Total Degree Units  60

For crosswalk of new subject codes, see page 43

Recommended Course Sequence
Fall, Year 1 (5 Units):
MATH 003A
Spring, Year 1 (5 Units):
MATH 003B
Fall, Year 2 (5 Units):
MATH 004A
Electives
Fall or Spring, Year 2 (4-8 Units):
List A - MATH 004B, MATH 004C. Choose one to two courses.
Fall or Spring, Year 1 or 2 (4-5 Units):
List B - Choose one course if only one was chosen in List A
Required Core: 23-24 units

MATHMATICS
A.S. Degree
Mathematics is a multifaceted subject of great beauty and application. The study of math explores some of the deepest questions and puzzles that have ever been encountered and equips the student with a universal language used to study quantities and relationships in all fields. Through the study of mathematics, the student develops both the ability to think logically and abstractly as well as the problem-solving and computational skills necessary for success in any field of study. A major in mathematics transfers to a four-year university where students have the opportunity to complete a Bachelor's Degree in Biology, Chemistry, Computer Science, Economics, Engineering, Mathematics, Physics, disciplines in Physical Sciences, and Statistics. Career Options
• Actuary • Appraiser • Assessor • Auditor • Biometrician • Budget Analyst • Casualty Rater • Computer Programmer • Controller • Demographer • Doctor • Econometrician • Engineering Analyst • Epidemiologist • Financial Analyst • Investment Analyst • Lawyer • Management Scientist • Mathematician • Operations Researcher • Public Opinion Analyst • Statistician • Surveyor • Systems Analyst • Teacher • Urban Planner. After completing this degree in Mathematics, a student will be able to:
• Solve problems using mathematical symbols, operations, and techniques appropriate to the course content and level of study.
• Apply appropriate technology including calculators and computers to the solution of mathematical problems.
• Demonstrate computational, estimation, and problem-solving skills.
• Construct mathematical models of physical problems, draw conclusions from these models, and communicate their conclusions.
• Formulate and test mathematical conjectures.
• Adapt general mathematical techniques to course-specific problems.
Required Core Courses: 23 units
Course  Units  OR
MATH 003A Calculus and Analytic Geometry 5  MATH 019 Discrete Mathematics 4
MATH 003B Calculus and Analytical Geometry 5  BIO 040 Organismal Biology 4
MATH 004A Intermediate Calculus 5  BIO 041 Principles of Animal Biology 5
MATH 004B Differential Equations 4  BIO 042 Principles of Plant Biology 5
MATH 004C Linear Algebra 4  BIO 043 Principles of Cell Biology 5
CHEM 001A General Chemistry 5  CHEM 001B General Chemistry 5
CHEM 012A Organic Chemistry 5  CHEM 012B Organic Chemistry 5
CIS 004A Computer Programming I (C++ Programming) 4  CIS 004A1 Computer Programming I (Java) 4
CIS 004B Computer Programming II (C++ Language) 4  CIS 004B1 Computer Programming II (Java) 4
CIS 037 C Programming 3  CIS 037 Discrete Mathematics 3
ECON 001A Principles of Microeconomics 3  ECON 001A Principles of Microeconomics Lab 1
ECON 001AH Honors Principles of Microeconomics 3  ECON 001AH Honors Principles of Microeconomics Lab 1
ECON 002AH Principles of Microeconomics Lab 1  ECON 002AH Honors Principles of Microeconomics Lab 1
ECON 002B Principles of Microeconomics 3  ECON 002B Principles of Microeconomics Lab 1
ECON 002BH Honors Principles of Microeconomics 3  ECON 002BH Honors Principles of Microeconomics Lab 1
ENGR 021 Intro Computing for Scientists and Engineers 3  GEOL 001A Physical Geology 4
GEOL 001AH Honors Physical Geology 4  GEOL 001AH Honors Physical Geology 4
GEOL 001BH Historical Geology 3  GEOL 001BH Historical Geology 3
GEOL 002B Historical Geology Laboratory 1  MATH 004C Linear Algebra 4
MATH 004 Linear Algebra 4  MATH 010 Elementary Statistics 4
MATH 010H Honors Elementary Statistics 4  MATH 019 Discrete Mathematics 4
MATH 012H Honors Linear Algebra 4  PHYS 002A General Physics -- Mechanics 5
PHYS 002B General Physics -- Electricity and Magnetism 5  PHYS 004A Engineering Physics--Mechanics 5
PHYS 004B Engineering Physics - Electricity and Magnetism 5  PHYS 004C Engineering Physics-Light, Heat and Waves 5
PHYS 004D Advanced Topics in Modern Physics 3  Total Major Units 29-33

To be awarded an A.S. degree, a student must complete
1. Core major requirements and required electives (29-33) units.
2. Additional units to meet the college graduation requirements.

Recommended Course Sequence
Fall, Year 1 (5 Units):
MATH 003A
Spring, Year 1 (5 Units):
MATH 003B
Fall, Year 2 (5 Units):
MATH 004A
Spring, Year 2 (4 Units):
MATH 004B
Fall or Spring, Year 2 (6-10 Units):
MATH 004C or MATH 019
Electives
Fall or Spring, Year 1 or 2 (6-10 Units):
Select 2 courses in Required Elective List.
Required Core: 23 units
Elective: 6-10 units

MATH TMP1 TRANSFER MATH
PREPARATION 1 - PREPARATION FOR TRANSFER LEVEL
0.5 units
Lecture 0 units; lab 0.5 units
This course serves as a preparation for students entering Math 000D, 001, 002, 008, and/or 012. In this course, students have the opportunity to develop mathematical skills necessary in succeeding in a transfer level math course as well as study skills needed to succeed in Trigonometry, Pre-calculus Algebra and/or Applied Calculus through classroom instruction and by using a web-based algebra system. Pass/No Pass Only

MATH TMP2 TRANSFER MATH
PREPARATION 2 - PREPARATION FOR FIRST SEMESTER CALCULUS
0.5 units
Lecture 0 units; lab 0.5 units
This course serves as a preparation for students entering Math 003A, Calculus I and Analytic Geometry. In this course, students have the opportunity to develop mathematical skills necessary in succeeding in a first-semester calculus course through classroom instruction and/or by using a web-based mathematics learning system. Pass/No Pass Only

MATH 000D TRIGONOMETRY
3 units
Lecture 3 units; lab 0 units
Prerequisite: MATH 104 or MATH 104R and MATH 106 or MATH 106R or qualifying score on Placement Test and proof of Geometry and Algebra II. Acceptable for credit: California State University C-ID MATH 851
This course covers the study of trigonometric functions. Topics include graphs, inverses, identities and proofs related to trigonometric expressions, trigonometric equations, solving right and oblique triangles, and the introduction to vectors.

• PREREQUISITES AND COREQUISITES are MANDATORY. See page 5 for specific information.
• Courses used to meet prerequisite requirements must have been completed with a grade of C or Pass or better.
• ADVISORY is a recommended preparation, NOT a REQUIREMENT.
• This catalog is subject to change and may be incomplete. Please consult the addenda at westvalley.edu/catalog/