

BOROUGH OF MANHATTAN COMMUNITY COLLEGE

The City University of New York

Department of Science

TITLE: UNIVERSITY PHYSICS I Course Code PHY 215, Section 521
Lecture Hours Per Week 4
Laboratory Hours Per Week 2
Credits 4

Instructor Dr. Hulan E. Jack Jr.

Websites:

General <http://www.hejackjr.com>
Only for class <http://www.hejackjr.com/phy215.html>
Class e-mail PHY215@hejackjr.com

DESCRIPTION

This is the first part of a two-semester sequence in calculus-based physics. Topics include; motion, mechanics, fluids, simple harmonic motion, and heat and thermodynamics.

COREQUISITE: MAT 301

Fall 2003

OBJECTIVES

1. To provide a broad, rigorous introduction to physics at the beginning college level for students who are currently learning elementary calculus.
2. To aid the student in developing physical intuition and problem-solving skills.
3. Learn the art and science of solving problems in a learning and communicative manner - setup, strategy, diagrams.

TEXTS: *Physics for Scientists and Engineers*, 5th Edition; by Raymond A. Serway and Beichner Saunders, 1996 <http://www.saunderscollege.com/physics/>
Physics Laboratory Experiment 5th Edition by Jerry D. Wilson, D. C. Heath and Company, 1998

Supplementary Notes:

Preview, Review, Summary - University Physics I, (PRS) ; Hulan E. Jack Jr.

MEETINGS

Tuesday	5:30 PM to 7:10 PM	Rm N682	Lecture & Quiz
Thursday	5:30 PM to 7:10 PM	Rm N515	Lab, Lecture, Quiz or Exam
Thursday	7:30 PM to 9:10 PM	Rm N519	Lecture & Quiz

THIS IS A CONTRACT

Read Carefully

1. GRADES

A. TERM SETUP

The course is in two parts, BOOT CAMP or BASIC TRAINING for seven (7) weeks and REGULAR for the remaining eight (8) weeks.

BOOT CAMP This is training into my expectations and methodologies. There are

1. **eight (8) quizzes** (15-20 minutes),
2. **one (1) traditional in class laboratory experiments** are performed during th last six weeks of the term in the Th 5:30 PM -7:10 PM sessions.
3. a full period "**Final**", actually it's a mid-term.

The Regular Term This is a continuation of Boot Camp. But now you know and are practiced in my expectations and methodologies. There are

1. **eight (8) 15-20 minute quizzes** are give during this part of the course.
2. **four (4) traditional in class laboratory experiments** are performed during th last six weeks of the term in the Th 5:30 PM -7:10 PM sessions.
3. **The Final** (full period).

Note: A quiz can cover any previous material and material for that day's discussion, including anything from past DOITs and labs.

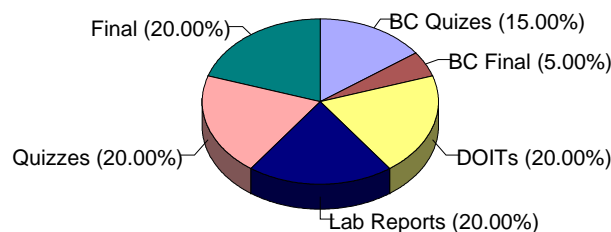
B. Your Grade will be determined as follows:

BOOT CAMP Total 20%

Quizzes (best 3 of 6)	15%
BOOT Camp Final	5 %

REGULAR Total 40%

Quizzes (best 4 of 8)	20%
Final Exam	20%



DOIT Reports	20%
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Labs (formal reports)(best 4 of 5)	20%	<u>MUST BE IN WITHIN 2 WEEKS</u>
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Grand Total 100%

BONUS POINTS

+5 You can up to 5 bonus (extra) points for doing problems of the board before class starts, at the rate of ½ point per problem.

C. Details of Grade Determination

DOITs	It takes 8 reports to get all 15%	
Grade =	$0.7 * (\text{Sum of Best 5})/5 + 0.3 * (\text{Sum of Next 3})/3$.	
BCQuizzes	Best 4 out of 8 (min of 5)	Best 4 of 4 or less
Grade =	$1.0 * (\text{Sum of best 2})/2$	$0.7 * (\text{Sum of best 4})/4$
Quizzes	Best 4 out of 8 (min of 5)	Best 4 of 4 or less
Grade =	$1.0 * (\text{Sum of best 4})/4$	$0.7 * (\text{Sum of best 4})/4$
LABs	Best 4 out of 5 (min of 4)	Best 3 of 3 or less
Grade =	$1.0 * (\text{Sum of best 4})/4$	$0.7 * (\text{Sum of best 3})/3$

** To avoid abuse of this system note that the grade drops when you turn in less than the specified number of reports or quizzes.*

D. SOME FINAL ISSUES

- 1. TO GET A GRADE OF INC. YOU MUST HAVE TURNED IN AT LEAST 6 DOITs , HALF THE LAB REPORTS AND HAVE TAKEN AT LEAST HALF OF EACH GROUP OF QUIZZES.**
- 2. There no makeups excepts for Finals (Boot Camp and regular).**
- 3. No work, except Lab Reports, accepted after Tuesday Dec. 2, 2003.**

2. REPORTS

SUBMIT EACH REPORT SEPATELY.

