

San José State University
Department of Physics and Astronomy
Physics 52: General Physics (Optics and Thermodynamics)
Section 3, Spring 2017

Instructor: Professor Kiumars Parvin

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Office Hours: TR: 1330 - 1430, Sci 148 (You may call for appointment or drop in at other times.)

Class Days/Time: TR: 1500 – 1615

Classroom: Science 258

Prerequisites: Physics 51 and Math 31 both with grades C or higher.

Co-requisite: Physics 52 Lab

Course Description

This class covers the basics of Optics and Thermodynamics. In Optics, we study geometrical and physical optics that are based on wave nature of light. We also study quantization of electromagnetic wave which renders particle aspect of light. Topics in these areas include mirrors, lenses, microscope, telescope, interference, diffraction, and diffraction grating. In Thermodynamics, we begin by studying temperature and heat and their relation to macroscopic objects. Later in the heart of Thermodynamics, the relation of heat and energy is discussed along with three important thermodynamic laws that give us car engines and refrigerators.

Required Text

University Physics, Volume Two, 14th Edition, Young and Freedman, Addison-Wesley
Chapters to be covered: 14 and 15 (summary only), 33, 34, 35, 36, 38, 17, 18, 19, and 20.

Homework:

Students are required to register online to access the homework website and, to do homework online. If you buy a new book, it comes with a package called Mastering Physics, Student

Access Kit. Follow the instruction inside the package for registration. You also need the following:

- Your personal access code which is beneath the pull-tab inside your Access Kit.
- A course ID which is **PARVIN52SPRING2017**.
- A valid email address.

If you did not buy a new book, here are two options to get an access code and, then follow above procedure. You may return your book and purchase a new book, which comes with a Mastering Physics package. You can purchase an access code online with an e-textbook or without an e-textbook (lasts 24 months). For this option follow these steps.

Go to the site <http://www.masteringphysics.com>.

Click on the picture of the front page of our textbook.

Then choose whether you would like the e-textbook

Once you have chosen this, register and pay.

Note: You may already have access to Mastering Physics. If this is the case, you just need to enroll into the course using the Course ID **PARVIN52SPRING2017**. Also, you may already have a Pearson account. If you are unsure, go to Student Register and click *forgot password*.

Laboratory

Students are required to sign up in one laboratory section and to attend regularly that section. If a student decides to drop the class, both lecture and the lab must be dropped. It is not possible to take lecture and lab in 2 separate semesters. Semester laboratory grade will be reported to lecture instructor and constitutes 15% of overall Physics 52 grade.

Examinations

There will be two midterms and a final comprehensive examination. All exams will be closed book closed note except for final exam in which a formula sheet prepared by instructor will be provided. Each exam will have standard problems, multiple-choice problems, and/or True/False questions on concepts. It is strongly recommended that students study the Summary and Key Terms listed at the end of each chapter for the concept part of the examinations.

Tentative Midterm Exam Dates

Midterm 1: Tuesday, March 7, 1500 – 1615, Chapters 33, 34, and 35 in Science 258

Midterm 2: Tuesday, April 18, 1500 – 1615, Chapters 36, 38, 17, and 18 in Science 253

There will be no make-up tests.

Final Examination

Final Examination is comprehensive and will be given on Thursday May 18, 2017, 1445 – 1700 in Science 258. Students must discuss any exam conflict they have with all instructors as soon as possible.

Grading

Semester grades are assigned based on the following format:

Laboratory	15%
Homework	19%
Midterm 1	17%
Midterm 2	22%
Final exam (comprehensive)	27%

Minimum Score	93	89	85	81	77	73	69	65	61	58	55	<55
Course Grade	A	A-	B+	B	B-	C+	C	C-	D+	D	D-	F

Course Learning Outcomes (CLO)

Upon successful completion of this course students will be able to:

Understand the basics of Optics and Thermodynamics and Their applications.

Explain the day to day optical and thermal phenomena.

Solve simple problems involving geometrical and physical optics.

Solve simple problems involving particle nature of electromagnetic wave and wave nature of particles.

Solve simple problems involving thermal conduction.

Solve simple problems involving heat engines.

Adding Procedure

If you intend to add this course (lecture and lab), you need to visit Physics and Astronomy Department website (<http://www.physics.sjsu.edu>) in which appropriate instruction is posted in the front page.

Students are responsible for understanding the policies and procedures about add/drop, grade forgiveness, etc. Refer to the current semester's [Catalog Policies](#) section at the soite:

<http://info.sjsu.edu/static/catalog/policies.html>.

Add/drop deadlines can be found on the [current academic calendar](#) web page located at http://www.sjsu.edu/academic_programs/calendars/academic_calendar/.

The [Late Drop Policy](#) is available at

<http://www.sjsu.edu/aars/policies/latedrops/policy/>.

Students should be aware of the current deadlines and penalties for dropping classes.

Information about the latest changes and news is available at the [Advising Hub](#) at <http://www.sjsu.edu/advising/>.

Dropping Policy

If you decide to drop this class, you must drop lecture and lab. It is the policy of the Physics and Astronomy Department that these two classes must be taken during the same semester.

University Policies

Academic integrity

Your commitment as a student to learning is evidenced by your enrollment at San Jose State University.

The [University's Academic Integrity policy](http://www.sjsu.edu/senate/S07-2.htm), located at <http://www.sjsu.edu/senate/S07-2.htm>, requires you to be honest in all your academic course work. Faculty members are required to report all infractions to the office of Student Conduct and Ethical Development. The [Student Conduct and Ethical Development website](http://www.sjsu.edu/studentconduct/) is available at <http://www.sjsu.edu/studentconduct/>.

Instances of academic dishonesty will not be tolerated. Cheating on exams or plagiarism (presenting the work of another as your own, or the use of another person's ideas without giving proper credit) will result in a failing grade and sanctions by the University. For this class, all assignments are to be completed by the individual student unless otherwise specified. If you would like to include your assignment or any material you have submitted, or plan to submit for another class, please note that SJSU's Academic Policy S07-2 requires approval of instructors.

Campus Policy in Compliance with the American Disabilities Act

If you need course adaptations or accommodations because of a disability, or if you need to make special arrangements in case the building must be evacuated, please make an appointment with me as soon as possible, or see me during office hours. Presidential Directive 97-03 requires that students with disabilities requesting accommodations must register with the [Accessible Education Center](http://www.sjsu.edu/aec/) at <http://www.sjsu.edu/aec/> to establish a record of their disability.