LABETTE COMMUNITY COLLEGE BRIEF SYLLABUS

SPECIAL NOTE:
This brief syllabus is not intended to be a legal contract. A full syllabus will be distributed to students at the first class session.

TEXT AND SUPPLEMENTARY MATERIALS USED IN THE COURSE (if any):

Please check with the LCC bookstore http://www.labette.edu/bookstore for the required texts for this class.

COURSE NUMBER: MATH 100

COURSE TITLE: INTERMEDIATE ALGEBRA

SEMESTER CREDIT HOUR: 3

DEPARTMENT: Mathematics

DIVISION: General Education

PREREQUISITE: Placement Test Recommendation or C or better in Math 095/096

COURSE DESCRIPTION:
This course will continue from MATH 096 Beginning Algebra to cover properties of relations and functions, properties of radicals and radical expressions, properties of rational expressions, solving quadratic equations using root extraction and the quadratic formula, and extending and building graphing concepts from lines to basic polynomial equations. (Non transferable)

COURSE OUTCOMES AND COMPETENCIES:
Students who successfully complete this course will be able to:

1. Perform arithmetic and algebraic manipulation of expressions and functions.

- Factor polynomials using trinomials, quadratic forms, special formulas, and grouping techniques.
- Add, subtract, multiply, and divide rational expressions (including complex fractions).
- Apply the rules of exponents to simplify expressions containing integer and rational exponents.
- Apply properties of radicals to perform operations on radical expressions including
    i. addition and subtraction.
    ii. multiplication and division (including rationalizing denominators).
    iii. properties of complex numbers.
- Determine if a relation is also a function by applying the definition of a function.
- Identify the domain of a relation or function.

- Evaluate a function at an x – value using function $(y = f(x))$ notation (includes function addition, subtraction, multiplication, and division).

2. Solve various equations and inequalities.

- Solve linear equations (including use of absolute value).
- Solve quadratic equations using
    i. factoring
    ii. roots
    iii. quadratic formula
- Solve systems of linear equations in two variables using graphing, substitution, and elimination.
- Solve equations using radicals.
- Solve equations using rational expressions.
- Solve linear inequalities (including use of absolute value) and graph solutions on the number line.

3. Graph points and curves in the Cartesian coordinate system.

- Plot points on the coordinate plane and calculate the distance and midpoint between them.
- Plot graphs of quadratic functions.
- Graph single and systems of linear inequalities.
- Analyze given information about two points, a point and slope, and parallel and perpendicular properties to find the equation of a line and plot its graph.
- Identify the domain and range of a function given its graph.
- Apply the vertical line test to determine if a given graph is a function or a relation.

4. Use course concepts, critical thinking, and reading skills to solve applied problems*.

- Apply critical thinking and reading skills to transform a written problem or set of facts into a mathematical model or formula.
- Solve the resulting model (or any given literal equation or formula) for the desired variable.
- Analyze the solution in the context of the problem as originally stated.

* Topics may include, but are not limited to:

i. direct and inverse variation
ii. mixture
iii. percent (mark up, discount, simple interest)
iv. geometrical applications (area and volume)
v. motion (and other physical science applications)