MINORS

A minor in physics for a bachelor's degree requires 18 units of which 6 must be upper division. For general secondary credential minor, see *Physical Science* section.

JUNIOR HIGH SCHOOL CREDENTIAL

(See *Physical Science* section.)

GENERAL SECONDARY CREDENTIAL

(See *Physical Science* section.)

MASTER OF ARTS DEGREE

The graduate program for the master of arts degree in physics is based on the equivalent of the undergraduate major in physics at Fresno State College. Twenty of the 30 units required for the degree must be in physics. For specific requirements, consult the chairman of the department; for general requirements, see *Degrees and Credentials—Master's Degrees*. See foreign language requirement below. For information on junior college teaching, see *Education Division* section.

MASTER OF SCIENCE DEGREE

The master of science degree in physics is designed for graduates who desire to seek industrial employment in physics and allied fields. Undergraduate preparation equivalent to a physics major at Fresno State College is necessary for admission. For specific details of the program, consult the chairman of the department; for general requirements, see *Degrees and Credentials—Master's Degrees*. See foreign language requirement below. For information on junior college teaching, see *Education Division* section.

FOREIGN LANGUAGE REQUIREMENT

After September 1, 1962, advancement to candidacy for the master of arts or the master of science degree with a major in physics will require the passing of an examination demonstrating the ability to read materials of the major in French, German, or Russian.

Courses

PHYSICS

Note: Math 6, Physics 4A-B-C are prerequisite to all upper division and graduate physics courses. No more than 12 units of lower division physics may be applied toward a degree. Associated lecture and laboratory courses must be taken concurrently.

2A-B. General Physics (4-4)

Prerequisite: Math B, 28, or equivalents; satisfactory score on mathematics proficiency test. Mechanics, properties of matter, heat, sound, light, electricity and magnetism, and modern physics. (3 lecture, 3 lab hours)

4A. Mechanics and Sound (4)

Prerequisite: Math 3. Statics, forces, motions, properties of matter, wave motion and sound; solution of problems illustrating principles of mechanics. (3 lecture, 3 lab hours)

4B. Electricity and Magnetism (4)

Prerequisite: Physics 4A, Math 3, 4. Electrostatics, concepts of fields and potential, capacitance, D.C. circuits, chemical and thermal effects, magnetic fields, induced current, alternating current circuits. (3 lecture, 3 lab hours)

4C. Heat, Light and Radiation (4)

Prerequisite: Physics 4A, Math 3, 4. Temperature, calorimetry, heat flow, engine cycles, lenses, mirrors, optical instruments, spectra, atomic structure, radioactivity, X rays, and nuclear physics. (3 lecture, 3 lab hours)