

Engineering Physics 1 (PHYS 213)

Syllabus, Spring 2009 (see also [studio syllabus](#))

Text: Fundamentals of Physics by Halliday, Resnick, and Walker (7th edition) + I-clicker

Instructor: Prof. Mick O'Shea, Office: CW331, e-mail mjoshea@phys.ksu.edu

Office Hours: Tues. and Thurs. 1:00 PM – 2:30 PM, and other times by appointment
[Additional offices hours on weeks of lecture quiz – Fri. 12:30 – 1:30 p.m.]

Website: If you are enrolled in this class, go to K-State Online to find the website.

Point Allocations:	Lecture Quiz Scores	450 Points
	Class participation	50 Points
	Studio	300 Points
	Final Exam	200 Points
Grade Assignment:	900-1000	A
	800-899	B
	700-799	C
	600-699	D
	0 -599	F

Lectures: The goal of this course is to teach the main concepts of physics and how to apply these ideas in solving physics problems. My lectures will help you develop a conceptual understanding of physics while the studios will help you integrate conceptual understanding with problem solving skills and concepts of measurement. Lectures in this class are important; attend all lectures, and get notes from a friend if you have to miss one. Class participation via I-clickers will be very important and will be worth 50 points. A separate handout will be posted on this.

Studios: You must be enrolled in a studio. You must bring a studio manual (available at the Arts and Science Copy Center in the basement of Eisenhower Hall) and a 5 × 5 Quad Ruled (**not** spiral bound) lab notebook (available at the Student Union or Varney's) to the first studio. **In the studio part of the course you will be graded on homework assignments, in-studio quizzes, and studio labs. Your grade for the studio is determined by your studio instructor (see Studio syllabus – distributed in your studio).**

The emphasis in studios will be to strengthen your conceptual foundation in physics by integrating problem solving with a direct comparison to experiments. Your goal here should not be just to learn how to solve *particular* homework problems, but rather to understand how to apply physics concepts to solve *any* problem you might encounter in this course.

It is important that you attempt all of the assigned homework problems and questions before you come to the studios. Homework assignments will be collected in studios. In trying to solve problems you should develop a strategy of first visualizing the physical situation (e.g. draw a diagram, make links to similar and more familiar situations etc.). You should then perform the algebraic calculations without substituting numbers for symbols for as long as possible. This allows for better trouble shooting, reveals dependencies and possible cancellation effects, and enhances your physical intuition. In order to obtain numerical solutions, you can substitute numbers at the end.

Help with homework and other questions you might have:

- Show up in your studio instructor's (or my) office hours with questions.
- The physics department staffs a work-room in Cardwell Hall, for students who want extra help with this course. This is a good place to work on homework problems. I will announce details later.
- After every lecture, you should go over the checkpoints and sample problems listed in the *extended study guide*. You should also go over the lecture notes. You should do this before starting to work on homework problems.
- **Answers to homework problems and questions will be posted on K-State Online.**
- Attend the help session on the Thursday before each lecture quiz, see syllabus
- **Working with other students:**
 - Feel free to discuss the Homework questions and problems and possible ways to solve them with other students. When it comes to writing down the solution, this must be done by you by yourself. Note that:
 - Copying someone else's solution is plagiarism – see below.
 - Copying a solution from a solution manual is plagiarism – see below.

Examinations (lecture quizzes and final exam):

There will be five lecture quizzes (Exams 1 – 5) during the semester, each worth 100 points. All lecture quizzes will be given in CW 101 or 102 on Fridays (see schedule) from 4:30 to 5:45 PM. **There will be no make-up lecture quizzes. Of these five quizzes, your lowest quiz score will be dropped. Your 4 highest lecture quiz scores will then be added up and multiplied by 1.125 to get a total of 450 points for the quizzes.** A comprehensive final exam worth 200 points will be given at the end of semester. The final exam is mandatory and will be given only at the scheduled time. All lecture quizzes and the final exam will consist of problems and multiple-choice questions. These will be related to lecture materials including in-class demonstrations, worked-out examples and checkpoints in the textbook, and to homework and lab assignments for studios. Calculators will be allowed on quizzes and the final exam. An equation sheet will be provided at the time of each quiz and the final exam. No notes (includes electronic notes) or books may be used in the lecture quiz or final exam.

