

Course Title:

IMP-1A (P)

Replacing an existing course? Updating IMP- Course 1A

To be submitted for A-G? Yes

Department Mathematics

Career Path – (if any)

Description of Target Group

IMP-1A is for students who have successfully completed the seventh-grade mathematics standards or Math A.

Purpose

- a) Length of course: one term/one semester
- b) Units: 5

IMP is a fully integrated, four-year college preparatory sequence of courses in mathematics designed to replace the traditional Algebra I, Geometry, Algebra II sequence. The sequence of topics is herein being rearranged between IMP-1 and IMP-2 in order to allow students to meet state math requirements for graduation in a single course and to facilitate a more natural transition from 8th-grade algebra to IMP-2. All Algebra-1 standards are being moved down into IMP-1. The topics listed below are covered in IMP-1A in a unified fashion, in the context of meaningful larger mathematical problems.

- Understanding the meaning of angles and their measurement
- Developing relationships among interior and exterior angles of polygons, including angle sum formulas
- Using variables and algebraic expressions
 - to represent concrete situations
 - to generalize results
 - to describe functions
- Using ratio and proportion in problem situations
- Developing equivalent equations for proportions
- Interpreting graphs and using graphs to represent situations
- Relating graphs to their equations (with emphasis on linear and quadratic relationships)
- Solving systems of equations by graphing
- Fitting equations to data, both with and without graphing calculators
- Understanding, modeling and computing with signed numbers
- Developing and using principles for equivalent expressions and equivalent equations
- Expressing problem situations in terms of equations
- Solving linear equations in one variable

IMP-1A (P) – continued

- Solving non-routine equations using graphing calculators
- Understanding and using the distributive property

Prerequisites – A Grade of C or better in Math A or another course that includes the State standards for seventh grade mathematics.

Standards of Expected Student Achievement

- Problem-solving
 - Working on long-term problems
 - Drawing on diverse knowledge and methods to solve problems
 - Applying appropriate technology to problem solving
 - Posing questions related to a problem
 - Generalizing problems
- Group work
 - Working cooperatively with others
 - Sharing ideas
 - Asking for assistance
 - Subdividing a task so that group members can work independently on different parts of it
- Writing and communication
 - Reading and understanding complex problems
 - Summarizing the essential ideas of a problem
 - Describing methods used to approach a problem
 - Explaining reasoning used in solving a problem
 - Evaluating and improving the quality of written work
 - Making oral presentations

Methods of Assessment of Student Learning

Students will be assessed using a combination of individual and cooperative group tests and quizzes, class work and homework assignments, Problems of the Week, oral presentations and portfolios.

Instructional Materials

Refer to: Secondary Adopted Texts and Approved Supplementary Books Used in the Santa Maria Joint Union High School District

Activities

This course will be presented as determined by the methods and techniques of the instructor and will utilize lecture, demonstration, group work, cooperative learning, investigations, manipulatives, graphing calculators, oral and written communication, study, drills, quizzes, and examinations.