Syllabus

PHY222, Elements of Physics II
Sections 27865-66, 23890, 23892-96

Spring 2015

Instructor: Dr. Jaan Mannik (Physics)
Office: 210 Nielsen Physics Bldg.
Class Hours: Tue.,Thur. 8:10 - 9:25 AM
Office Hours: Tue., Thur. 9:30 - 10:30 AM
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Learning Objectives of the Course

1) The main objective of the course is to learn the basic principles and concepts of introductory physics. The topics covered include electricity and magnetism, electrical circuits, optics, and elements of modern physics (relativity, quantum and atomic physics, and nuclear physics).

The course also aims to show how this material is linked to phenomena and techniques one encounters in biology and medicine.

2) Develop problem solving skills. Develop skills for quantitative data analysis.

Textbook:

R. A. Serway, C. Vuille, J. S. Faughn, **College Physics, 9th ed**.
ISBN: 9781111876050. This textbook is not mandatory but it is recommended.

If you want to have a paper copy of the textbook then you can also buy College Physics 8th or 10th Edition from the same authors.

Additional resources are available from Open Stax College. Their online free College Physics textbook (http://cnx.org/content/col11406/1.7/) covers essentially the same material as R. A. Serway, C. Vuille, J. S. Faughn, College Physics, 9th ed.

Homework assignments:

There will be homework for each Chapter with an average frequency one homework per week. The homework is based on **WebAssign** (http://www.webassign.net)

Note that homework will contribute to your final grade. The homework is due by each **Tuesday 8 am**. Exceptions will be noted in class. Homework which is submitted after the deadline does not count. The two lowest scores of your homework are left out when calculating your final score.

You need to purchase an **access code** for WebAssign from

http://www.webassign.net

This gives you also access to the **e-book version of the textbook**. If you have not used WebAssign before then you should set up your account with WebAssign first. Instructions how to set up WebAssign account and enroll to homework problems are posted under Course Materials (WebAssign_QuickStart.pdf). In the first step, irrespective if you have had previously WebAssign account or not, you need to enter class key for the course.

The class key for this course is: **utk 0002 4642**

Clickers

You should bring your clickers (personal response units) to each class. The channel of the clickers in this class is **45**. Answers to clicker questions will contribute to extra credit, which can make up to 5% of the total from your other assignments.

Please register your clickers for this course using Blackboard. Your responses to exercises do not count if you have not registered your clicker for the course. The course you should register your clicker is:

phys222a-sp2015merged: PHYSICS 222-Mannik SP2015 Merged

Click first on this course heading, then choose "Tools" from the left top corner. Next click to "TurningPoint Registration Tool" and then enter your reponse device ID which is on the back side of the device. You can find detailed instructions how to register your clicker under Course Materials. Look for item "Instructions for Clicker Registration" and open file "RespondCardRegisration.pdf".

Class participation

Participation in the class is not taken but clicker exercises can earn you extra credit. It is expected that you read the relevant textbook material before the class to be able effectively participate in the class and to do clicker exercises.

Labs

While laboratory work will be graded by each Lab Instructor independently, an effort will be made to ensure a uniform grading policy between different laboratory sections. Laboratory make-ups are entirely at the lab instructor's discretion and arrangements for such must be made with the lab instructor.

Lab Instructors and Schedules

Laboratory is room 508 and recitations in room 608 or 510 in Nielsen Physics Building.

CRN	Section	Lab	Recitation	TAs name	TAs e-mail
23890	11	W 1:25-3:20	W 12:20-1:10	Brandon Becker	bbecker7@vols.utk.edu
23892	12	R 3:35-5:30	R 2:30-3:20	Mostafa Hussein	mhussei3@utk.edu
23893	13	W 7:45-9:35	W 6:45-7:35	Eric Stacy	estacy@vols.utk.edu
23894	14	W 3:35-5:30	W 2:30-3:20	Mostafa Hussein	mhussei3@utk.edu
23895	15	F 1:25-3:20	F 12:20-1:10	Jeffrey Garcia	jgarcia1@vols.utk.edu
23896	16	W 9:05-11:00	F 8:00-8:50	Jeffrey Garcia	jgarcia1@vols.utk.edu
27865	17	F 9:05-11:00	F 8:00-8:50	Brandon Becker	bbecker7@vols.utk.edu
27866	18	R 7:45-9:35	R 6:45-7:35	Eric Stacy	estacy@vols.utk.edu

