

PRINCE SULTAN UNIVERSITY
Department of Mathematics and General Sciences
Physics I (PHY105) SYLLABUS
Term 151



Textbook: College Physics, by Serway & Vuille, 9th Edition, Brooks/Cole (2012).

Lab Manual: General Physics Laboratory Manual: Mechanics, by Hazem Abu-Farsakh.

Goals:

- To increase the understanding of natural phenomena and laws
- To develop physical curiosity and critical thinking skills
- To enhance investigative and observational skills
- To enhance problem solving strategies and techniques
- To enhance communication skills

Objectives:

- To become familiar with the basic physical principles and concepts in Mechanics.
- To be able to deal with vector quantities, calculate components and resultants.
- To be able to apply the general equations for uniformly accelerated objects in one and two dimensions.
- To be able to apply Newton's laws of motion.
- To understand the concepts of work, kinetic energy, potential energy, conservation of energy, and conservation of momentum.
- To become familiar with rotational motion and rotational energy

Grading:

Different class assessment techniques will be used. A total of 100 points will be distributed as follows:

- **Exams:** Two major exams: 15 points *each*
Final *comprehensive* exam: 40 points
- **Quizzes:** 10 points
- **Laboratory:** 20 points (10 for lab reports, and 10 for lab final exam)

Important Notes:

- *There will be no make-ups for quizzes missed by the student.*
- *Major exam make-up may be possible only after a legitimate reason, approved by the office of student affairs.*
- *If you miss more than 4 labs you will get zero in your total lab mark.*

Attendance and Absences:

- Attendance will be taken within 5 minutes of the start of the class. You will be considered absent if you arrive later.
- A “DN” Grade will be automatically issued to the student who misses 16 lectures for 3 classes per week sections including excused absences (or 11 lectures for 2 classes per week sections). After that he will not be allowed to attend..
- There will be no makeups for the lectures missed by the student.

Learning Management System (LMS):

We will use LMS throughout this course for several purposes,

- 1- Exchanging information (announcements and other details)
- 2- Downloading files (lectures, presentations, homeworks, exercises, solutions, ...)
- 3- Communicating (email, forums, announcements, calendar, ...).

Please make sure that you can login to the LMS website (<https://lms.psu.edu.sa>) (note the https not http), and that the course PHY105 is among your courses and you can access it. If you have any access issues please contact the responsible person.

Classroom Policy:

For the benefit of your fellow students and your instructor, please practice common courtesy with regard to all course interactions. For example:

- Be considerate toward your classmates and instructor, arrive to class on time and do not leave early.
- Avoid classroom distractions. Be attentive, stay awake, and take notes.
- If you must leave early please inform your instructor in advance (enter or leave quietly, don't walk across the front of the classroom)
- ***Cell phones must be turned off during class.***

Additional Reading:

- 1- *Physics*. James Walker. Pearson/Addison-Wesley.
- 2- *Fundamentals of Physics*. Halliday, Resnick, and Walker. John Wiley & Sons, INC.
- 3- *Physics for Scientists and Engineers*, Serway & Jewett. Brooks/Cole.

Lecture Schedule (Tentative) & Exams Dates

Week #	Date	Chapter & Topic/ Sections	Notes
1	August 23–27	<i>Ch. 1: “Introduction” Sections 1.1, 1.3, 1.4, 1.5</i>	
2	August 30 – Sep. 03	<i>Ch. 2: “Motion in One Dimension”</i>	
3	September 06 – 10	<i>Ch. 3: “Vectors and Two Dimensional Motion”</i>	
4	September 13 – 17	<i>Ch. 3 continued</i>	
Haj Vacation : September 18 - 28			
5	September 29 – Oct. 01	<i>Ch. 3 continued</i>	
6	October 04 – 08	<i>Ch. 4: “The Laws of Motion”</i>	
7	October 11 – 15	<i>Ch. 4 continued</i>	
First Major Exam – Tuesday, October 13 , 6:00 PM , Auditorium			
8	October 18 – 22	<i>Ch. 4 continued</i>	
9	October 25 – 29	<i>Ch. 5: “Energy”</i>	
10	November 01 – 05	<i>Ch. 5 continued</i>	
11	November 08 – 12	<i>Ch. 6: “Momentum and Collisions” Sections 6.1 to 6.4</i>	
12	November 15 – 19	<i>Ch. 6 continued</i>	
13	November 22 – 26	<i>Ch. 7: “Rotational Motion” Sections 7.1 to 7.4</i>	
Second Major Exam , Tuesday, November 24 , 6:00 PM , Auditorium			
14	November 29 – Dec. 03	<i>Ch. 7 continued</i>	
15	December 06 – 10	<i>Ch. 8: “Rotational Equilibrium” Sections 8.1 to 8.5</i>	
16	December 13 – 17	<i>Ch. 8 continued</i>	
	December 20 – 21	<i>Final Exam Preparation Period</i>	
Final Exams : December 22 – January 07			