

**Central Ohio Technical College  
Course Description Listing – General Education Courses – Mathematics Courses  
2009-2010 Academic Year**

**ALL STUDENTS MUST TAKE PLACEMENT TESTS PRIOR TO SCHEDULING THE FIRST COMMUNICATIONS OR MATHEMATICS COURSE.**

**MTH-1200 Basic Mathematics**

5 credit hours, 5 contact hours (5 hours lecture and 0 hours lab). Prerequisite: None. Not open to students with credit for MTH-3000 or MTH-3002. Course is required for all students scoring below 41 on the ASSET numerical skills test or below 44 on the COMPASS numerical skills test. This course will count neither for elective credit nor toward meeting minimum credit hours for graduation. Course is graded A-E.

Basic Mathematics is designed to develop the student's potential to succeed in other college mathematics courses. The basic arithmetic skills involving whole numbers, fractions, and decimals are reviewed. Also covered are signed numbers, percents, dimension analysis, and the rudiments of algebra.

**MTH-1203 Introduction to Geometry**

3 credit hours, 3 contact hours (3 hours lecture and 0 hours lab). Prerequisite: C grade (2.00) or better in MTH-1200, or score of at least 41 on ASSET Numerical Skills test, or score of at least 44 on COMPASS Pre-Algebra/Numerical Skills test. This course will count neither for elective credit nor toward meeting minimum credit hours for graduation. Course is graded A-E.

This course is an introduction to elementary geometric concepts. It includes the study of lines, angles, triangles, polygons, circles and solids. Right triangle trigonometry and classic geometric constructions are also explored. This course is problem-solving oriented rather than proof-oriented.

**MTH-1204 Business Math**

5 credit hours, 5 contact hours (5 hours lecture and 0 hours lab). Prerequisite: C grade (2.00) or better in MTH-1200, or score of at least 41 on ASSET numerical skills test or score of at least 44 on COMPASS pre-Algebra/Numerical Skills Test. Course is graded A-E. This course is not open to students with credit for MTH-1201 or MTH-1202.

This course is a study of basic business arithmetic. It presents the concepts and applications of percentages, payroll, insurance, consumer interest, loans, and other common business computations.

**MTH-1205 Introduction to Algebra**

5 credit hours, 5 contact hours (5 hours lecture and 0 hours lab). Prerequisite: C grade (2.00) or better in MTH-1200, or score of at least 41 on ASSET Numerical Skills test, or score of at least 44 on COMPASS Pre-Algebra/Numerical Skills test. This course will count neither for elective credit nor toward meeting minimum credit hours for graduation. This course is not open to students with credit for MTH-1210. Course is graded A-E.

This course is an introduction to elementary algebraic concepts. It includes operations with real numbers, exponents and radicals, variable expressions, first degree equations, word problems, formulas and graphing. The student will develop the ability to use a scientific calculator efficiently.

**MTH-1208 Elementary Statistics**

5 credit hours, 5 contact hours (5 hours lecture and 0 hours lab). Prerequisite: C grade (2.00) or better in MTH-1205 or score of at least 43 on COMPASS Elementary Algebra test. This course is not open to students with credit for MTH-1224, MTH-1230 or MTH-2030. Course is graded A-E.

This is an introductory course in descriptive and inferential statistics. Topics covered include summarizing data with frequency tables; pictures of data; measures of center, variation and position; exploratory data analysis; probability; probability distributions; normal probability distributions; estimates and sample sites; hypothesis testing; inferences from two samples; correlation and regression. Concepts are explained intuitively and supported by examples. The applications are general in nature, and the exercises include problems from agriculture, biology, business, economics, education, environmental studies, psychology, engineering, medicine, sociology, and computer science.

**COTC Course Description Listing – General Education Courses – Mathematics Courses  
2009-2010 Academic Year****MTH-1210 Intermediate Algebra**

5 credit hours, 5 contact hours (5 hours lecture and 0 hours lab). Prerequisite: C grade (2.00) or better in MTH-1205, or score of at least 10 on COTC Algebra Skills test, or score of at least 43 on COMPASS Elementary Algebra test. This course is not open to students with credit for MTH-3010. Course is graded A-E.

This course is a study of intermediate algebraic operations. It includes solving equations and inequalities, factoring, rational expressions, radicals, systems of equations, and graphing.

**MTH-1215 College Algebra**

5 credit hours, 5 contact hours (5 hours lecture and 0 hours lab). Prerequisite: Successful completion of MTH-1210 with a grade of "C" (2.00) or better or a score of at least 71 on the COMPASS Algebra test. A Texas Instruments 83, 84, or 89 graphing calculator is required for this course. Course is graded A-E.

This course is a study of algebraic functions including polynomial, rational, radical, exponential, logarithmic and piece-wise defined functions. Topics investigated will include domain, range, graphs, inverses, operations, equations, inequalities and their applications.

**MTH-1216 Pre-Calculus**

5 credit hours, 5 contact hours (5 hours lecture and 0 hours lab). Prerequisite: Successful completion of MTH-1215 with a grade of "C" (2.00) or better or a score of at least 80 on the COMPASS Algebra test. Course is graded A-E.

This course is a study of the concepts of Trigonometry (including graphs), vectors and conic sections.

**MTH-1226 Trigonometry**

5 credit hours, 5 contact hours (5 hours lecture and 0 hours lab). Prerequisite: C grade (2.00) or better in MTH-1210 or a score of at least 71 on the COMPASS Algebra test. Course is graded A-E.

Exponential and logarithmic functions and concepts of trigonometry, including the graphing of trigonometric functions, are discussed.

**MTH-1232 Introduction to Calculus**

5 credit hours, 5 contact hours (5 hours lecture and 0 hours lab). Prerequisite: MTH-1226 or a score of 46 on the COMPASS Trigonometry test. Course is graded A-E. Course is not open to students with credit for MTH-1231 or MTH-3020.

An introduction to the principles of Analytic Geometry to develop an understanding of graphic functions. These concepts are expanded to the calculus or rate of change expressed through algebraic functions, derivatives, maximum and minimum velocity, temperature, and the applications of the integral in areas, volumes, pressure, power, electrical charge and work; with the emphasis on their application as related to the engineering technician.

**MTH-2553 Mathematics for Programming**

5 credit hours, 5 contact hours (5 hours lecture and 0 hours lab). Prerequisite: C grade (2.00) or better in MTH-1210 or a score of at least 71 on the COMPASS Algebra test. Course is graded A-E.

Areas of study include numeration systems, matrix and Boolean algebra, probability, mathematics of finance, and other mathematical topics used in programming.