MATHEMATICS

Graduation Requirement:

I. Three years of mathematics; thirty units of Math. Pass Algebra 1.

MATH I

PREREQUISITES: Teacher Placement

CONTENT: This year long course includes standards from the conceptual categories of Number and Quantity, Algebra, Functions, Geometry and Statistics and Probability. Students will extend their understanding of numerical manipulation to algebraic manipulation along with their understanding of linear relationships and functions. The course will also include topics of data analysis and geometry. Homework is assigned and use of a calculator is up to the discretion of the instructor. **Satisfies the UC/CSU Mathematics Subject Requirement.**

MATH I SUPPORT

GRADE LEVEL: 9

PREREQUISITE: Teacher Placement

CONTENT: This course is designed for students who are taking Math I and need the extra math support in order to be successful in Math I.

MATH I HONORS (H)

PREREQUISITES: Teacher Placement

CONTENT: The Math I Honors course will progress at a faster pace, with more depth per topic and more topics studied. Homework requirements will be more demanding than the non-honors course. This year long course includes standards from the conceptual categories of Number and Quantity, Algebra, Functions, Geometry and Statistics and Probability. Students will extend their understanding of numerical manipulation to algebraic manipulation along with their understanding of linear relationships and functions. The course will also include topics of data analysis and geometry. Homework is assigned and use of a calculator is up to the discretion of the instructor. **Satisfies the UC/CSU Mathematics Subject Requirement.**

MATH II

PREREQUISITES: "C" grade or better second semester of Math I

CONTENT: This year long course includes standards from the conceptual categories of Number and Quantity, Algebra, Functions, Geometry and Statistics and Probability. Students will extend their understanding of linear, exponential and quadratic functions with the introduction of the complex number system. The course will also include topics of probability, similarity, right triangle trigonometry and circles. Homework is assigned and use of a calculator is up to the discretion of the instructor. **Satisfies the UC/CSU Mathematics Subject Requirement.**

MATH II HONORS (H)

PREREQUISITES: "C" grade or better second semester of Math I (H)

CONTENT: The Math II Honors course will progress at a faster pace, with more depth per topic and more topics studied. Homework requirements will be more demanding than the non-honors course. This course includes standards from the conceptual categories of Number and Quantity, Algebra, Functions, Geometry and Statistics and Probability. Students will extend their understanding of linear, exponential and quadratic functions with the introduction of the complex number system. The course will also include topics of probability, similarity, right triangle trigonometry and circles. Homework is assigned and use of a calculator is up to the discretion of the instructor**. Satisfies the UC/CSU Mathematics Subject Requirement.**

MATH II A

PREREQUISITES: Teacher Placement

CONTENT: This course is the first year of a two-year Math II program. Students will take Math II A their first year and Math II B their second year. Students must pass both years in order to meet their graduation requirement. This course includes standards from the conceptual categories of Number and Quantity, Algebra, Functions, Geometry and Statistics and

Probability. Students will extend their understanding of linear, exponential and quadratic functions with the introduction of the complex number system. Homework is assigned and use of a calculator is up to the discretion of the instructor. **Satisfies the UC/CSU Mathematics Subject Requirement.**

MATH II B

PREREQUISITES: Passing grade in Math II A

CONTENT: This course is the second year of a two-year Math II program. Students must pass both years in order to meet their graduation requirement. This course includes standards from the conceptual categories of Number and Quantity, Algebra, Functions, Geometry and Statistics and Probability. Students will extend their understanding of linear, exponential and quadratic functions with the introduction of the complex number system. The course will also include topics of probability, similarity, right triangle trigonometry and circles. Homework is assigned and use of a calculator is up to the discretion of the instructor**. Satisfies the UC/CSU Mathematics Subject Requirement.**

MATH III

PREREQUISITES: "C" grade or better second semester of Math II

CONTENT: This year long course includes standards from the conceptual categories of Number and Quantity, Algebra, Functions, Geometry and Statistics and Probability. Students will extend their understanding of functions to include polynomial, rational and radical functions. Right triangle trigonometry will be extended to include general triangles. The concepts of functions and geometry will be consolidated in order to model and solve contextual problems. The course will also include topics of probability and data. Homework is assigned and use of a calculator is up to the discretion of the instructor**. Satisfies the UC/CSU Mathematics Subject Requirement.**

