San Jose State University
College of Science / Physics and Astronomy
Physics 52 Heat and Light, Sec 1, Spring 2019

Instructor: Paul F Houck
Meeting Times: MWF 9:30 - 10:20am Science Building, Room 253
Email: Paul.Houck@sjsu.edu
Office Hours M W 10:30 am - 12:30 pm in SCI 262
Prerequisites: A grade of C or higher in Physics 50, 51; Math 30, 31

Required: University Physics, Young and Freedman 14 ed, access to Canvas, and a scientific calculator.

Course Description: This is one of a three-semester series of courses in calculus-based general physics, serving students majoring in engineering, chemistry, physics, mathematics and other sciences. Students are introduced to general principles of optics and thermodynamics at a calculus-based level. Several technological applications of these principles are discussed. Topics include waves, geometric optics, wave optics (including interference, diffraction, and polarization), heat, thermal properties of matter, and thermodynamics and its laws. Other topics include special relativity and modern physics. A problem solving approach is used, emphasizing both conceptual understanding and basic mathematical modeling.

Student Learning Outcomes:

a. Solve real world problems involving propagation of light and heat.
b. Predict the transfer of heat among materials.
c. Analyze the physical propagation of light through different media, by drawing light ray diagrams characteristics of reflection and refraction.
d. Analyze the phenomena of interference and diffraction in optics, predicting patterns produced by narrow slits: single, double and multiple.
e. Explain how Relativity and Quantum Mechanics changed our view of the physical world.

Grading

Homework - Assigned via Canvas - 10%
Lab Grade - From your lab instructor - 10%
Midterm 1 - Optics - 30%
Midterm 2 - Thermo/Modern Topics - 20%
Final - Cumulative - 30%

(I might grade on a curve, don’t count on it.)
How to succeed in the class
- Read up on material before class. We are starting in chapter 33 and will be moving onto chapter 34 after that. By reading before class you will be able to get more out of the lecture.
- Do not read the book like a novel, it isn’t a novel, it is a textbook. I will be going over a few techniques in week 2 of the course to help you get the most out of the course.
- Attempt homework before it is due. This way when you have questions about specific problems you can ask in office hours, during lecture, during your lab, ask a friend. If you send me emails around midnight just before an assignment is due asking for help I will complain to my wife and she does not like that.
- If you are having trouble with a problem, try easier problems from the same section to act as stepping stones.
- Ask questions, even the act of trying to determine how you need to ask your questions will help you understand. (Saying “I don’t know.” is not a question!)
- Do not confuse being able to follow someone else’s work with understanding the material. Make sure you can explain ideas and work in your own words.
- You must take all exams to pass. The final exam is on Monday May 20, 7:15-9:30 am in the same room as lecture is held.

University Policies:
Academic Integrity Statement from the Office of Student Conduct and Ethical Development (Quoted from F06-2):
“Your own commitment to learning, as evidenced by your enrollment at San José State University, and the University’s Academic Integrity Policy 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 policy on academic integrity can be found at http://sjsu.edu/student_conduct.”

Campus Policy in Compliance with the Americans with Disabilities Act (Quoted text from F06-2):
“If you need course adaptations or accommodations because of a disability, or if you need 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 DRC to establish a record of their disability.”
Information for the Disability Resource Center (DRC) can be found at:
http://www.drc.sjsu.edu/

Presidential Directive 97-03 for Accommodations for Students with Disabilities can be found at:
http://www.sjsu.edu/president/directives/

For more details on course content and due dates for assignments, stay connected to Canvas for regular updates.