, and III bound together. It is possible to carry Volume 1 to class (recommended) while the complete binding of Volume I, II and III is probably too cumbersome to carry to class. To do well in this course it is recommended that you look over the lecture material prior to coming to a lecture and then review that material prior to the next lecture where it is likely to be used. Bring the textbook to class and make notes in it as the lecture goes along. It is not necessary to take notes as I follow the book on the blackboard, even using the same notation. I warn the class when I am about to deviate from the book so that you can start taking notes. If you work in this manner you can pay full attention to what is going on on the blackboard without being distracted by the need to keep up with the blackboard in your notetaking. Please ask questions when things are not clear. It is likely that you are not the only one in class for which matters need more explanation.

In the discussion sessions the material of the week will be reviewed and homework problems worked out. Attendance is strongly advised in order to master the material and prepare for the Quizzes and Final. Individual assistance is available during office hours. The Physics Tutorial Center in Mayer Hall 2702 is available as well. Please consult their website for opening hours (Google: "UCSD Physics Tutorial Center"). Working together with one or more other students on the homework will be beneficial. Talking about the material and clarifying it for each other is an important part of getting to "own" it.

COURSE SCHEDULE

The class schedule and homework assignments are listed below:

Week	Dates	Chapter	Homework
1	1/4-1/8	1	1, 2, 3, 4, 8, 9, 13
		2	2, 3, 6, 8, 12, 18, 23, 29, 37, 51, 58, 66, 68, 93
2	1/11-1/15	3	3, 5, 6, 8, 10, 13, 17, 18, 19, 24, 28, 33, 36, 46, 55
		5-2	35, 36, 38, 43, 46
3	1/18-1/22	4	10, 13, 21, 27, 33, 37, 44, 54, 56, 69, 79
	1/20		Quiz # 1
4	1/25 - 1/29	5	18,20,23,24,25,31,37,43,47,60,80,94
5	2/1-2/5	6	11, 17, 18, 19, 32, 35, 40, 53, 77
	2/3		Quiz $\# 2$
6	2/8-2/12	7	9, 14, 16, 17, 21, 27, 35, 40, 45, 47, 63, 89
7	2/15-2/19	8	10, 23, 26, 29, 33, 39, 42, 45, 49, 52, 57, 62, 65, 77, 92
	2/17		Quiz $\# 3$
8	2/22-2/26	9	11,15,19,25,36,40,43,46,48,50,64,67,94,98,111
9	2/29-3/4	10	9, 10, 23, 37, 45, 46, 64, 65, 66, 67, 68, 92
	3/2		Quiz # 4
10	3/8-3/11	11	1, 2, 3, 10, 15, 23, 25, 33, 35, 41, 51, 54, 55, 56
		12	This Chapter will be covered in 4B
11		Final	Thursday $3/17/2016$ from 11:30 am - 2:30 pm in CH 212

FURTHER INFORMATION

Quizzes will be closed book. All students are required to purchase bluebooks for taking Quizzes and the Final. At the first Quizz you will be assigned a 3-digit code number. Your assigned code number and course number (4A) should be written on the cover of your bluebook. Do not write your name on the bluebook for confidentiality reasons as the bluebooks will be returned together. Write your answers in ink, not pencil. You will not loose points when you cross out incorrect text. You will be able to collect your Quiz at the end of a lecture. Solutions to the Quizzes and grades by code number will be posted on the 4A webpage. Please check your grades promptly to make sure they are recorded correctly.

Appeals to the grading of the Quizes should be made in writing within one week from the day the graded Quizzes were returned. Do not write in the bluebook but rather attach a sheet of paper with your appeal and give it to the TA. Grade changes will only be considered if the Quiz is written in ink, not when written in pencil. Contact the instructor if a problem is not resolved after a discussion with the TA.

The three Quizzes with the highest scores will be counted toward the course grade so you can drop one Quiz without penalty. Therefore there will be no makeup Quizzes. In case of illness, documented with a letter from a physician or nurse, an accommodation will be made if more than one Quiz is missed because of the illness.

The course grade will consist of 50% from the best three out of four Quizzes and 50% from the Final. There will be no makeup Final so appraise yourself of the Final's date before making plans to leave town for the Spring Break.

Please remind yourself of the "UCSD Policy on Integrity of Scholarship" in the UCSD catalog. I do not expect to encounter a problem in this area but if I do these rules will be strictly enforced. Laptops, tablets, and smartphones are not allowed during the Quizzes and the Final and need to be stowed out of view in a closed bag situated below your chair on the ground. A simple scientific calculator can be brought to Quizzes and Final. Those that allow storage of text and/or formulas are not permitted. You are not being tested on memorization or on doing complicated arithmetic so calculations will be simple and straightforward.