MAT 001 - MAT 001

Lec: 0 Lab: 0 Credit: *

Indicates credit given for rigorous calculus-track mathematics course work transferred from another college for which there is no equivalent course at TTC. *Hours vary depending on external course.

Division: Science and Mathematics

MAT 002 - MAT 002

Lec: 0 Lab: 0 Credit: *

Indicates credit given for transfer-level mathematics course work transferred from another college for which there is no equivalent course at TTC. *Hours vary depending on external course.

Division: Science and Mathematics

MAT 031 - Developmental Mathematics Basics

Lec: 3.0 Lab: 0 Credit: 3.0

Course Offered
Fall
Spring
Summer

This course includes the study of whole numbers, fractions, decimals, ratios, proportions and percents. Concepts are applied to real-world problem solving.

Appropriate placement

Grade Type: Pass/Fail

Division: Science and Mathematics
MAT 032 - Developmental Mathematics

Lec: 3.0 Lab: 0 Credit: 3.0

Course Offered
Fall
Spring
Summer

This course includes the study of integers, rational numbers, percent, basic statistics, measurement, geometry and basic algebra concepts. Application skills are emphasized.

Prerequisite
MAT 031
or
appropriate placement

Grade Type: Pass/Fail
Division: Science and Mathematics

MAT 101 - Beginning Algebra

Lec: 3.0 Lab: 0 Credit: 3.0

Course Offered
Fall
Spring
Summer

This course includes the study of rational numbers and their applications, operations with algebraic expressions, linear equations and applications, linear inequalities, graphs of linear equations, operations with exponents and polynomials, and factoring.

Prerequisite
MAT 032
or
appropriate placement

Grade Type: Letter Grade
Division: Science and Mathematics

MAT 102 - Intermediate Algebra

Lec: 3.0 Lab: 0 Credit: 3.0

Course Offered
This course includes the study of linear systems and applications; quadratic expressions, equations, functions, and graphs; and rational and radical expressions and functions.

**Prerequisite**
MAT 101
with a minimum grade of C

**Grade Type:** Letter Grade  
**Division:** Science and Mathematics

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**MAT 109 - College Algebra with Modeling**

**Lec:** 3.0  **Lab:** 0  **Credit:** 3.0

**Course Offered**
Fall  
Spring

This course is an approach to algebra that incorporates mathematical modeling of real data and business applications. Emphasis is on linear, quadratic, piecewise defined, rational, polynomial, exponential and logarithmic functions. Includes inequalities and matrices. MAT 109 is designed for the student with plans to use college algebra as a terminal course or take MAT 130 after completion. Focus is placed more on applications rather than theoretical mathematics.

**Prerequisite**
MAT 102
with a minimum grade of C or appropriate placement

**Grade Type:** Letter Grade  
**Restrictions:** Students who receive credit for MAT 109 may not also receive credit for MAT 110.  
**Division:** Science and Mathematics

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**MAT 110 - College Algebra**

**Lec:** 3.0  **Lab:** 0  **Credit:** 3.0

**Course Offered**
Fall  
Spring
Summer
This course includes the following topics: polynomial, rational, logarithmic and exponential functions; inequalities; systems of equations and inequalities; matrices; determinants; and solutions of higher degree polynomials.

**Prerequisite**
MAT 102
with a minimum grade of C

**Grade Type:** Letter Grade

**Restrictions:** Students who receive credit for MAT 110 may not receive credit for MAT 109 or MAT 112.

**Division:** Science and Mathematics

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**MAT 111 - College Trigonometry**

**Lec:** 3.0  **Lab:** 0  **Credit:** 3.0

**Course Offered**
Fall
Spring
Summer

This course includes the following topics: trigonometric functions, trigonometric identities, solution of right and oblique triangles, solution of trigonometric equations, polar coordinates, complex numbers including De Moivre’s Theorem, vectors, conic sections and parametric equations.

**Prerequisite**
MAT 110
with a minimum grade of C

**Grade Type:** Letter Grade

**Restrictions:** Students may not receive credit for both MAT 111 and MAT 112.

**Division:** Science and Mathematics

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**MAT 112 - Precalculus**

**Lec:** 5.0  **Lab:** 0  **Credit:** 5.0

**Course Offered**
Spring
Summer
This course includes algebraic, exponential, logarithmic and trigonometric functions and their graphs; analytic trigonometry; analytic geometry; and applications of trigonometry.

