BACHELOR OF SCIENCE DEGREE IN CHEMISTRY

General Education	45
Chemistry Major	46
Chem 1A-B, 6, 106, 110A-B, 111A-B, 128A-B, 129A-B	
Elect 6 units from: Chem 115, 122, 126, 130	
Elect 3 units from: Chem 190 or a 200 course	
Additional Requirements	30
German 61, Math 3, 4, 6, Physics 4A-B-C	
Physics 102A or other approved u.d. physics or mathematics course	
Electives	7
German 1A-B or equivalent required if not taken in high school	
Recommended: Chem 99	
	128

MINORS

A minor in chemistry for a bachelor's degree requires 19 or 20 units, of which 6 are upper division. See also general secondary credential minor in *Physical Science* section.

	Units
Chem 1A-B; or 2A-B and 101	9–10
Chem 8, 105, 109	10
	19–20

JUNIOR HIGH SCHOOL CREDENTIAL

(See *Physical Science* section)

GENERAL SECONDARY CREDENTIAL

(See *Physical Science* section)

MASTER OF SCIENCE DEGREE

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

FOREIGN LANGUAGE REQUIREMENT

After September 1, 1962, advancement to candidacy for the master of science degree with a major in chemistry (except for those who have been certified as graduates in Chemistry by the American Chemical Society) will require the passing of an examination demonstrating the ability to read scientific German.

Courses

CHEMISTRY

1A-B. General Chemistry and Qualitative Analysis (5-5)

Chem 1A not open to students with credit in Chem 2A-B. Prerequisite: high school chemistry or physics; advanced algebra or Math B (and a satisfactory score on mathematics proficiency test). Fundamental principles of chemistry; properties of common elements and their compounds; application of the principles of chemical equilibrium to separation and identification of ions. (3 lecture, 6 lab hours)