

Physics 135bL (*Tear-off sheet*)

Spring 2012

Dr. Werner Däppen

Dr. Dennis Nemeschansky

Name (Printed): _____
Last First Initial

Name (Signed): _____

e-mail Address: _____

University ID Number: _____

Local Address: _____

Local Telephone: _____

Major: _____ Class: _____

Highest Math Class Completed: _____

Professional Goal:

Medicine ____; Dentistry ____; Pharmacy ____; Physical Therapy ____; Other _____

Physics 135bL Laboratory Section: day _____; hour _____

I'm registered but I don't know the day or time: _____

If you are **not** registered in a laboratory section, did you complete the 135bL

laboratory previously? Yes _____ No _____

If yes, do you have permission from the undergraduate office to use the

laboratory credit this semester: Yes _____ No _____

Contact the lecturer to be sure that your Lab grade is properly recorded

Comments:

**Physics 135bL
Course Information**

Spring 2012

Welcome to Physics 135bL! This is the second course in the 2-semester Physics series intended to meet the needs of students majoring in the Natural Sciences other than Physics, Chemistry, or Engineering and who are preparing to enter one of the health oriented professions.

The subject matter of this course includes electricity and magnetism, optics, relativity and nuclear physics. The goal of the course is to teach you how to approach and solve physical problems and how to develop an intuition for the important physical properties which affect a given situation.

**I. Course Instructors
Dennis Nemeschansky**

Office	Office Hours	Phone	email
SSC 216C	M 3-4, W 2-3	213-740-1130	dennisen@usc.edu

Werner Däppen

Office	Office Hours	Phone	email
SHS 370	Tu 2-3, W 11-12	213-740-1316	dappen@usc.edu

II. Course Materials

II.a. Required for Lecture

D. C. Giancoli, *Physics: Principles with Applications*, 6th Edition, Prentice Hall, 2004

II.b. Required for Laboratory

Laboratory Manual for Physics 135bL, Spring 2012. This manual is available on the lab blackboard page.

II.c. Optional Supplementary Materials

Joseph Boyle, *Physics: Student Study Guide With Selected Solutions*, 6th Edition, Prentice Hall College Division, 2004

III. Guide Lines

III.a. Prerequisites

The prerequisite for this course is a working knowledge of elementary algebra and trigonometry. Your text has a brief review in appendix A.

III.b. Registration

Your registration for this course consists of three separate parts: a lecture, “quiz section”, and laboratory. You must register for each of them. The only exception is that if you have previously completed the laboratory and have received permission to carry its grade into the current semester, then you would register only for the lecture and the “quiz section”. The quiz section is reserved for the course midterms.

Attention!

Students who are repeating Physics 135bL must obtain written permission from the Undergraduate Physics Office (SGM 407) in order to be excused from repeating the laboratory. A copy of the written memo must be turned in to the professor during the first week of classes.

III.c. Disabilities

Students who need to request accommodations based on a disability are required to register each semester with the Office of Disability Services and Programs (DSP). They are found at STU 301 and their phone number is 231-740-0776. A letter of verification to the instructor from the DSP is needed for the semester you are enrolled. If you have any questions please contact the instructor and the DSP.

IV. Grading

Your grade will be determined according to the following distribution:

80% Lecture:

- 5% Homework
- 19% Midterm I
- 19% Midterm II
- 37% Final Examination

20% Laboratory:

- 20% Laboratory

*In order to receive a passing grade in the course (D-above) you must receive a passing grade in **both** the Lecture and the Laboratory portions. In addition, you must receive a*

passing grade on the final examination. Each semester a few students fail to complete the laboratory experiments and consequently **fail the entire course** – *please don't let this happen! If you miss a lab, make sure to arrange a lab make-up as soon as possible with your T.A.*

Broadly speaking, grading is done by the distribution curve of the combined scores of exams, homeworks and lab. No rigid percentage marks (such as, e.g., a rule that 90% corresponds to an A-, or similar) are used. Further details about the grading procedure are given in class.

