

## SYLLABUS

<b>DATE OF LAST REVIEW:</b>	12/2019
<b>CIP CODE:</b>	24.0101
<b>SEMESTER:</b>	Departmental Syllabus
<b>COURSE TITLE:</b>	College Algebra
<b>COURSE NUMBER:</b>	MATH0106
<b>CREDIT HOURS:</b>	3
<b>INSTRUCTOR:</b>	Departmental Syllabus
<b>OFFICE LOCATION:</b>	Departmental Syllabus
<b>OFFICE HOURS:</b>	Departmental Syllabus
<b>TELEPHONE:</b>	Departmental Syllabus
<b>EMAIL:</b>	Departmental Syllabus <i>KCKCC-issued email accounts are the official means for electronically communicating with our students.</i>
<b>PREREQUISITES:</b>	Students need to meet the correct placement measure for this course or have completed MATH0104 Intermediate Algebra with a grade of “C” or higher.

### **KRSN Course MAT 1010**

**This course is approved by the Kansas Board of Regents for System Wide Transfer (SWT) among all Kansas public postsecondary institutions offering an equivalent course. The learning outcomes and competencies detailed in this course outline or syllabus meet or exceed the learning outcomes and competencies specified by the Kansas Core Outcomes Groups project for this course as approved by the Kansas Board of Regents. A list of courses available at each institution is located at**

[https://kansasregents.org/academic\\_affairs/transfer-articulation](https://kansasregents.org/academic_affairs/transfer-articulation).

**REQUIRED TEXT AND MATERIALS:** Please check with the KCKCC bookstore, <http://www.kckccbookstore.com> for the required text for your particular class.

**COURSE DESCRIPTION:** College Algebra includes analysis and graphing of functions, including constant, linear, absolute value, square root, polynomial, rational, exponential and logarithmic functions and non-functions; and solving equations and inequalities, including polynomial equations, exponential equations, logarithmic equations, and systems of linear

equations and inequalities. Students will be expected to use appropriate technology as one tool to achieve competency in College 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. Functions and Non-functions
  - A. Function Notation
  - B. Equations
  - C. Graphs
    - 1. Constant, Linear
    - 2. Absolute Value, Piecewise
    - 3. Quadratic, Square Root
    - 4. Cubic, Other Polynomial
    - 5. Rational
    - 6. Exponential, Logarithmic
    - 7. Conic sections
  - D. Domain and Range
  - E. Equations
    - 1. Constant, Linear
    - 2. Absolute Value, Piecewise
    - 3. Quadratic, Square Root
    - 4. Cubic, Other Polynomial
    - 5. Rational
    - 6. Exponential, Logarithmic
    - 7. Conic sections
  - F. Graphs
  - G. Combinations and Composition of Functions
  - H. Inverses
- II. Equations and Inequalities
  - A. Equations
    - 1. Constant, Linear
    - 2. Absolute Value, Piecewise
    - 3. Quadratic, Square Root
    - 4. Cubic, Other Polynomial
    - 5. Rational
    - 6. Exponential, Logarithmic
    - 7. Conic sections
  - I. Inequalities
    - 1. Linear

- 2. Polynomial
- 3. Rational
- 4. Absolute Value
- J. Systems of Inequalities
- K. Applications of Equations
- L. Data Analysis
- M. Systems of Equations
- N. Conics

**EXPECTED LEARNER OUTCOMES:**

- A. The student will be able to analyze and graph functions and non-functions.
- B. The student will be able to find solutions of equations and inequalities.

**COURSE COMPETENCIES:**

Upon successful completion of this course:

*The student will be able to analyze and graph functions and equations.*

1. The student will be able to use functional notation.
2. The student will be able to recognize and distinguish between functions and relations (equations).
3. The student will be able to use the concepts of symmetry, intercepts, left- and right-hand behavior, asymptotes, and transformations to sketch the graph of various types of functions (constant, linear, quadratic, absolute value, piecewise-defined, square root, cubic, polynomial, rational, exponential, and logarithmic) or relations (circle) given in description.
4. The student will be able to determine the domain and range of a function.
5. The student will be able to write the equation that describes a function (for types given above) or circle given its description.
6. The student will be able to use graphs of functions for analysis.
7. The student will be able to find arithmetic combinations and composites of functions.
8. The student will be able to find the inverse of a function.

