

## Introductory General Physics II

### (Physics 112, CRN 30072)

Physics 112 is the second part of an introductory general physics. This course is intended to give an introduction to electricity and magnetism, electrical circuits, light, and modern physics. The emphasis will be to study the most important ideas and applications rather than to cover all topics in the traditional syllabus.

<b>Prerequisite</b>	Physics 111. <i>Math proficiency in the following areas is essential: algebra, trigonometry, and vectors. If you are uncertain about your preparation, consult the instructor.</i>
<b>Instructor</b>	Dr. Alexander L. Godunov Office: OCNPS 0219 (Oceanography and Physics) Phone: 683-5805 godunov@physics.odu.edu Web page: <a href="http://www.physics.odu.edu/~godunov/teaching/phys112_07">http://www.physics.odu.edu/~godunov/teaching/phys112_07</a>
<b>Classes</b>	Monday - Friday, 10:30 – 12:50, in Oceanography & Physics, Room 100
<b>Office Hours</b>	Tuesday - Friday 13:00-14:00 in OCNPS 0219 and by appointment
<b>Materials</b>	College Physics, Vol. 2, 8 <sup>th</sup> edition by Young & Geller (recommended) Physics 112 & 232 Laboratory Manual (required) Mastering Physics Student Packet (required) ( <a href="http://www.masteringphysics.com">www.masteringphysics.com</a> ).
<b>Course Grades</b>	The final grade is calculated on an absolute scale. There are 100 points possible for this course of which 15 points are for the homework, 15 points for the laboratories and 70 points for the examinations. The lowest midterm examination score is not counted; the remaining two count for 20 points each. The final exam counts for 30 points. Conceptual Tests and class participation can give up to 5 bonus points to the final grade. The grading policy is non-competitive and lenient, but there will be no curve. Letter grades: A: 100 – 85, B: 85 – 75, C: 75 – 65, D: 65 – 50, F: 50 – 0. <i>A letter grade (including “+” and “-” designations) is determined only at the end of the term.</i>
<b>Final Exam</b>	July 20 <sup>th</sup> , 2007, 3.00 PM – 6.00 PM Oceanography & Physics, Room 100
<b>Lectures</b>	Each class period will consist of a couple mini-lectures, interactive discussions and Conceptual Tests*. (* ) short multiple-choice questions that focus on the underlying concepts.
<b>Homework</b>	All homework problems will be from the “Problems” at the end of each section. The homework is to be submitted via the web using ‘Mastering Physics’. The class name is GodunovPhy112. After the first login you need to enter your UIN, and your

Last and First name. After the due day and time, you will be locked out of Mastering Physics, and unable to submit your solutions. Doing the homework problems is one of the best ways to learn the material. Credit for homework is given to encourage practicing and thinking about physics on a regular basis. This credit will influence the final grade for this course.

### Laboratory

The departmental policy is that ***a student must pass the lab to pass the course.*** The labs are self-contained. Some will not be 'in sequence' with the lecture. The following rules will apply:

- You must read the assigned experiment before coming to lab class. There may be a short quiz before labs to insure the student is properly prepared for it.
- ***Attendance is mandatory.*** You will be allowed one (1) unexcused "cut" during this semester. A grade F will be assigned to a student who has two (2) or more unexcused "cuts". There will be no make up labs.
- Laboratory reports should be prepared according to the instructions in the Physics 112 Laboratory Manual. In addition, your laboratory instructor will discuss the format for your laboratory report and their grading procedure.

### Exams

There will be three midterm exams and one final exam. The midterm examinations will be given during the regularly scheduled class periods. All the exams will be closed book, but one page (8½" × 11") with only basic equations will be allowed, (i.e. no homework solutions are allowed on the formula sheet). You must turn in your formula sheet at the end of the test.

The examinations will emphasize the material in lectures and homework assignments. Some material covered in class may be omitted. A typical exam will include problems and questions similar to the homework or discussions in class. Your work should be neat and orderly; with large, clear, and clearly labeled diagrams. Formulas and numbers alone won't do; you must show your work and explain your reasoning to earn full credit on a problem.

All exams are hand-graded. Most credit is given for the correct method or "Theory". It is the responsibility of the student to communicate answers clearly. The final examination is comprehensive. It is mandatory and will be given only at the scheduled time (July 20<sup>th</sup>, 2007, 3.00 PM – 6.00 PM).

Regrade: Requests for correction of grading mistakes on exams can be made when the work is returned to you. The requests must be made within three days after getting your grade. Regrade requests should be written. In their request, students must explain why they believe there is a mistake in grading and why they deserve more credit. It is not a plea for more points. However, clerical errors (e.g., addition errors) will be corrected immediately.

No make-up examinations will be given. In case you have a legitimate reason for missing an exam, consult with me before, or within 24 hours after the exam.

### Course goals

Teach qualitative and quantitative thinking skills that can be applied in a broad variety of fields and circumstances. Cultivate individual and collaborative problem solving skills. The context for learning these skills is physics, and more specifically, electrostatics and magnetostatics, changing electric and magnetic fields, circuits, optics, relativity and elements of modern physics.

<b>Course structure</b>	Different people learn in different ways. Therefore this course offers a learning environment with a diversified set of options that you can tailor to your individual learning style. There are class meetings, review sessions, homework assignments, laboratory sessions, office hours, and many ways to get additional support.
<b>Keys to success</b>	What counts in Physics 112 is to understand the underlying concepts. Advanced reading, consistent participation, and timely completion of assignments are the keys to success. If you work regularly and allocate enough time each day to complete the assignments on time and keep up with the course, you will get the most out of the course both intellectually and grade-wise. Two things that generally do not work are memorization (on exams you may have a page with equations anyway) and cramming to catch up just before the examinations (it will be impossible to assimilate all the material). Use the support resources to clarify the material as soon as you feel unsure about something — the instructor is there to help you.
<b>Expectations</b>	<p>For the most efficient use of time in class – you are expected to be prepared for class by reading the material ahead. Reading ahead requires time and some discipline, but the payoff is considerable: the material will be much easier to understand.</p> <p>Exams and assignments – you are expected to do your work in a neat way (clear diagrams, equations, explanations and numbers). You must show your work and explain your reasoning to earn full credit on a problem.</p> <p>Finally, you are expected to ask for help when you feel you do not understand something. Do not wait until the final exam to address any problems with the material, most of the time it will be too late.</p>
<b>Important</b>	In Physics 112, high professional and ethical standards are promoted. Plagiarism and cheating are serious offenses and may be punished by failure on the exam and failure in the course. The academic integrity code is to be maintained at all times.
<b>Collaboration</b>	<p>We strongly encourage collaboration in class, during laboratories, and on homework assignments. Because the course is graded on an absolute scale, you will never reduce your grade by helping others — on the contrary, by doing so you will reinforce your own knowledge and improve your performance. Although, before working together or consulting others on any assignments, it is helpful to first tackle the work alone.</p> <p>Activities for which collaboration is not permitted are: examinations and submission of homework assignments.</p>