

Syllabus for Physics 2220 (Summer Semester 2009)

Course number	Phycs 2220
Title	Physics for Scientists and Engineers II
Credit hours	4.0
Course website	http://www.physics.utah.edu/~gernot/Physics2220/Physics2220.html
Pre-requisites	Phycs 2210, Math 1110, Math 1220
Course instructor	<p>Gernot Laicher, Ph.D. Research Associate Professor of Physics</p> <p>Office: SP, room 410 Office hours: M, W, F 9:30am-10:30am (not on exam days) 801-585-5553 (fax 801-581-4246) gernot@physics.utah.edu http://www.physics.utah.edu/~gernot/gernot.html</p>
Course administrator	<p>Mary Ann Woolf Office: JFB, room 205 801-581-4246 (fax 801-581-4246) woolf@physics.utah.edu</p>
Teaching assistants	<p>Rob Roundy (Marshal and Web Assign) rroundy@physics.utah.edu</p> <p>Eric Twarog (2220-002) elric@physics.utah.edu</p> <p>Rhett Zollinger (2220-003) rhettzollinger@gmail.com</p> <p>Pei-I Ku (2220-004) pei39@gmail.com</p>
Lecture	M, W, F: 8:00am – 9:15am (in JFB103)
Discussion sections	<p>2220-002: T, H 9:00am – 9:15am (in JFB B1)</p> <p>2220-003: T, H 9:00am – 9:15am (in LCB 225)</p> <p>2220-004: T, H 9:00am – 9:15am (in LCB 121)</p>
Textbook	Physics for Scientists and Engineers, 7th Edition, Serway and Jewett Vol. 2. Any version.

Course description	<p>This course is a continuation of Physcs 2210 and contains the following subjects:</p> <p>Electrostatics, electric fields, and potential. Magnetic fields and Faraday's law. Current flow, resistance, capacitance and inductance. Electric circuits and electromagnetic oscillations. Electromagnetic waves, geometric optics, and a short introduction to modern physics.</p>																				
Course objectives	<p>At the end of the semester, the student is expected to be able to understand, and apply to the solution of problems, the theoretical concepts of electrodynamics, optics, and basic modern physics laws. The student should be able to understand these laws and concepts at such a level of abstraction that he/she can apply the conceptual framework not only to pre-trained problem sets, but to previously not encountered, somewhat different, situations as well.</p>																				
Schedule of topics	<p>Please note: The following lecture plan is TENTATIVE. It may be revised during the course of the semester. The exam dates, however, are very unlikely to be changed.</p> <table border="1" data-bbox="467 1073 1455 1843"> <thead> <tr> <th data-bbox="467 1073 699 1125">Week</th> <th data-bbox="699 1073 932 1125">Mon</th> <th data-bbox="932 1073 1170 1125">Wed</th> <th data-bbox="1170 1073 1455 1125">Fri</th> </tr> </thead> <tbody> <tr> <td data-bbox="467 1125 699 1314">Week 1 (18-May-2009) Introduction, Coulomb's Law</td> <td data-bbox="699 1125 932 1314">Introduction ; 23.1-4</td> <td data-bbox="932 1125 1170 1314">23.5-7 24.1</td> <td data-bbox="1170 1125 1455 1314">24.2-4 25.1</td> </tr> <tr> <td data-bbox="467 1314 699 1465">Week 2 (25-May-2009) Gauss' Law</td> <td data-bbox="699 1314 932 1465">Memorial Day</td> <td data-bbox="932 1314 1170 1465">25.2-4</td> <td data-bbox="1170 1314 1455 1465">25.5-6 26.1-2</td> </tr> <tr> <td data-bbox="467 1465 699 1654">Week 3 (01-June-2009) Potential & Conductors</td> <td data-bbox="699 1465 932 1654">26.3-6</td> <td data-bbox="932 1465 1170 1654">Review</td> <td data-bbox="1170 1465 1455 1654">Exam 1</td> </tr> <tr> <td data-bbox="467 1654 699 1843">Week 4 (08-June-2009) Electrostatic energy</td> <td data-bbox="699 1654 932 1843">27.1-6</td> <td data-bbox="932 1654 1170 1843">28.1-6</td> <td data-bbox="1170 1654 1455 1843">29.1-3</td> </tr> </tbody> </table>	Week	Mon	Wed	Fri	Week 1 (18-May-2009) Introduction, Coulomb's Law	Introduction ; 23.1-4	23.5-7 24.1	24.2-4 25.1	Week 2 (25-May-2009) Gauss' Law	Memorial Day	25.2-4	25.5-6 26.1-2	Week 3 (01-June-2009) Potential & Conductors	26.3-6	Review	Exam 1	Week 4 (08-June-2009) Electrostatic energy	27.1-6	28.1-6	29.1-3
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Week 5 (15-June -2009) Capacitors, electric current and Ohm's Law, Electric circuits	29.4-6	30.1-3	30.4-7
Week 6 (22-June -2009) B-field	31.1-4 (6)	Review	Exam 2
Week 7 (29-June -2009) Ampere's Law	32.1-3	32.4-6 33.1-2	Independence Day
Week 8 (06-July -2009) Electromagnetic Induction	33.3-8 (9)	34.1-3	34.4-7
Week 9 (13-July -2009) AC circuits, Maxwell's equations	35.1-5	35.6-8 36.1	36.2-4
Week 10 (20-July -2009) Electromagnetic waves	Review	Exam 3	Pioneer Day
Week 11 (27-July -2009) Reflection and refraction	36.7-10	37.1-3	37.4-6
Week 12 (03-August-2009) Optics, Diffraction	38.1-4	38.6 + Review	
(06-August-2009)	Final Exam (in lecture room; 7:30 a.m. – 9:30 a.m.)		

