



MA-110 Intermediate Algebra

Sean Keady
NORTH CENTRAL KANSAS TECHNICAL COLLEGE

COURSE INFORMATION

The concepts of fundamental operations with real and imaginary numbers, symbolism used in Algebra, solving and graphing equations, and applications of these concepts to word problems will be developed. The course is designed for students who have only one year of high school algebra, are inadequately prepared for College Algebra, or score in the prescribed range on the placement exam. Topics covered include number systems, linear equations and equalities, polynomials, exponents, rational expressions, and quadratic equations.

Credits: 3

Total Hours: 45

Pre/Corequisites:

- Prerequisite: Grade of C or better in MA-099 Basic Algebra or appropriate placement scores.

CLASS INFORMATION

Section Number: Online

Term: Summer Year: 2024 Start Date: 6/3/2024 End Date: 7/26/2024

Meeting Times: Asynchronous

Meeting Location: Online

Delivery Mode: Online

INSTRUCTOR

Sean Keady

Email: skeady@ncktc.edu

Office Phone: 785-738-9022 (Please email)

Mobile Phone: Please email

Office Location: Microsoft Teams Appointment (email me to setup one)

TEXTBOOKS

We will reference the below book (print copies are optional as the book is free online):

Intermediate Algebra 2nd edition

<https://openstax.org/details/books/intermediate-algebra-2e>

We will use myopenmath.com and the Moodle course for some assignments. [Myopenmath.com](https://myopenmath.com) is free and doesn't require an access code.

SUPPLIES

• Calculator Options:

- You can use the best physical calculators that you already have (if you have any) for assignments and the exam. A smartphone or computer calculator is not allowed for the final exam.
- - > Casio fx-300ESPLUS2 2nd Edition, Standard Scientific Calculator, Black (available cheaply on amazon)
 - > Casio fx-115ESPLUS2 2nd Edition, Advanced Scientific Calculator (very similar to the prior calculator)
 - > A Ti-36 or Ti-84 is another option (especially if you already have one)
- Backup option for homework and quizzes(or while calculator is shipping):
- <https://www.geogebra.org/graphing>
 - ^can be used as a free online, web alternative to a graphing calculator
- ^can also be used for visualization and to supplement a scientific calculator on homework and quizzes

COURSE COMPETENCIES

1. Factor quadratic expressions, expressions of quadratic form, special forms, and factor by grouping.
2. Perform addition, subtraction, multiplication, and division on rational expressions.
3. Simplify complex fractions.
4. Apply the laws of exponents to simplify expressions containing rational exponents.
5. Apply the laws of radicals to perform addition, subtraction, and multiplication on expressions involving radicals. Rationalize denominators containing radicals.
6. Simplify radicals containing negative radicands. Perform arithmetic operations on complex numbers.
7. Evaluate functions using function notation.
8. Solve linear inequalities in one variable showing solutions both on the real number line and in interval notation.
9. Solve literal equations, including those that require factoring.
10. Solve systems of linear equations in two variables.
11. Solve equations by factoring and quadratic formula.
12. Solve equations containing rational expressions.
13. Solve equations involving radicals.
14. Solve linear absolute value equations and inequalities in one variable.
15. Develop and solve mathematical models including variation, mixture, motion, work, and geometrical applications.
16. Graph linear inequalities.
17. Graph quadratic functions.

18. Determine an equation of a line given either sufficient information (two points) or a particular condition (perpendicular to a given line, parallel to a given line through a specific point, through a specific point with a given slope, etc.).
19. Calculate the distance between two points.
20. Distinguish between functions and relations using the Vertical Line Test.
21. Identify the domain and range of a function given its graph.

GRADING INFORMATION

NCKTC Grading Scale

- A 100% -90%
- B 89% - 80%
- C 79% - 70%
- D 69% - 60%
- F 59% and below

Grade Calculation & Parts

30% Homework assignments submitted on [Myopenmath.com](https://myopenmath.com) (Equally Weighted)

15% Chapter Quizzes submitted on [Myopenmath.com](https://myopenmath.com)

15% Forums submitted on [Myopenmath.com](https://myopenmath.com)

- Posts will be done in a two post cycle.
- The first will be for your initial post.
- The second will be for your posting of comments on the other students' posts.

40% Final Exam (Cumulative, Multiple choice in two parts) on Moodle

- Test Notes Requirements:
 - Maximum of both sides of 4 pages of notes on the final exam (8.5 by 11 inch sheets only).