*The student will be able to find solutions of equations and inequalities.*

9. The student will be able to solve literal equations; quadratic equations by factoring and the quadratic formula; equations involving rational expressions, radicals, absolute value expressions, and exponential or logarithmic functions.
10. The student will be able to solve inequalities of the following types: linear (in one and two variables), polynomial, rational, absolute value.
11. The student will be able to solve systems of inequalities by graphing.
12. The student will be able to apply equations listed above to real-world situations, including but not limited to depreciation, growth and decay, and max/min problems.
13. The student will be able to examine and analyze data, make predictions/interpretations, and do basic modeling.
14. The student will be able to solve systems of equations by various methods, including matrices.

**ASSESSMENT OF LEARNER OUTCOMES:**

Student progress is evaluated by means that include, but are not limited to, exams, written assignments, and class participation. A comprehensive, proctored, departmental final exam will be given in all sections of College Algebra.

**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.

**STATEMENTS ON NON-DISCRIMINATION, HARASSMENT AND VIOLENCE, AND EDUCATIONAL EQUALITY****Non-Discrimination Policy Statement**

Kansas City Kansas Community College is committed to promoting and sustaining a campus community which identifies and values the individuality of every community member and is dedicated to maintaining a positive environment where diversity is encouraged and fostered throughout the college. KCKCC strongly believes that diversity generates a positive image and awareness and community strength that encourages active involvement and helps enhance organizational effectiveness and culture. KCKCC prohibits discrimination on the basis of race, religion, color, sex (including pregnancy, gender identity, and sexual orientation), parental status, national origin, age, disability, family medical history or genetic information, political affiliation, military service, or other non-merit based factors. All college actions and policies comply with all state, federal and local laws and regulations.

**Harassment and Violence Statement**

Kansas City Kansas Community College is committed to providing a non-discriminatory and harassment-free educational, living and working environment for all members of the campus community, including students, faculty, administrators, staff, trustees or visitors. This policy prohibits all forms of sexual or gender-based harassment and sexual assault.

Title IX, regulated by the Office of Civil Rights, prohibits discrimination on the basis of sex in federally funded education programs and activities. All schools who receive any federal financial assistance must comply with Title IX.

Deputy Title IX Coordinator: Sean Burkett, Employee Relations Manager, [sburkett@kckcc.edu](mailto:sburkett@kckcc.edu) or 913-288-7269, 7250 State Avenue, Kansas City, Kansas 66112.

**Educational Equality Statement**

Kansas City Kansas Community College is committed to a policy of educational equity. Accordingly, the College admits students, grants financial aid and scholarships, and conducts all educational programs, activities, and employment without regard to race, color, creed, religion, sex, national origin, age, sexual orientation, marital status, ancestry, veteran status, or disabilities.

Any person having inquiries concerning College compliance with regulations Implementing Title VI of the Civil Rights Act of 1964, Title IX of the Education Amendments of 1972, Section 504 of the Rehabilitation Act of 1973, or the American with Disabilities Act of 1990, is directed to contact Human Resources, Kansas City Kansas Community College, 7250 State Avenue, Kansas City, Kansas 66112, Telephone (913) 288-7646.

Any person needing access to academic programs or college activities due to a documented disability is directed to contact the Student Accessibility and Support Services, 913-288-7664 for accommodations.

More information on these statements and additional resources are available through the links below.

<http://www.kckcc.edu/footer/statements>

<http://www.kckcc.edu/services/reporting/titleix>

<http://www.hhs.gov/ocr/office/file>