

MATHEMATICS

With the complexity of the modern era, basic mathematical principles are needed to a greater degree than ever before. A great deal of emphasis is being placed on scientific discoveries and improvements. An insight of these processes is needed by all students for better citizenship for tomorrow. The facts and mechanics of mathematics are easily forgotten, but knowledge of principles and understanding of the processes are remembered. The mathematics program of this school endeavors to offer instruction in mathematics to meet the social, practical, and vocational needs of the student. No matter what career a student may choose, some mathematics is needed.

Graduation requirement:

Class of 2010 and beyond 6 credits (3 years) of Math

Pre-Algebra - Grades 9-10

2 Semester

Prerequisite: Instructor Recommendation

This course is designed to develop the understanding and thinking skills needed for successive courses in the mathematics program. In order to succeed in this class, the student will be expected to use the necessary study skills to complete the daily assignments and be prepared for the quizzes and tests.

Topics studied through application/problem solving include: fundamental operations on real numbers; solving equations, inequalities and problems; number theory; ratios, area, perimeter, exponents, proportions and percents; graphing linear equations and inequalities, and probability and statistics. Other topics covered may include volume, basic geometric concepts, and measurement.

Algebra I - Grades 9-10-11

2 Sememster

Prerequisite: Instructor Recommendation

Algebra I is the basis for the study of all advanced science and mathematics. The course includes elementary algebra, integrating other branches of mathematics with algebra and solving application problems to show students how math is used in our society. The branches of mathematics studied will be algebra, geometry, discrete math, probability and statistics. In order to succeed in this class the student will be expected to use the necessary study skills to complete the daily assignments and be prepared for the quizzes and tests.

Geometry - Grades 9-10-11-12

2nd Semester

Prerequisite: Algebra I

Geometry is a course that maintains and integrates algebra skills and concepts and applies geometric concepts to everyday life. Students will learn logical thinking and problem-solving skills. Some calculator usage will also be included. Students will be expected to do daily assignments along with quizzes and tests for each chapter.

Preferred calculator: TI30XIIS

Algebra II - Grades 10-11-12

2nd Semester

Prerequisite: Geometry

This is the third course in the traditional college-prep math sequence (following Algebra I and Geometry). Topics covered include equations, inequalities, functions, systems, matrices, quadratics, polynomials, exponents, radicals, logarithms, conic section, and an introduction to trigonometry. Most concepts are presented both manually and with use of graphing calculator technology. An emphasis is placed on applying concepts to real life situations when possible.

Algebra III with Trigonometry - Grades 11-12

Semester Elective

Prerequisite: Algebra II

This is the 1st semester of the fourth course in the traditional college-prep sequence (following Algebra I, Geometry, and Algebra II). Topics covered include functions and their graphs, polynomials, and right triangle trigonometry. Most concepts are presented both manually and with use of graphing calculator technology. An emphasis is placed on applying concepts to real life situations when possible.

Pre-Calculus - Grades 11-12

Semester Elective

Prerequisite: Algebra III with Trigonometry

This is the 2nd semester of the fourth course in the traditional college-prep sequence (following Algebra I, Geometry, and Algebra II). Topics include exponential and logarithm functions, sequences and series, conic sections, polar graphing, and an introduction to Calculus at the end of the course. Most concepts are presented both manually and with use of graphing calculator technology. An emphasis is placed on applying concepts to real life situations when possible.

Calculus I – Grades 11-12

Semester Elective

Prerequisite: Algebra III with Trigonometry and ACT of 28 in Math or CompassTrig 46 (Dual Credit through ICCC 4 credits) [MAT 210]

This is a first course in integrated calculus and analytic geometry. The concepts of analytic geometry are studied as they apply to calculus. The calculus concepts covered include the rate of change of a function, limits, derivatives of algebraic, logarithmic, trigonometric, and inverse trigonometric functions, applications of the derivative and an introduction to integration. The graphing calculator will be used.

Calculus II – Grades 11-12

Semester Elective

Prerequisite: Calculus I and ACT of 28 in Math or CompassTrig of 46 (Dual Credit through ICCC 4 credits) [MAT 216]

This is the second course of the calculus sequence. It includes the study of techniques and applications of integration, infinite series, polar equations and graphs, and vectors in two and three dimensions and vector-valued functions.

Principals of Statistics - Grades 11-12

Semester Elective

Prerequisite: Algebra II and ACT Math score of 20 or Compass Algebra Score of 51 (Dual Credit through ICCC – 3 credits) [MAT 156]

The study of principles of statistics is recommended for anyone planning to pursue a college degree. Basic elements of statistics presented in this course can be found in literally hundreds of occupations from science and technology to business and education. This course is highly recommended for all college-bound and community college-bound seniors. Topics covered include sampling, descriptive statistics (graphical representations, measures central tendency, and measure of dispersion), analysis of normal distributions, estimation, combinatorics, and the use of probability in predicting experimental outcomes. Students will be graded on written assignments, written tests and quizzes, and laboratory activities. Scientific calculator will be used, preferably the TI30XIIS.

Business Math – Grades 11-12

Semester Elective (Dual Credit through ICCC-4 credits) [BUS 112]

Prerequisite: Guidance Approval

The student applies basic mathematical skills used in personal and business operations. This course includes fractions, decimals, percents, trade and cash discounts, markups, markdowns, interest, depreciation, investments, insurance, payroll, and annuities. Calculators will be used. This course is suggested for anyone with an interest in Administrative Specialist, Carpentry, Graphics Technology, and Web Technology.

Technical Mathematics – Grades 11-12

Semester Elective (Dual Credit through ICCC-3 credits) [MAT 743]

Prerequisite: Guidance Approval

This is an applied mathematics course which will teach or reinforce basic mathematical skills. Fundamental mathematical concepts will be applied to the real life problems of today's industries. This course is suggested for anyone with an interest in Automotive Technology, CAD Technology, Industrial Mechanics, Diesel Technology, Manufacturing Technology, and Welding Technology.