Extra Credit/Correction opportunities: (Announced as the course goes on)

- Warmup & Refresh assignments
- Other assignments
- Practice Exam questions on [Myopenmath.com](https://myopenmath.com)

Other policies

Late homework and quizzes are not accepted.

If you miss a test or are going to miss a test, for intermediate algebra, email me asap. This is for emergencies only!

If you are traveling(for your NCK tech program classes or department), homework and quiz assignments are still due Wednesday at 11:59 PM and should be completed ahead of time.

The last official day a student can withdraw from class is July 5th for summer 2024. A grade of "W" will appear on the transcript if the student withdraws on or before that date; a grade of "F" will appear if you withdraw after that date.

Online students should email the registrar (doffutt@ncktc.edu) to request a withdrawal from the class before the posted last official day to withdraw.

Schedule

Intermediate algebra Online	Assignments Due Date
Reading Chapter 1 Assignments: 1.1, 1.2, 1.3, 1.4, & 1.5 Chapter 1 Quiz Forum/Creative Challenge 1: Initial Post	Due Date: Wed. June 5th at 11:59 PM
Reading Chapter 2 Assignments: 2.1, 2.3, 2.5, 2.6, & 2.7 Chapter 2 Quiz Forum/Creative Challenge 1: One Comment Post Course Competencies: #8 Solve linear inequalities in one variable showing solutions both on the real number line and in interval notation. #9 Solve literal equations, including those that require factoring.	Due Date: Wed. June 12th at 11:59 PM
Reading Chapter 3 Assignments: 3.1, 3.2, 3.3, 3.5, & 3.6 Chapter 3 Quiz Forum/Creative Challenge 2: Initial Post	Due Date: Wed. June 19th at 11:59 PM

<p>Course Competencies:</p> <p>#7 Evaluate functions using function notation.</p> <p>#14 Solve linear absolute value equations and inequalities in one variable.</p> <p>#15 Develop and solve mathematical models including variation, mixture, motion, work, and geometrical applications.</p> <p>#16 Graph linear inequalities.</p> <p>#18 Determine an equation of a line given either sufficient information (two points) or a particular condition (perpendicular to a given line, parallel to a given line through a specific point, through a specific point with a given slope, etc.).</p> <p>#20 Distinguish between functions and relations using the Vertical Line Test.</p> <p>#21 Identify the domain and range of a function given its graph.</p>	
<p>Reading Chapter 4</p> <p>Assignments:</p> <p>4.1 & Chapter 4 other topics assignment</p> <p>Chapter 4 Quiz</p> <p>Forum/Creative Challenge 2: One Comment Post</p> <p>Course Competencies:</p> <p>#10 Solve systems of linear equations in two variables.</p>	<p>Due Date: Wed. June 19th at 11:59 PM</p>
<p>Reading Chapter 5</p> <p>Assignments:</p> <p>5.1, 5.2, 5.3, & 5.4</p> <p>Chapter 5 Quiz</p> <p>Forum/Creative Challenge 3: Initial Post</p>	<p>Due Date: Wednesday, June 26th at 11:59 PM</p>
<p>Reading Chapter 6</p> <p>Assignments:</p> <p>6.1, 6.2, 6.3, & 6.5</p> <p>Chapter 6 Quiz</p> <p>Forum/Creative Challenge 3: One Comment Post</p> <p>Course Competencies:</p>	<p>Due Date: Wednesday, June 26th at 11:59 PM</p>

<p>#11 Solve equations by factoring and quadratic formula.</p> <p>Reading Chapter 7</p> <p>7.1, 7.2, 7.4, & 7.5</p> <p>Chapter 7 Quiz</p> <p>Forum/Creative Challenge 4: Initial Post</p> <p>Course Competencies:</p> <p>#3 Simplify complex fractions.</p> <p>#12 Solve equations containing rational expressions.</p>	<p>Due Date:</p> <p>Wed. July 3rd at 11:59 PM</p>
<p>Reading Chapter 8 Sections 8.1 to 8.4</p> <p>Assignments:</p> <p>8.1, 8.2, 8.3, 8.4,</p> <p>Forum/Creative Challenge 5: Initial Post</p> <p>Course Competencies:</p> <p>#2 Perform addition, subtraction, multiplication, and division on rational expressions.</p> <p>#4 Apply the laws of exponents to simplify expressions containing rational exponents.</p> <p>#5 Apply the laws of radicals to perform addition, subtraction, and multiplication on expressions involving radicals. Rationalize denominators containing radicals.</p> <p>#13 Solve equations involving radicals.</p>	<p>Due Date:</p> <p>Wed. July 10th at 11:59 PM</p>
<p>Reading Chapter 8 Sections 8.5 to 8.8</p> <p>Assignments:</p> <p>8.5, 8.6, & 8.7</p> <p>Chapter 8 Quiz</p> <p>Forum/Creative Challenge 5: One Comment Post</p> <p>Course Competencies:</p> <p>#6 Simplify radicals containing negative radicands. Perform arithmetic</p>	<p>Due Date:</p> <p>Wed. July 10th at 11:59 PM</p>

