

General Physics w/calculus II (PH 112), Fall 2004

Instructor: Dr. Abdalla M. Elsamadicy
Office: Optics Building, Rm 246
Office hours: MWF 9:00-11:30
or by appointment

Phone: 824-2842
Class hours: MWF 2:55-3:50
Room: MSC 100
Email: elsamaa@email.uah.edu

Students enrolled in this class are strongly advised to make use of the extra help provided through our Physics Department Success Center, Optics Building Rm 200. Tutors will not solve your homework, but they will help you to understand the material better. Operating hours are 11:00 am- 5:00 pm every day. Phone: 824-2476

Text

Fundamentals of Physics, 7th edition, by Halliday, Resnick and Walker. John Wiley & Sons, Inc., NY.

This course is calculus-based introduction to physics. During this term we will study thermodynamics, electricity, and magnetism, covering chapters 18-33 in our text.

GRADING POLICY

Course grade will be computed as follows:

Final	30 %
Midterm	20 %
9 Weekly Quizzes	20 %, <i>There is no make up for a missed quiz</i>
Assignments	20 %
Attendance	10 %

Will drop the lowest two quiz grades.

Letter grades will be assigned as follows:

A = (85:100), **B** = (70: < 85), **C** = (55: < 70), **D** = (40: < 55), **NC** = Below 40

HOMEWORK

Homework assignments are due as indicated on the attached assignment schedule.

EXAMS:

I will supply equation sheet on the midterm exam and the final exam. Makeup exams will only be given for absences with an approved written excuse.

ONLY CALCULATORS, WHICH DO NOT, STORE EQUATIONS WILL BE ALLOWED DURING EXAMS.

SOLUTION SETS

After the homework due date, solutions to homework assignments will be available for check out from the Physics Department Success Center or from me.

ATTENDANCE

As stated in the UAH catalog: “Students at the University of Alabama in Huntsville have the following academic responsibilities:

(2). To attend all meetings of each class in which they are enrolled. Instructors will announce at the beginning of the semester if they consider attendance in computing final grades.”

Attendance will be taken and will count in the final determination of your Grade! It is a well-known fact that students who skip class do poorly on exams and quizzes and therefore receive bad grades.

ACADEMIC HONESTY

Again the UAH catalog state: “Students at the University of Alabama in Huntsville have the following academic responsibilities:

(6) To maintain the integrity of the classroom by practicing academic honesty. Students should refer to the student handbook for details regarding academic dishonesty. Plagiarism and other forms of cheating are subject to penalties as outlined in the student handbook.”

COMPLAINT PROCEDURE

If you have difficulties or complaints related to this course, your first action usually should be to discuss them with the instructor of the class. If such a discussion would be uncomfortable for you or fails to resolve your difficulties, you should contact Professor Hillman, Chair of the Department of Physics. Professor Hillman's office is 201. His telephone number is 824-2481. If you still are unsatisfied, you should discuss the matter with Dr. Debra Moriarity, Associate Dean of the College of Science. Dean Moriarity's office is MSC 207 Materials Science Building.

STUDENTS WITH DISABILITIES

I would like to hear from anyone who has a disability that may require a modification of seating, testing, or other class procedures. Please see me after class or during my office hours to discuss appropriate modifications.

PROBLEM-SOLVING SESSIONS

There will be problem-solving sessions. Time and place will be determined. The graduate teacher assistants of this course will conduct it. It is not mandatory, but I encourage everyone to attend.

HOMEWORK ASSIGNMENTS

Homework assignments and due dates are posted on the class web page.

You should do all of the assignments several times, to ensure that you fully understand the material. Afterwards, I recommend that you do the assignments once more, just in case.

