PRINCE SULTAN UNIVERSITY
Department of Mathematics & Science
Physical Science (SCI101) SYLLABUS
Term 151

Instructor Information:

Textbook:

- ***Conceptual Physical Science Explorations*. Hewitt, Suchocki, and Hewitt. Second Edition. Pearson/Addison Wesley (2010).**

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:

The student is expected to become familiar with basic physical principles and concepts in mechanics and fluids. A *conceptual* rather than mathematical approach will be used. Specific objectives include:

- To understand various aspects in the motion of uniformly accelerated objects.
- To become familiar with Newton's laws of motion
- To understand the concepts of work, energy, kinetic energy, potential energy, the conservation of energy
- To become familiar with several concepts in fluid mechanics, such as fluid pressure, Archimedes' principle, and Bernoulli's principle.
- To become familiar with some concepts in heat and in vibrations and waves

Grading:

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

- ***Exams***: Two major exams (20 points *each*) and one final *comprehensive* exam (40 points)
- ***Quizzes and homework***: 15 points
- ***Attendance and participation***: 5 points

There will be no make-ups for quizzes missed by the student. Major exam makeup may be possible only after a legitimate excuse that must be approved by the office of student affairs.

Attendance and Absences:

- Attendance will be taken during the first **10 minutes** of class time. You will be considered absent if you arrive later.
- A "DN" Grade will be automatically issued to the student who misses more than **12 lectures**. After that he will not be allowed to attend lectures or to take exams.
- 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, mainly:

1- Exchanging information and communicating (email, forums, announcements, calendar …)

2- Downloading files (lectures, presentations, homeworks, exercise, solutions, …)

Please make sure that you can login to the LMS website (https://lms.psu.edu.sa), and that the course SCI101 is among your courses and you can access it. If you have any access issues please contact the responsible person.

Lecture Schedule (Tentative) & Exams Dates

WEEK #	DATES	CHAPTER, TOPIC & SECTIONS	
1	Aug. 23 – 27	CH2: Newton's 1st Law of Motion	
2	Aug. 30 – Sept. 3	CH2 continued	
3	Sept. 6 – 10	CH3: Newton's 2nd Law of Motion	
4	Sept. 13 – 17	CH3 continued	
5	Sept. 20 – 24	*Eid Al-Adha Vacation (Sept. 18 – 28)*	
6	Sept. 27 – Oct. 1	**Classes resume on Tuesday Sept. 29** CH4: Newton's 3rd Law of Motion	
7	Oct. 4 – 8	CH4 continued	
8	Oct. 11 – 15	CH6: Energy	**1ST MAJOR EXAM (SUN. 11/10, 4 PM)**
9	Oct. 18 – 22	CH6 continued	
10	Oct. 25 – 29	CH8: Fluid Mechanics	
11	Nov. 1 – 5	CH8 continued	
12	Nov. 8 – 12	CH8 continued	
13	Nov. 15 – 19	Selected topics: Heat	**2ND MAJOR EXAM (SUN. 15/11, 4 PM)**
14	Nov. 22 – 26	Heat continued	
15	Nov. 29 – Dec. 3	Selected topics: Waves	
16	Dec. 6 – 10	Waves continued	
17	Dec. 13 – 17	Selected topics: Chemistry	
18	Dec. 20	Dec. 20 – 21 exams preparation period Final Exams : Dec. 22 – Jan. 7	

Important Dates:

- Sept. 3: Last day for dropping courses without a permanent record
- Oct. 29: Last day for dropping courses with grade "W"
- Nov. 12: Last day for dropping all courses with grade "W"

Homework and Quizzes:

- There is a homework assignment at the end of each chapter. You are required to do the homework within a week after finishing each chapter, but you are not required to submit your homework. Your homework will be evaluated using a homework-quiz. That is, one week after finishing the chapter, you will be given a number of problems from your homework to solve in the class.
- In addition, a number of quizzes will be given to monitor student understanding and progress, and to put emphasis on important concepts.
- Homework assignments:

	Think and Explain	Think and Solve
Ch. 2	2, 5, 7, 10, 18	1, 2, 3, 4, 5
Ch. 3	1, 3, 7, 8, 10	2, 3, 4, 5, 6
Ch. 4	2, 3, 6, 7, 10	1, 2, 3, 4, 5
Ch. 6	1, 3, 8, 13, 15	2, 3, 4, 5, 6
Ch. 8	1, 7, 9, 14, 18	1, 2, 3, 4, 5

Classroom Policy:

For the benefit of your fellow student, 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
- ***Cell phones must be turned off during class.***

Additional Reading:

1. *Physics.* James Walker. 4th Edition. Pearson/Addison-Wesley (2010).
2. *Fundamentals of Physics*. Halliday, Resnick, and Walker. John Wiley & Sons, INC.