

**NEOSHO COUNTY COMMUNITY COLLEGE
MASTER COURSE SYLLABUS**

COURSE IDENTIFICATION

Course Code/Number: MATH 011

Course Title: Beginning Algebra

Division: Applied Science (AS) Liberal Arts (LA) Workforce Development (WD)
 Health Care (HC) Lifetime Learning (LL) Nursing Developmental

Credit Hour(s): Four (4)

Effective Date: Summer 2017

Assessment Goal Per Outcome: 70%

COURSE DESCRIPTION

This course is designed for students with little or no background in algebra. This course will not transfer nor does it carry credit for graduation requirements at NCCC. It is accepted by the State of Kansas as a developmental mathematics course. Topics covered are: signed numbers and operations, manipulation of simple algebraic expressions, equations and inequalities, polynomials, and rational expressions. Students will be expected to have access to at least a scientific calculator. A graphing calculator such as a TI-83 is acceptable. It will be used in future algebra courses.

MINIMUM REQUIREMENTS/PREREQUISITES AND/OR COREQUISITES

For specific placement requirements for this class, please refer to the Mandatory Placement Policy in the College Catalog. No previous algebra is necessary.

TEXTS

The official list of textbooks and materials for this course is found on [myNeosho](http://www.neosho.edu/ProspectiveStudents/Registration/CourseSyllabi.aspx).

<http://www.neosho.edu/ProspectiveStudents/Registration/CourseSyllabi.aspx>

GENERAL EDUCATION OUTCOMES

1. Practice Responsible Citizenship through:
 - identifying rights and responsibilities of citizenship,
 - identifying how human values and perceptions affect and are affected by social diversity,
 - identifying and interpreting artistic expression.
2. Live a healthy lifestyle (physical, intellectual, social) through:
 - listing factors associated with a healthy lifestyle and lifetime fitness,
 - identifying the importance of lifetime learning,
 - demonstrating self-discipline, respect for others, and the ability to work collaboratively as a team.
3. Communicate effectively through:
 - developing effective written communication skills,
 - developing effective oral communication and listening skills.
4. Think analytically through:
 - utilizing quantitative information in problem solving,
 - utilizing the principles of systematic inquiry,
 - utilizing various information resources including technology for research and data collection.

COURSE OUTCOMES/COMPETENCIES (as Required)

The student will strive to achieve and be able to demonstrate an understanding of the following competencies:

1. Arithmetic and Algebraic Manipulation
 - A. Evaluate arithmetic expressions using the order of operations, including absolute value, and properties of real numbers.
 - B. Evaluate algebraic expressions.
 - C. Apply the laws of exponents to simplify expressions containing integer exponents.
 - D. Perform addition, subtraction, multiplication, and division on polynomial expressions.
 - E. Factor expressions with common factors that require grouping, simple trinomial expressions, and difference of square expressions.
 - F. Perform addition, subtraction, multiplication, and division on rational expressions.
 - G. Evaluate radicals, approximating those that are irrational.
2. Equations and inequalities.
 - A. Solve linear equations in one variable.
 - B. Solve literal equations that do not require factoring.
 - C. Solve a simple quadratic equation by factoring.
 - D. Develop and solve mathematical models including number, geometry, proportion, and percent applications.
3. Graphs on a Coordinate Plane
 - A. Plot points on a coordinate plane.
 - B. Graph linear equations by plotting points.
4. (Optional) Analysis of Equations and Graphs

- A. Identify the x-intercept, y-intercept, and slope of a line given its graph.
- B. Construct the equation of both a vertical and a horizontal line.

MINIMUM COURSE CONTENT

The following topics must be included in this course. Additional topics may also be included.

- I. Study Skills for Math
 - A. Text book overview
 - B. Study Skills for Success in Math
 - C. Introduction to Problem Solving
- II. The Arithmetic of Signed Numbers
 - A. Review of fractions
 - B. The Real Number System and Set Theory
 - C. Inequalities and Absolute Value
 - D. Addition of Real Numbers
 - E. Subtraction of Real Numbers
 - F. Multiplying and Dividing Real Numbers
 - G. Exponents and order of operations
 - H. Properties of the Real Number System
- III. Equations and Inequalities
 - A. Adding and subtracting algebraic expressions
 - B. Solving equations
 - 1. Addition Property of Equality
 - 2. Multiplication and division Property of Equality
 - 3. Solving Linear Equations with a Variable on Only One Side of the Equation
 - 4. Solving Linear Equations with a Variable on Both Sides of the Equation
 - C. Literal equations and applications
 - D. Solving linear inequalities
 - E. Changing Application Problems into Equations
 - F. Solving Application Problems
- IV. Graphs and Linear Equations
 - A. Solutions of equations in two variables
 - B. The Cartesian coordinate system
 - C. Graph of a linear equation
- V. Polynomials
 - A. Exponents
 - 1. Positive integer exponents and monomials
 - 2. Negative integer exponents
 - 3. Scientific Notation
 - B. An introduction to polynomials
 - 1. Addition and subtraction

