

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

**Physics 201 - General Physics III – Fall 2009 - 2010 (Term 091)**  
**Course Schedule, Coordination and Grading Policy**

1. **Course Description** (Undergraduate bulletin 2001-2003).  
A continuation of Phys 101 and 102, topics covered include inductance; magnetic properties of matter; electromagnetic oscillations and waves; geometrical and physical optics; relativity, introduction to quantum physics; atomic and molecular physics, nuclear physics, particle physics and cosmology.
- 2) Prerequisite: PHYS 102, Co-requisite: MATH 102 Calculus II.
- 3) **Textbook:** "Fundamentals of Physics", by Halliday, Resnick and Walker, **Eighth Edition**, John Wiley & Sons, Inc (2008).
- 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**. **Lab sessions will start during the second week of the semester.**
- 5) **Grading Policy**
  - (A) **Course grade:** The course grade will be evaluated as follows:

	<u>%age</u>		
<b>Class work</b>	<b>15%</b>	A+ ≥80	53 ≤ C < 60
<b>Laboratory</b>	<b>20%</b>	≤ A < 80	47 ≤ D+ < 53
<b>First major exam</b>	<b>15%</b>	73 ≤ B+ < 77	41 ≤ D < 47
<b>Second major exam</b>	<b>20%</b>	67 ≤ B < 73	F < 41
<b>Final exam</b>	<b>30%</b>	60 ≤ C+ < 67	
Total	100%		
- 6) 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.  
Note: It is your responsibility to visit the registrar web page for withdrawal dates, final exam date and time.

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**Physics 201 Lecture Schedule: Fall 2009 - 2010 (Term 091)**

Week	Date	Topics	Chap.	Sections
1	3 October (Sat) 5 5 Mon 7 Tue 5 Mon	<b>Induction and Inductance</b> Faradays Law of Induction Inductance RL Circuits  <i>No Lab</i>	<b>30</b> 30 30 30	1-4 5-8 9-11
2	10 Sat 12 Mon 12 Mon 14 Wed 12 Mon	Mutual Inductance <b>EM Oscillations and Alternating current</b> LC Oscillations RLC Circuits  <i>Error Analysis</i>	30 <b>31</b> 31 31 <i>Lab 1</i>	12 1-4 5-8
3	17 Sat 19 Mon 19 Mon 21 Wed 19 Mon	Series RLC Circuits <b>Maxwell's Equations (Magnetism of Matter)</b> Gauss' Law for magnetic field Maxwell's equations  <i>Current Balance</i>	31 <b>32</b> 32 32 <i>Lab 2</i>	9-11 1-4 5, 7
4	24 Sat 26 Mon 26 Mon 28 Wed 26 Mon	Magnetic Materials <b>Electromagnetic Waves</b> EM Waves (Qualitative and Quantitative Analysis) Energy Transport  <i>RC Circuit</i>	32 <b>33</b> 33 33 <i>Lab 3</i>	8-11 1-4 5-8

5	31 Sat <b>02 Novembre (Mon)</b> 02 Mon 04 Wed <i>02 Mon</i>	Total Internal Refraction <b>Images</b> Plane and spherical Mirrors Spherical Refracting Surfaces and thin lenses <i>RLC Circuits</i>	33 <b>34</b> 34 34 <i>Lab 4</i>	9-10  1-5 6-7	
6	7 Sat <b>9 Mon</b> 9 Mon 11 Wed <i>9 Mon</i>	Review <b>Interference</b> Light as a wave and diffraction Young's Interference experiment <i>Polarization of Light</i>	<b>30-33</b> <b>35</b> 35 35 <i>Lab 5</i>	30-33  1-3 4-5	
<b>Sunday 08 November First Major Exam (30-33)</b>					
7	14 Sat <b>16 Mon</b> 16 Mon 18 Wed <i>16 Mon</i>	Intensity in Double Slit Interference <b>Diffraction</b> Diffraction & Wave Theory of Light Diffraction by Double Slit <i>Thin Lens and Spherical Mirrors</i>	35 <b>36</b> 36 36 <i>Lab 6</i>	6-8  1-5 6-7	
8	<b>5 December (Sat)</b> <b>7 Mon</b> 7 Wed 9 Wed <i>7 Mon</i>	Diffraction Gratings <b>Relativity</b> The postulates, Measuring and event Relativity of Time and Length <i>Refractive Index and Colors</i>	36 <b>37</b> 37 37 <i>Lab 7</i>	8-10  1-4 5-6	
9	12 Sat 14 Mon <b>16 Wed</b> 16 Wed <i>14 Mon</i>	Lorentz Transformation Doppler Effect for Light <b>Photons and Matter Waves</b> Photon, The Quantum of Light <i>Michelson Interferometer</i>	37 37 <b>38</b> 38 <i>Lab 8</i>	7-9 10-12  1-3	
10	19 Sat 21 Mon <b>23 Wed</b> 23 Wed <i>21 Mon</i>	Photons Have Momentum Schrodinger's Equation <b>Matter waves</b> Energy of Trapped Electron <i>Diffraction of Light</i>	38 38 <b>39</b> 39 <i>Lab 9</i>	4-6 7-9  1-4	
11	<b>26 Sat</b> 26 Sat 28 Mon 30 Wed <i>28 Mon</i>	Two and Three Dimensional Trap The Hydrogen Atom <b>Review</b> <i>Grating and Spectroscopy</i>	39 39 <b>34-38</b> <i>Lab 10</i>	5-7 8-9 34-38	
<b>Sunday 03 January Second Major Exam (34-38)</b>					
12	<b>2 January 2010 (Sat)</b> 2 Sat 4 Mon 6 Wed <i>4 Mon</i>	<b>Properties of Atoms</b> Properties of Atoms Pauli Exclusion Principle Lasers <i>Atomic Constants</i>	<b>40</b> 40 40 40 <i>Lab 11</i>	1-4 7-9 11-12	
13	<b>9 Sat</b> 9 Sat 11 Mon 13 Wed <i>11 Mon</i>	<b>Conduction of electricity in Solids</b> Electronic Properties Metals Semiconductors <i>Radiation detection</i>	<b>41</b> 41 41 41 <i>Lab 12</i>	1-4 5 6-7	
14	<b>16 Sat</b> 16 Sat 18 Mon 20 wed <i>18 Mon</i>	<b>Nuclear Physics</b> Some Nuclear Properties Radioactive Decay $\beta$ Decay <i>Lab Final</i>	<b>42</b> 42 42 42	1-3 4-5 6-7	
15	23 Sat <b>25 Mon</b> 27 Wed	Nuclear Models <b>Energy from the Nucleus</b> Revision <i>No Lab</i>	42 <b>43</b>	9 1-6	
16					
<b>Final Exam January/February 2010</b>					