COURSE OUTLINE

Mathematics 301
Skills for College Success in Intermediate Algebra

I. Catalog Statement

Mathematics 301 is designed to complement Mathematics 101 in the development and practice of essential study techniques and course material for success in intermediate algebra. Topics include integration of web-based supplemental instruction, life management skills, strategies for successful classroom experience, and critical thinking/problem solving strategies.

Total Lecture Units: 2.0
Total Course Units: 2.0

Total Lecture Hours: 48.0 (3 hours per week)
Total Faculty Contact Hours: 48.0 (3 hours per week)

Corequisite: Mathematics 101.

Note: This course is Pass/No Pass only.

II. Course Entry Expectations

Skills Expectations: Reading 5; Writing 5; Listening-Speaking 5; Math 0

While enrolled in the course, the student should be able to:
1. solve linear equations and inequalities;
2. solve absolute value equations and inequalities;
3. simplify exponential and radical expressions;
4. add, subtract, multiply and divide algebraic expressions;
5. graph linear equations and inequalities;
6. solve linear systems;
7. use algebra to solve applied problems;
8. use function notation;
9. factor polynomials;
10. solve rational equations;
11. solve radical and quadratic equations;
12. graph quadratic functions and circles.

III. Course Exit Standards

Upon successful completion of the required course work, the student will be able to:
1. describe intermediate algebra outcomes and objectives;
2. solve algebraic equations;

3. use critical thinking skills to better analyze, synthesize, and evaluate ideas and information;
4. make use of life-skills that improve the likelihood of success in intermediate algebra;
5. apply knowledge of math community resources and college support services;
6. apply academic success strategies.

IV. Course Content   **Total Contact Hours = 48**

  A. Mathematical Content   32 hours
    1. Operations on real numbers
    2. Solutions of linear equations and inequalities
    3. Graphs of lines, equations of lines, and variation
    4. Systems of linear equations and inequalities
    5. Exponents, polynomials, and factoring
    6. Rational expressions and equations
    7. Rational exponents and radicals
    8. Quadratic equations and graphs
    9. Exponential and logarithmic functions
    10. Conic sections
    11. Sequences and series
  B. Math Study Skills Content   16 hours
    1. Time management
    2. Motivation for college success in mathematics
    3. Critical thinking skills
    4. Test taking techniques
    5. Goal setting
    6. Transferring / career exploration resources
    7. College support resources
    8. Math community resources

V. Methods of Instruction

The following instructional methodologies may be used in this course:
1. classroom lecture/discussion;
2. classroom activities;
3. computer activities;
4. guest speakers;
5. small group work/discussion.

VI. Out of Class Assignments

The following out of class assignments may be used in this course:
1. reading and working exercises;
2. projects, for example, meeting with a counselor to establish or update a student education plan;
3. using software to work exercises and watching videos related to content.

VII. Methods of Evaluation

The following methods of evaluation may be used in this course:
1. worksheets reinforcing algebraic techniques;
2. group work.

VIII. Textbook

Nolting, P., Math Study Skills Workbook, 4th Edition.
Boston: Houghton Mifflin Company, 2011.
10th Grade Textbook Reading Level. ISBN: ISBN 0-840-05309-6.

Barclay, Judy. Solving Algebra Word Problems.
Belmont, CA: Brooks/Cole Cengage Learning, 2005.
10th Grade Reading Level. ISBN 0-534-49573-7.

IX. Student Learning Outcomes

1. Student will work successfully on intermediate algebra level assignments with fellow students both in and out of the classroom.
2. Incorporate strategic academic and life skills in planning and self-assessment of mathematics success.
3. Use available campus resources to make educational decisions.