Policy on taking exams: See online file entitled 'Exam, Studio policy' in the 'Information' folder on the course website.

Studio: See studio syllabus

University policy requires that the following be included on this syllabus:

I. STATEMENTS FOR ACADEMIC ACCOMMODATIONS FOR DISABLED STUDENTS

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.

II. STATEMENT REGARDING ACADEMIC HONESTY

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 Honor System Policy on the Provost's home page at <http://www.ksu.edu/honor/>.

Engineering Physics 1 (Phys. 213) HW and Study Guide for Spring, 2009

First studio: Jan.15th/16th - MUST ATTEND OR YOU MAY BE DROPPED

Second studio Jan. 20th/21st (Ch.2:sect 1-6) Ch. 2 Q 2,3; P 2, 3, 5, 13, 15. This studio will be in the format of an introductory lecture and some problem solving (this set of problems is not turned in)

Following studios (below): These studios will integrate problem solving and experiments

Date	Lecture	Check -points	Samp. Prob.	Studio HW (Bring completed HW to start of each studio)	Studio Lab
1-21	Ch. 2: sect 6-10	2: 4-6	2: 5-7	Ch.2 Q 5; P 16, 27, 31, 32, 50, 52, 61	2.1, 2.2
1-26	Ch. 3:sect 1-8	3: 3,4	3: 5-9	Ch.3 Q 4, 7, 9; P 22, 28, 31, 32, 44, 52, 54	2.3
1-28	Ch. 4:sect 5-6	4: 5	4: 6-7	Ch.4 Q 8, 9; P 20, 23, 26, 29, 34, 35	4.1, 4.3
2-2	Ch. 5:sect 1-7	5: 2-5	5: 1-2	Ch.5 Q 5, 6; P 3, 5, 11, 14, 18, 22, 24	5.1, 5.2
2-4	Ch. 5:sect 8-9	5:7	5: 7-9	Ch.5 Q 8; P 25, 41, 45, 49, 50, 51	5.3, 5.4

Feb 6 Quiz 1 4:30 – 5:45 PM Chapters 2, 3, 4, 5 [Work session 12:30 p.m. Feb 6, CW221]

Date	Lecture	Check points	Samp. Prob.	Studio HW (Due at the start of each studio)	Studio Lab
2-9	Ch. 6:sect 1-3	6: 1-2	6: 1-3	Ch.6 Q 1, 3, 6; P 6, 7, 11, 19, 21, 22	6.1, 6.2
2-11	Ch. 6: 5, Ch.4:7	6: 5	6: 7,8,10	Ch.6 Q 9, 11; P 28, 29, 36, 41, 49, 102	6.3, 6.5
2-16	Ch. 7:sect 1-8	7: 1-4	7: 1,5,8	Ch.7 Q 4, 5; P 4, 12, 19, 20, 27, 50, 51	7.1, 7.2
2-18	Ch. 8:sect 1-5	8: 1,3	8: 1,3	Ch.8 Q 2, 3; P 4, 5, 6, 7, 22, 25, 89	8.2, 8.1

Feb 20 Quiz 2 4:30 – 5:45 PM Chapters 6, 7, 8 (part) [Work session 12:30 p.m. Feb 20, CW221]

Date	Lecture	Check-points	Samp. Prob.	Studio HW (Due at the start of each studio)	Studio Lab
2-23	Ch. 8:sect 7-8	8: 5	8: 6-8	Ch.8 Q 6; P 28, 29, 31, 34, 48, 68	8.3, 6.4
2-25	Ch. 9: sect 1-7	9: 1-4	9: 1,4-7	Ch.9 Q 1, 4; P 1, 4, 11, 15, 26, 32, 82	8.4, 9.1
3-2	Ch. 9: sect 8-10	9:6	9: 8-10	Ch.9 Q5, 6; P 35,40, 41, 50, 56, 60	9.2, 10.2
3-4	Ch. 10: sect 1-7	10: 1-4	10: 2,3,5	Ch.10 Q 1, 4; P 1, 6, 17, 18, 32, 34	10.3 (11.1)
3-9	Ch. 10:sect8-10	10: 6,7	10: 7,8	Ch.10 Q 5, 7; P 39, 48, 51, 61, 69, 84	11.1, 11.4
3-11	Review			Ch.8:P90,95; Ch.9:P59, 97; Ch10: P63,83	11.2, 11.3

