Southeast Missouri State University

Department of Mathematics **Course No. MA101**
Title of Course: Intermediate Algebra I **New : Spring 2009**

I. Catalog Description and Credit Hours of Course:
Polynomials, factoring, equations and inequalities in one and two variables, rational expressions, rational exponents, quadratic equations, and systems of linear equations. Course grade: CR or F. (3 credit hours)

II. Prerequisite(s):
ACT Math subscore of 0 to 20

III. Purposes or Objectives of the Course:
To prepare students for Logical Systems and other university courses.

IV. Expectations of Students:
A. Attend all scheduled class sessions and work with either the ALEKS software or an instructor assistant during the entire class period.
B. Complete at least 40 hours of on-line out-of-class practice.
C. Keep an organized notebook of all problems worked and other notes.
D. Successfully master at least 80 new concepts above the ALEKS baseline assessment.

V. Course Outline: (Total program is 240 concepts)

A. Real numbers and linear equations (76 concepts total)
1. Real numbers (24 concepts)
2. Solving linear equations (21 concepts)
3. Applications of linear equations (26 concepts)
4. Absolute value (5 concepts)

B. Graphs and linear functions (32 concepts total)
1. Order pairs (4 concepts)
2. Graphing lines (6 concepts)
3. Equations of lines (11 concepts)
4. Inequalities in two variables (2 concepts)
5. Sets, relations, and Functions (9 concepts)

C. Systems of linear equations (11 concepts total)
1. Solving and graphing (5 concepts)
2. Applications of linear equations (6 concepts)

D. Exponents and Polynomials (40 concepts total)
1. Integer and rational exponents (13 concepts)
2. Manipulating polynomial expressions (8 concepts)
3. Factoring polynomials (19 concepts)

E. Rational expressions and functions (34 concepts total)
1. Simplifying expressions (13 concepts)
2. Solving equations (7 concepts)
3. Graphing (1 concept)
4. Applications of rational functions (6 concepts)
5. Direct and inverse variations (7 concepts)

F. Radicals and quadratic equations (47 concepts total)

1. Radicals and rational exponents (31 concepts)
2. Complex numbers (4 concepts)
3. Quadratic equations (7 concepts)
4. Parabolas (5 concepts)

VI. Textbook:

None. Students will purchase a subscription to ALEKS – currently about $65 for 20 weeks. Students may purchase their subscription at the bookstore.

VII. Basis of Student Evaluation:

If the student passes the ALEKS mastery level assessment, a grade of CR will be assigned and a test score will be entered in the student's record: IntermedAlgCourse 101.

If the student does not pass the ALEKS mastery level assessment, but does master 80 additional concepts above the ALEKS baseline assessment, a grade of CR will be assigned.

If neither of the above is achieved, a grade of F will be assigned.