

115. Introduction to Quantum Mechanics (3)

Prerequisite: Physics 102, 105A, 110, Math 81. Historical background, postulates, meaning and methods of quantum mechanics; applications to atomic phenomena.

116. Quantum Physics of Atoms (3)

Prerequisite: Phys 115. Quantum mechanics applications to atomic and nuclear physics.

120. Electrical Measurements (3)

Prerequisite: Physics 4A-B-C, Math 77. Theory, operation and use of direct and alternating current measuring instruments. (2 lecture, 3 lab hours)

130A-B. Advanced Laboratory (2-2)

Prerequisite: Physics 102, 105A-B; senior physics major. Advanced experiments in mechanics, electricity and magnetism, atomic and nuclear physics. Opportunity for at least one individual project. (6 lab hours)

140. Thermodynamics and Kinetic Theory (3)

Prerequisite: Math 81. Fundamental concepts and laws of thermodynamics and kinetic theory with applications.

162. Introduction to Solid State Physics (3)

Prerequisite: Physics 115. Classification of solids; crystalline state and lattice vibrations; properties of metallic lattices and dielectrics; magnetic properties of solids; free electron theory and band theory of metals; semiconductors; imperfections.

170A-B. Introduction to Mathematical Physics (2-2)

Application of mathematical methods to the solution of problems in physics.

175T. Topics in Contemporary Physics (3)

Designed to provide students with special work in such areas of physics as plasmas, high energy physics, solid state, nuclear structure, astrophysics, low temperature phenomena.

180A-B. Seminar in Physics (1-1)

Prerequisite: senior or graduate physics major or permission of department chairman.

190. Independent Study (1-3; max see reference)

See *Regulations and Procedures—Independent Study*.

GRADUATE COURSES

(See *Course Numbering System—Definitions and Eligibility*)

Note: Preparation equivalent to a physics major at Fresno State College and the permission of the instructor are prerequisite to admission to any of the graduate courses in Physics.

203A-B. Theoretical Physics (3-3)

Advanced treatment of classical analytical mechanics including Lagrange's and Hamilton's formulation of the laws of motion, special relativity, small oscillation theory, hydrodynamics.

220A-B. Advanced Electricity and Magnetism (3-3)

Electromagnetic theory and its applications; solutions of Laplace's equation; electromagnetic potentials; cylindrical and spherical waves; retarded potentials; Lienard-Wiechert potentials; special relativity and electron theory.