Note: Students with low ACT or SAT scores, or lacking scores, are given a Mathematics Placement Test to determine the appropriate level of mathematics course in which they may enroll.

The following courses are designed to help students prepare for College-level coursework and do not result in degree or transferable credit.

**MATH 0308. FOUNDATIONS OF MATHEMATICAL REASONING (LECTURE 3, LAB 1). CREDIT 3. ACGM.**

This course prepares students for a college level courses in Statistical Reasoning and Quantitative Reasoning. Topics include: numeracy with an emphasis on estimation and fluency with large numbers; evaluating expressions and formulas; rates, ratios, and proportions; percentages; solving equations; linear models; data interpretations, including graphs and tables; verbal, algebraic and graphical representations of functions; exponential models. Prerequisite: TSI Math 336 - 349 or AB 5 or AB 6. This course does not transfer.

**MATH 0310. ELEMENTARY ALGEBRA (LECTURE 3, LAB 0). CREDIT 3. ACGM.**

This course is designed to develop skills and understanding in basic algebra concepts. Topics include equations, graphing, exponents, polynomials, factoring, radicals, and systems of linear equations. Prerequisite: TSI Math 336-341. This course does not transfer.

**MATH 0320. INTERMEDIATE ALGEBRA (LECTURE 3, LAB 0). CREDIT 3. ACGM.**

This course is designed to develop skills and understanding in the following areas: relations and functions, inequalities, algebraic expressions and equations (absolute value, polynomial, radical, rational), with a special emphasis on linear and quadratic expressions and equations. Prerequisites/co-requisites: Prerequisite of TSI Math 342-349 or MATH 0310 with a grade of "C" or better or co-requisite of MATH 0310. This course does not transfer.

The following are approved academic courses for credit, transferable to public universities in Texas.

**MATH 1314. COLLEGE ALGEBRA (LECTURE 3, LAB 1). CREDIT 3. ACGM.**

In-depth study and applications of polynomial, rational, radical, exponential and logarithmic functions, and systems of equations using matrices. Prerequisites/co-requisites: Prerequisite of TSI Math 350 or MATH 0320 with a grade of "C" or better or co-requisite of MATH 0320.

**MATH 1324. MATH FOR BUSINESS AND SOCIAL SCIENCE (LECTURE 3, LAB 1). CREDIT 3. ACGM.**

The application of common algebraic functions, including polynomial, exponential, logarithmic, and rational, to problems in business, economics, and the social sciences are addressed. The applications include mathematics of finance, including simple and compound interest and annuities; systems of linear equations; matrices; linear programming; and probability, including expected value. Prerequisite: TSI Math 350 or MATH 0320 with a grade of "C" or better.

**MATH 1325. BUSINESS CALCULUS (LECTURE 3, LAB 1). CREDIT 3. ACGM.**

This course is the basic study of limits and continuity, differentiation, optimization and graphing, and integration of elementary functions, with emphasis on applications in business, economics, and social sciences. Prerequisites: MATH 1314 or MATH 1324 with a grade of "C" or better or COM Math Placement Test.

**MATH 1332. CONTEMPORARY MATH (QUANTITATIVE REASONING) (LECTURE 3, LAB 0). CREDIT 3. ACGM.**

Intended for Non STEM (Science, Technology, Engineering, and Mathematics) majors. Topics include introductory treatments of sets and logic, financial mathematics, probability and statistics with appropriate applications. Number sense, proportional reasoning, estimation, technology, and communication will be embedded throughout the course. Prerequisites/co-requisites: Prerequisite of TSI Math 350 or MATH 0308 with a grade of "C" or better or co-requisite of MATH 0308. Contact Counseling to determine which math course satisfies requirement of desired baccalaureate program.

**MATH 1342. ELEM STATISTICAL METHODS (LECTURE 3, LAB 1). CREDIT 3. ACGM.**

Collection, analysis, presentation and interpretation of data and probability. Analysis includes descriptive statistics, correlation and regression, confidence intervals and hypothesis testing. Prerequisite of TSI Math 350 or MATH 0308 with a grade or co-requisite of MATH 0308.

**MATH 1350. MATHEMATICS FOR TEACHERS I (LECTURE 3, LAB 0). CREDIT 3. ACGM.**

This course is intended to build or reinforce a foundation in fundamental mathematics concepts and skills. It includes the conceptual development of the following: sets, functions, number systems, number theory, and properties of the various number systems with an emphasis on problem solving and critical thinking. Prerequisite: MATH 1314 with a grade of "C" or better.

**MATH 1351. MATHEMATICS FOR TEACHERS II (LECTURE 3, LAB 0). CREDIT 3. ACGM.**

This course is intended to build or reinforce a foundation in fundamental mathematics concepts and skills. It includes the concepts of geometry, measurement, probability, and statistics with an emphasis on problem solving and critical thinking. Prerequisite: MATH 1350 with a grade of "C" or better.

**MATH 2318. LINEAR ALGEBRA (LECTURE 3, LAB 3). CREDIT 3. ACGM.**

Introduces and provides models for application of the concepts of vector algebra. Topics include finite dimensional vector spaces and their geometric significance; representing and solving systems of linear equations using multiple methods, including Gaussian elimination and matrix inversion; matrices; determinants; linear transformations; quadratic forms; eigenvalues and eigenvector; and applications in science and engineering. Prerequisite: MATH 2414 with grade of "C" or better.

**MATH 2412. PRECALCULUS (LECTURE 4, LAB 0). CREDIT 4. ACGM.**

In-depth combined study of algebra, trigonometry, and other topics for calculus readiness. Prerequisites: MATH 1314 grade "C" or better or COM Math Placement Test.

**MATH 2320. DIFFERENTIAL EQUATIONS (LECTURE 3, LAB 0). CREDIT 3. ACGM.**

Ordinary differential equations, including linear equations, systems of equations, equations with variable coefficients, existence and uniqueness of solutions, series solutions, singular points, transform methods, and boundary value problems; application of differential equations to real-world problems. Prerequisite: MATH 2414 with grade "C" or better.
MATH 2413. CALCULUS I  
(LECTURE 4, LAB 1). CREDIT 4. ACGM.  
Limits and continuity; the Fundamental Theorem of Calculus; definition of the derivative of a function and techniques of differentiation; applications of the derivative to maximizing or minimizing a function; the chain rule, mean value theorem, and rate of change problems; curve sketching; definite and indefinite integration of algebraic, trigonometric, and transcendental functions, with an application to calculation of areas. Prerequisite: MATH 2412 with a grade of "C" or better or COM Placement Test.

MATH 2414. CALCULUS II  
(LECTURE 4, LAB 0). CREDIT 4. ACGM.  
Differentiation and integration of transcendental functions; parametric equations and polar coordinates; techniques of integration; sequences and series; improper integrals. Prerequisite: MATH 2413 with a grade of "C" or better.

MATH 2415. CALCULUS III  
(LECTURE 4, LAB 0). CREDIT 4. ACGM.  
Advanced topics in calculus, including vectors and vector-valued functions, partial differentiation, Lagrange multipliers, multiple integrals, and Jacobians; application of the line integral, including Green's Theorem, the Divergence Theorem, and Stokes' Theorem. Prerequisite: MATH 2414 with a grade of "C" or better.