PHYSICS 204 COLLEGE PHYSICS II (GEP:NSC GDR: NS)

Spring 2017
 Prerequisite: **203 OR EQUIV, OR CONS INSTR**

**Lecture: D101 SCI, Mon., Wed., Fri. 11:00-11:50**

**Lab: B112 SCI (Day of week and time of day depends on section)**

**Discussion: A106 SCI (Day of week and time of day depends on section)**

 **Instructor**: Dr. Chris Verzani

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  **Phone**: 715-346-4764

 **Office**: SCI B103

 **Office Hours**: Mon 14:00-14:50, Tues. 15:00-15:50, Wed. 10:00-10:50

 Thurs. 10:00-10:50, other times by appointment

 **Text**: Physics, Walker, 5th edition

Course goals:

This semester you will be presented with a variety of physics topics including (but not limited to); electric charge, electric fields, electric potentials, capacitors, Ohm’s law, electric circuits, magnetism, Faraday’s law, polarization of light, light waves, geometrical and physical optics, the atom, the nucleus, and radioactivity. Ideas will be presented both mathematically and conceptually in lecture and the laboratory. During the semester there will be three main goals:

1. Make a connection between the conceptual, mathematical, and laboratory (or “hands-on”) aspects of physics.
2. Be able to accurately explain physics to others.
3. Understand how physics applies to the world around us, i.e. applications.

Attendance: Although attendance is not recorded for the lectures, it is highly recommended that you attend. Regular attendance will help you learn the material and, thus, lead to better performance on homework, laboratory exercises and exams. **Laboratory attendance** **is** required to receive a laboratory grade.

**Grading**:

Your grade will be composed from your work in the following three areas.

1. Discussion Handouts
2. Laboratory
3. Homework
4. Examinations

**Discussion Handouts**

Discussion sections are held each week. During most discussion sessions this semester you will be given handouts (10 handout-outs in total). You are strongly encouraged to break into small groups (max. group size = 4 students), and work out the exercises by working together with your group-mates. Each discussion handout will be worth 10 points, for a total of 100 points for the entire semester. **Work together on the handouts**! Make sure you know how to do the problems yourself, because it is likely that you will see some of these discussion exercises on future exams.

**Laboratory**

The laboratory is mandatory. There is no laboratory manual. Each week, a new lab will also be posted on D2L, and it is recommended that you read over the lab prior to coming to the laboratory. Laboratory handouts can be printed at the beginning of each laboratory session. Each lab will be worth 25 points. Over the entire semester, 10 lab sessions will be completed, for a total of 250 points.

**Homework**

Homework assignments will be assigned throughout the semester. Homework due dates will be posted on D2L, and also announced in class. Homework is to be turned in (written or typed), at the beginning of the class period, on the date that it is due

Keeping a copy of your homework will be helpful when studying for exams (you may see the same problems again!)

 Late homework will be considered for grading, on a case by case basis, but may incur a penalty for being late. Late homework will not be accepted after that assignment has been graded and turned back for the class.

 Discussing strategies for homework problems with your classmates should strengthen your understanding of the material and is encouraged. However, you should only turn in work that is your own, representing your own understanding of the material. In order to receive full credit for a homework problem, you should show all your work, including explanations for your approach when appropriate.

 A total of 150 points (or 15% of your grade) can be earned from graded homework. Randomly selected problems will be graded (not all problems will count towards your homework score).

**Examinations**

Four examinations will be given during the semester. Four 50 minute, in-class (D101) exams will be given. The fifth (final) exam will be given during the final examination period (May 17th, 12:30-14:30). The final exam will not be a cumulative exam, and is weighted equally with the first four exams. The final exam will be held in our lecture room, D101. Every exam will be worth 100 points, for a total of 500 points.

 You will be allowed to create your own reference sheets, which you can use during the exams. It’s up to you what to include on your reference sheet (More information about reference sheets will be provided as the date of the first exam approaches. Exams reviews will be posted on D2L, which will clearly indicate what format the exams will be, and what topics you should focus on.

