

Portland State University  
Department of Physics

Physics 213, General Physics: Waves, Optics, & Thermodynamics  
Summer 2005: August 5 to August 26 11:45am – 2:05pm

**Instructor:** Todd Dixon

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**Office hours:** Tue/Wed 2:45 – 3:45, SB I Rm 220

**Text:** Fundamentals of Physics, Halliday, Resnick, & Walker (6<sup>th</sup> ed.)

This course covers the basic concepts of waves, optics, & thermodynamics. Homework problems will be assigned but will not be graded. The homework is meant to help the student apply the concepts from the lecture & to review the covered theory. The course grade is based on three exams.

### **Course Overview**

#### First Week

Ch 16 Oscillations  
Ch 17 Waves I  
Ch 18 Waves II  
Ch 34.1 – 34.6 Electromagnetic Waves  
Exam #1: August 12

#### Second Week

Ch 34.7 – 34.9 Electromagnetic Waves  
Ch 35 Images  
Ch 36 Interference  
Ch 37 Diffraction  
Exam #2: August 19

#### Third Week

Ch 19 Temperature, Heat, and the 1<sup>st</sup> Law of Thermodynamics  
Ch 20 The Kinetic Theory of Gases  
Ch 21 Entropy & the 2<sup>nd</sup> Law of Thermodynamics  
Exam #3: August 26