CLASS SCHEDULE

DATE	CHAPTER
1- August 30	Administrative class
2- September 1	18- Temperature, Heat, 1 st law
3- September 3	Continue Temperature, Heat, 1 st law
4- September 6	NO CLASS
5- September 8	Continue Temperature, Heat, 1 st law
6- *September 10	19- Kinetic Theory of Gases
7- September 13	Continue Kinetic Theory of Gases
8- September 15	Continue Kinetic Theory of Gases
9- September 17	20- Entropy, 2 nd law of thermodynamics
10- September 20	Continue Entropy, 2 nd law of thermodynamics
11- *September 22	21- Electric Charge
12- September 24	22- Electric Fields
13- September 27	Continue Electric Fields
14- September 29	Continue Electric Fields
15- *October 1	23- Gauss, Law
16- October 4	Continue Gauss, Law
17- October 6	Continue Gauss, Law
18- October 8	NO CLASS
19- *October 11	24- Electric Potential
20- October 13	Continue Electric Potential
21- October 15	REVIEW FOR MIDTERM EXAM
22- October 18	MIDTERM EXAM
23- October 20	25- Capacitance
24- October 22	Continue Capacitance
25- *October 25	26- Current and Resistance
26- October 27	Continue Current and Resistance
27- October 29	27- Circuits
28- November 1	Continue Circuits
29- November 3	Continue Circuits
30- *November 5	28- Magnetic Fields
31- November 8	Continue Magnetic Fields
32- November 10	Continue Magnetic Fields
33- *November 12	29- Mag. Fields due to Currents
34- November 15	Continue Mag. Fields due to Currents
35- November 17	Continue Mag. Fields due to Currents
36- *November 19	30- Induction and Inductance
37- November 22	Continue Induction and Inductance
38- November 24	NO CLASS
39- November 26	NO CLASS
40- November 29	Continue Induction and Inductance
41- *December 1	31- EM Oscillations and AC current.
42- December 3	Continue EM Oscillations and AC current.
43- December 6	32 Maxwell's Equations, Magnetism of matter.
44- December 8	Continue Maxwell's Equations, Magnetism of matter.
45- December 10	Review & evaluation (Last class meeting)
46- December 13	Final Exam (3:00 pm - 5:30pm)

*Quiz day

GOOD LUCK.

Syllabus Physics 115

Scope of Course:

PH 115 is an independent, 1 credit hr. lab course normally taken in parallel with PH 112. The lab course includes the experimental study of gas laws, heat and temperature, and a major emphasis on electricity and magnetism. The sequence of experiments is arranged in the same order as the topics are normally covered in the lecture course. You'll continue to practice skills such as error analysis, basic statistics and plotting of data. This term you'll be assembling electrical circuits and use a variety of instruments to measure electrical and magnetic quantities.

Lab Manual: The manual is locally published and is available in the bookstore.

Location and Length: PH 115 meets in room 226, Wilson Hall. The scheduled lab period is 2 hours.

Instructor:

The instructor is Dr. Abdalla M. Elsamadicy. A graduate teaching assistant will assist him. Dr Elsamadicy along with the TA will announce their office hours and where they will be. The TA is responsible for explaining the lab experiment, conducting the lab class, grading your written reports and Dr. Elsamadicy will keep the records to determine your semester grade.

Complaint Procedure:

If you have difficulties or complaints related to this course, your first action usually should be to discuss them with Dr. Elsamadicy, the Physics Lab Coordinator. He may be contacted in room 246 Optics Bld., by phone at 824-2842, or by email at elsamaa@email.uah.edu. If such a discussion fails to resolve your difficulties, you should contact Professor Lloyd W. Hillman, Chair of the Department of Physics. Professor Hillman's Office is RM 201 in the Optics Building, 824-2481 and email is HillmanL@UAH.edu. If you are still unsatisfied, you should discuss the matter with the Associate Dean of the College of Science. The Associate Dean's office is MSC207 in the Material Science Connector Building.

Students with Disabilities

Anyone who has a disability that may require a modification of seating, testing, or other class procedures, please see the lab instructor after class or during office hours to discuss appropriate modifications.

Lab Goals: The major goals of this lab course are to give you, direct experience with physical phenomena, experience in connecting the real world to concepts and theories, and an introduction to the art of experimentation and measurement.

Grading and Attendance:

Semester grades are based on the individual grades for 9 weekly experiments. Therefore, your attendance and actually doing all scheduled experiments is absolutely essential. Should you have a valid, excused absence, please arrange a time with your lab instructor to perform the make-up lab as soon as possible.

Experiments:

The schedule of experiments is posted at the entrance to the lab room.

SCHEDULE for PH LAB 115

DATE	EXP. No.	TITLE
Aug. 30 – Set. 3		No Lab
Sep. 6 – 10	115 - 1	Boyle's Law [A]
Sep. 13 – 17	115 - 2	Specific Heat [A]
Sep. 20 – 24	115 - 3	Electric Field [A]
Sep. 27 – Oct. 1	115 - 4	Potential and Capacitance
Oct. 4 – 8	-----	No Lab
Oct. 11 – 15	115 - 5	Circuit Basics
Oct. 18 – 22	-----	<u>Mid-term Exam.</u>
Oct. 25 – 29	115 - 7	Ohm's Law [A]
Nov. 1 – 5	115 - 8	RC Circuits [A]
Nov. 8 – 12	115 - 10	Tangent Galvanometer
Nov. 15 – 19	115 - 11	Induced emf & Inductance[A]
Nov. 22 - 26		No Lab
Nov. 17 – Dec. 3		<u>Final Exam.</u>