<p>operations on complex numbers.</p>	
<p>Reading Chapter 9 Sections 9.1 to 9.3</p> <p>Assignments:</p> <p>9.1, 9.2, 9.3,</p> <p>Warmup & Refresh 1 (Extra Credit)</p> <p>Forum/Creative Challenge 6: Initial Post</p> <p>Course Competencies: #1. Factor quadratic expressions, expressions of quadratic form, special forms, and factor by grouping. #11 Solve equations by factoring and quadratic formula.</p>	<p>Due Date:</p> <p>Wed. July 17th at 11:59 PM</p>
<p>Reading Chapter 9 Sections 9.4 to 9.8</p> <p>Assignments:</p> <p>9.4, 9.5, 9.6, & 9.7</p> <p>Chapter 9 quiz</p> <p>Forum/Creative Challenge 7: Initial Post</p> <p>Course Competencies: #1. Factor quadratic expressions, expressions of quadratic form, special forms, and factor by grouping. #17 Graph quadratic functions.</p>	<p>Due Date</p> <p>Wed. July 17th at 11:59 PM</p>
<p>Reading Chapter 11 Sections 11.1</p> <p>Assignments:</p> <p>11.1</p> <p>Warmup & Refresh 2 (Extra Credit)</p> <p>Forum/Creative Challenge 7: One Comment Post</p> <p>Course Competencies: #19 Calculate the distance between two points.</p>	<p>Due Date:</p> <p>Wed. July 24th at 11:59 PM</p>
<p>Assignments:</p> <p>Warmup & Refresh 3 (Extra Credit)</p>	

Forum/Creative Challenge 8: Initial Post	Due Date: Wed. July 24th at 11:59 PM
Assignments: Practice Final Exam (two part PDF practice exam on Moodle, self grade) Practice Final Exam Questions (myopenmath.com , for extra credit) Forum/Creative Challenge 8: One Comment Post	Due Date: Wed. July 24th at 11:59 PM
Assignments: Final Exam (on Moodle--> Multiple choice)	Due Date: Thurs. July 25th at 11:59 PM

ACADEMIC HONESTY

Membership in the NCK Tech learning community imposes upon the student a variety of commitments, obligations, and responsibilities. It is the policy of this college to impose sanctions on students who misrepresent their academic work. Appropriate classroom instructors or other designated persons will select these sanctions consistent with the seriousness of the violation and related considerations.

Examples of scholastic dishonesty include but are not limited to:

- Plagiarism: i.e. taking someone else's intellectual work and presenting it as one's own. Each department set standards of attribution. Faculty will include disciplinary or class-specific definitions in course syllabi.
- Cheating is unacceptable in any form. Examples include consultation of books, library materials, notes or intentional observation of another student's test on paper or a computer screen; accessing another student's answers from an exam to be given or in progress; submission of falsified data; alteration of exams or other academic exercises; and collaboration on projects where collaboration is forbidden.
- Falsification, forgery or alteration of any documents pertaining to assignments and examinations.
- Students who participate in, or assist with, cheating or plagiarism will also be in violation of this policy.

Classroom instructors and/or administrators will assess sanctions for violations of this policy. The seriousness of the violation will dictate the severity of the sanction imposed. Academic sanctions may include but are not limited to any of the following:

1. verbal or written warning
2. lowering of grade for an assignment
3. lowering of term grade

Administrative sanctions may include but are not limited to either of the following

1. Suspension from the course, program, or College

2. Dismissal from the course, program, or College

NCK TECH MISSION STATEMENT

North Central Kansas Technical College delivers applied, innovative and personalized education to empower learners, enrich lives, develop skilled professionals and strengthen economic systems.

