**Department Master Syllabus**

**Camden County College**

**Blackwood, NJ 08012**

**Course Title**: College Algebra for Business & Social Sciences

**Course Number:** MTH-114

**Dept/Program Affiliation:** Mathematics

**Date of Review: 11/2018**

(This Department Master Syllabus has been examined by the program/department faculty members and it is decided that no revision is necessary at this time.)

**Date of Last Revision**: **11/2018**

(This Department Master Syllabus has been examined by the program/department faculty members and it is decided a change requiring a revision is necessary at this time.)

**N.B.** A change to the course materials alone (textbooks and/or supplementary materials) may not constitute a revision. Any other change to the items listed below on this form is considered a revision and requires approval by the program faculty at a Program/Department Meeting and by the division at a Chairs and Coordinator Meeting.

**Credits: 3**

**Contact Hours: Lecture 3 Lab 0 Other**

**Prerequisites:** MTH-100 (Algebraic Concepts) **and** ENG-013 (Reading Skills III) **OR** proper placement exam scores

**Co requisites: None**

**Course Description:**

This college algebra course is designed for business and social science majors. Topics include operations on algebraic and exponential expressions; linear equations; using technology for linear, polynomial, exponential, and logarithmic regression; inverse functions; theory and applications of polynomial, rational, exponential, and logarithmic functions; solving exponential and logarithmic equations; graphs and transformations; mathematics of finance; and an introduction to limits. The use of graphing calculators is an integral part of the course; their use throughout the course will facilitate understanding of salient concepts. Students are required to purchase a Texas Instruments TI-83/84 or TI-83/84 Plus calculator.

**Course Student Learning Outcomes:** (Cognitive, Psychomotor, Affective Domains)

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

* describe real world situations through the formulation of regression models, and utilize these models to extrapolate or predict future behavior, as assessed by tests, quizzes, homework, or projects.
* translate graphs of linear, polynomial, rational, absolute value, *n*th root, exponential, and logarithmic functions, and use a graphing calculator to sketch and interpret said graphs, as assessed by tests, quizzes, homework, or projects.
* solve linear, polynomial, rational, absolute value, *n*th root, exponential, and logarithmic equations, as assessed by tests, quizzes, homework, or projects.
* calculate and interpret simple interest, compound interest, and future and present values of annuities, as assessed by tests, quizzes, homework, or projects.
* calculate and interpret limits of functions, as assessed by tests, quizzes, homework, or projects.

**General Education Student Learning Outcomes:**

Students will apply appropriate mathematical and statistical concepts and operations to interpret data and to solve problems.

**Course Outline:**

**Unit I**

Polynomials

Factoring

Rational Expressions

Exponents and Radicals

Rational Exponents and Radicals

First-Degree Equations

Quadratic Equations

**Unit II**

Graphs

Equations of Lines

Linear Models

Linear Inequalities

Polynomial and Rational Inequalities

**Unit III**

Functions

Graphs of Functions

Applications of Linear Functions

Quadratic Functions with Applications

Polynomial Functions

Rational Functions

**Unit IV**

Exponential Functions

Applications of Exponential Functions

Logarithmic Functions

Logarithmic and Exponential Equations

**Unit V**

Simple Interest and Discount

Compound Interest

Annuities, Future Value, and Sinking Funds

Annuities, Present Value, and Amorization

Present Value of an Annuity; Amortization

General Problem-Solving Strategy

**Unit V**

Introduction to Limits **(If Time Permits)**

Infinite Limits and Limits at Infinity **(If Time Permits)**

**Instructional Materials:**

Instructors may employ a variety of lecture tools including black/white board scribing, power point presentations, document reader projections, TI-83/84 overhead projection unit for the graphing calculators, software, etc…

**Course Activities:**

The classroom activities will include formal and informal lectures where new material and assigned problems will be explained. Students will have the opportunity to contribute to the discussion and to ask questions about the material. The calculator will be an integral part of the class.

**Assessment of Student Learning Outcomes**: The student will be evaluated on the degree to which student learning outcomes are achieved. In addition to a minimum of two tests, a variety of methods may be used such as class participation, projects, homework assignments, etc. (There must be some evidence that the learning outcomes have been achieved.) Student progress will be evaluated on the following basis:

1. Unit Tests

2. Periodic Quizzes, if you deem they are necessary to motivate students to study and attend class on a regular basis.

3. Electronic Homework assignments, if graded. (optional, but strongly encouraged)

4. Other graded homework or projects.

5. Class attendance, if you have specified this at the beginning of the semester.

6. Comprehensive final examination (optional, but strongly encouraged).

**Grading:**

Grades will be based on student's performance in the above designated areas. Percentages will be assigned by each individual professor.

**A** 90 to 100

**B** 80 to 89

**C** 70 to 79

**D** 60 to 69

**F** Below 60

**I** Incomplete (only under extreme emergencies)

must be completed within one semester.

**NA** Not attending

**XA** Never Attended

**W** Withdraw (student must submit an official withdrawal form

by the deadline).

**Textbook:**

*Finite Mathematics With Applications,* by Lial, Hungerford, Holcomb and Mullins Pearson, current ed.

**Supplemental Materials:**

Textbook specific course management system.