

**SAN DIEGO COMMUNITY COLLEGE DISTRICT
CITY, MESA, AND MIRAMAR COLLEGES
ASSOCIATE DEGREE COURSE OUTLINE**

SECTION I**SUBJECT AREA AND COURSE NUMBER:** Mathematics 015C**COURSE TITLE:** Intermediate Algebra Refresher**Units: -**
Pass/No Pass**CATALOG COURSE DESCRIPTION:**

This course is intended for those students who have completed the math assessment with a level of M40 (intermediate algebra) and wish to improve their placement level; students who have successfully completed Math 15B; students who have successfully completed Math 96 but need more review; or students who unsuccessfully attempted Math 104, 116, 141 or 210A and need review of intermediate algebra skills. The course will consist of lecture classes and/or independent study using a computer program to refresh those concepts identified as needed for each student. Successful completion of this course may serve as a basis for a petition to challenge Math 96. This course will not replace a failing grade in Math 96.

REQUISITES:

NONE

FIELD TRIP REQUIREMENTS: Not required**TRANSFER APPLICABILITY:** Not Applicable to Associate Degree, pre-collegiate basic skills - reading, writing, computation**TOTAL LECTURE HOURS:****TOTAL LAB HOURS:****STUDENT LEARNING OBJECTIVES:**

Upon successful completion of the course the student will be able to:

All of the outcomes refer to the Math 96 course outline and the student will complete the needed outcomes based on a diagnostic test.

1. demonstrate understanding of the mathematical concepts required for the intermediate algebra level as defined in the district course outline;
2. perform the basic arithmetic operations required for the intermediate algebra level as defined in the district course outline;
3. translate verbal expressions into algebraic expressions and simplify them as needed for the intermediate algebra level as defined in the district course outline;
4. apply mathematical properties required for the intermediate algebra level as defined in the district course outline;
5. apply the appropriate skills in application problems required for the intermediate algebra level as defined in the district course outline.

SECTION II

1. COURSE OUTLINE AND SCOPE:

A. **Outline Of Topics:**

The following topics are included in the framework of the course but are not intended as limits on content. The order of presentation and relative emphasis will vary with each instructor.

- I. Mathematical Concepts
 - A. rational exponents,
 - B. polynomial and rational equations
 - C. exponential and logarithmic equations
 - D. matrices
 - E. sequences and series
 - F. three dimensional geometry
 - G. graphs of nonlinear equations
- II. Arithmetic Operations with
 - A. rational exponents
 - B. polynomial, rational, exponential and logarithmic expressions
 - C. complex numbers
- III. Algebraic Expressions
 - A. translate verbal phrases into polynomial, rational, exponential and logarithmic equations
 - B. translate verbal phrases into polynomial, rational, exponential and logarithmic inequalities
- IV. Mathematical Properties
 - A. rational exponents,
 - B. polynomial and rational equations
 - C. exponential and logarithmic equations
 - D. matrices
 - E. sequences and series
 - F. three dimensional geometry
 - G. right triangle trigonometry
 - H. graphs of nonlinear equations
- V. Application Problems to include but not limited to
 - A. work
 - B. variation
 - C. growth and decay

B. **Reading Assignments:**

Reading assignments are required and may include but, are not limited to, the following:

- I. Reading and studying the related chapters in the intermediate algebra texts identified in the district course outline.
- II. Reading articles from current journals, such as Math Horizons, and newspapers pertaining to applications of intermediate algebra topics as indicated in the district course outline.

C. **Appropriate Assignments that Demonstrate Critical Thinking:**

Critical thinking assignments are required and may include, but are not limited to, the following:

- I. interpreting mathematical principles and techniques, at the appropriate level, to solve broader and more difficult problems than those covered in class;
- II. solving a variety of application problems, at the appropriate level, which require the appropriate use of techniques and theorems learned in class.

D. **Appropriate Outside Assignments:**

Outside assignments may include, but are not limited to, the following:

- I. reviewing, and where necessary,
- II. rewriting class notes;
- III. practicing problems from the appropriate sections;
- IV. writing short papers on related mathematical topics such as equations, functions, graphing and geometric shapes;

- V. completing reports on exploratory activities performed in class, such as calculator investigations.
- VI. designing a space using a variety of geometric shapes;
- VII. computer explorations and tutorials such as graphing and factoring using Maple or Derive.
- VIII. viewing video tapes on topics such as absolute value and area.

E. Writing Assignments:

Writing assignments are required and may include, but are not limited to, the following:

- I. writing, in paragraph form, methods of solving various types of intermediate algebra problems;
- II. writing a reflective journal containing common errors and their corrections;
- III. writing a short paper on one of the early geometers;
- IV. writing a report on the life of a mathematician;
- V. writing a report explaining the results of an experiment involving algebraic functions.

2. METHODS OF EVALUATION:

A student's grade will be based on multiple measures of performance unless the course requires no grade. Multiple measures may include, but are not limited to, the following:

- I. completion of the assigned components
- II. completion of the assigned assessments at the appropriate level
- III. an in-class final exam for the Intermediate Algebra.

3. METHODS OF INSTRUCTION:

Methods of instruction may include, but are not limited to, the following:

- * Lecture-Lab Combination
- * Distance Education
- * Computer Assisted Instruction
- * Lecture Discussion
- * Audio-Visual
- * Collaborative Learning
- * Lecture

4. REQUIRED TEXTS AND SUPPLIES:

Textbooks may include, but are not limited to:

TEXTBOOKS:

- 1. Bittinger, Ellenbogen, Johnson.. Elementary and Intermediate Algebra, Concepts and Applications, 4 ed. Pearson, 2005, ISBN: 0536953821

MANUALS:

PERIODICALS:

SOFTWARE:

- 1. ALEKS. McGraw Hill, 2.0 ed.
ALEKS is a diagnostic and tutorial software package which will be adjusted to cover the specific topics in this course. The software can be downloaded from the web and students will enroll via a password from the instructor.

SUPPLIES:

- 1. a scientific calculator.

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