Vision Statement

North Central Kansas Technical College is dedicated to being a leader in workforce development by maximizing value for students, employers and communities through educational excellence.

Core Values

Achieving EXCELLENCE with INTEGRITY through

DEDICATION

INNOVATION

COLLABORATION

COMMUNICATION

NCK TECH NON-DISCRIMINATION POLICY

NCK Tech is committed to nondiscrimination on the basis of race, color, gender, ethnic or national origin, sex, sexual orientation, gender identity, marital status, religion, age, ancestry, disability, military status, or veteran status in admission or access to, or treatment or employment in, its programs and activities. Further, it is the policy of the college to prohibit harassment (including sexual harassment and sexual violence) of students and employees. Any person having inquiries concerning the college's compliance with the regulations implementing Title VI, Title VII, Title IX, Section 504, and the Americans with Disabilities Act Amendments Act is directed to the VP of Student and Instructional Services (Section 504/ADA Compliance Officer and Title VI, Title VII, & Title IX Compliance Officer) at (785)738-9055, cisbell@ncktc.edu, or PO Box 507, 3033 US Hwy 24, Beloit, KS 67420.

NCK TECH TOBACCO USE POLICY

The use of tobacco products in any form and/or electronic cigarettes is prohibited in, or within ten (10) feet of any building owned, leased, or rented by the College.

NCK TECH WEAPONS POLICY

Individuals who choose to carry concealed handguns **are solely responsible to do so in a safe and secure manner in strict conformity with state and federal laws and NCK Tech weapons policy.** Individuals must be 18 years of age to carry concealed handguns.

Safety measures outlined in the NCK Tech weapons policy specify that a concealed handgun:

- Must be under the constant control of the carrier.
- Must be out of view, concealed either on the body of the carrier, or backpack, purse, or bag that remains under the carrier's custody and control and within immediate reach of the individual.
- Must be in a holster that covers the trigger area and secures any external hammer in an un-cocked position
- Must have the safety on, and have no round in the chamber.

Lockers, toolboxes, and/or tool bags are not approved storage devices in accordance with NCK Tech Policy.

OVERVIEW FOR STUDENTS WITH DISABILITIES

NCK Tech is dedicated to providing equal access and opportunity to all campus programs and services for students with disabilities. We are committed to providing reasonable accommodations in accordance with applicable state and federal laws including, but not limited to, Section 504 and 508 of the Federal Rehabilitation Act of 1973 and the Americans with Disabilities Act Amendments Act (ADAAA) of 2008. We strive to create a safe, respectful and inclusive environment and promote awareness, knowledge and self-advocacy.

NCK Tech acknowledges that traditional methods, programs and services are not always appropriate or sufficient to accommodate the limitations experienced by some qualified persons with disabilities. When a student's disability prevents him/her from fulfilling a course requirement through conventional procedures, consideration will be given to alternatives, **keeping in mind that academic standards must be maintained.**

Services are provided through Student Accessibility Services (SAS) staff located in the Student Success Center, on the Beloit Campus, and in Student Services, on the Hays Campus.

- Director of Learning Services, may be reached at [1-785-738-9020](tel:1-785-738-9020); or by mail at [NCK Technical College, 3033 US Hwy 24, Beloit, KS 67420](mailto:Director of Learning Services).

Student Responsibilities

Students requesting support services will need to register ("self-disclose" and complete Student Accessibility Services Intake and Consent Form), provide appropriate documentation (if available) including how the disability affects academic performance and suggested accommodations, and communicate with the Director of Learning Services as part of the interactive process to create an *Educational Accommodation Plan* that will notify Instructors of approved accommodations, services and/or auxiliary aids.

Students are encouraged to make timely and appropriate disclosures and requests, at least two weeks in advance of a course, program, or activity for which an accommodation is requested (or as soon as realistically possible) to allow adequate time for accommodation services to be set in place.

Accommodations, Academic Support Services, or Auxiliary Aids

Reasonable accommodations including academic support services and auxiliary aids are provided to allow students with disabilities an equal opportunity to participate in and benefit from our educational programs. Accommodations will be provided on a case-by-case basis determined by student request, documentation, intake interview, Educational Accommodation Plan team, and assessment of individual needs and course requirements.

