North Central State College

MASTER SYLLABUS	2025-2026

A. Academic Division: Liberal Arts

B. Discipline: Mathematics

C. Course Number and Title: MATH1110 College Algebra

D. Assistant Dean: Laura Irmer, MFA, MA

E. Credit Hours: 4

F. Prerequisites: MATH0084 (Minimum grade of C- required) or qualifying placement test score

G. Last Course/Curriculum Revision Date: Fall 2023 Origin date: 06/08/2011

H. Textbook(s) Title:

College Algebra with Co-Requisite Support - Access Code
Author: Lumen Learning
Publisher: Lumen, Inc
ISBN 978-1-64087-291-2
Copyright: 2023

I. Workbook(s) and/or Lab Manual:
TI-84 Calculator recommended ISBN #8780000100116 *Check with instructor on calculator options

J. Course Description:

A study of:

1. Polynomial operations, rational expressions, exponents, radicals;
2. Linear and quadratic equations, inequalities, absolute value applications and their graphs;
3. Graphs of elementary functions and non-functions including inverse functions, combining functions, and translating and transforming functions;
4. Study of polynomial functions, including the Fundamental Theorem of Algebra, zeroes of polynomials, rational functions, partial fractions;
5. Exponential and logarithmic functions including graphs and applications;
6. Gauss-Jordan elimination and Cramer's Rule.

This course meets the requirements for OTM College Algebra TMM001

K. College Wide Learning Outcomes:

College-Wide Learning Outcomes	Assessments - - How it is met & When it is met
Communication – Written	
Communication – Speech	
Intercultural Knowledge and Competence	
Critical Thinking	
Information Literacy	
Quantitative Literacy	Quantitative Literacy VALUE Rubric, midterm exam

L. Course Outcomes and Assessment Methods:

Upon successful completion of this course, the student shall:

Outcomes	Assessments – How it is met & When it is met
1. Determine whether an algebraic relation or graph represents a function and perform transformation of those functions.	Homework and tests regularly throughout the term and Final Exam.
2. Add, subtract, multiply, divide and compose a variety of functions.	Homework and tests regularly throughout the term and Final Exam.
3. Analyze the graph of a variety of functions and their inverses.	Homework and tests regularly throughout the term and Final Exam.
4. Use the Remainder and Factor Theorems for polynomial functions.	Homework and tests regularly throughout the term and Final Exam.
5. Solve application problems including creating mathematics which model a wide range of phenomena.	Homework and tests regularly throughout the term and Final Exam.
6. Solve equations and systems of equations with a variety of methods (including technology) and determine symmetry using their graphs.	Homework and tests regularly throughout the term and Final Exam.
7. Solve inequalities graphically, algebraically, and with using technology and solve systems of inequalities.	Homework and tests regularly throughout the term and Final Exam.
8. Identify and express conics in standard rectangular form and graph.	Homework and tests regularly throughout the term and Final Exam.
9. Solve polynomials over the complex numbers system.	Homework and tests regularly throughout the term and Final Exam.
10. Write series in summation notation and find the sum of arithmetic and geometric series.	Homework and tests regularly throughout the term and Final Exam.

M. Recommended Grading Scale:

NUMERIC	GRADE	POINTS	DEFINITION
93–100	A	4.00	Superior
90–92	A-	3.67	Superior
87–89	B+	3.33	Above Average
83–86	B	3.00	Above Average
80–82	B-	2.67	Above Average
77–79	C+	2.33	Average
73–76	C	2.00	Average
70-72	C-	1.67	Below Average
67–69	D+	1.33	Below Average
63-66	D	1.00	Below Average
60-62	D-	0.67	Poor

N. College Procedures/Policies:

North Central State College believes that every student is a valued and equal member of the community.* Every student brings different experiences to the College, and all are important in enriching academic life and developing greater understanding and appreciation of one another. Therefore, NC State College creates an inclusive culture in which students feel comfortable sharing their experiences. Discrimination and prejudice have no place on the campus, and the College takes any complaint in this regard seriously. Students encountering aspects of the instruction that result in barriers to their sense of being included and respected should contact the instructor, assistant dean, or dean without fear of reprisal.

* *Inclusive of race, color, religion, gender, gender identity or expression, national origin (ancestry), military status (past, present or future), disability, age (40 years or older), status as a parent during pregnancy and immediately after the birth of a child, status as a parent of a young child, status as a foster parent, genetic information, or sexual orientation*

Important information regarding College Procedures and Policies can be found on the syllabus supplement located at
https://ncstatecollege.edu/documents/President/PoliciesProcedures/PolicyManual/Final%20PDFs/14-081b.pdf

North Central State College

SYLLABUS ADDENDUM

Academic Division:	Liberal Arts	**Discipline:**	Mathematics
Course Coordinator:	Sara K. Rollo		
Course Number:	MATH 1110-921	**Course Title:**	College Algebra
Semester / Session:	Spring 2026/Session B	**Start / End Date:**	03/16/2026 – 05/08/2026

Instructor Information

Name:	Christine Shearer	**Credentials:**	M.S. Mathematics/B.S. Mathematics
Phone Number:	419-755-4755	**E-Mail Address:**	cshearer@ncstatecollege.edu
Office Location:		**Office Hours:**	Mondays 11am-12pm, Wednesdays 10am-12pm, Fridays 10am-12pm

