

**NEOSHO COUNTY COMMUNITY COLLEGE
MASTER COURSE SYLLABUS**

COURSE IDENTIFICATION

Course Code/Number: MATH 112

Course Title: Intermediate 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 a minimal background in algebra. The course carries institutional credit of 4 hours (It counts toward graduation from NCCC). The course may not transfer credit to another institution, dependent upon graduation requirements for particular programs and institutions as described in their catalogs. Topics covered are: equations and inequalities, absolute value, functions and graphs, polynomials, rational expressions and radicals, and systems of equations and inequalities. Students will be expected to have access to at least a scientific calculator. A graphing calculator (such as a TI-83) would be acceptable. (It would be needed for College Algebra.)

MINIMUM REQUIREMENTS/PREREQUISITES AND/OR COREQUISITES

For specific placement requirements for this class, please refer to the Mandatory Placement Policy in the College Catalog.

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 be able to demonstrate the ability to:

1. Use basic rules of Algebra and real numbers.
2. To solve problems involving linear equations, absolute value equations and inequalities in one variable as well as set up and solve application problems.
3. To identify functions and sketch linear equations and functions in 2 variables and use a multivariate approach to solving application problems involving linear equations and functions.
4. To factor polynomials and perform standard polynomial operations.
5. To solve quadratic equations and application problems involving quadratic equations.
6. To simplify expressions and solve equations involving rational expressions.
7. To graph inequalities in two variables and solve systems equations by using substitution, addition and graphing.
8. To simplify expressions containing rational exponents and radicals and solve equations containing such expressions.

MINIMUM COURSE CONTENT

I. Real Numbers (Quick review)

A. Signed number arithmetic and order of operations on the real numbers

II. 1st Degree Equations and Inequalities.

A. Show solutions on a number line and in interval notation.

B. Solve single variable linear and absolute value equations and inequalities using the addition and multiplication properties.

C. Set up and solve application problems involving linear equations and inequalities in one variable.

D. Solve absolute value functions and inequalities.

III. Graphs and Linear Equations

- A. The graph of a linear equation
- B. The slope of a line
- C. Forms of linear equations

IV. Beginning Look at Functions

- A. Relations & Functions
- B. Tables & Graphs
- C. Algebra of Functions
- D. Composition of Functions

V. Factoring Polynomials

- A. Factoring Special Polynomials
- B. Factoring trinomials
- C. Solving quadratic equations by factoring
- D. Problem Solving with Factoring
- E. Solving quadratic equations by completing the square
- F. The quadratic formula

VI. Rational Expressions

- A. Operations with rational expressions
- B. Complex fractions
- C. Solving Rational Equations

VII. Systems of Linear Equations and Inequalities

- A. Graphing systems of linear equations
- B. Systems of equations with two variables with applications
- C. Systems of linear equations in three variables
- D. Graphing linear inequalities in two variables

VIII. Radicals and Exponents

- A. Roots and Radicals
- B. Simplifying Radical Expressions
- C. Operation on Radical Expressions
- D. Rational Exponents
- E. Complex numbers

STUDENT REQUIREMENTS AND METHOD OF EVALUATION

INSTRUCTIONAL METHODS

The text will serve as a guideline for the course with most of the material taken from the text and delivered in an informal lecture/discussion presentation. A TI-83 or other model of a graphing calculator, videos or other forms of technology may be used for demonstrations. Problem assignments will be made for each section that is covered and the student should be ready to discuss the problems in the next class session. Normally the first part of a class will be used to discuss the previous assignment. The student is encouraged to visit the instructor for individual help outside of class; seek help immediately when you don't understand some concept.

STUDENT REQUIREMENTS

See the syllabus supplement for a specific course section for details of student requirements and method of evaluation.

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

GRADING SCALE

- A: 90-100
- B: 80-89
- C: 70-79
- F: 69 and below

See the syllabus supplement for a specific course section for details of grading scale.

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>