IV.a. Homework

Homework is assigned each week and is due on the second class meeting of the following week. The homework is turned in *at the beginning* of the lecture, *not at the end* of the day that they are due. Please turn in your homework on time, because *late homework will not be accepted*. Please make sure to **staple together multiple sheets**. *All work submitted as loose pages will not be graded.*

We expect that it will take several hours to complete each of your homework sets. The sets are the central way to master the course material. “Understanding” physics does not mean knowing the words and reading the book. “Understanding” implies development of the necessary skills to solve physics problems you have not seen before.

Homework problems will range from the trivial to the difficult. *Midterm and final examination questions will resemble (and in isolated instances may be identical to) many of those problems.* We urge you to attempt every homework problem, even if you are not able to complete each one.

We encourage you to work with friends on deciding how to do the homework. This does not imply simply copying solutions from each other. You can learn a tremendous amount by cooperating and explaining to each other how to analyze a problem, but everyone must turn in their independently worked solutions.

All of the homework problems will be from the textbook. Solutions to the homework assignments will be posted on *Blackboard* after the due dates.

IV.b. Examinations

There will be two midterm exams and a final exam. The midterms will be given during the quiz section. The midterms will cover material incrementally through the semester, and the final exam will be cumulative over the whole course.

Please note the date and time of the midterms and final examination (see *Physics 135b Course Schedule* on the last page). No exceptions to these dates and times are allowed. If you have a conflict, please attend to it immediately.

There will be no make-up exams given for any tests in this course. A missed exam will prevent you from passing unless you have approval from your professor before the exam because of an extreme emergency.

IV.c. Calculators

No programmable calculators are allowed during the exam.

IV.d. Laboratory

Physics is an experimental science and therefore the laboratory is a very important part of this course. Physics 135bL laboratories *will meet* during the first week of classes. Each week you will have in the laboratory either a discussion meeting or an experiment. The laboratory policies are clearly spelled out in the introduction to the Lab Manual. Read it carefully.

Read the description of the experiment carefully ***before*** coming to the laboratory. This will help you to understand the experiment and you will be more efficient. You must complete all laboratory assignments at the “Pass” level. Then your laboratory grade will be derived from laboratory quizzes, performance, the lab midterm, and the lab final. *As noted previously, it is necessary for you to pass the laboratory portion of the course in order to pass the course as a whole, and to pass the lab you must complete all experiments.*

If you miss a laboratory period it is your responsibility to make arrangements with your T.A. to make-up the missing experiment. Your T.A. will not make that arrangement for you. *Do not simply attend another laboratory section unannounced. TA's will not accept students in the laboratory who are not registered in their section without prior official arrangements.*

Questions concerning the laboratory should be referred to the Lab Director, Dr. Gokhan Esirgen (KAP B19, e-mail: esirgen@usc.edu, phone: 213-740-1138)

V. Assistance

You have a variety of opportunities for assistance available to you. Please seek it immediately if you are having difficulties with this course. We list some of these below.

V.a. Lecture

Don't underestimate the value of questions during the lecture period. In large lectures, many students are reluctant to pose questions, which they fear may seem silly to either, their peers or the instructor. Almost always, if one student asks a question, there are several other students who have been bothered by the same question. Often such questions tell the instructor what is not clear to the students. A portion of each week's lecture time will be devoted to illustrative examples including some from the assigned homework. Some of them may also appear later on some of the exams.

If for any reason you want to see your course instructor privately, our office hours are shown in section I. of this syllabus. If you are unable to make those times, please feel free to make an appointment convenient for both you and your course instructor.

V.b. Laboratory TA's

All laboratory-teaching assistants are graduate students, usually pursuing a Ph. D. in Physics. They are all capable of answering any questions you have regarding subject material. Usually your lab TA can answer questions immediately, either at the beginning or at the end of the lab period. However, some problems you pose may require some additional thought. In either event, you should regard your TA as a resource not only for the laboratory, but also for the lecture-related questions. Your lab TA will also have office hours for assistance.

V.c. Electronic Assistance

Everyone in this class has a convenient access to the USC Network. All information about the course will be posted on the *Blackboard* at

<https://blackboard.usc.edu>

At this address, you will find this *syllabus*, *important announcements*, *useful hints about some homework problems* and *examinations from previous semesters*. Sample exams should only be considered as samples illustrating the type of problems given in previous physics 135bL exams. Solutions to your homework sets (after the due date) will be placed on blackboard at 5:00 pm every Thursday.