DO NOT STAPLE DIFFERENT REPORTS TO EACH OTHER!!!

A. LAB REPORTS - Read this whenever doing a lab report

- 1. Students are expected to submit a formal lab report on the Tuesday following each lab. This allows at least one weekend to do the report.**
- 2. Every formal lab report must have the following format :**

Item	Name	Description	Comments	Size	Points
1	Objective	Why am I doing this? What do I seek to explore.	In your own words	1 to 3 paragraphs	5 pts
2	Theory	A description and discussion of the theory.	ELECTRO STATIC COPY (XEROX)	1 to 3 pages	10 pts
3	Methods	Description of the methods and equipment used. Include sketch of apparatus and equations used		1 to 3 pages	10 pts
4	Data	Listing of the data acquired	Copy of group data	1 to 3 pages	10 pts
5	Calculations	Show details of <i>EVERY</i> (ALL) calculation(s) you did.	Your own work	1 to 3 pages	20 pts
6	Questions	Answer all questions in lab sheet.	Your own work	1 to 3 pages	25 pts
7	Conclusions	How well did the experiment match the theory? What caused the differences? List % differences between your measured values and theoretical or accepted values. List the things that did or could have caused substantial errors.	In your own words	1 to 3 paragraphs	10 pts

3. ***ANY REPORT TURNED IN WITH ANY ONE OF THE SEVEN PARTS COMPLETELY MISSING WILL BE AWARDED A FINAL, NON-NEGOTIABLE, UNCHANGEABLE GRADE OF 0 (ZERO)!***

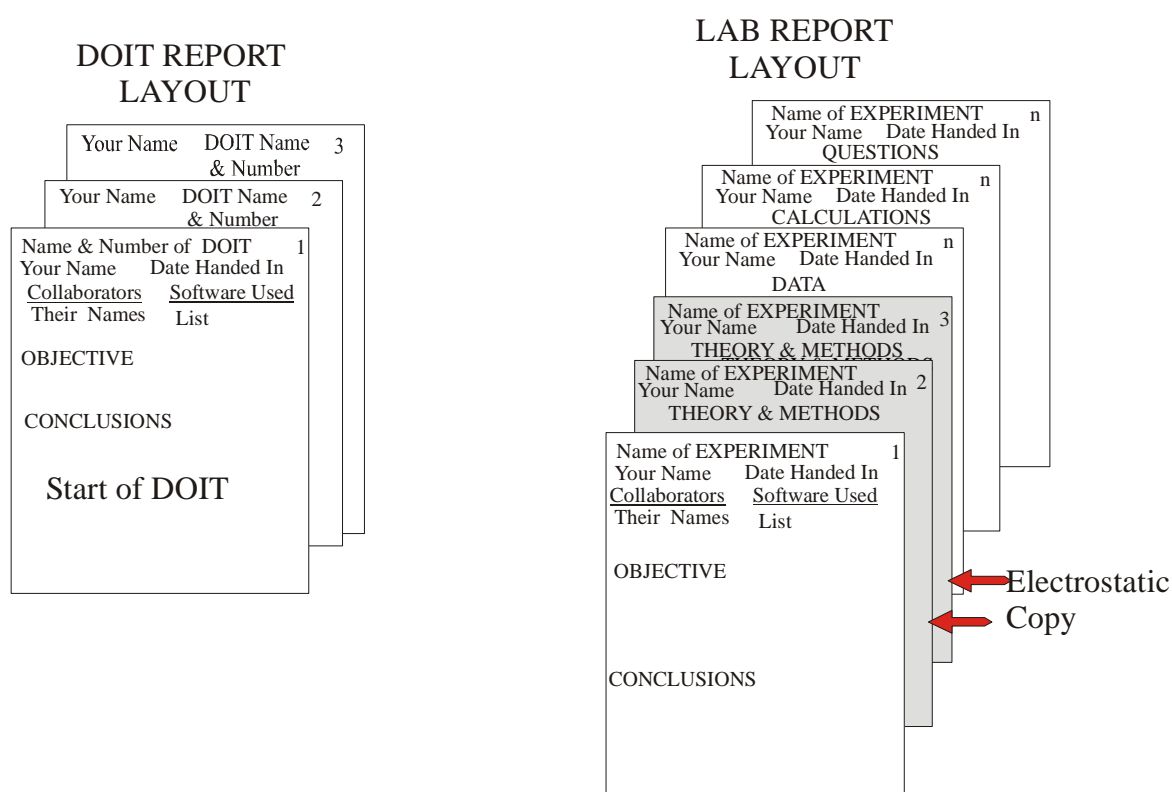
B. DOIT REPORTS - *read this whenever you are doing DOIT reports*