Teaching and learning methods	<p>Lecture, discussion section, and web-based homework assignments</p> <p>All homework is submitted within the WebAssign environment. Do not disregard the importance of the homework part of your course grade. Your final HW submission must be done no later than 10:00 a.m. on their due date. The purpose of the discussion section is to allow you to get all the assistance you need to help you submit finished and correct homework. Do not disregard the importance of the discussion part of the course. In general, students who attend discussion sections regularly, do better in the course. The actual assignments are accessed individually by each student when they enter the WebAssign website.</p> <p>https://www.webassign.net/utah/login.html).</p>
Evaluation methods and criteria	<p>Performance is evaluated based on homework assignments, three midterm exams, and a final exam.</p> <p>The lowest four homework scores will be dropped. The lowest of the three midterm exams will be dropped.</p> <p>Homework counts 25% towards the final score. The two best midterm exams count 25% each towards the final score (50% total). The final exam counts 25% towards the final score.</p>
Exam schedule	<p>Midterm 1: Friday, June 5th 8:00am - 9:15am in JFB 103. Midterm 2: Friday, June 26th 8:00am - 9:15am in JFB 103. Midterm 3: Wednesday, July 22nd 8:00am - 9:15am in JFB 103. Final Exam: Thursday, August 6th 7:30am - 9:30am in JFB 103.</p>
Re-grade policy	<p>A disputed exam grade must be brought to the instructor's attention before the next exam is given. Re-grades will not be performed on exams that are written in pencil. Re-grade forms must be completed for every problem in question. Re-grade forms are available here. Exam Procedures are here. No re-grades will be made for homework problems, which are graded automatically by WebAssign.</p>

<p>Faculty and student responsibilities</p>	<p>All students are expected to maintain professional behavior in the classroom setting, according to the Student Code, spelled out in the Student Handbook. Students have specific rights in the classroom as detailed in the code. The Code also specifies proscribed conduct that involves cheating on tests, plagiarism, and/or collusion, as well as fraud, theft, etc. Students should read the code carefully and know they are responsible for the content. According to the Faculty Rules and Regulations, it is the faculty responsibility to enforce responsible classroom behaviors, beginning with verbal warnings and progressing to dismissal from class and a failing grade. Students have the right to appeal such action to the Student Behavior Committee.</p> <p>Student Code: http://www.regulations.utah.edu/academics/6-400.html</p> <p>Code of Faculty Rights and Responsibilities: http://www.regulations.utah.edu/academics/6-316.html</p> <p>Additional guidelines ruling the exam procedures are spelled out in this document provided by the course instructor: http://www.physics.utah.edu/~gernot/Physics2220/Exam%20Policy%202.pdf</p>
<p>ADA statement</p>	<p>The University of Utah seeks to provide equal access to its programs, services and activities for people with disabilities. If you will need accommodations in the class, reasonable prior notice needs to be given to the <u>Center for Disability Services</u>, 162 Union Building, 581-5020 (V/TDD). CDS will work with you and the instructor to make arrangements for accommodations.</p> <p>All 2220 students who have special accommodations for exams, please contact Mary Ann Woolf, 205 JFB, woolf@physics.utah.edu , 801-581-4246 (phone and fax).</p>
<p>Non-Contract Note</p>	<p>The syllabus is not a binding legal contract. It may be modified by the instructor when the student is given reasonable notice of the modification.</p>