MATH III HONORS (H)

PREREQUISITES: "C" grade or better second semester of Math II Honors

CONTENT: The Math III Honors course will progress at a faster pace, with more depth per topic and more topics studied. Homework requirements will be more demanding than the non-honors course. This year long course includes standards from the conceptual categories of Number and Quantity, Algebra, Functions, Geometry and Statistics and Probability. Students will extend their understanding of functions to include polynomial, rational and radical functions. Right triangle trigonometry will be extended to include general triangles. The concepts of functions and geometry will be consolidated in order to model and solve contextual problems. The course will also include topics of probability and data. Homework is assigned and use of a calculator is up to the discretion of the instructor**. Satisfies the UC/CSU Mathematics Subject Requirement.**

PRE-CALCULUS

PREREQUISITES: "C" grade or better second semester of Math III.

CONTENT: The first semester is an extension of Math III topics with primary focus on studying functions. Topics studied include graphs and applications of the twelve basic functions with emphasis on learning how to use a graphing calculator. The second semester is the study of Trigonometry. Trigonometric functions, solving equations involving the trigonometric functions, complex numbers, Law of Sines and Law of Cosines are studied in depth along with other trigonometric applications. Students may borrow a graphing calculator, but it is preferred for students to have their own. Regular and extensive homework is assigned.

Satisfies the UC/CSU Mathematics Subject Requirement.

STATISTICS

(Not offered 23-24)

PREREQUISITES: "C" grade or better second semester of Math 3.

CONTENT: This course is an introduction to probability and statistics with emphasis on techniques

and applications that are useful in business, social sciences and biological sciences. Students will be introduced to the major concepts and tools for collecting, analyzing and drawing conclusions from data. A scientific calculator is required. Regular and extensive homework is assigned **Satisfies the UC/CSU Mathematics Subject Requirement.**

AP CALCULUS AB (H)

PREREQUISITES: "B" grade or better in Math 3 Honors and recommendation from the Math 3 Honors teacher.

CONTENT: College-level theory and applications of differential and integral calculus are studied. Intensive effort and a graphing calculator (TI preferred) are required. A graphing calculator will be supplied if student does not have one. **Satisfies the UC/CSU Mathematics Subject Requirement.**

PREPARATION FOR STATISTICS

PREREQUISITES: "C" grade or better second semester of Math 3.

CONTENT: This one semester introductory Statistics Course is designed for the college-bound student who has successfully completed Math III or Math III Honors and is intended to prepare students for a dual enrollment transferable community college Statistics course Spring semester. The goal of this course is to provide students with exposure to the big ideas of statistics and probability with a balance of conceptual understanding, computation, and the use of statistical technology. Students will use spreadsheets and the free online statistics calculator in geogebra.org to analyze real data, observational and sampled, and to simulate random experiments. Each unit in the course will culminate with a traditional paper exam and a performance task that involves data analysis and/or conducting an experiment. The performance tasks allow the students to support their knowledge through written reports that describe patterns, interpret results and draw data-based conclusions.

Satisfies the UC/CSU Mathematics Subject Requirement.

***Only offered Fall semester**

ELEMENTARY PROBABILITY AND STATISTICS

PREREQUISITES:"C" or better in Preparation for Statistics.

CONTENT: This dual enrollment course covers data analysis using descriptive and inferential statistics. Graphs and computations include measures of central tendency and dispersion, correlation and regression, and presentation of data on a histogram, scatter plot, box plot, and the normal curve. Probability concepts include those for discrete and continuous random variables. Sampling and hypothesis testing are covered for means and variances. Topics from algebra are combined with applications in statistics in the lab portion of the class. This course applies to the degree requirements for students not majoring in Science, Technology, Engineering, and Math (STEM) fields. Prerequisite: MATH C053 or MATH C055

Satisfies the UC/CSU Mathematics Subject Requirement.

*Only offered Spring semester