University of Hawaii
Department of Physics and Astronomy

Phys 440, Solid State Physics, Fall 2020

Time: Online class
Instructor: Prof. Klaus Sattler (956-8941), email: sattler@hawaii.edu
Text: Charles Kittel, Introduction to Solid State Physics

Course Outline:
Pre-Lecture: You will study videos on 'Survey of Materials Science'
Chapter 1: Crystal Structure
Chapter 2: Wave Diffraction and the Reciprocal Lattice
Chapter 3: Crystal Binding
Chapter 4: Phonons I. Crystal Vibrations
Chapter 5: Phonons II. Thermal Properties
Chapter 6: Free Electron Fermi Gas
Chapter 7: Energy Bands
Chapter 8: Semiconductor Crystals
Chapter 9: Fermi Surfaces and Metals
Chapter 10: Superconductivity
Special Topics Lectures

At the beginning of a week, you will receive lecture slides and videos to study during that week. Also, you will be guided through the week by email contacts.

Homework: At the end of every week, on or before Friday 4 pm, please submit a one-page essay describing what you learned during that week.

Exams: We will have two midterm exams and the final examination.
Tentative Dates: Test 1: Sept 28, Test 2: Nov. 2, Test 3, Dec. 9

SYLLABUS: The syllabus describes the intended progression of the course. The syllabus and homework assignments will be revised as needed. Changes to the syllabus and the homework assignments will be announced.