

**KING FAHD UNIVERSITY OF PETROLEUM AND MINERALS
DEPARTMENT OF PHYSICS**

Physics 102 - General Physics II – Spring 2007 - 2008 (Term 062)

Course Schedule, Coordination and Grading Policy

<http://www.kfupm.edu.sa/phys/102/>

- 1) **Course Description** (Undergraduate bulletin 2001-2003)
A continuation of PHYS 101. Topics covered include: wave motion and sound; temperature, first and second law of thermodynamics; kinetic theory of gases; Coulomb's law; the electric field; Gauss' law; electric potential; capacitors and dielectrics; D.C. circuits; the magnetic field; Ampere's and Faraday's laws.
- 2) **Prerequisite:** PHYS 101, **Co-requisite:** MATH 102
- 3) **Textbook:** "Fundamentals of Physics", by Halliday, Resnick and Walker, Extended 7th Ed. John Wiley & Sons (2005).
- 4) **Method:** The course material will be presented in: **lectures** (3 hrs/week), **lab work** (3 hrs/week) and problem-solving techniques will be shown in **recitations** (1 hr/week). Attendance in lectures, recitations and Lab's is **compulsory**.
- 5) **Grading Policy**

(A) **Course grade:** The course grade will be evaluated as follows:

	<u>%age</u>	<u>*1000-Point System</u>	<u>Grades</u>	
Class-work	10%	100	A+ ≥ 800	530 ≤ C < 600
Laboratory	20%	200	770 ≤ A < 800	470 ≤ D+ < 530
First major exam	20%	200	730 ≤ B+ < 770	410 ≤ D < 470
Second major exam	20%	200	670 ≤ B < 730	F < 410
Final exam	30%	300	600 ≤ C+ < 670	
Total	100%	1000		

*Based on the 1000-point system for the whole course, the class work grade will be assigned 100 points, Lab work 200 points, etc.

(B) **Class-work (with average score 60/100) shall comprise of:**

- A minimum of 5 quizzes (**no quizzes in the last week of the classes**).
- Homework problems are assigned from the textbook (exercises & problems) or other means and may be collected by some instructors. Solutions to the homework problems will be posted on the Physics 102 notice board after completion of the corresponding chapter.

(C) **Laboratory work (with average score 140/200)**

The lab work score will be based on the lab final and any/or a combination of the lab reports, lab quizzes, lab exams (written and/or practical), ... etc. as chosen by the lab instructor.

- ◆ **To the student who is repeating the course:** You do not have to repeat the lab **provided you had a score > or = 120 out of 200. Please make a request to carry your lab score by filling a form with the secretary within two weeks from the start of classes, after which no request will be entertained.**

(D) **Major and final examinations**

The major exams and the final exam will be of **multiple-choice type**. The exams are scheduled as follows:

First major exam	Saturday, March 31	2007	@ 6:30 PM	(Chapters 16 - 20)
Second Major Exam	Monday, May 7	2007	@ 6:30 PM	(Chapters 21 - 26)
Final Exam	??			(Chapters 16 - 30)

6) **Policy on make-up exams**

- a) If you miss a major or final exam, you should go and **see the Coordinator** with your official excuse **within three days** after the exam.
- b) **Only official excuses are accepted. Personal excuses are not allowed.**
- c) If you **attend the exam**, you **cannot** have a make-up exam.
- d) If you miss the exam without a valid excuse, you get a **ZERO** score for that exam.
- e) The make-up will be given once, and **no make-up for the make-up or the final exam.**

7) **Attendance:** Attendance will be **enforced and evaluated** according to current university regulations. A **DN** grade will be given to any student exceeding 12 absences (LLF + Rec.) without official excuses and/or three absences in laboratory experiments. **Any student in possession of an excuse for officially authorized absence must present this excuse to his instructor no later than one week following his resumption of class attendance.** Only those students who have 5 absences, or less, in the whole semester shall be promoted to higher grade if they reach the borderline (≤ 10 points out of 1000) between two letter grades (for example F (400) to D (410) or B (720) to B+ (730) etc.)

8) **Note:** It is your responsibility to visit the registrar web page for withdrawal dates, final exam date and time.