Every DOIT report submitted for grade must follow this layout.

Item	Name & Description	Size	Points
1	Objective - why am I doing this? What do I seek to explore, discover or understand.	1 to 3 paragraphs	5 pts
2	INCLUDE quantitative definitions of entities under study and any appropriate relationships.	1/4 to 1 page	20 pts.
3	Diagrams with short explanations	1/2 to 1 page	20 pts
4	Observations - Data	1/2 to 2 pages	20 pts
5	Brief discussion covering interpretation of your findings and conclusions in terms of your objectives.	1/2 to 2 pages	25 pts

DOIT reports will typically run from as little as 2 pages to no more than 6 pages, except DOIT 1-2.

C. NOTE REPORT LAYOUTS This is what they **must** look like!



D. ADDITIONAL ISSUES FOR LAB REPORTS AND DOITs

a. ANSWERING QUESTIONS AND MAKING ARGUMENTS

Physics is a quantitative and rational subject. Hence when answering questions or making arguments, the appropriate equations (definitions, relationships, etc.) **must** be included, physical laws **must** be referenced when appropriate, and explanatory diagrams **must** be included when appropriate.

b. USE OF SOFTWARE FOR CALCULATIONS

I strongly recommend that in your lab reports and DOITs you use mathematical software such as spreadsheets, Mathematica, Maple, Matlab, Mathcad. If you do, list software you used on the first page of your report.

c. COLLABORATION

Collaboration, working with others, is strongly recommended. If you work with others on lab reports or DOITs, be sure to list their names as “Collaborators” on the top of the first page under your name. If I find too much identical work by different students without being listed as “Collaborators” I will assume plagiarism with all of the consequences.

d. NEATNESS AND APPEARANCE OF SUBMITTED REPORTS - 10 POINTS

Notice that the point distribution for both Lab and DOIT reports account for 90 points out of 100. The remaining 10 points are for neatness and appearance of the report. In any written report you are supposed to be communicating ideas, information, and developing and supporting

arguments. Appearance and neatness are critical in achieving these goals.. In addition, appearance and neatness convey to the reader how you feel about yourself, your work and the reader. Sloppy work says negatives about all. For appearance and neatness the report must satisfy the following criteria:

NEATNESS AND APPEARANCE

	Required	Not Acceptable (will be returned without grade)
1	Strictly conform to the layout pictures on page 5	If any are missing
2	Multi sheet reports stapled.	FOLD OVER&TEAR or Paper clips
3	Multi sheet reports must be in order.	Out of order
4	Legible writing	Illegible writing

e. **LATENESS PENALTIES**

For all reports there will be a lateness penalty of 10 points for each 2 weeks over due.

3. **STUDY AIDS**

A. **CHEAT SHEETS**

During all quizzes and exams you are allowed to use a **HAND WRITTEN** cheat sheet consisting of both sides of two 8.5" x 11" sheets. **It will be turned in with the quiz or exam and returned with the graded paper. ANYTHING MORE IS CHEATING!!!**

A **HAND WRITTEN** Cheat Sheet is a study and exam aid consisting of ideas, concepts, diagrams, formulae and whatever that help to you understand those items that you are not only uncomfortable with, but with which you experience some desperation. This sheet should be a moving target. As topics and time go by, old items should be falling off because you have a handle on them. Use it when studying, when doing problems. Remove items when you no longer need them. Carry it with you at all times to look at, think about and play with the ideas wherever you are.

B. **TAPE RECORDING**

I very strongly recommend that you tape all classes. For one, everything that I put on the board is repeated several times during the discussion and dialogue. So, if you have missed anything in your notes, then you have a description on tape, Also you have a record of all questions, discussions and dialogues that you may not have paid particular attention at the time because it was not relevant to your thoughts at that moment because you were stuck on an earlier point. You may raise issues with the participants on your next meeting, in class, in person, by telephone, or by e-mail.