**Prerequisite**

MAT 102

with a grade of B or higher or appropriate placement

**Grade Type:** Letter Grade

**Restrictions:** Students who receive credit for MAT 112 may not receive credit for MAT 109, MAT 110 or MAT 111.

**Division:** Science and Mathematics

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**MAT 120 - Probability and Statistics**

**Lec:** 3.0  **Lab:** 0  **Credit:** 3.0

**Course Offered**

Fall
Spring
Summer

This course includes introductory probability and statistics, including organization of data, sample space concepts, random variables, counting problems, binomial and normal distributions, central limit theorem, confidence intervals and test of hypothesis for large and small samples, type I and type II errors, linear regression, and correlation.

**Prerequisite**

MAT 101

with a minimum grade of C or appropriate placement

**Grade Type:** Letter Grade

**Division:** Science and Mathematics

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**MAT 123 - Contemporary College Mathematics**

**Lec:** 3.0  **Lab:** 0  **Credit:** 3.0

**Course Offered**

Spring
Summer

This course provides an appreciation and understanding of the mathematics underlying several topics in contemporary society. Topics may include voting methods, apportionment problems, Euler and Hamilton circuits, population growth and fractals.

**Prerequisite**

MAT 102
with a minimum grade of C or appropriate placement

Grade Type: Letter Grade
Division: Science and Mathematics

MAT 130 - Elementary Calculus

Lec: 3.0 Lab: 0 Credit: 3.0
This course includes differentiation and integration of polynomials; rational, logarithmic and exponential functions; and interpretation and application of these processes. This is a terminal course designed for students who do not wish to take additional calculus courses. Its transferability usually depends on the student’s major.

Prerequisite
MAT 109
or
MAT 110
or
MAT 112
with a minimum grade of C

Grade Type: Letter Grade
Restrictions: Students may not receive credit for both MAT 130 and MAT 140.
Division: Science and Mathematics

MAT 140 - Analytic Geometry and Calculus I

Lec: 4.0 Lab: 0 Credit: 4.0
Course Offered
Fall
Spring
Summer
This course includes derivatives and integrals of polynomials; rational, logarithmic, exponential, trigonometric and inverse trigonometric functions; curve sketching; maxima and minima of functions; related rates; work; and analytic geometry.

Prerequisite
MAT 111
or
MAT 112
with a minimum grade of C
**Grade Type:** Letter Grade  
**Restrictions:** Students may not receive credit for both MAT 140 and MAT 130  
**Division:** Science and Mathematics

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**MAT 141 - Analytic Geometry and Calculus II**

**Lec:** 4.0  **Lab:** 0  **Credit:** 4.0 

**Course Offered**

Fall  
Spring  
Summer

This course continues calculus of one variable, including analytic geometry, techniques of integration, volumes by integration and other applications, infinite series including Taylor series, and improper integrals.

**Prerequisite**

MAT 140  
with a minimum grade of C

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**MAT 155 - Contemporary Mathematics**

**Lec:** 3.0  **Lab:** 0  **Credit:** 3.0 

**Course Offered**

Fall  
Spring  
Summer

This course includes techniques and applications of the following topics: properties of and operations with real numbers, elementary algebra, consumer mathematics, applied geometry, measurement, graph sketching, interpretations and descriptive statistics.

**Prerequisite**

MAT 032  
or  
appropriate placement

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**Grade Type:** Letter Grade  
**Division:** Science and Mathematics
MAT 170 - Algebra, Geometry and Trigonometry I

Lec: 3.0 Lab: 0 Credit: 3.0

Course Offered
Fall
Spring
Summer

This course includes elementary algebra, geometry, trigonometry and applications.

Prerequisite
MAT 032

Grade Type: Letter Grade
Division: Science and Mathematics

MAT 240 - Analytic Geometry and Calculus III

Lec: 4.0 Lab: 0 Credit: 4.0

Course Offered
Fall
Spring
Summer

This course covers multivariable calculus including vectors, partial derivatives and their applications to maximum and minimum problems with and without constraints, line integrals, multiple integrals in rectangular and other coordinates, and Stokes’ and Green’s theorems.

Prerequisite
MAT 141
with a minimum grade of C

Grade Type: Letter Grade
Division: Science and Mathematics

MAT 242 - Differential Equations

Lec: 4.0 Lab: 0 Credit: 4.0

Course Offered
Fall
Spring
Summer
This course includes solution of linear and elementary nonlinear differential equations by standard methods with sufficient linear algebra to solve systems, applications, series, Laplace transform and numerical methods.

**Prerequisite**

MAT 141

with a minimum grade of C

**Grade Type:** Letter Grade  
**Division:** Science and Mathematics