MATHEMATICS

The mathematics program provides strong emphasis on fundamental concepts and problem solving skills useful in a myriad of career paths. The study of both pure mathematics and applied mathematics provide skills useful in fields such as Actuarial Science, Astronomy, Biology, Chemistry, Computer Science, Digital Arts, Earth Sciences, Economics, Education, Engineering, Physical Sciences, Physics, the Social Sciences.

Associate in Science Degree

MATHEMATICS FOR TRANSFER DEGREE

The Associate in Science in Mathematics for Transfer (Mathematics AS-T) Degree is intended for students who plan to complete a bachelor's degree in a similar major at a CSU campus. Students completing the degree are guaranteed admission to the CSU system, but not to a particular campus or major.

A student graduating with an Associate in Science in Mathematics for Transfer degree may transfer to a four-year institution to complete a Bachelor's Degree in mathematics and applied mathematics or similar programs.

To earn an Mathematics AS-T degree, students must complete:

REQUIRED CORE (15 units):		**UNITS**
MATH V21A	Calculus/Analytic Geometry I	5
MATH V21B	Calculus/Analytic Geometry II	5
MATH V21C	Multivariable Calculus	5

Choose a minimum of 6 units from LIST A and B with at least 3 units from LIST A:

LIST A:
Select one to two (1-2) of the following courses (3-6 units):

MATH V22	Linear Algebra	3
MATH V23	Differential Equations	3

LIST B:
Select one (1) of the following courses (3-5 units):

CS V11	Programming Fundamentals	3
CS V13	Object-Oriented Programming	3
CS V17/ MATH V52	Discrete Structures	3
CS V30	Beginning C++	3
CS V40	Beginning Java	3
MATH V44	Elementary Statistics	4
PHYS V03A	General Physics I: Calculus Based	4
AND		
PHYS V03AL	General Physics I Laboratory: Calculus Based	1

Major Units	21-23
CSU General Education or IGETC-CSU Pattern	44-45
Electives (CSU transferrable units to reach 60)	
Double-Counted Units	(5-10)
DEGREE TOTAL	**60**

See a counselor or consult assist.org, especially if you plan to transfer to a UC campus or a college or university other than CSU.

For other course descriptions, see Computer Science and Physics

PROGRAM STUDENT LEARNING OUTCOMES

Upon successful completion of the **Mathematics** program students will be able to:

- Use formal systems of reasoning to draw well supported conclusions from given information..
- Comprehend and express mathematical constructs using correct mathematical notation.

COURSE DESCRIPTIONS

Recommended preparation for all math courses: The mathematics department strongly urges all students to take the appropriate mathematics assessment test to help determine the strength and currency of background knowledge.

MATH V01 - ELEMENTARY ALGEBRA — 5 Units

Prerequisite: *MATH V10 or MATH V10A-V10C; or placement as measured by the college assessment process*
Hours: *5 lecture weekly*
This course covers number sets, operations with signed numbers, linear equations, graphing, ratio, proportion and variation, linear inequalities, introduction to functions, factoring, rational expressions and equations, exponents, factorable quadratic equations, and systems of equations. Students receiving credit in MATH V01 will not receive credit in MATH V01A-V01E or MATH V11A-V11B.
Formerly Math 1.

MATH V02 - GEOMETRY — 3 Units

Prerequisite: *MATH V01 or MATH V01A-V01E or MATH V11B or MATH V88A-V88E; or placement as measured by the college assessment process*
Hours: *3 lecture weekly*
This course covers sets, real numbers, lines and planes, triangles, congruence, proof, geometric inequalities, parallel and perpendicular lines and planes, polygons, similarity, circles, locus, construction, area, perimeter, and volume.
Formerly Math 2.

MATH V03 - INTERMEDIATE ALGEBRA — 5 Units

Prerequisite: *MATH V01 or MATH V01E or MATH V11B; or placement as measured by the college assessment process*
Hours: 5 lecture weekly
This course covers equations and inequalities, systems of equations using matrices, exponents and radicals, complex numbers, functions and graphs, quadratic equations, conic sections, exponential and logarithmic functions. It satisfies mathematics competency for the AA/AS degree. Students receiving credit in MATH V03 will not receive credit in MATH V03A-V03E, MATH V12, MATH V13A-V13B or MATH V35.
Formerly Math 3.

MATH V04 - COLLEGE ALGEBRA — 4 Units

Prerequisite: *MATH V03 or MATH V13B; or placement as measured by the college assessment process*
Hours: *4 lecture weekly*
This is an advanced course in algebra, designed for students continuing to calculus or applied calculus. Topics include a review of number systems and basic algebra; systems of equations (including matrices and their determinants); variation; functional notation; theory of polynomial equations; study of polynomial, rational, radical, exponential, absolute value, and logarithmic functions; complex numbers; analytic geometry; and applications.
Formerly Math 4. Transfer credit: CSU; UC; credit limitations - see counselor.