KING FAHD UNIVERSITY OF PETROLEUM AND MINERALS

DEPARTMENT OF PHYSICS

Physics 101 - General Physics I
Fall 2012 (Term 121)

Revised on 13 Oct 2012

Course Description:

The topics covered include particle kinematics and dynamics; conservation of energy and linear momentum; rotational kinematics; rigid body dynamics; conservation of angular momentum; Gravitation; simple harmonic motion; the static and dynamics of fluids.

Co-requisite: MATH 101

Textbook:

"Fundamentals of Physics", by Halliday, Resnick and Walker, **Ninth Edition**, John Wiley & Sons, Inc (2011).

Teaching Method:

The course material will be presented in *lectures* (3 hrs. per week). Problem solving techniques will be shown in *recitations* (1 hr. per week). The understanding of concepts learned in the lectures will be strengthened by *laboratory work* (3 hrs. per week). **All classes (lectures and recitation) will start from the first week. Labs will start from week #2 only. Homework questions will be posted and graded online (Blackboard).** Office hours (OH) of the instructors may better be utilized for clarifying the course material and developing problem solving skills on a regular basis. Please see the master list of OH for identifying the instructor who is available at a particular time.

Attendance:

1. A **DN** grade shall be given to the student who has 3 or more unexcused absences in the LAB.
2. A **DN** grade shall be given to the student who has more than 12 unexcused absences in lecture + recitations,
3. A **W** grade will be given to the student whose total absences (excused and unexcused) is more than 20 absences. To get this grade, the unexcused absences should be less than 13. Otherwise the student will get a **DN** grade.
4. A Student who has a valid excuse (from KFUPM clinic or Students Affairs) for his absence must present it to his instructor no later than one week following his resumption to the classes.

Assessment:

Grading Policy	%
Class Work	5
Home Work (online)	5
Lab Work	20
Major Exam I	20
Major Exam II	20
Final Exam	30
Total	**100**

Letter Grades Distribution	
$A^+ \geq 80$	$53 \leq C < 60$
$77 \leq A < 80$	$47 \leq D^+ < 53$
$73 \leq B^+ < 77$	$41 \leq D < 47$
$67 \leq B < 73$	$F < 41$
$60 \leq C^+ < 67$	

a) Class work (with average score 3.0/5):
The class score shall be derived from student's performance in quizzes/class test. The quizzes/class test will be of problem solving type.

b) Online Home work (no averaging):
Homework will be given online for each lecture. Failing to submit the homework before the deadline will result in a zero score for that particular chapter.

c) Lab work (with average score 14.0/20):
The lab score shall be derived from a combination of lab reports/quizzes. Those who have taken the lab in the previous semesters and want to carry the lab score to this semester without taking the lab, please make the petition to carry the lab grade by filling up the form available in the department office (6/110).

d) Exams:
All exams will be of multiple-choice type. A sheet of important formulae (not definitions) will be provided in all exams.

e) Upgrade:
A student who has 5 absences or less in the whole semester will be promoted to the next higher letter grade (for example from F to D or B to B+ etc.) only if his total score is one mark or less from the higher letter grade.

Make-up Exam Policy:

Student who has missed an exam (1st or 2nd) with valid excuse must present officially authorized document to the course coordinator within 3 days after the exam for a make-up. However, if you miss the Final Exam with valid excuse you will get "IC" in the course and you will take the Final Exam the following semester. If you do not have a valid excuse, the score for that exam will be zero. Personal excuses are not accepted.

Physics 101 Lecture Schedule - Fall 2012 (Term 121)

Week	Date	Topics	Chapter	Sec	Useful Links
1	01 Sept 12	Units, Changing units, Significant Figures Tutorial*	01	1-3	Sig. Figures 1
	03	Length, time, mass (powers of ten), Dimensional Analysis*	01	4-7	
	05	1-D motion, Displacement, Velocity (Average Instantaneous)	02	1-5	
2	08 Sept	Acceleration, 1-D motion with constant acceleration, Free fall.	02	6-10	Acceleration 1
	10	Vectors and scalars.	03	1-4	Components 1
	12	Adding & Multiplying Vectors	03	5-8	Adding 1
Wednesday – 12 Sept. 2012- Last day for dropping courses without permanent record					
3	15 Sept	2 & 3D motion with constant acceleration.	04	1-3	Displacement 1
	17	Projectile motion (Demo #1)	04	4-6	Projectile1,2
	19	Uniform circular motion; Relative velocity	04	7-9	Circular 1, 2
4	22 Sept	**Review**	---	---	
	24	Newton's first and second laws, FBD	05	1-4	Gravity 1
	26	Newton's third law	05	5-7	
5	29 Sept	Applications	05	8,9	Ramp 1
	01 Oct	Friction, (Demo #2)	06	1,2	Friction 1
	03	Circular Motion	06	3,5	Circular 2, 3
Sunday, 7 October 2012– First Major Exam (Chapters 1 – 6)					
6	06 Oct	**Review**	--	--	
	08	Kinetic Energy and Work	07	1-5	Spring 1
	10	Work done by Weight, Spring, power.	07	6-9	
Wednesday, 10 October 2012 - Last day for dropping courses with grade of "W"					
7	13 Oct	Potential energy	08	1-4	Pendulum 1
	15	Conservation of energy	08	5,7,8	
	17	Center of mass. (Demo # 3)	09	1-3	COM 1
Eid Al-Adha Vacation: 20 October- 2 November					
8	03 Nov	Linear momentum and its conservation (Demo # 4)	09	4-6	Conservation 1
	05	Collisions in 1-D	09	7,8	Collisions 1
	07	Collisions in 2-D (Inelastic, Elastic)	09	9-11	
9	10 Nov	Rotational motion	10	1-4	
	12	Torque	10	5-8	
	14	Work and rotational kinetic energy	10	9,10	Torque 1
10	17 Nov	Rolling (Demo # 5)	11	1-4	
	19	Angular momentum & torque	11	5-8	Rolling 1
	21	Conservation of angular momentum (Demo # 6)	11	9-11	
Wednesday 21 November 2012: Last day for withdrawal from **all courses** with grade of "W"					
11	24 Nov	**Review**	---	---	
	26	**Review**	---	---	Ang. Mom. 1
	28	Equilibrium, Examples	12	1-4	
Tuesday 27 November 2012: Second Major Exam (Chapters 7 – 11)					
12	01 Dec	Elasticity	12	5-7	Young Modulus1
	03	Newton's law of Gravitation	13	1-4	Shear Modulus 1
	05	Gravitational-potential energy	13	5,6	
13	08 Dec	Kepler's laws, Satellites	13	7,8	
	10	**Review**	---	---	Kepler 1
	12	Fluids, Measuring Pressure (Demo # 7)	14	1-4	
14	15 Dec	Archimedes principle. Demo # 7b	14	5-7	Buoyancy 1
	17	Fluid dynamics, Bernoulli's equation	14	8-10	Bernoulli 1
	19	Oscillations SHM (Demo # 8)	15	1-3	
Wednesday - 19 December 2012: Last day for withdrawal from all courses with grade of WP/WF					
15	22 Dec	Energy in SHM, Simple Pendulum (Demo # 9)	15	4-6	Pendulum 1
	24	**Review**	---	----	
	26	**Review**	---	---	
16	29 Dec	Normal Sunday Classes			
1-12 Jan. 2013: Final Exam (Chapters 1 – 15)					
Wish you a successful semester.			Dr. A. Al-Sunaidi (*Physics 101-Lecture Coordinator)*		