2. Multiplication of polynomials and special products
- C. Divide a polynomial by a monomial.
- D. Factoring a Monomial from a Polynomial
- E. Factoring by Grouping
- F. Factor a trinomial of the form where the coefficient of the "x" term is "1"
- G. Factor a trinomial of the form where the coefficient of the "x" term is not "1"
- H. Special Factoring Formulas
- I. Solving a simple quadratic equation by factoring
- J. Applications of Quadratic Equations

VI. Rational Expressions

- A. Simplifying rational expressions
- B. Multiplication and division of rational expressions
- C. Addition and subtraction of rational expressions
- D. Roots and Radicals
- E. Simplifying Radical Expressions
- F. Operations on Radical Expressions

STUDENT REQUIREMENTS AND METHOD OF EVALUATION

INSTRUCTIONAL METHODS

Students will be expected to sometimes use a calculator in class on homework assignments and on tests. An informal lecture/discussion presentation of textbook material will be used. Presentations will be enhanced through the use of classroom presentations, videos and TI-82 or TI-83 graphing calculators. Students will be responsible to discuss any assigned problem. This discussion may utilize written problems, written or oral reports, or white board demonstrations of student abilities during any class session. Students will be responsible for assigned reading in the textbook and for learning various calculator techniques. Students may work in groups on some assignments and quizzes.

STUDENT REQUIREMENTS

1. Successful completion of assignments and tests
2. Regular class attendance and participation
3. Comprehensive final

GRADING SCALE

The grade at any time, including the final course grade, will be based on the accumulated point totals of daily work, assigned homework problems, unit tests, and the final exam. Grades will be assigned by straight percentage of the accumulated point totals relative to points available as in the following scale:

A: above 90% B: 80-89.9% C: 70-79.9% F: below 70%

ASSESSMENT OF STUDENT LEARNING

The purpose of assessing student learning at Neosho County Community College is to ensure the educational purposes of the institution are met and appropriate changes are made in program development and classroom instruction to allow for student success. The instructor(s) of this course will determine the methods of assessment most appropriate and complete an assessment report at the end of the course.

Attendance Policy

1. NCCC values interactive learning which promotes student engagement in the learning process. To be actively engaged, the student must be present in the learning environment.
2. Unless students are participating in a school activity or are excused by the instructor, they are expected to attend class. If a student's absences exceed one-eighth of the total course duration, (which equates to one hundred (100) minutes per credit hour in a face-to-face class) the instructor has the right, but is not required, to withdraw a student from the course. Once the student has been dropped for excessive absences, the registrar's office will send a letter to the student, stating that he or she has been dropped. A student may petition the chief academic officer for reinstatement by submitting a letter stating valid reasons for the absences within one week of the registrar's notification. If the student is reinstated into the class, the instructor and the registrar will be notified. Please refer to the Student Handbook/Academic Policies for more information
3. Absences that occur due to students participating in official college activities are excused except in those cases where outside bodies, such as the State Board of Nursing, have requirements for minimum class minutes for each student. Students who are excused will be given reasonable opportunity to make up any missed work or receive substitute assignments from the instructor and should not be penalized for the absence. Proper procedure should be followed in notifying faculty in advance of the student's planned participation in the event. Ultimately it is the student's responsibility to notify the instructor in advance of the planned absence.

ACADEMIC INTEGRITY

NCCC expects every student to demonstrate ethical behavior with regard to academic pursuits. Academic integrity in coursework is a specific requirement. Definitions, examples, and possible consequences for violations of Academic Integrity, as well as the appeals process, can be found in the College Catalog, Student Handbook, and/or Code of Student Conduct and Discipline.

ELECTRONIC DEVICE POLICY

Student cell phones and other personal electronic devices not being used for class activities must not be accessed during class times unless the instructor chooses to waive this policy.

NOTE

Information and statements in this document are subject to change at the discretion of NCCC. Students will be notified of changes and where to find the most current approved documents.

ACCOMMODATIONS

If you are a student with a disability who may need accommodation(s), in compliance with Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act (ADA) of 1990, please notify the Dean of Student Services in the Student Services Office, Sanders Hall, 620-432-0304, on the Chanute Campus, or the Dean for the Ottawa and Online Campuses, 785-248-2798, on the Ottawa Campus as soon as possible. You will need to bring your documentation for review in order to determine reasonable accommodations, and then we can assist you in arranging any necessary accommodations.

NON-DISCRIMINATION POLICY

The following link provides information related to the non-discrimination policy of NCCC, including persons with disabilities. Students are urged to review this policy.

<http://www.neosho.edu/Departments/NonDiscrimination.aspx>

SEXUAL MISCONDUCT POLICY (TITLE IX)

At NCCC, it is the responsibility of an instructor to help create a safe learning environment in the classroom, including both physical and virtual classrooms. All instructors are considered mandatory reporters at NCCC, therefore any information regarding sexual misconduct that is shared by a student in one-on-one meetings with the instructor must be reported to appropriate personnel at the College. Instructors will keep the information private to the greatest extent possible, but it is not confidential. Generally, climate surveys, classroom writing assignments or discussions, human subjects research, or events such as Take Back the Night events do not provide notice that must be reported to the Coordinator by employees, unless the reporting party clearly indicates that they wish a report to be made.

The following link provides information related to the sexual misconduct policy of NCCC, including resources, reporting options, and student rights. Students are urged to review this policy.

<http://www.neosho.edu/TitleIX.aspx>

COURSE NOTES