The laboratory manual for Physics 221 is Contemporary Introductory Physics Experiments by James E. Parks, Hayden-McNeil Publishing, ISBN 978-0-7380-6168-9. This manual is available at the UT Book and Supply Store. **The manual is mandatory.**

You can find the schedule of labs at:
http://www.phys.utk.edu/labs/Spring%202015%20Room%20510%20Schedule.pdf

Exams

There will be three one-hour, in-class tests, on **Jan. 29, Feb. 26** and **Apr. 2**, and a Final Exam during the exam period on **May. 5 (8:00 am – 10:00 am)**. Of three tests the two best ones count for your grade. Because one test may be missed without direct penalty, make-up tests will not be given. Hour tests will be closed book, but a list of useful equations may be provided. If there is a concern about a grade given on an exam or exam question, an appeal can be made for one week after the graded exams are returned to the class. Grade appeals must be written and returned to the professor along with the graded exam for his consideration.

Preliminary Schedule

Date	Topic	Chapter
Jan. 8	Intro, Electric Forces and Fields	Chapter 15
Jan. 13	Electric Forces and Fields	Chapter 15
Jan. 15	Electrical Energy and Capacitance	Chapter 16
Jan. 20	Electrical Energy and Capacitance	Chapter 16
Jan. 22	Current and Resistance	Chapter 17
Jan. 27	Current and Resistance	Chapter 17
Jan. 29	Test	
Feb. 3	Direct-Current Circuits	Chapter 18
Feb. 5	Direct-Current Circuits	Chapter 18
Feb. 10	Magnetism	Chapter 19
Feb. 12	Magnetism	Chapter 19
Feb. 17	Induced Voltages	Chapter 20
Feb. 19	Alternating Current Circuits	Chapter 21
Feb. 24	Alternating Current Circuits	Chapter 21
Feb. 26	Test	
Mar. 3	Reflection and Refraction	Chapter 22
Mar. 5	Reflection and Refraction	Chapter 22
Mar. 10	Mirrors and Lenses	Chapter 23
Mar. 12	Mirrors and Lenses	Chapter 23
Mar. 24	Optical Instruments	Chapter 25
Mar. 26	Optical Instruments	Chapter 25
Mar. 31	Wave Optics	Chapter 24
Apr. 2	Test	
Apr. 7	Relativity	Chapter 26
Apr. 9	Quantum Physics	Chapter 27
Apr. 14	Atomic Physics	Chapters 28
Apr. 16	Atomic Physics	Chapters 28
Apr. 21	Nuclear Physics and Applications	Chapters 29&30
Apr. 23	Nuclear Physics and Applications	Chapters 29&30
May 5	Final Exam	

Note that except tests and the final exam some dates in this schedule may change.

Grades

Two tests (the best of three) count 15% of final grade and the Final Exam is worth 30%. Homeworks are worth 15% points. All lab reports together are worth 25%. Clicker exercises in the class count as an extra credit with a maximum of 5%.

In each part

90% and above A
87% - 89% A-
83% - 86% B+
80% - 82% B
77% - 79% B-
73% - 76% C+
70% - 72% C
67% - 69% C-
63% - 66% D+
60% - 62% D
57% - 59% D

In some tests/assignments scaling may apply. Scaling will not lower your grade.

Announcements: For announcements check the Class Pages on Blackboard regularly.

If you need course adaptations or accommodations because of a documented disability, please contact the Office of Disability Services (ODS). This will ensure that you are properly registered for the services provided by ODS.

Disability Services
2227 Dunford Hall
Knoxville, TN 37996-4020
Phone: (865) 974-6087 (v/tty)
Fax: (865) 974-9552
Email: ods@utk.edu
Website: http://ods.utk.edu/