VI. Getting Your Grades

You will be able to get your current grades in Physics 135b at any time on Blackboard at

<https://blackboard.usc.edu>

If you find any mistakes, please, contact your course instructor immediately. Blackboard is a fairly new system and some problems do occur.

VII. Academic Integrity

Below is a general description of the academic integrity violation process per University policy. This process addresses such incidents as cheating, unauthorized collaboration, and plagiarism. An overview of academic integrity at USC can be found at:

<http://www.usc.edu/student-affairs/SJACS/forms/AcademicIntegrityOverview.pdf>

VIII. Some useful dates

January 9 _____	Spring classes begin
January 16 _____	Martin Luther King Day (University Holiday)
January 27 _____	Last day to drop without a mark of “W”, and Last day to register or drop/add
February 14 _____	Midterm 1 (5:00 - 6:30 p.m.)
February 20 _____	Presidents’ day (University Holiday)
March 12-17 _____	Spring recess
April 3 _____	Midterm 2 (5:00 - 6:30 p.m.)
April 6 _____	Last day to drop a class with mark “W”
April 27 _____	Spring classes end
May 3 _____	Final Examination Thursday (8:00 – 10:00)

Physics 135b Course Schedule

Homework assignments numbered below are the ***Problems and not the Questions***. You should nevertheless read the questions and think about them since they are instructive and provide physical insights. Turn in your assignment at the beginning of the class. Late homework will **not** be accepted.

Week	Date	Chapter Assignment and Subject	Homework problems	Due Date
1	1/9	Chap16 Electric Charge and Electric Field	6,13,18,21,32,35,37,41,44,45	1/18,19
2	1/16	Martin Luther King Day		
2	1/16	Chap 17 Electric Potential	9,19,22,26,37,40,44,49,51,60	1/25,1/26
3	1/23	Chap18: Electric Currents	6,7,15,19,21,28,34,39,45,48	2/1,2/2
4	1/30	Chap19: DC circuits	3,11,14,17,19,21,25,27,32,37,43,52,58	2/8,2/9

5	2/6	Chap20: Magnetism	10, 12, 19, 25, 29, 38, 40, 43, 54, 77.	2/17,2/18
6	2/13	Midterm 1, Tue. 2/15	(5:00 p.m. – 6:30 p.m.) Rm. TBA	
	2/13	Chap21: Electromagnetic Induction and Faraday's Law	6,8,9,15,16,17	2/23,2/24
	2/20	President's Day		
7	2/20	Chap21: Electromagnetic Induction and Faraday's Law	23,28,36, 37,44,47,51,58,66,67	2/29,3/1
		Chap22: Electromagnetic waves.	11,18,33.	
8	2/27	Chap23: Light Geometric Optics	4,11,16,25,30,32,39,41,50,55,63	3/7,3/8
9	3/5	Chap24: The wave nature of Light	7,10,23,24,34,37,44,46,50,56.	3,21,3/22
	3/12-3/17	Spring Recess		3/28,3/29
10	3/19	Chap26: The Special Theory of Relativity	6, 11, 12, 16, 23, 26, 34, 38, 41, 46.	
11	3/26	Chap27: Early Quantum Theory and Models of the Atom	6,18,22,30,35,43,,52,56	4/4,4/5
12		Midterm 2, Tue 4/ 3	(5:00 p.m. – 6:30 p.m.) Rm. TBA	
12	4/2	Chap30: Nuclear Physics and Radioactivity	5,13,16,23,24,29,33,35,42,44	4/11,4/12
13	4/9	Chap31: Nuclear Energy Effects and Uses of Radiation	7,8,16,19,32,33,41,44,48	4/18,4/19
14	4/16	Chap32: Elementary particles	9,12,18,19,22,23,27,28,34,37	4/25,4/26
15	4/23	Review – Classes End 4/27		
	5/3	Final Exam – Thursday. 5/3	(8:00 – 10:00 a.m.) Rm. TBA	