

**Physics 101 - General Physics I
Fall 2006 (Term 061)**

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; simple harmonic motion; the static and dynamics of fluids.

Co-requisite: MATH 101

Textbook:

"Fundamentals of Physics", by Halliday, Resnick and Walker, seventh Edition, John Wiley & Sons, Inc (2005).

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). **Lab sessions will start during the second week of the semester.** Solutions to the homework problems will be posted on the Physics 101 notice board according to the posted schedule. 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:

Attendance in lectures, recitations and labs is compulsory. It will be enforced and evaluated according to the current university regulations. A **DN** grade shall be given to the student who has 3 absences in labs or 12 unexcused absences in (lectures + recitations) or the combination of both. Student who has valid excuse for his absence must present officially authorized document to his instructor no later than one week following his resumption to the classes. Only those students who have less than 6 absences in the whole semester shall be promoted to upper grade if they reach the borderline between two grades (for example F to D or B to B+ etc.).

Grading Policy:

Class work	10%	Grades:	$A^+ \geq 80$	$53 \leq C < 60$
Lab work	20%		$77 \leq A < 80$	$47 \leq D^+ < 53$
Major Exam I	20%		$73 \leq B^+ < 77$	$41 \leq D < 47$
Major Exam II	20%		$67 \leq B < 73$	$F < 41$
Final Exam	30%		$60 \leq C^+ < 67$	
<hr/> <i>Total</i>	<i>100%</i>			

(a) **Class work (with average score 60/100):**

The class score shall be derived from student's performance in quizzes/class test. The quizzes/class test will be of problem solving type. Home works will not be collected. However, the quizzes may contain problems similar to Home work problems.

(b) **Lab work (with average score 140/200):**

The lab score shall be derived from a combination of lab reports/quizzes, and lab final exam.

(c) **Exams:**

All exams will be of multiple choice type. A sheet of important formulae (not definitions) will be provided in all exams. First Major Exam: 30/10/2006, Second Major Exam: 09/12/2006, Final Exam: ~20/01/2007. **No cell telephones are allowed in the examination rooms.**

Make-up Exam Policy:

Student who has missed an exam with valid excuse must present officially authorized document to the course coordinator within 3 days after the exam for a make-up. If not, the score for that exam will be zero. Personal excuses are not welcomed.

Please see the next pages for exam dates and homework assignment.

Week	Date	Topics	Chapter	Sections	Homework
1	09 Sept. 2006 11 13 14	Units, Changing units Length, time, mass 1-D motion, Displacement, Velocity 1-D motion with constant acceleration, Free falls.	01 01 02 02	1-4 5-7 1-5 6-10	7, 23, 57 7,29,31,43,88
2	16 Sept. 18 20	Vectors and scalars. Adding & Multiplying Vectors Review ch1-3	03 03	1-4 5-8	19,33,43,73
Tuesday – 19 Sept. 2006 - Last day for dropping courses without permanent record					
3	23 Sept. 25 27	National Holiday 2 & 3D motion with constant acceleration. Projectile motion (Demo #1)	 04 04	 1-3 4-6	 4,7,23,48,63
4	30 Sept. 02 Oct. 04	Uniform circular motion; Relative velocity. Newton's first and second laws Newton's third law	04 05 05	7-9 1-6 7,8	40,50,58,62
5	07 Oct 09 11	Applications Friction (Demo #2) Circular Motion	05 06 06	9 1-3 5	10,22,41,74
Eid Al-Fitr Vacation (12 Oct – 27 Oct 2006)					
Monday – 30 Oct. 2006 – First Major Exam (Chapters 1 – 6) 6:00 – 8:00 PM					
6	28 Oct. 30 01 Nov.	<i>Review (1-4)</i> <i>Review (1-6)</i> Kinetic energy & Work	- - 07	- - 1-5	 13,18,37,41,50
7	04 Nov. 06 08	Work done by Weight, Spring, power. Potential energy Conservation of energy	07 08 08	6-9 1-5 7,8	7,28,41,57,62
Tuesday – 07 Nov. 2006 - Last day for dropping courses with grade of W					
8	11 Nov 13 15	Center of mass. (Demo # 3) Linear momentum and its conservation (Demo #4) Collisions in 1-D and 2-D	09 09 09	1-4 5-7 8-11	32,46,62,82,89
9	18 Nov 20 22	<i>Review (ch 7 - 9)</i> Rotational motion Torque.	- 10 10	 1-4 5-8	 6,12,55,58,84,94
10	25 Nov. 27 29	Work and rotational kinetic energy Rolling (Demo #5) Angular momentum & torque	10 11 11	9,10 1-4 5-8	18,39,56,60,85
11	02 Dec 04 06	Conservation of angular momentum (Demo #6) <i>Review (ch 10 -11)</i> <i>Review (ch 7-11)</i>	11 - -	9-11 - -	
Saturday – 09 Dec 2006 – Second Major Exam (Chapters 7 – 11) 6:00 – 8:00 PM					
12	09 Dec 11 13	Equilibrium Elasticity Newton's law of Gravitation	12 12 13	1-4 5-7 1-3	23,31,37,73,75 4,15,31,43,56
13	16 Dec 18 20	Gravitational-potential energy. Kepler's laws, Satellites Fluids (Demo #7)	13 13 14	4-6 7,8 1-4	 18,22,26,41,55,69
Id al-Adha Vacation 21 Dec 06 - 05 Jan 07					
14	06 Jan 07 08 10	Archimedes principle Fluid dynamics, Bernoulli's equation. Oscillations (Demo #8)	14 14 15	5-8 9,10 1-4	 9,33,85
Wednesday – 10 Jan 2007 - Last day for withdrawal from all courses with grade of "WP/WF"					
15	13 Jan 15 17	Energy in SHM, Simple pendulum (Demo#9) <i>Review (ch 1-11)</i> <i>Review (ch 12-15) (Last day of classes)</i>	15	5,6*	
Saturday – 20 Jan. 2007 ~ Final Exam (Chapters 1 – 15)					

Wish you a successful semester.

Dr. M. S. Abdelmonem (Physics 101-Lecture Coordinator)