INTRODUCTORY PHYSICS FOR SCIENTISTS AND ENGINEERS

Physics 1212  Tu & Th  Period 5  2:00-3:30pm  Room 202  Spring Semester 2016

PHYS 1212 is the second semester of a two semester course in introductory physics. It is a four credit hour course requiring a working knowledge of calculus, trigonometry, algebra, and geometry.

Instructor  Prof. Michael Geller
Office: Room 251 Physics Building
Tel: 706-340-6021
Email: mgeller@uga.edu

Web Page  www.physast.uga.edu/courses

When do labs start?
The labs begin the second week of classes, January 19-22. Please read through the online lab syllabus and the first experiment before the first lab.

Course Format
This course consists of two lectures and one laboratory per week. The lectures will be used primarily to supplement the material discussed in the book, not present it comprehensively. You will be expected to study assigned material before it is discussed in class. If you do not study the assigned material on your own or do not do the assigned reading before coming to class you will have difficulty in this course. You will be responsible for all the assigned material—it may appear in the homework or on an exam—even if it is not discussed in class.

You must also be registered for one of the laboratory sections which will meet once a week for two hours. The laboratory is required. Graduate teaching assistants will be assigned to be your lab instructors. They will assign you a laboratory grade at the end of the semester. I will include that grade in your overall grade for the course. Questions about the laboratory exercises should be directed to your lab instructor.

Office Hours  Tuesdays 3:15pm
Room 251 Physics Building

Course Assistant  Yifan Dai. Email: yfdai@uga.edu
Office hour: Tuesdays 11:00am-12:00pm, Room 323 Physics Building
Also available Monday through Friday 8:00-9:00am
See the course assistant for questions about your grades or to view an exam.

Required Course Materials

Physics for Scientists and Engineers (3rd edition), by R. D. Knight (Pearson, 2013). Available at the bookstore. The 2nd edition is also acceptable. You do not need a Mastering Physics license for this course.

Scientific calculator.
Homework

Optional homework problems will be assigned in class but will not be collected or graded. The problems are not from our textbook and you have to come to class to get them. I will give solutions to some of the problems during lecture.

Exams

There will be three in-class midterm exams and a cumulative final exam. All exams, including the final exam, have multiple-choice format. You must bring a #2 pencil to the exams. Scantron forms will be provided. The two best midterm scores will be used to determine your course grade, the remaining one will be dropped. All midterm exams will be open book and closed notes; no written notes, equation sheets, or additional sheets of paper are allowed during the exams, including the final. Electronic copies of the textbook are not permitted in the exam. However you may print out chapters and bring them to the exams. Highlighting and notes written into the textbook is allowed. Calculators (including graphing calculators) are allowed, but the use of laptop or other computers is forbidden. Texting or the use of cell phones during exams is considered cheating. There will no make-up exams given: If you miss a midterm exam it will count as your dropped exam, regardless of whether or not the absence is excused and approved by the university. Exams are property of the Department of Physics and Astronomy and are not returned. However the course assistant will let you view your exams. The in-class midterm exam schedule is provided below. The final exam will be 12:30-3:30pm on Tuesday, May 10 in Physics Room 202 (our regular lecture room).

Grading

Your final grade will be determined according to:

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<table>
<thead>
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<tr>
<td>2 best midterm exams</td>
<td>30%</td>
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<td>(15% each)</td>
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<td>lab grade</td>
<td>15%</td>
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<td>final exam</td>
<td>55%</td>
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The grading scale is as follows (points rounded to the nearest integer):

- A  89 - 100%
- A- 86 - 88%
- B+ 83 - 85%
- B  79 - 82%
- B- 76 - 78%
- C+ 73 - 75%
- C  69 - 72%
- C- 66 - 68%
- D  50- 65%
- F  0 - 49%

Course Schedule

<table>
<thead>
<tr>
<th>day</th>
<th>date</th>
<th>topic covered (tentative)</th>
<th>book chapters</th>
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<tbody>
<tr>
<td>1</td>
<td>Tu Jan 12</td>
<td>nature of light</td>
<td>22</td>
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<tr>
<td>2</td>
<td>Th Jan 14</td>
<td>wave optics</td>
<td>22</td>
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<tr>
<td>3</td>
<td>Tu Jan 19</td>
<td>wave optics</td>
<td>22</td>
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<tr>
<td>4</td>
<td>Th Jan 21</td>
<td>ray optics</td>
<td>23</td>
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<td>5</td>
<td>Tu Jan 26</td>
<td>ray optics</td>
<td>23</td>
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<td>6</td>
<td>Th Jan 28</td>
<td>ray optics</td>
<td>23</td>
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<tr>
<td>7</td>
<td>Tu Feb 2</td>
<td>exam 1</td>
<td>23</td>
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<tr>
<td>8</td>
<td>Th Feb 4</td>
<td>optical instruments</td>
<td>24</td>
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</table>
9  Tu Feb 9  optical instruments  24
10 Th Feb 11  electric charge and force  25
11  Tu Feb 16  electric field  26
12  Th Feb 18  electric field  26
13  Tu Feb 23  Gauss’s law  27
14  Th Feb 25  Gauss’s law  27
15  Tu Mar 1  exam 2
16  Th Mar 3  electric potential  28
17  Tu Mar 15  electric potential  28
18  Th Mar 17  potential and field  29
19  Tu Mar 22  potential and field  29
20  Th Mar 24  electric current  30
21  Tu Mar 29  electrical circuits  31
22  Th Mar 31  electrical circuits  31
23  Tu Apr 5  magnetic field  32
24  Th Apr 7  magnetic field  32
25  Tu Apr 12  electromagnetic induction  33
26  Th Apr 14  electromagnetic induction  33
27  Tu Apr 19  exam 3
28  Th Apr 21  electromagnetic fields  34
29  Tu Apr 26  quantum physics  38
30  Th Apr 28  quantum physics  38
  Tu May 11  final exam

Academic Honesty

All academic work must meet the standards contained in the document *A Culture of Honesty*, available at [www.uga.edu/honesty](http://www.uga.edu/honesty). Every student is responsible for knowing and understanding this policy. If you have any questions concerning this you are obligated to ask me for clarification. Anyone caught cheating will be reported to the university and will receive an F for the course.

General Information

This syllabus is a general plan for the course and deviations may be necessary. You are responsible for attending every lecture. Each student is responsible for the material discussed in class and the announcements made in class. Absence from class does not relieve one of this responsibility.

If you are *retaking* the course and are happy with the final lab grade you received previously, you do not have to attend the lab. You do have to remain registered for the lab, but you do not have to attend. Please contact Tom Barnello, the Lab Coordinator (email: tjbar@physast.uga.edu, tel: 706-542-2903) before the end of the drop/add period so that your seat may be made available to another student. If you would like to improve your lab grade, you must attend the lab and do all of the lab exercises again and take another lab final.