MATHEMATICS (MATH)

90 Beginning Algebra — 3 credit hours
Offered fall and spring semesters. Three hours of lecture and discussion a week. Inclusive Access Fee: $95.00.

This course has four modules: evaluating algebraic expressions and solving linear and literal equations; graphing linear equations and inequalities, finding equations of lines, including parallel and perpendicular lines; performing operations with integer exponents, scientific notation, and multiplying polynomials; factoring polynomials and solving quadratic equations using factoring. Applications of all these topics will also be covered. Calculators will be used throughout this course. A scientific calculator with a fraction key is strongly recommended. This course does not meet associate degree graduation requirements.

93 Intermediate Algebra — 3 credit hours
Offered fall and spring semesters. Three hours lecture and discussion a week. Inclusive Access Fee: $95.00.

This course has four modules: rational expressions and equations; systems of equations; rational exponents, radicals and their graphs; quadratic, absolute value and piece-wise defined functions and their graphs. Applications of all these topics will also be covered. Some topics from Beginning Algebra will be reviewed before the specific module is covered. Calculators will be used throughout this course. A scientific calculator with a fraction key is strongly recommended. This course does not meet associate degree graduation requirements.

Prerequisite: Appropriate Placement Assessment score or grade of "C" or better in Mathematics 90, or students who have had a grade of "D" in Mathematics 96.

96 Beginning and Intermediate Algebra — 6 credit hours
Six hours of lecture and discussion per week.

This course is designed for those students who wish to complete the Math 90 and Math 93 sequence of courses during a single semester. Calculators will be used throughout this course. A scientific calculator with a fraction key is strongly recommended. This course does not meet associate degree graduation requirements.

Prerequisite: Appropriate Placement Assessment score.

102 College Algebra — 3 credit hours
Offered fall and spring semesters. Three hours lecture and discussion a week. Inclusive Access Fee: $61.00.

This course includes the study and applications of functions including Polynomial, Rational, Exponential, Logarithmic, Logistic, Trigonometric, Parametric and Inverse functions. Applications of systems of equations, inequalities and matrices will also be covered. This course focuses on the importance of thinking, problem solving and application and requires that students engage in solving realistic problems using technological tools.

Prerequisite: Appropriate Placement Assessment score or grade of "C" or better in Mathematics 93 or 96.

105 Elements of Mathematics — 3 credit hours
Offered fall and spring semesters. Three hours of lecture and discussion a week.

Introduction to problem solving with emphasis on strategies applied to topics in algebra, probability and statistics.

Prerequisite: Appropriate Placement Assessment score or grade of "C" or better in Mathematics 90.

109 Probability and Statistics — 3 credit hours
Offered fall and spring semesters. Three hours lecture and discussion a week. Inclusive Access Fee: $61.00.

The main topics are: probability, counting techniques, binomial distribution, charts and graphs, measures of central tendency and variability, normal distributions, sampling methods, z-scores, t-scores, confidence intervals and hypothesis tests. The following hypothesis tests will be covered in this course; one mean, one and two proportions, unpaired t-test, paired t-test, regression and correlation, multiple regression, chi square goodness of fit test, chi square test for independence and analysis of variance. Significance levels, p-values, critical values, test statistics and summaries of hypothesis tests will be included. This course includes the use of Excel or other statistical software to analyze data.

Prerequisite: Appropriate Placement Assessment score or grade of "C" or better in Mathematics 90.

119 Pre-Calculus I — 4 credit hours
Offered fall and spring semesters. Four hours lecture and discussion a week. Inclusive Access Fee: $95.00.

This course begins with a review of algebra. The course progresses through the study of operations with exponents and radicals; solutions of equations and inequalities; mathematical expressions, functions and solving and graphing linear, quadratic, polynomial, rational and exponential and logarithmic functions; and solutions to systems of equations and matrices. This course is designed as a first course in analysis for those planning to study mathematics 201 and a basic course for those planning to enroll in mathematics 200. A graphing calculator, such as a TI-83, may be required.

Prerequisite: Appropriate Placement Assessment score or grade of "C" or better in Mathematics 93 or 96.

