

El Paso Community College

Syllabus

Part II

Official Course Description

SUBJECT AREA	<u>Mathematics</u>
COURSE RUBRIC AND NUMBER	<u>MATH 1314</u>
COURSE TITLE	<u>College Algebra (C) (MNS)</u>
COURSE CREDIT HOURS	<u>3 3 :</u> <u>1</u>
	Credits Lec Lab

I. Catalog Description

In-depth study and applications of polynomial, rational, radical, exponential and logarithmic functions, and systems of equations using matrices. Additional topics such as sequences, series, probability, and conics may be included. **Prerequisite: Placement by Math TSIA or equivalent; OR completion of NCBM 0114 with a “CR” or NCBM 0314 with a “C” or better; OR concurrent enrollment in NCBM 0114 or NCBM 0314. (3:1). Lab fee.**

II. Course Objectives

Upon completion of this course the student will comprehend some of the great ideas of mathematics, and will be able to demonstrate this understanding:

A. Unit I – Equations, Inequalities, Modeling, Functions and Graphs:

1. Equations in One Variable)
2. Equations and Graphs in Two Variables
3. Constructing Models to Solve Problems
4. Quadratic Equations
5. Linear, Absolute Value, Quadratic and Rational Inequalities
6. Functions, Relations and their Graphs
7. Families of Functions
8. Operations with Functions; Constructing Functions; Finding Inverse Functions.

B. Unit II – Polynomial and Rational Functions:

1. Linear and Quadratic Functions
2. Complex Numbers
3. Zeros of Polynomial Functions
4. Theory of Equations
5. Graphs of Polynomial and Rational Functions

C. Unit III – Exponential and Logarithmic Functions:

1. Exponential Functions and Their Applications
2. Logarithmic Functions and Their Applications
3. Properties of Logarithms

4. Equations and Applications of Exponential and Logarithmic Functions
- D. Unit IV – Systems of Equations and Inequalities, and using Matrices to Solve these Systems:
1. Systems of Linear Equations in Two and Three Variables
 2. Nonlinear Systems of Equations
 3. Partial Fractions - optional
 4. Systems of Inequalities in Two Variables
 5. Solving Linear Systems Using Matrices
 6. Operations with Matrices and Finding Inverses of Matrices
 7. Using Determinants to Solve Linear Systems – optional

EPCC Core Learning Outcomes

Upon successful completion of this course, students will:

1. Demonstrate effective written, oral, and/or visual **communication skills**.
2. Apply **critical thinking skills** by engaging in creative thinking, innovation, inquiry, analysis, evaluation, and synthesis of information.
3. Demonstrate **empirical and quantitative skills** by formulating an inquiry and then identifying and following an investigative process using empirical and/or qualitative/quantitative reasoning to satisfy the inquiry.

III. THECB Learning Outcomes (ACGM)

Upon successful completion of this course, students will:

1. Demonstrate and apply knowledge of properties of functions, including domain and range, operations, compositions, and inverses.
2. Recognize and apply polynomial, rational, radical, exponential and logarithmic functions and solve related equations.
3. Apply graphing techniques.
4. Evaluate all roots of higher degree polynomial and rational functions.
5. Recognize, solve and apply systems of linear equations using matrices.

IV. Evaluation

There will be at least three in class exams (100 points each) and one required in class comprehensive final exam to evaluate student learning for the course. Quiz grades and homework grades may also be used in the evaluation of the final grade, if the instructor so chooses. A laboratory is required, and the average of all the lab grades will be equal to one unit test, and is used in compiling the final grade for the course. A comprehensive final exam is mandatory for all students.

The homework grade will be weighted no more than the weight of one exam; the comprehensive final exam will be weighted at least as much as one exam. The final exam cannot be dropped.

Grades will be assigned according to the following scale:

<u>Average</u>	<u>Grade</u>
90-100	A
80-89	B
70-79	C
60-69	D
0-59 or for cheating	F

A challenge exam is available for this course. There is a \$20 fee, payable at the cashier's office. This exam must be taken before the 12th day of class.

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

V. Disability Statement (Americans 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.

VII. Title IX and Sex Discrimination

Title 9 (20 U.S.C. 1681 & 34 C.F.R. Part 106) states the following "No person in the United States shall, on the basis of sex, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any educational program or activity receiving Federal financial assistance." The Violence Against Women Act (VAWA) prohibits stalking, date violence, sexual violence, and domestic violence for all students, employees and visitors (male and female). If you have any concerns related to discrimination, harassment, or assault (of any type) you can contact the Assistant to the Vice President for Student and Enrollment Services at 915-831-2655. Employees can call the Manager of Employee Relations at 915-831-6458. Reports of sexual assault/violence may also be reported to EPCC Police at 915-831-2200.