MATH-MATHEMATICS (MATH)

MATH 101. General Supplemental Instruction I
1 Credit
Corequisite(s): MATH 120.

MATH 102. General Supplemental Instruction II
1 Credit
Corequisite(s): MATH 121G.

MATH 107. Topics in Mathematics
1-3 Credits
Topics to be announced in the Schedule of Classes. Maximum of 3 credits per semester. Total credit not to exceed 6 credits. Community Colleges only.
Prerequisite: consent of instructor.

MATH 111. Fundamentals of Elementary Mathematics I
3 Credits
Numbers and the four operations of arithmetic. Understanding and comparing multiple representations of numbers and operations, in particular how these representations build from whole numbers to integers to fractions and decimals. Applying properties of numbers and operations in contextual situations. Reasoning, communicating, and problem solving with numbers and operations. Applications to ratio, and connections with algebra. Taught primarily through student activities and investigations. Restricted to: EDUC,EPAR,E ED,ECED majors.
Prerequisite: C or better in MATH 111.

MATH 112G. Fundamentals of Elementary Mathematics II
3 Credits
Geometry and measurement. Multiple approaches to solving problems and understanding concepts in geometry. Analyzing and constructing two- and three-dimensional shapes. Measurable attributes, including angle, length, area, and volume. Understanding and applying units and unit conversions. Transformations, congruence, and symmetry. Scale factor and similarity. Coordinate geometry and connections with algebra. Reasoning and communicating about geometric concepts. Taught primarily through student activities and investigations.
Prerequisite(s): C or better in MATH 111.

MATH 120. Intermediate Algebra
3 Credits
Linear and algebraic functions as they arise in real world problems. Exponential and logarithmic functions. Equations and inequalities and their solutions considered symbolically, graphically and numerically. )
Prerequisite: adequate score on the Mathematics Placement Examination (see note above.

MATH 121G. College Algebra
3 Credits
Fundamental concepts of functions, including algebraic and graphical properties. Fitting functions to data. Finding zeroes and extreme values. Solving systems of equations.
Prerequisites: Adequate math placement score or C or better in MATH 120.

MATH 121. General Supplemental Instruction III
1 Credit
Corequisite(s): MATH 121G.

MATH 142G. Calculus for the Biological and Management Sciences
3 Credits (2+2P)
Review of functions. Derivatives, exponential and logarithmic functions, antiderivatives and indefinite integrals, basic ordinary differential equations and growth models, with an emphasis on applications.
Includes a significant writing component.
Prerequisite(s): C or better in MATH 121G.

MATH 190G. Trigonometry and Precalculus
4 Credits (3+2P)
Elementary functions used in the sciences with emphasis on trigonometric functions and their inverses. Polar coordinates. Complex numbers and Euler's formula. Analytic geometry and vectors.
Prerequisite: adequate score on Mathematics placement exam or a C or better in MATH 121G (see note at beginning of this section).

MATH 191G. Calculus and Analytic Geometry I
4 Credits
Limits and continuity, theory and computation of derivatives, applications of derivatives, extreme values, critical points, derivative tests, L'Hopital's Rule.
Prerequisite(s): C or better in MATH 190G.

MATH 192G. Calculus and Analytic Geometry II
4 Credits
Riemann sums, the definite integral, antiderivatives, fundamental theorems, techniques of integration, applications of integrals, improper integrals, Taylor polynomials, sequences and series, power series and Taylor series.
Prerequisite(s): C or better in MATH 191G.

MATH 192GH. Calculus and Analytic Geometry II Honors
4 Credits (3+1P)
A more advanced treatment of the material of MATH 192G with additional topics. Consent of Instructor required. Restricted to Las Cruces campus only.
Prerequisite(s): Consent of Department.

MATH 200. Directed Study
1-3 Credits
May be repeated for a maximum of 6 credits. Graded S/U.
Prerequisite: consent of the instructor.

MATH 210G. Mathematics Appreciation
3 Credits
Mathematics and its role in the development and maintenance of civilization.
Prerequisites: High school algebra, and an adequate score on the Mathematics Placement Examination.

MATH 215. Fundamentals of Elementary Mathematics III
3 Credits
Probability, statistics, ratios, and proportional relationships. Experimental and theoretical probability. Collecting, analyzing, and displaying data, including measurement data. Multiple approaches to solving problems involving proportional relationships, with connections to number and operation, geometry and measurement, and algebra. Understanding data in professional contexts of teaching. Taught primarily through student activities and investigations.
Prerequisite(s): C or better in MATH 112.

MATH 235. Calculus for the Technical Student I
3 Credits
Intuitive differential and integral calculus with applications to engineering.
Prerequisite: C or better in MATH 190G.
MATH 236. Calculus for the Technical Student II
3 Credits
A continuation and extension of the material in MATH 235.
Prerequisites: C or better in MATH 235 or in MATH 192G.

MATH 242. Calculus for the Biological and Management Sciences II
3 Credits
Calculus of functions of several variables, techniques of integration, differential equations, infinite series. Applications.
Prerequisite: C or better in MATH 142G.

MATH 275G. Spirit and Evolution of Mathematics
3 Credits
Same as HON 275G.

MATH 279. Introduction to Higher Mathematics
3 Credits
Logic; sets, relations, and functions; introduction to mathematical proofs.
Prerequisites(s): C- or better in MATH 192.

MATH 280. Introduction to Linear Algebra
3 Credits
Systems of equations, matrices, vector spaces and linear transformations. Applications to computer science.
Prerequisites(s): Grade of C- or better in MATH 192G.

MATH 291G. Calculus and Analytic Geometry III
3 Credits
Vector algebra, directional derivatives, approximation, max-min problems, multiple integrals, applications, cylindrical and spherical coordinates, change of variables.
Prerequisite: grade of C or better in MATH 192G.

MATH 292. Calculus and Analytic Geometry IV
3 Credits
Vector calculus, linear algebra, selected topics. Community Colleges only.
Prerequisite: grade of C or better in MATH 291G or equivalent.