

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

Physics 102 - General Physics II – Spring 2005 - 2006 (Term 052)

Course Schedule, Coordination and Grading Policy

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

- 1) **Course Description** (Undergraduate bulletin 1997-98)
A continuation of Physics 101. Topics covered include: Wave motion; Sound; Temperature; First and second laws of thermodynamics; Kinetic theory of gasses; Coulomb's law; Electric field; Gauss' law; Electric potential; Capacitors and dielectrics; Circuits; The magnetic field; Faraday's law; Ampere's law.
- 2) **Co-requisite (Math 102)**
- 3) **Textbook:** "Fundamentals of Physics", by Halliday, Resnick and Walker, 7th Ed. John Wiley & Sons, Inc. (2001).
- 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	26 March 2006 @ 8:00PM	(Chapters 16 - 20) .
Second Major Exam	1st May 2006 @ 8:00 PM	(Chapters 21 - 26)
Final Exam	Jun 5 2006 @ 7:30 AM	(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) **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

Week	Date	Topics	Chapt	Sections	Homework
1	13 Feb 15 16	Waves I , Types of Waves. (Demo # 1) Speed of Traveling Waves, Energy and Power. Superposition and Interference of Waves, Phasors* (Demo # 2)	16 16 16	1-4 5-7 9-11	6,14,24,30,31
2	18 Feb 20 22	Standing Waves, Resonance. (Demo # 3) Wave II, Sound Waves, Interference. (Demo # 4) Intensity, Resonance.	16 17 17	12,13 1-5 6	6,10,13,26,38,48
3	25 Feb 27 01 Mar	Doppler Effect. Review (Demo # 5). Temperature, Zeroth Law, Temp. scales Thermal Expansion Temperature and Heat.capacity	17 18 18	8 1-5 6-8	5,12,36,45,52,57
4	04 Mar. 06 08	Work , heat and First Law of Thermodynamics. Applications of the First Law, Heat Conduction. Ideal Gases, pressure, temperature	18 18 19	9-10 11,12 1-4	9,22,26,48,61
5	11 Mar. 13 15	Translational Kinetic Energy. Specific Heats Adiabatic Expansion.+ Review Entropy and the Second Law of Thermodynamics.	19 19 20	5,8 11 1-3	5,9,15,23,40
6	18 Mar. 20 22	Heat Engines and Refrigerators. + Review Electric Charge, Coulomb's Law Review	20 21	4,5 1-6-	5,6,12,15
Sunday – 26 March 2006 – (Chapters 16 – 20) 8:00 – 10:00 PM					
7	25 Mar. 27 29	Electric Fields. (Demo # 6) Point Charges in Electric Fields. Electric Flux, Gauss' Law.	22 22 23	1-4, 6* 8,9** 1-5	6,11,12,24,30,42 (** overview only) 3,6,15,20,26,43
8	01 Apr. 03 05	Charged Isolated Conductor, Cylindrical Symmetry Application of Gauss law: Electric Potential and Potential Energy. (Demo # 7)	23 23 24	6,7 8,9 1-4	2,6,20,31,39,52
9	08 Apr. 10 12	Potential Due to a Point Charge. Electric Potential Energy of a System. Capacitance. (DEMO #8)	24 24 25	5,6,9 10,11 1-3	8,16,17,24,34,40
10	15 Apr. 17 19	Capacitors in Parallel and Series. Energy Stored in a Capacitor, Dielectrics. Moving charges, Current and Current Density.	25 25 26	4 5,6 1-3	1,16,22, 38,43
11	22 Apr. 24 26	<i>Resistance, Ohm's Law</i> <i>Electric Energy and Power</i> Pumping charges work energy, emf, circuits and loops	26 26 27	4,5 7 1-5	
12	29 Apr. 01 May 03	Multiple Loop. (Demo # 9) <i>Review</i> RC Circuits	27 27 -	6,7 8 -	4,10,21,28,31,33,47
Monday – May 1st 2006 – Second Major Exam (Chapters 21 – 26) 6:00 – 8:00 PM					
13	06 May 08 10	Magnetic Field and Force. (Demos # 10 & 11) Charged Particle in a Magnetic Field. Torque on a Current Loop.	28 28 28	1-3 5,7 8,9**	1,3,17,35,39,40 (** overview only)
14	13 May 15 17	Biot-Savart Law. Ampere's Law. Solenoid.	29 29 29	1 2,3 4	4,8,22,27,30,41
15	20 May 22 24 27	Faraday's Law, Lenz's Law (Demos # 12 & 13) Induction and Energy Transfers. <i>Review (Chapters 10-30).</i> <i>27 May Review (16-30) (Last day of classes)</i>	30 30 - -	1-4 5 - -	3,7,12,15,27
Final Exam Mon Jun 5 2006 (Chapters 16– 30)					

Dr.Khalil Ali Ziq
Physics 102-Lectures Coordinator.