Common Course Outline
Math 083
Intermediate Algebra
3 Semester Hours

The Community College of Baltimore County

Description

This course covers rational expressions and equations, radicals, quadratic equations, complex numbers, functions and relations, and exponential and logarithmic functions.

Prerequisites: Math 082 or a satisfactory score on the Math placement test, and RDGN 051 or ESOL 053 or LVR 1.

Overall Course Objectives

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

A. identify functions and use function notation
B. determine the domain and range of a function
C. factor, add, subtract, multiply, and divide functions
D. graph linear, quadratic, exponential and logarithmic functions
E. solve quadratic equations by 1) factoring, 2) completing the square, 3) the quadratic formula, and 4) graphing the function
F. solve applications of quadratic equations
G. perform operations on radical expressions
H. perform operations on complex numbers
I. solve radical equations
J. simplify, factor, add, subtract, multiply, and divide rational expressions
K. solve rational equations
L. determine the domain and range of exponential and logarithmic function
M. recognize and graph conic sections

Major Topics

I. Functions and Relations
   A. Introduce function notation
   B. Identify the domain and range of a function
   C. Perform operations on functions
II. Quadratic Functions
   A. Graph quadratic functions, identifying domain and range and using function notation
   B. Solve quadratic equations using the square root method, factoring, completing the square and the quadratic formula

C. Perform operations on complex numbers
D. Solve quadratic equations (including equations with complex number roots)
E. Use optimization and simulation methods
F. Solve radical equations

III. Polynomial, Radical, and Rational Functions and Equations
A. Perform operations on polynomial expressions and factor
B. Graph power and polynomial functions, identifying domain and range and using function notation
C. Simplify radicals and expressions with rational exponents
D. Perform operations on rational expressions
E. Solve rational equations

IV. Exponential and Logarithmic Functions and Equations
A. Graph exponential functions, identifying domain and range and using function notation
B. Graph logarithmic functions, identifying domain and range and using function notation
C. Evaluate exponential and logarithmic functions

V. Conic Sections
A. Graphs parabolas and circles
B. Write equation of parabolas and circles

Individual faculty members may include additional course objectives, major topics, and other course requirements to the minimum expectations stated in the Common Course Outline.

Course Requirements

Grading: Grading procedures will be determined by the individual faculty member but will include the following:

1. Two (2) written examinations
2. Individual and/or group work

Grading/exams: Grading procedures will be determined by the individual faculty member but will include the following:

Quizzes and Final Exam: Final exam will count between 25% and 30% of the grade. Student must have an overall average of 70 % to pass this course.

Grade: 90-100%: A
80-89%: B
70-79%: C
Below 70%: Unsatisfactory Performance - Student will receive an F.

The Community College of Baltimore County is committed to providing a high-quality learning experience that results in growth in knowledge, attitudes, and skills necessary to function successfully as a transfer student, in a career and as a citizen. To accomplish this goal, we

maintain high academic standards and expect students to accept responsibility for their individual growth by attending classes, completing all homework and other assignments, participating in class activities and preparing for tests.

We take seriously our responsibility to maintain high-quality programs and will periodically ask you to participate in assessment activities to determine whether our students are attaining the knowledge, attitudes and skills appropriate to various courses and programs. The assessment activities may take many different forms such as surveys, standardized or faculty-developed tests, discussion groups or portfolio evaluations. We ask that you take these activities seriously so that we can obtain valid data to use for the continuous improvement of CCBC's courses and programs.

Date revised: 01/21/08