

**Portland State University**  
Department of Physics  
*Physics 203 – General Physics*  
Waves, Optics & Modern Physics

**Spring 2008**

**Instructor:** Bjoern Seipel  
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**Office hour:** **Wednesday 13.00-14.30** (and by appointment) at **SB2 314**  
**Text book:** **Giambattista Richardson Richardson - College Physics 2nd edition & ARIS (online course management system)**  
*Full Text (for PH 201,202,203) ISBN 0073222747*  
*or Volume I ISBN 0073256412 (for PH201 only) & ARIS*  
*Volume II ISBN 0073256420 (both volumes needed for PH202 and PH203) & ARIS*  
*To get access to ARIS use this link <http://www.mhhe.com/grr/> and go to the "super site"*

and register

**To enroll in ARIS for General Physics 203 use Student Section Code:**

**.....coming soon**

**Web:** <http://www.physics.pdx.edu/~bseipel/>

**Class:** **Tuesday and Thursday, 4.40pm-6.30pm in SB2**  
**#101**

**Course overview :** (updated 03/30/2008)

The course covers the basic concepts of waves, light and optics and modern physics.

**Part 1:** **Oscillations, Waves and Sound** (Chapter 10-12) (Exam1)

**Part 2:** **Optics** (Chapter 22-24) (Exam2)

**Part 3:** **Diffraction, Modern Physics** (Chapter 25-27) (Exam3)

**The Skills Enhancement and Tutoring Center 425 SMSU 503/725-4457 [www.setc.pdx.edu](http://www.setc.pdx.edu) offers free tutoring**

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[Java Applet for Lenses and Mirrors](#)

[TEST EXAM1](#)

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**Lecture Notes**

**Part 1:**

[01 in-class lecture notes](#)

[02 in-class lecture notes](#)

[03 in-class lecture notes](#)

[04 in-class lecture notes](#)

[05 in-class lecture notes](#)

[06 in-class lecture notes](#)

## **Homework**

**CH10 Problems** 28,30,34,35,44,46,49,55,57,58,60,62,63,69,71,75,76,82,89

**CH11 Problems** 1,3,5,9,11,12,14,15,18,20,23,33,36,37,40,42,43,49,53,55,56,59

**CH12 Problems** 1,10,11,12,16,20,23,29,31,34,35,37,41,46,51,53,62,63,68,71

### **Part 2:**

[06 in-class lecture notes](#)

[07 in-class lecture notes](#)

### **Part 3:**

[in-class lecture notes \(interference\)](#)

[in-class lecture notes \(relativity\)](#)

[in-class lecture notes \(quantum physics\)](#)

**CH22 Problems** 9,12,14,17,20,24,25,31,34,40,42,43,48,52,58,60,61

**CH23 Problems** 6,7,10,14,15,17,18,31,35,36,39,40,41,47,49,50,52,62,64,65,73,74,76,79,81,89,92,97

**CH24 Problems** 1,5,6,14,18,19,21,25,26,27,30,32,40,42,43,48,49,52,71,74

**Practice Quizzes:** [Quiz 4](#), [Quiz5](#), [Quiz6](#)

### **Part3:**

**Practice Quizzes:** [Quiz7](#)

**Solutions [quiz7](#),**

**CH25 Problems** 1,3,12,14,20,21,27,31,32,35,36,37,47,48,50,53,55,56,67,72

**CH26 Problems** 1,3,4,6,8,9,10,13,16,19,20,28,30,34,36,38,39,44,45,53,66,71,80

**CH27 Problems** 2,4,6,7,18,21,23,24,28,29

## **Homework**

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The homework is meant to **help the students**

apply the concepts from the lecture and to review the covered theory. Homework problems will be assigned but will not be graded. The homework should help the students to **prepare for the exams**. Some of the homework problems might also appear in a slightly changed form in the exams. **The solutions will be on hold in PSU's library.**

**All Conceptual Questions and Multiple Choice** questions at the end of each chapter.

**Suggested Problems (Solutions to the problems are on hold in the library):**

## **Quizzes**

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Besides the homework additional (online) quizzes will be given occasionally. These quizzes can consist of both conceptual questions and problems and will be graded. The quizzes count are worth 30% of your final grade.

## **Exams**

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The course grade is based on the quizzes (30%) three exams (70%). **The best exam of each student is worth 40%, and the two other are worth 35% (2<sup>nd</sup> best) and 25% of the total grade.** The exams can have both conceptual questions and problems. The exams are **non-comprehensive**, but exam 2 and 3 **may include** general concepts already covered in previous exam.

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Exam1 Tuesday April 22nd, **4.40pm-6.30pm**

Exam2 Thursday May 15th, **4.40pm-6.30pm**

Exam3 Tuesday June 10th **5.30pm-7.20pm**

Allowed is

**One piece of paper** is allowed with anything **YOU** want to write on it. **Handwritten** on both sides. Format: Letter 8.5 x 11

**Calculator is required!!**

Make-up exams will be only given in case of emergencies or illness (with proof) at the end of the term.

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### **Grading Scale**

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$\geq 90\%$  **A**, 80%-89% **B**, 70%-79% **C**, 60%-69% **D**,  $< 59\%$  **F**

Lowest in the range will be a MINUS, highest will be a PLUS

(E.g. 90% = A- and 89% = B+)

You can calculate your final score

Option 1: with Quizzes

Final Score =  $(e1 * 0.5 + e2 * 0.3 + e3 * 0.2) * 0.7 + Q * 0.3$

$e1, e2, e3$  = your exam scores in %;  $Q$  = Quiz Factor

The  $Q$  - factor will be calculated as follows:

Total quiz score =

80% -->  $Q = 100$

70% -->  $Q = 90$

60% -->  $Q = 80$

50% -->  $Q = 70$

Option 2: Without quizzes or quiz score  $< 50\%$

Final Score =  $e1 * 0.5 + e2 * 0.3 + e3 * 0.2$

### **Tutoring**

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The Skills Enhancement and Tutoring Center (SETC) provides FREE drop in tutoring in Biology, Chemistry, Chinese, French, German, Spanish, Arabic, Russian, Psychology, Physics, Statistics, and Writing. It is a FREE resource available for PSU students sponsored by Student Services Resource Fees and Student Affairs. The SETC has trained undergraduate and graduate tutors and has flexible drop in tutoring hours. The SETC is located in Smith Memorial Student Union (SMSU) in room 425. More information can be found at [www.setc.pdx.edu](http://www.setc.pdx.edu). (Physics: every day from 11:30 - 12:30)