

PHYSICS

**Physics 101 - General Physics I
Fall 2003 (Term 031)**

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, sixth Edition, John Wiley & Sons, Inc (2001).

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 ⁺ 80	53 ? C < 60
Lab work	20%		77 ? A < 80	47 ? D ⁺ < 53
Major Exam I	20%		73 ? B ⁺ < 77	41 ? D < 47
Major Exam II	20%		67 ? B < 73	F < 41
Final Exam	30%		60 ? C ⁺ < 67	
<hr/>				
<i>Total</i>	<i>100%</i>			

(a) **Class work (with average score 6.0/10):**

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 14.0/20):**

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: 19/10/2003, Second Major Exam: 8/12/2003, Final Exam ~10/1/2004. **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.

Physics 101 Lecture Schedule Fall 2003 (Term 031)

Week	Date	Topics	Chapter	Sections	Homework
1	13 Sept.	Units, Changing units	01	1-3	12, 23, 25
	15	Length, time, mass	01	4-6	
	17	1-D motion, Displacement, Velocity	02	1-4	8,19,31,42,56
2	20 Sept.	1-D motion with constant acceleration, Free falls.	02	5-8	17,26,28,37
	22	Vectors and scalars.	03	1-4	
	24	Adding & Multiplying Vectors	03	5-7	
	25	Review (ch 1-3)			
Wednesday – 24 Sept. 2003 - Last day for dropping courses without permanent record					
3	27 Sept.	2 & 3D motion with constant acceleration.	04	1-3	4,9,15,37,57,58
	29	Projectile motion	04	4-6	
	01 Oct.	Uniform circular motion; Relative velocity.	04	7-9	
4	04 Oct.	Newton's first and second laws	05	1-5	8,38,49,50
	06	Newton's third law, Applications.	05	6-8	
	08	Friction	06	1-2	10,19,24,41
5	11 Oct	Circular Motion	06	4	7,19,22,26,31
	13	Review (ch 1-6)			
	15	Kinetic energy & Work	07	1-3	
Sunday – 19 Oct 2003 – First Major Exam (Chapters 1 – 6) 6:00 – 8:00 PM					
6	18 Oct	Work done by Weight, Spring, power	07	4-7	6,16,21,25,32
	20	Potential energy	08	1-4	
	22	Conservation of energy.	08	6,7	
7	25 Oct	Center of mass.	09	1-3	8,19,24,37
	27	Linear momentum and its conservation	09	4-6	
	29	Collisions in 1-D	10	1-3	14,17,26,33,51
Tuesday – 28 Oct 2003 - Last day for dropping courses with grade of W					
8	01 Nov	Collisions in 2-D	10	4-6	4,29,37,47,55,66
	03	Review (ch 7 - 10)			
	05	Rotational motion	11	1-4	
9	08 Nov	Torque.	11	5-8	1,12,17,25,35,50
	10	Work and rotational kinetic energy	11	9,10	
	12	Rolling	12	1-4	
Eid Al-Fitr Vacation (13 Nov – 29 Nov 2003)					
10	01 Dec	Angular momentum & torque	12	5-8	
	03	Conservation of angular momentum	12	9,10	
11	06 Dec	Review (ch 11 -12)	-	-	3,7,16,28,37
	08	Review (ch 7-12)	-	-	
	10	Equilibrium	13	1-3	
Monday – 08 Dec 2003 – Second Major Exam (Chapters 7 – 12) 6:00 – 8:00 PM					
12	13 Dec	Elasticity	13	4-6	5,8,21,33,45,61
	15	Newton's law of Gravitation	14	1-3	
	17	Gravitational potential energy.	14	4-6	
13	20 Dec	Kepler's laws, Satellites	14	7,8	6,19,32,41,54
	22	Fluids	15	1-4	
	24	Archimedes principle	15	5-8	
14	27 Dec	Fluid dynamics, Bernoulli's equation.	15	9,10	12,18,54
	29	Oscillations	16	1-3	
	31	Energy in SHM, Simple pendulum	16	4,6*	
Wednesday – 31 Dec 2003 - Last day for withdrawal from all courses with grade of "WP/WF"					
15	03 Jan	Review (13-16)	-	-	
	05	Review (1-10)	-	-	
	07	Review (12-16) (Last day of classes)	-	-	

Saturday – 10 Jan. 2004 – Final Exam (Chapters 1 – 16)

Wish you a successful semester.

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