 Missing an exam will earn a grade of 0 (zero). Examinations are not group projects. Plagiarism and cheating are serious offenses and may be punished by failure on the exam; failure in the course; and/or expulsion from the university.  For more information refer to <http://library.uwsp.edu/vrd/plagiarism.htm>

Grades:

4 Exams (100 points each), and 1 Final Exam (100 points)

25 points for each lab (250 points total)

Homework (150 points total)

10 points for each Discussion handout (100 points total)

|  |
| --- |
| Distribution of Maximum Possible Points |
| Exams 1, 2 and 3 | 4 \* 100pnts = 100  |
| Final Exam | 100 |
| Discussion Handouts  | 100  |
| Homework | 150 |
| Laboratory | 250 |
| TOTAL | 1000  |

Final grades will be determined from the total points as follows:

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| A | A- | B+ | B | B- | C+ | C | D | F |
| 930-1000 | 900-929 | 870-899 | 830-869 | 800-829 | 770-799 | 700-769 | 600-699 | Below 600 |

D2L: A great deal of information about this class will be posted on D2L. Some of these items are: Scores from handouts, quizzes, exams, and labs, and your final grade.

Announcements: Such as deviations from the course calendar, quiz times, class

cancellations, etc., solutions to some handouts, exams, some lecture notes, … etc.

Email: Occasionally, announcements will be emailed to you in addition to being posted on D2L.

Individual Help and Tutoring:  Any student who wishes individual help is encouraged to see me during my office hours, or other times by appointment.

The Department of Physics and Astronomy has several student tutors available to help students taking introductory physics courses. You can stop by SCI

A105 if you need some extra help. The tutoring schedule can be viewed on the web at http://www.uwsp.edu/physastr/tutor\_schedule.htm. The tutoring is free of charge. In addition, it is planned that group tutoring will be offered through the Tutoring-Learning Center (TLC).

Note:  **If you have any condition such as a physical or learning disability, which will make it difficult for you to carry out the work as I have outlined it or which will require academic accommodations, please notify me and contact the** [**Office of Disability Services**](http://www.uwsp.edu/special/disability/) **during the first two weeks of the semester in order to request accommodation.  A** [**Reasonable Accommodation Request-Report Form**](http://www.uwsp.edu/centers/rights/reasonable%20accommodation%20form.pdf) **is available online.**

Tentative Course Schedule: College Physics 204, Spring 2017

Exam 1: Electric fields and potentials, Capacitors, Ohm’s law,

Exam 2: Electric circuits, Kirchhoff circuits, RL, RC circuits

Exam 3: Magnetism, Faraday’s law, Electromagnetic radiation, Polarization, Light waves

Exam 4: Geometrical optics (refraction/reflection), Physical optics

Final Exam: Diffraction and interference, Einstein’s special theory of relativity, the nucleus, Radioactivity, (possibly other selected topics time permitting)

Tentative Course Schedule:

This is a rough outline of the material being covered. More detailed reading and homework assignments will be handed out in class.

**Tentative Schedule**

|  |  |  |  |
| --- | --- | --- | --- |
| **Week** | **Date** | **Topic** | **Lab** |
| 1 | 1/23 | Electric Charge/Fields | No Lab |
| 2 | 1/30 | Coulombs Law | Lab and Disc. #1 |
| 3 | 2/6 | Gauss’ Law  | Lab and Disc #2 |
| 4 | 2/13 | Electric Potential and Electric potential Energy | **Exam #1 Friday (02/17)** **11:00-11:50** |
| 5 | 2/20 | Capacitance | Lab and Disc. #3 |
| 6 | 2/27 | DC Circuits | Lab and Disc. #4 |
| 7 | 3/6 | Kirchhoff’s Laws | **Exam #2 Friday (03/10)** **11:00-11:50** |
| 8 | 3/13 | RC and RL circuits  | Lab and Disc. #5 |
| 9 | 3/20 |  | **Spring Break** |
| 10 | 3/27 | Magnetic Forces | Lab and Disc. #6 |
| 11 | 4/3 | Sources of Magnetic Field, and magnetic forces on charges | **Exam #3 Friday (04/07)** **11:00-11:50** |
| 12 | 4/10 | Magnetic Flux/ Lenz’s Law | Lab and Disc. #7 |
| 13 | 4/17 | Electromagnetic waves/Polarization | Lab and Disc. #8 |
| 14 | 4/24 | Reflection/Refraction of light | **Exam #4 Friday (04/28)** **11:00-11:50** |
| 15 | 5/1 | Mirrors/Lenses/Interference | Lab and Disc. #9 |
| 16 | 5/8 | Special Relativity/Radiation | Lab and Disc. #10 |
| 17 | 5/15 | Final Exam | **May 17th (Wed), 12:30 – 14:30** |