➡ ***"All of physics is either impossible or trivial. It is impossible until you understand it, and then it becomes trivial."*** Ernest Rutherford

Physics 102 Lecture Schedule Spring 2007 (Term 062)

Week	Date	Topics	Chapt	Sections	Homework
1	17 Feb. 19 21	Types and terminology of Waves. (Demo # 1) Speed of Traveling Waves, Energy and Power. Superposition and Interference of Waves, (Demo # 2)	16 16 16	1-4 5-7 9, 10	6,14,24,30,31,43,45
2	24 Feb. 26 28	Standing Waves, Resonance. (Demo # 3) Sound Waves, Interference. (Demo # 4) Intensity, Resonance.	16 17 17	12, 13 1-5 6, 7	6,10,15,26,38,52
3	3 March 5 7	Doppler Effect (Demo # 5). Temperature, Zeroth Law, Temp. Scales, Expansion Temperature and Heat capacity.	17 18 18	9 1-6 7, 8	7,14,30,45,53,57
4	10 March 12 14	Work, Heat and First Law of Thermodynamics. Applications of the First Law, Heat Conduction. Ideal Gases, Isothermal Expansion.	18 18 19	9, 10 11,12 1-3	7,12,22,24,44,56
5	17 March 19 21	RMS Speed, Translational Kinetic Energy. Specific Heat, Adiabatic Expansion. Entropy and the Second Law of Thermodynamics.	19 19 20	4, 5 8, 11 1-4	5,9,13,15,23,27,40
6	24 March 26 28	Heat Engines and Refrigerators. <i>Review</i> <i>Review</i>	20 20 -	1-4 5, 6 -	
Saturday, March 31 – First Major Exam (Chapters 16 – 20) 6:30 – 8:30 PM					
7	31 March 02 April 04	Electric Charge, Coulomb's Law Electric Fields. (Demo # 6) Point Charges in Electric Fields.	21 22 22	1-6 1-5 8,9	5,6,12,15 6,11,12,24,30,42
8	07 April 09 11	Electric Flux, Gauss' Law. Charged Isolated Conductor, Cylindrical Symmetry. Spherical Symmetry	23 23 23	1-5 6-8 9	3,6,19,22,26,44
9	16 April 18	Electric Potential and Potential Energy. (Demo # 7) Potential Due to a Point Charge.	24 24	1-4 5-7, 10	2,4, 31,37,52
10	21 April 23 25	Electric Potential Energy of a System. Capacitance. (DEMO #8) Capacitors in Parallel and Series	24 25 25	11,12 1-3 4	8,17,23,24,34,43
11	28 April 30 02 May	Energy Stored in a Capacitor, Dielectrics. Moving charges, Current and Current Density. Resistance, Ohm's Law, Electric Energy and Power.	25 26 26	5,6 1-3 4, 5, 7	1,16,22, 38,43
12	05 May 07 09	Pumping charges work energy, emf, circuits and loops Multiple Loop. (Demo # 9) RC Circuits	27 27 27	1-6 7 9	6,10,21,27,31,33,47
Monday, May 7 – Second Major Exam (Chapters 21 – 26) 6:30 – 8:30 PM					
13	11 May 13 15	Magnetic Field and Force. (Demos # 10 & 11) Charged Particle in a Magnetic Field. Torque on a Current Loop.	28 28 28	1-4 6, 8 9, 10	1,3,17,35,39,40,61
14	18 May 20 22	Biot-Savart Law. Ampere's Law. Solenoid, Magnetic Dipole.	29 29 29	1-2 3, 4 5, 6	4,8,21,27,30,41,51
15	25 May 27 29	Faraday's Law, Lenz's Law (Demos # 12 & 13) Induction and Energy Transfers. <i>Review (Chapters 16-22)</i>	30 30 -	1-4 5 -	3,7,12,15,27
16	02 Jun	<i>Review (Chapters 23-30) (Last day of classes).</i>	-	-	
Final Exam ???? (Chapters 16– 30)					

Prof. Dr. Ibraheem Nasser
Physics 102-Lectures Coordinator.