

Mathematics majors planning to apply the use of mathematics in any of several areas are recommended to elect additional courses in consultation with departments offering courses in such areas.

### MATHEMATICS MINOR

The minor in mathematics includes 20 units of mathematics courses, of which at least 6 must be upper division. Math 75, or Math 71 and 72, or equivalent must be included. Math 1, 2, 4, 5 may not be applied on the minor.

### CREDENTIAL PROGRAM

The Mathematics Department has an approved waiver program for certification of subject matter competence which is a part of the requirement leading to a public school teaching credential. See the departmental adviser for details.

### MASTER OF ARTS AND MASTER OF SCIENCE DEGREES

For information about the Graduate program at CSU, Fresno, see the *Graduate Bulletin*, available in the Office of the School of Graduate Studies.

#### Foreign Language Requirement

Any student preparing for graduate work in mathematics is advised to meet the foreign language requirement of the school he or she plans to attend. Proficiency in the reading of at least two languages selected from French, German, and Russian is required for most doctor's degree programs; however, most graduate programs do not leave time for language study. There is usually no language requirement for a master's degree.

### COURSES

#### MATHEMATICS (Math)

##### 1. Elementary Algebra (3) (Former Math 27)

Transition from arithmetic to the symbolism and generalization of algebra; fundamental operations, equations, formulas. (See *Duplication of Courses*)

##### 2. Plane Geometry (3) (Former Math 28)

Prerequisite: Math 1. Points, lines, angles, triangles, polygons, circles; axioms, theorems; proofs and constructions.

##### 4. Intermediate Algebra (3) (Former Math 29)

Prerequisite: elementary algebra and geometry. Sets, functions, graphs, quadratic equations, inequalities, simultaneous equations, matrices and determinants, mathematical induction, binomial theorem, progressions, exponents and logarithms. (See *Duplication of Courses*.)

##### 5. Trigonometry (3) (Former Math 30)

Prerequisite: intermediate algebra. Concept of a function, sine and cosine functions, tables and graphs, other trigonometric functions, identities and equations. Trigonometric functions of angles, solution of triangles. (See *Duplication of Courses*.)

##### 11. Elementary Statistics (3) (Former Math 40)

Prerequisite: high school algebra. Illustration of statistical concepts: elementary probability models, sampling, descriptive measures, confidence intervals, testing hypotheses, chi-square, nonparametric methods, regression. It is recommended that students with credit in Math 72 or 75 take Math 101.

##### 11L. Elementary Statistics Laboratory (1) (Former Math 40L)

Prerequisite: concurrent enrollment in Math 11. (Not required for Math 11.) Computational techniques pertinent to elementary statistics with emphasis on calculator programming and formula derivation.