Mar 13 Quiz 3 4:30-5:45 PM Chapters 8(part), 9, 10 [Work session 12:30 p.m. Mar 13, CW221]

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(3/16-3/20 student holiday)

Date	Lecture	Check-points	Samp. Prob.	Studio HW (Due at the start of each studio)	Studio Lab
3-23	Ch. 11:sect 1-8	11:1-3	11: 1-2	Ch.11 Q 3; P 3, 4, 5, 8, 9, 10	12.1, 12.2
3-25	Ch. 11: sect 9-11	11: 4-7	11: 5-7	Ch.11 Q7,8,10 P 26, 43, 46, 49, 50, 80	12.3, 12.4
3-30	Ch. 12: sect 1-5	12: 1,2,4	12: 1-3	Ch.12 Q 2, 3; P 5, 7, 9, 10, 14, 22, 23	13.1, 13.2,
4-1	Ch.13:sect 1,2,4,6,7	13: 4,5	13: 5,7	Ch.13 P15, 17, 19, 33, 40, 48, 56	13.3, 14.2

Apr 3 Quiz 4 4:30-5:45 PM Chapters 11, 12, 13 [Work session 12:30 p.m. Apr 3rd, CW221]

Date	Lecture	Check-points	Samp. Prob.	Studio HW (Due at the start of each studio)	Studio Lab
4-6	Ch. 14: sect 1-7	14: 1,2	14: 1- 5	Ch.14 Q 3; P 3, 5, 6, 9, 19, 22, 25, 29	15.1, 15.2, 15.3
4-8	Ch. 14: sect 8-10	14: 3,4	14: 6-8	Ch.14 Q 7, 10; P 47,48, 53, 54, 55, 59	(15.3),15.6
4-13	Ch. 15: sect 1-3	15: 1,2	15: 1,2	Ch.15 Q 2,4; P 1, 9, 11,17,19, 25, 81	16.1, 16.2
4-15	Ch. 15: sect 4,6,9	15: 3,4	15: 3,5,6	Ch.15 Q 6; P 28,30, 31, 32, 33, 43, 49	16.3(1 st part) -
4-20	Ch. 16; sect.4,5, 10,12,13	16:2,3, 6	16:2,3,6,8	Ch.16:Q 1,3,9; P 1, 6, 30, 43, 45, 48, 49	17.2, 17.3
4-22	Review			Ch.14: P33,58;Ch.15: P36,72;Ch.16:P7,83	-

Apr 24 Quiz 5 4:30-5:45 PM Chapters 14, 15, 16 [Work session 12:30 p.m. Apr. 24th, CW221]

Date	Lecture	Check-points	Samp. Prob.	Studio HW (Due at the start of each studio)	Studio Lab
4-27	Ch.17:sect 3,4,5,7	17:2,4	17:1,3,6	Ch. 17 Q1, 7; P 5, 8, 15, 16, 40, 42	18.1
4-29	Ch.18: sect 5-8	18: 2,3,	18: 2,3,4	Ch.18 Q 2; P5, 11, 19, 20, 23, 25,27	19.3, 19.4
5-4	Ch.18: sect 9-11, Ch.19: sect 2,3	18:4,5,6 19: 1	18:5 19: 1,2	Ch.18 Q 5, 8; P 37, 42, 44, 45 Ch.19 P 2, 4, 12	19.5, 20.2
5-6	Review			Ch.17: P32 Ch.18: P30 Ch.19:P14	

May 15 Final Exam 7:30 – 9:20 AM Comprehensive [Work session to be announced May 13th, May 14th]

Note that the **Work sessions** listed above (Thursday before each exam) are primarily problem solving sessions. Come prepared to ask question about assigned problems. Specific topics will also be reviewed upon request.