El Paso Community College
Syllabus
Part II
Official Course Description

SUBJECT AREA	**Mathematics**
COURSE RUBRIC AND NUMBER	**MATH 0305**
COURSE TITLE	**Intermediate Algebra**
COURSE CREDIT HOURS	**3 (Credits) 3 : (Lec) 0 (Lab)**

I. Catalog Description

Extends the study of beginning algebra. Includes topics on factoring polynomials, rational expressions and equations, radical expressions and equations, fractional exponents, complex numbers, quadratic equations, nonlinear inequalities, and exponential and logarithmic expressions. Covers the introduction of rational, radical, quadratic, exponential and logarithmic functions. May not be counted toward graduation requirements. **Prerequisite: MATH 0303 or NCBM 0103 with a "C" or better or ME03 or by placement exam. (3:0).**

II. Course Objectives

Upon satisfactory completion of this course, the student will be able to:

A. Unit I: Factoring
1. Factor trinomials of the form $ax^2 + bx + c$.
2. Factor the difference of two squares, perfect-square trinomials, sum and difference of two cubes and trinomials that are quadratic in form.
3. Solve equations by factoring.
4. Solve applications involving above objectives.

B. Unit II: Rational expressions and functions
1. Identify the domain of rational functions.
2. Evaluate rational functions.
3. Simplify rational expressions
4. Use field properties to multiply, divide, add and subtract rational expressions.
5. Simplify complex fractions.
6. Solve rational equations.
7. Solve literal equations.
8. Solve applications using above objectives.

C. Unit III: Radical expressions and functions; complex numbers
1. Simplify expressions containing rational exponents.
2. Simplify radical expressions.
3. Use field properties to add, subtract, multiply and divide radical expressions.
4. Rationalize the denominator of a radical expression.
5. Find the domain of radical functions.
6. Evaluate radical functions.
7. Graph radical functions.
8. Solve equations containing radical expressions.

9. Use field properties to add, subtract, multiply, and divide complex numbers.
10. Solve applications using above objectives.

D. Unit IV: Quadratic equations and functions, non-linear inequalities
1. Understand and use the root square property, completing the square, and quadratic formula to solve quadratic equations.
2. Solve equations that are quadratic in form.
3. Solve nonlinear inequalities.
4. Graph quadratic functions, using points, x-intercepts, and the vertex.
5. Solve applications using above objectives.

E. Unit V: Exponential and logarithmic functions
1. Understand one-to-oneness of functions and inverse functions.
2. Evaluate exponential and logarithmic functions.
3. Graph exponential and logarithmic functions.
4. Understand inverse relationship of exponential and logarithmic functions.

III. THECB Learning Outcomes (ACGM)

Upon successful completion of this course, students will:
1. Define, represent, and perform operations on real and complex numbers.
2. Recognize, understand, and analyze features of a function.
3. Recognize and use algebraic (field) properties, concepts, procedures (including factoring), and algorithms to combine, transform, and evaluate absolute value, polynomial, radical, and rational expressions.
4. Identify and solve absolute value, polynomial, radical, and rational equations.
5. Identify and solve absolute value and linear inequalities.
6. Model, interpret and justify mathematical ideas and concepts using multiple representations.
7. Connect and use multiple strands of mathematics in situations and problems, as well as in the study of other disciplines.

IV. Evaluation

A. Students will be assessed on all five units. Students must take a comprehensive final exam. Refer to part III of the Instructor's Course Requirements for more information.

B. The course grade will be assigned based on the following scale.

A …… 90 – 100
B …… 80 – 89
C …… 70 – 79
D …… 60 – 69
F ……. Below 60

C. For the attendance policy, refer to part IV of the Instructor's Course Requirements.

D. **I** and **W** Grades

The student is responsible for completing the necessary forms for **I**ncomplete, and **W**ithdraw grades (except as noted below). **I** and **W** grades may be assigned whenever appropriate deadlines are met. To be eligible for an **I** grade, the student must complete 80% of the course with at least a 75% average. The proper forms must also be signed by both the instructor/professor before being submitted to the registrar.

V. Disability Statement (American with/Disabilities Act [ADA])

EPCC offers a variety of services to persons with documented sensory, mental, physical, or temporary disabling conditions to promote success in classes. If you have a disability and believe you may need services, you are encouraged to contact the Center for Students with Disabilities to discuss your needs with a counselor. All discussions and documentation are kept confidential. Offices located: VV Rm C-112 (831-2426); TM Rm 1400 (831-5808); RG Rm B-201 (831-4198); NWC Rm M-54 (831-8815); and MDP Rm A-125 (831-7024).

VI. 6 Drop Rule

Students who began attending Texas public institutions of higher education for the first time during the Fall 2007 semester or later are subject to a 6-Drop limit for all undergraduate classes. Developmental, ESL, Dual Credit and Early College High School classes are exempt from this rule. All students should consult with their instructor before dropping a class. Academic assistance is available. Students are encouraged to see Counseling Services if dropping because exemptions may apply. Refer to the EPCC catalog and website for additional information.