Prince Sultan University

General Science Department

First Semester 2017 - 2018

INSTITUTIONAL COURSE SYLLABUS

Course Code: PHY105	Course Title: PHYSICS I
Course Instructor: Dr. Muaffaq Nofal	Email: m_nofal@psu.edu.sa
Credit Hours: 4	Lectures: 9 - 10 Sunday, Tuesday, Thursday 8 - 9:15 Monday, Wednesday 1 - 2:15 Monday, Wednesday
Office Hours: 8 -9 Sunday, Tuesday, Thursday 2:15 - 4 Monday, Wednesday	
Office : E 336	

I. Course Description: This course introduces the principles of mechanics, energy and heat. The course covers physics and measurements, motion in one dimension, vectors, motion in two dimensions, laws of motion, circular motion and other applications of Newton's laws, work and energy, potential energy and conservation of energy, temperature and heat. The emphasis in this course is cultivating an understanding of natural phenomena through direct observation, reasoning and application of this knowledge.

II. Course Learning Outcomes

Skills	Course Learning Outcomes	Measured by
Knowledge	1. Describe basic physical quantities in mechanics and heat.	
Cognitive Skills	1. Calculate physical parameters associated with thermal properties of matter. 2. Calculate various physical quantities using kinetic equations. 3. Apply Newton's laws of motion to solve various physical problems. 4. Solve physical problems using conservation laws.	
Interpersonal Skills & Responsibility	1. Demonstrate basic experimental skills by setting	

	up experiments, carrying out experimental procedures, and reporting properly the results.	
Communication, Information Technology, Numerical	1.	
Psychomotor	1.	

III. Course Content or your weekly schedule

Week #	Date	Chapter & Topic/ Sections	Notes
1	September 17 – 21	***Ch. 1*****:** "Introduction to Physics" (Sec. 1.1 to 1.7)	
2	September 24 – 28	***Ch. 2*****:** "One Dimensional Kinematics" (Sec. 2.1 to 2.7)	
3	October 01 – 05	***Ch. 2****: continued*	
4	October 08 – 12	***Ch. 3*****:** "Vectors" (Sec. 3.1 to 3.5)	
5	October 15 – 19	***Ch. 4*****:** "Two Dimensional Kinematics" (Sec. 4.1 to 4.5)	
6	October 22 – 26	***Ch. 5*****:** "Newton's Laws of Motion" (Sec. 5.1 to 5.7)	
7	October 29 – Nov. 02	***Ch. 6*****:** "Applications of Newton's Laws" (Sec. 6.1 to 6.5)	
First Major Exam: Monday, October 30 , 6:00 PM , Auditorium			
8	November 05 – 09	***Ch. 6*****:** *continued*	
9	November 12 –16	***Ch. 7*****:** "Work and Kinetic Energy" (Sec. 7.1 to 7.4)	
10	November 19 –23	***Ch. 8****:* "Potential Energy and Conservation of Energy" (Sec. 8.1 to 8.4)	
11	November 26 – 30	***Ch. 8*****:** *continued*	
12	December 03 – 07	***Ch. 9*****:** "Linear Momentum and Collisions" (Sec. 9.1 to 9.6)	
13	December 10 – 14	***Ch. 10*****:** "Rotational Kinematics" (Sec. 10.1 and 10.3)	
Second Major Exam: Monday, December 11 , 6:00 PM , Auditorium			
14	December 17 – 21	***Ch. 11*****:** "Rotational Dynamics & Static Equilibrium" (Sec. 11.1 and 11.3)	
15	December 24 – 28	***Ch 12*****:** "Temperature and Heat" (Sec. 12.1, 12.2, 12.3, 12.5, 12.6)	
Final Exams : December 30 - January 11			

IV. Course Components

Component	Contact Hours
Lecture	45
Tutorial	0
Practical/Field	15

V. Teaching Strategies

Domain	Strategy
Knowledge	In class quizzes
Cognitive Skills	Questions and debates during the class directed to students Exams Quizzes
Interpersonal Skills & Responsibility	Questions during the class directed to students Individual discussions
Numerical & Communication Skills	Individual discussions

VI. Course Requirements

1-Two major exams during the semester and one final comprehensive exam at the end of the semester
2- Quizzes
3- Weekly lab report
4- Final lab practicel exam.
5- Final lab written exam.

VII. Student Assessment

A. Assessment Task

Domain	Assessment Task
Knowledge	Major Exams and Quizzes
Cognitive Skills	Major Exams and Quizzes
Interpersonal Skills & Responsibility	Lab Reports and Lab Practical Exam
Numerical & Communication Skills	Lab Reports and Lab Practical Exam

B. Schedule of Assessment

Assessment	Assessment Task	Week Due	Proportion of Final Assessment
1	First Major Exam	7	15%
2	Second Major Exam	12	15%
3	Final Exam	16	40%
4	Lab Final Exam	15	10%
5	Lab Reports	Weekly	10%
6	Quizzes	4 and 9	10%

VIII. Learning Resources

A. References - required text, essential references, recommended books, electronic materials, web sites and other learning materials. Please indicate proper bibliographic entry).

Textbook: James S. Walker, Physics, Technology Update, Fourth Edition, Pearson International Edition, 2013

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

Additional Reading:

1- Principles of Physics, Serway & Jewett. Fourth Edition. Brooks/Cole, 2005 -1
2- College Physics, Nicholas Giordano. Second Edition Brooks/Cole, 2013 -2

B. Facilities Required - lecture room, computing resources, laboratories, others)
Classrooms (capacity 30 students)
Physics lab (capacity 15 students)
PC, data show with Star board
Lab Equipments

C. Learning Management System – website address, instructions, required participation, etc.
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.