SYLLABUS

DATE OF LAST REVIEW: 01/2014

CIP CODE: 24.0101

SEMESTER: Departmental Syllabus

COURSE TITLE: Intermediate Algebra

COURSE NUMBER: MATH0104

CREDIT HOURS: 3

INSTRUCTOR: Departmental Syllabus

OFFICE LOCATION: Departmental Syllabus

OFFICE HOURS: Departmental Syllabus

TELEPHONE: Departmental Syllabus

EMAIL: Departmental Syllabus

KCKCC-issued email accounts are the official means for electronically communicating with our students.

PREREQUISITE(S): 1) Grade of “C” or higher in MATH0099 Elementary Algebra

OR

2) Algebra COMPASS score of 46 - 65

REQUIRED TEXT AND MATERIALS: Please check with the KCKCC bookstore http://www.kckccbookstore.com for the required text for your particular class. TI graphing calculator recommended.

COURSE DESCRIPTION: Intermediate Algebra includes a brief review of Elementary Algebra, linear functions and graphs, rational expressions and equations, radical expressions and complex numbers, quadratic equations and graphs, and an introduction to logarithmic functions. Students will be expected to use appropriate technology as one tool to achieve competency in Intermediate Algebra.

METHOD OF INSTRUCTION: A variety of instructional methods may be used depending on content area. These include but are not limited to: lecture, multimedia, cooperative/collaborative learning, labs and demonstrations, projects and presentations, speeches, debates, and panels, conferencing, performances, and learning experiences outside the classroom. Methodology will be selected to best meet student needs.
COURSE OUTLINE:
I. Arithmetic and Algebraic Manipulation
   A. Quadratics
   B. Rational expressions
   C. Complex fractions
   D. Rational exponents
   E. Radicals
   F. Complex numbers
   G. Functions
   H. Logarithms

II. Equations and Inequalities
   A. Linear inequalities
   B. Literal equations
   C. Systems of linear equations
   D. Quadratic equations
   E. Rational equations
   F. Radical equations
   G. Absolute value equations & inequalities
   H. Mathematical models
      1. Variation
      2. Mixture
      3. Motion
      4. Work
      5. Geometry

III. Graphs on a Coordinate Plane
   A. Linear inequalities
   B. Quadratic functions

IV. Analysis of Equations and Graphs
   A. Equation of a line
      1. Through two points
      2. Given particular conditions
   B. Distance between two points
   C. Functions and non-functions
      1. Vertical line test
      2. Domain and range

EXPECTED LEARNER OUTCOMES:
A. The student will be able to perform arithmetic and algebraic manipulations.
B. The student will be able to solve equations and inequalities.
C. The student will be able to graph linear and quadratic functions on a coordinate plane.
D. The student will be able to analyze equations and graphs.
COURSE COMPETENCIES:
Upon successful completion of this course:

1. The student will be able to factor quadratic expressions, quadratic forms, special forms, and factor by grouping.
2. The student will be able to perform addition, subtraction, multiplication, and division on rational expressions.
3. The student will be able to simplify complex fractions.
4. The student will be able to apply the laws of exponents to simplify expressions containing rational exponents.
5. The student will be able to perform addition, subtraction, and multiplication on expressions involving radicals.
6. The student will be able to simplify radicals by rationalizing denominators.
7. The student will be able to simplify radicals containing negative radicands.
8. The student will be able to perform operations involving complex numbers.
9. The student will be able to evaluate functions using functional notation.
10. The student will be able to evaluate common logarithms.

The student will be able to solve equations and inequalities
11. The student will be able to solve linear inequalities with one variable, show the solution both on a real number line and in interval notation.
12. The student will be able to solve literal equations including those that require factoring.
13. The student will be able to solve systems of linear equations in two variables.
14. The student will be able to solve quadratic equations by factoring and by using the quadratic formula.
15. The student will be able to solve equations containing rational expressions.
16. The student will be able to solve equations containing radicals.
17. The student will be able to solve linear absolute value equations and inequalities in one variable.
18. The student will be able to develop and solve mathematical models including variation, mixture, motion, work, and geometrical applications.

The student will be able to graph linear and quadratic functions on a coordinate plane.
19. The student will be able to graph linear inequalities on a coordinate plane.
20. The student will be able to graph quadratic functions on a coordinate plane.

The student will be able to analyze equations and graphs.
21. The student will be able to determine an equation of a line given two points.
22. The student will be able to determine the equation of a line given a particular condition, e.g., perpendicular or parallel to a given line through a specific point, through a specific point with a given slope.
23. The student will be able to calculate the distance between two points.
24. The student will be able to distinguish between functions and relations using the vertical line test.
25. The student will be able to identify the domain and range of a function given its graph.

**ASSESSMENT OF LEARNER OUTCOMES:**
The course grade is determined by this grading scale:
- A = 90% and above
- B = 80-89%
- C = 70-79%
- D = 60-69%
- F = 59% and below

A comprehensive final exam will be given in all sections of Elementary Algebra. This final exam will count a minimum of 25% of each student’s course grade.

**SPECIAL NOTES:**
Material included is intended to provide an outline of the course and rules that the instructor will adhere to in evaluating the student’s progress. However, this syllabus is not intended to be a legal contract. Questions regarding the syllabus are welcome any time.

Kansas City Kansas Community College is committed to an appreciation of diversity with respect for the differences among the diverse groups comprising our students, faculty, and staff that is free of bigotry and discrimination. Kansas City Kansas Community College is committed to providing a multicultural education and environment that reflects and respects diversity and that seeks to increase understanding.

Kansas City Kansas Community College offers equal educational opportunity to all students as well as serving as an equal opportunity employer for all personnel. Various laws, including Title IX of the Educational Amendments of 1972, require the college’s policy on non-discrimination be administered without regard to race, color, age, sex, religion, national origin, physical handicap, or veteran status and that such policy be made known.

Kansas City Kansas Community College complies with the Americans with Disabilities Act. If you need accommodations due to a documented disability, please contact The Director of the Academic Resource Center, in Room 3354 or call: 913-288-7670.