

MATH 130 Syllabus

College Algebra Section OLA – Summer 2021

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Section 1: Course Overview

Instructor

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Office hours & location: By appointment via Zoom

Course Information

MATH 130 OL – College Algebra

Summer 2021

May 10 – June 25, 2021

Course Overview

Further development of the fundamental concepts of algebra with emphasis on applications and problem solving. Topics include linear and quadratic equations and inequalities; functions and graphs; zeros of polynomial and rational functions; exponential and logarithmic functions; systems of equations and inequalities; matrices and determinants; probability and counting arguments. Use of graphing calculators and current technology will be emphasized.

Course Prerequisites

MATH 112 or MATH 120 with a grade of “C” or higher or placement determined by ACT, SAT and/or North Central Assessment/Placement scores.

Course Objectives

To complete this course successfully, you will:

- Solve equations and inequalities involving linear, quadratic, polynomial and rational functions.
- Solve equations involving exponential and logarithmic functions.
- Solve modeling problems using linear, quadratic, polynomial, rational, exponential and logarithmic functions.
- Graph and interpret linear, quadratic, polynomial, rational, exponential and logarithmic functions.
- Solve systems of equations and inequalities by a variety of methods including matrix methods and operations.
- Graph conic sections.
- Solve modeling problems using conic sections.

Section 2: Course Material and Tech Requirements

Course Textbook and Materials

Required:

- *Knewton Alta Single Term Access* - ISBN: 9781635452440

Optional:

- *OpenStax College Algebra*: <https://openstax.org/details/books/college-algebra>

Online Course Requirements

Internet

This course is entirely online, which means we will not be meeting in a traditional classroom. All interactions and activities will utilize internet technologies. ***You are responsible for having a reliable computer and high-speed internet connection throughout the course.***

Learning Management System (Brightspace)

This course uses Brightspace as its learning management system (LMS). You must be able to use Brightspace to download and view documents, review and submit assignments, post to discussion boards, interact with others in the class, and view posted grades. For tutorials on how to use Brightspace, please click the *Learn How to Use Brightspace* link on the Brightspace home page or the *Get Help* link on the course menu.

- [Brightspace 101](#) – If you would like to learn about and practice using the tools in Brightspace, you may self-enroll in this FREE, self-paced training course.

Email

You must check your North Central student email account daily. Any course correspondence outside of Brightspace will be sent to your North Central student email account. If you would like assistance accessing your student email account on your personal computer, smartphone, or other devices, you may contact the IT Help Desk (contact information in Section 6).

Computer Requirements

This course requires that you have reliable, high-speed access to the internet and computer/laptop with updated software. You need to have access to and must be able to use:

- High-speed Internet access (i.e., cable modem, DSL)
- Web browser (Free) – the latest version of Firefox, Chrome, or Safari is recommended
- Microsoft Office - Free to North Central students as part of your tuition. To download Microsoft Office365, login to the North Central portal and select the My Office365 link.
- Adobe Acrobat Reader (Free)
- **NOTE: Online courses CANNOT be completed on mobile phones.**

Section 3: Communication Policy

Communication Policy

I have a “3 before me” policy. If you have questions regarding this course, you must review these resources before asking me to respond to individual questions of a non-personal nature:

- Syllabus
- Announcements in Brightspace
- General Questions discussion board

If you cannot find the answer to your question, please *post your question* in the General Questions discussion, which I monitor closely. Just as in a traditional classroom, your question will be answered and benefit your fellow classmates. *You are encouraged to subscribe to this forum and to answer questions from other students – this not only allows us to support each other but also helps provide timely assistance if I am away from my computer.*

Instructor Response Expectations

I do my best to respond to General Questions posts within 24-48 business hours but typically respond much sooner. If you have issues or questions of a personal nature, such as notifying me of a personal emergency or have questions regarding your grades, you are welcome to email me. Please allow 24-48 business hours for a response.

Section 4: Other Policies

Attendance/Participation

Attendance in an online course means *logging into Brightspace regularly, with regular and timely participation* in course activities and assignments.

Student Code of Conduct / Netiquette

Students are responsible for obeying municipal, state, and federal laws, as well as North Central policies. The complete Student Code of Conduct, including the guidelines for netiquette in electronic communication, can be found in the North Central Student Handbook ([available online here](#)).