120 Pre-Calculus II — 4 credit hours
Offered spring semester. Four hours lecture and discussion a week. Inclusive Access Fee: $95.00.

This course is a continuation of Mathematics 119. It progresses through an analytical study of the trigonometric and reverse trigonometric functions, trigonometry equations, trigonometric identities, applications of trigonometry, mathematical induction, and conic sections. A graphing calculator, such as a TI-83, may be required.

Prerequisite: Appropriate Placement Assessment score, Mathematics 119, or consent of instructor.

200 Calculus for Applications — 3 credit hours
Offered spring semester. Three hours lecture and discussion a week. Inclusive Access Fee: $95.00.

An introductory one-semester calculus course with emphasis on business, economics, and life science applications. Limits and continuity are treated intuitively. The major task of the course is an investigation of the derivative and integral for applications.

Students who have completed Mathematics 201 may not take 200 for credit.

Prerequisite: Appropriate placement test score or Mathematics 102 or 119. Students who have completed Mathematics 201 may not take 200 for credit.

201 Calculus I — 4 credit hours
Offered fall semester. Four hours lecture and discussion a week. Inclusive Access Fee: $95.00.

Includes study of limits, continuity, and differentiation of algebraic and trigonometric functions; chain rules; maximum-minimum problems: curve plotting; Rolle's and mean value theorems; and definite and indefinite integration of these functions and applications. A graphing calculator, such as a TI-83, may be required.

Prerequisite: Appropriate Placement Assessment score or successful completion of Mathematics 120.

202 Calculus II　　　　　　　　　　**4 credit hours**
Offered spring semester. Four hours lecture and discussion a week.
Inclusive Access Fee: $95.00.

Includes a continuation of application of the definite and indefinite integral
along with transcendental and hyperbolic functions, further techniques of
integration, polar coordinates, parametric equations, and infinite series. A
graphing calculator, such as a TI-83, may be required.

Prerequisite: Mathematics 201.

203 Calculus III　　　　　　　　　　**4 credit hours**
Four hours lecture and discussion a week.

This course includes a study of vectors in n-space and their applications,
partial derivatives, multiple integrals and line integrals. A graphing
calculator, such as a TI-83, may be required.

Prerequisite: Mathematics 202.

206 Differential Equations　　　　　　**4 credit hours**
Four hours lecture and discussion a week.

Includes solution of equations of order one with elementary applications;
linear differential equations - homogeneous and nonhomogeneous
equations; variation of parameters; inverse differential operators; and
Laplace transforms. A graphing calculator, such as a TI-83, may be
required.

Prerequisite: Mathematics 202.

216 Mathematics for Teacher Education I　　**3 credit hours**
(Education 216)
Offered fall semester. Three hours lecture and discussion a week.
Inclusive Access Fee $95.00.

This course is a program requirement designed specifically for students
majoring in Teacher Education. It is intended to enhance and broaden
the students' mathematical knowledge. Cooperative learning and
collaborative group investigations will be utilized to solve problems,
conduct mathematical experiments, formulate mathematical models, make
predictions, and other related learning activities. Topics in the course
include problem solving and reasoning, set theory, functions, estimation,
numeration and mathematical systems, the real number system and
elementary number theory. Mastery of basic communication skills is
required to successfully complete this course. Students will be required
to make both oral and written reports as they communicate mathematics.
Mathematics 216 does not meet the general education requirement for an
Associate Degree.

*Prerequisite: Appropriate Placement Assessment score or grade of "C" or
better in Mathematics 90.*

217 Mathematics for Teacher Education II　　**3 credit hours**
(Education 217)
Offered spring semester. Three hours lecture and discussion a week.
Inclusive Access Fee $95.00.

Cooperative and collaborative group activities will be utilized in the
investigation of topics in basic geometry, measurement techniques,
introductory probability and elementary statistics. Communicating
mathematics, utilizing technology as a tool for problem solving,
basic experimentation and data collecting, and connections between
mathematical concepts, patterns and models to real world applications
are activities stressed in this course. This course may be used to meet
General Education Requirements.

*Prerequisite: Appropriate Placement Assessment score or grade of "C" or
better in Mathematics 90.*