I. Topical Timeline / Course Calendar (Subject to Change):

Weeks	Topics	Assignment	Due Date
1	Review equations and inequalities and cover rectangular coordinates, graphing utilities and introduce graphing equations	Review for Success: Topic 1 Topic 1 Homework	3/21 3/21
	Utilize the distance and midpoint formulas and graph circles, lines and study variation	Topic 2 Homework	3/21
2	Utilize the distance and midpoint formulas and graph circles, lines and study variation	Topic 2 Test	3/25
	Graph functions and learn of their properties, study and practice transformations, and build functions using mathematical models	Review for Success 1: Topic 3 Review for Success 2: Topic 3	3/28 3/28
3	Graph functions and learn of their properties, study and practice transformations, and build functions using mathematical models	Topic 3 Homework Topic 3 Test	4/1 4/1
	Build linear and quadratic functions from data and build quadratic models from verbal descriptions and from data	Review for Success: Topic 4 Topic 4 Homework	4/4 4/4
4	Graph polynomial functions and find real and complex zeros of a polynomial function. Study the properties of and graph rational functions and inequalities	Review for Success: Topics 1 and 5 Review for Success: Topics 5 Topic 5 Homework	4/8 4/8 4/8
	Topics from weeks 1 – 4	Midterm (Topics 1 – 5)	4/11
5	Review composite functions, one-to-one functions and inverse functions. Learn the properties of and graph exponential functions and logarithmic functions. Build financial, exponential, logarithmic and logistic models from data	Review for Success 1: Topic 6 Review for Success 2: Topic 6 Topic 6 Homework Topic 6 Test	4/15 4/15 4/18 4/18
6	Identify and express conics in standard rectangular form and graph	Review for Success: Topic 11 Topic 11 Homework Topic 11 Test	4/22 4/22 4/25
7	Solve systems of equations using substitution, elimination, matrices, and determinants. Practice partial fraction decomposition	Review for Success 1: Topic 12 Review for Success 2: Topic 12 Topic 12 Homework Topic 12 Test	4/29 4/29 5/2 5/2
8	Write series in summation notation and find the sum of arithmetic and geometric series. Practice mathematical induction and use the binomial theorem	Review for Success: Topic 13 Topic 13 Homework	5/6 5/6
	Topics from weeks 1 – 8	Final Exam	5/9

II. Grading and Testing Guidelines:

Final Grade Calculation

Activity	Qty	Points	Percentage
Review for Success	12	60	8
Homework	9	90	12
Test	5	500	60
Midterm	1	200	
Final Exam	1	100	20

1. Topic 1 Homework and Review for Success
2. Topic 2 Homework
3. **Topic 2 Test**
4. Topic 3 homework and Reviews for Success 1 and 2
5. **Topic 3 Test**
6. Topic 4 Homework and Review for Success
7. Topic 5 Homework and Reviews for Success
8. **Midterm Exam: Topics 1 - 5**
9. Topic 6 Homework and Reviews for Success 1 and 2
10. **Topic 6 Test**
11. Topic 11 Homework and Review for Success
12. **Topic 11 Test**
13. Topic 12 Homework and Reviews for Success 1 and 2
14. **Topic 12 Test**
15. Topic 13 Homework and Review for Success
16. **Comprehensive departmental final exam**

III. Examination Policy:

Topic tests, the midterm and the final exam will all be completed on Lumen. Each of these assignments will be timed. Students will be given 150 minutes to take each test. Students will have two attempts per question, and each test must be completed in a single setting (i.e. the timer cannot be paused). Students will not be allowed to begin a test and then request an extension. Do not click on the exam link until you are fully prepared to take the exam.

IV. Class Attendance and Homework Make-Up Policy:

There are no live meetings for this course. You are expected to watch the recorded videos that will be posted in Lumen and then complete the homework in Lumen. I will accept late work, however, in an 8-week format, it is important that you do not get behind.

V. Classroom Expectations:

N/A

	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Week 1	Mar 15	Mar 16	Mar 17	Mar 18	Mar 19	Mar 20	Mar 21 Review for Success: Topic 1 Due Topic 1 Homework Due Topic 2 Homework Due
Week 2	Mar 22	Mar 23	Mar 24	Mar 25 Topic 2 Test Due	Mar 26	Mar 27	Mar 28 Review for Success 1: Topic 3 Due Review for Success 2: Topic 3 Due
Week 3	Mar 29	Mar 30	Mar 31	Apr 1 Topic 3 Homework Due Topic 3 Test Due	Apr 2	Apr 3	Apr 4 Review for Success: Topic 4 Due Topic 4 Homework Due
Week 4	Apr 5	Apr 6	Apr 7	Apr 8 Review for Success: Topics 1 and 5 Due Review for Success: Topic 5 Due Topic 5 Homework Due	Apr 9	Apr 10	Apr 11 Midterm (Topics 1 – 5) Due
Week 5	Apr 12	Apr 13	Apr 14	Apr 15 Review for Success 1: Topic 6 Due Review for Success 2: Topic 6 Due	Apr 16	Apr 17	Apr 18 Topic 6 Homework Due Topic 6 Test Due
Week 6	Apr 19	Apr 20	Apr 21	Apr 22 Review for Success: Topic 11 Due Topic 11 Homework Due	Apr 23	Apr 24	Apr 25 Topic 11 Test Due
Week 7	Apr 26	Apr 27	Apr 28	Apr 29 Review for Success 1: Topic 12 Due Review for Success 2: Topic 12 Due	Apr 30	May 1	May 2 Topic 12 Homework Due Topic 12 Test Due
Week 8	May 3	May 4	May 5	May 6 Review for Success: Topic 13 Due Topic 13 Homework Due	May 7	May 8	May 9 Final Exam Due