Reasonable testing accommodations may include, but are not limited to:

- Extended testing time
- Reduced distraction testing environment
- Test reader and/or scribe
- Use of calculator

Academic support services/auxiliary aids may include, but are not limited to:

- Note-taking assistance (second set of notes, power point slides, or other visual aids provided)
- Sign Language Interpreter
- Preferential seating in the classroom
- Large print exams, handouts, signs, etc.
- Telecommunications devices
- Use of Assistive Technology

Accommodations may not fundamentally alter the nature of the program or activity, lower academic standards, present undue financial or administrative burden on the college, or pose a threat to others or public safety.

Additionally, some accommodations and services cannot be provided, such as personal devices or assistance with personal services.

Auxiliary aids may be available through a variety of sources available to individual students. The student may make a request in obtaining specialized support services from other resources such as Vocational Rehabilitation Services (VR), Recordings for the Blind, Kansas Talking Book Service, etc. For example, Vocational Rehabilitation may fund such items as transportation to the institution, tuition, textbooks, hearing aids, and other individually prescribed medical devices.

If at any time throughout the academic year, a student feels that the agreed upon accommodations are not being followed or that alternate accommodations need to be provided, the student should notify Student Accessibility Services (SAS) staff. NCK Tech is committed to student success; however, we do not require students to use accommodations. The decision of when to utilize approved accommodations or services is up to the student. Integration, self-advocacy and individual responsibility are promoted and expected.

Grievance Procedure

Any student who believes he or she has been subjected to discrimination on the basis of disability or has been denied access or accommodations, shall have the right to invoke the Grievance Procedure.

Students are encouraged to first discuss their concerns with SAS. An attempt will be made to resolve the issue(s) causing concern by assisting the student in discussions with the person(s) involved. Most situations are positively resolved through this process. If the student does not feel the concern or complaint has been appropriately resolved, he or she should contact the [Vice President of Student and Instructional Services](#) at 1-800-658-4655 or PO Box 507, 3033 US Hwy 24, Beloit, KS 67420, where grievance procedures are filed for all students, including students with disabilities.

If the complaint is not resolved at the College level, a student may choose to file a complaint with the [Office for Civil Rights](#) at 1-816-268-0550 or U.S. Department of Education, One Petticoat Lane, 1010 Walnut Street, Suite 320, Kansas City, MO 64106.

Confidentiality

All information regarding a student's disability is confidential. All documentation will remain separate from academic records and will not be released to an individual or source external to NCK Tech without the student's written consent. In order to provide effective services, it may be necessary to communicate limited information on a need-to-know basis regarding disability-related needs to NCK Tech faculty and/or staff.

REASONABLE SUSPICION

If reasonable suspicion of substance abuse exists regarding an employee or student based on objective criteria (including, but not limited to, behavior, appearance, demeanor, detection of the odor of alcohol or any controlled substance), the employee or student will be requested to consent to drug testing performed by NCK Tech's contract vendor at the expense of the college.

- A. A college administrator (or their designee) shall drive the employee or student to the vendor's site for drug testing and shall return the employee or student to his/her residence (or arrange for transportation) following the testing.
- B. Test results shall be sent directly to the college administrator, with a copy also sent to the employee or student. All test results will be considered confidential, access to the results will be limited to institutional personnel who have a legitimate need-to-know.
- C. In the event of a positive test result, the employee or student may request a retest of the sample at the employee or student's expense. The request must be submitted within 24 hours.
- D. Positive results for any illegal drugs, or prescription drugs (either not prescribed for the employee or student, or at levels above the prescribed dosage), or blood alcohol level of 0.04 or greater shall be grounds for disciplinary action, up to and including termination or expulsion.
- E. Refusal to provide a specimen for this testing shall be treated as a positive drug test result.
- F. Test results or specimens that have been determined to be altered by the employee or student shall be grounds for disciplinary action, up to and including termination or expulsion.
- G. If the employee or student tests positive for an authorized prescription drug which may impair his/her performance or judgment, the employee or student may not be permitted to participate in college activities until he/she provides a doctor's release.

RIGHT TO MODIFY THE SYLLABUS

The instructor reserves the right to modify the syllabus during the semester. Students will be given advanced notice if a change would occur.

NCKTC INCLEMENT WEATHER POLICY

School dismissals and cancelations will be announced using the NCKTC RAVE Alert system. Local media will also be notified.

NCKTC KANSAS CORE OUTCOME STATEMENT

The learning outcomes detailed in this syllabus meet, or exceed, the learning outcomes specified by the Kansas Core Outcomes Project for this course, as sanctioned by the Kansas Board of Regents.