Late Work Policy

Submitting late work puts undue pressure on your classmates and doesn't show respect for their time or input in our discussions. I am aware that emergencies happen, and life sometimes throws us unexpected challenges. I am willing to work with you on a *short-term, limited basis* when these things happen. ***You must contact me as soon as possible to make arrangements for late work without a penalty. However, the decision to extend a deadline is at the sole discretion of the instructor!!!!***

Unless you have made arrangements with me ***in advance***, due to an emergency situation, the Late Work Policy for this class is:

- **Homework**
Homework assignments may be turned in late, with a penalty of 5% per day past the due date.
- **Module Quizzes**
Module may be turned in late, with a penalty of 10% per day each day past the due date.
- **Late work will not be accepted for the**
 - Course Orientation Quiz
 - Discussions
 - Final Exam

Academic Integrity

North Central holds its students to high standards of academic integrity in all areas of college life, including the distance education environment. Any form of academic dishonesty will not be tolerated and can have serious consequences, including automatic failure in the course and/or dismissal from the college. By taking any form of course assessment, you agree that:

- You are the person registered in this course who has participated in and will receive academic credit for this class and will not receive unauthorized assistance from any other person or source during this assessment.
- Acknowledge that unauthorized sharing of information about an assessment with others is strictly prohibited and could result in serious consequences.

By accessing assessments in this course, you are acknowledging your compliance with North Central's standards of academic integrity and that any violation will be dealt according to the [Academic Dishonesty Process outlined in the North Central Student handbook](#).

Accessibility Statement

In compliance with the Rehabilitation Act of 1973's Section 504 and 508, and the Americans with Disabilities Act of 1990, North Central's department of Learning Support Services (LSS) provides students with documented disabilities access to professional disability specialists, support staff, and specialized services. For more information about services provided or to request an accommodation for a disability, please [visit LSS on the web](#), on campus in Room 533 of the SCRC, or call 231-348-6682 from 8:30 am to 5 pm Monday –Friday (hours may vary, so please check the website).

Copyright

All materials and content in this course were created by the instructor, unless otherwise specified.

Student Appeals

North Central's student complaint and appeals processes begin with a student's direct communication with the faculty/staff member in an attempt to work together to resolve the matter. For complete information on North Central's student policies and processes regarding appeals & complaints, please see the [North Central Student Handbook](#).

Subject to Change

All materials, assignments, and deadlines are subject to change. It is your responsibility to read course announcements and other communications.

COVID-19 On-Campus Safety Policy

To best protect the safety of students, faculty, staff, and their families during the COVID-19 pandemic, masks that cover the nose and mouth are required. Any violation of this policy may be considered a violation of the Student Code of Conduct and may result in dismissal of the student and/or class and possible further sanctions.

Faculty, librarians, and counselors may dismiss individual students if they refuse to comply with mask use, social distancing, and hand sanitizer requirements. If the non-compliant student does not comply with the safety request, the faculty member may dismiss the rest of the class, maintain appropriate social distance between him or herself and the non-compliant student, and call 911 for a trespass complaint. Again, such non-compliance may be considered a violation of the Student Code of Conduct.

Students who are not able to comply with safety mandates, such as the mask requirement, due to a certified medical condition are to schedule an appointment with Learning Support Services to request an accommodation prior to attending any in person class or campus event, or be subject to the rules above regarding non-compliance.

[More information on North Central's response to COVID-19 can be found here.](#)

Section 5: Grading

Grades and Grading Scale

Grades in this course are based on the number of points earned.

Category	Points Per Item	# of Items	Total for Category
Course Orientation Quiz	10	1	10
Homework	10	93	930
Discussions	30	7	140
Module Quizzes	50	5	250
Final Exam	200	1	200
		Total:	1530

North Central Letter Grades

The North Central letter grades corresponding to percentages achieved are:

Letter	Points	Letter	Points
A	1431 – 1530	C	1125 – 1170
A-	1370 – 1430	C-	1064 – 1124
B+	1324 – 1369	D+	1018 – 1063
B	1278 – 1323	D	972 – 1017
B-	1217 – 1277	D-	911 – 971
C+	1171 – 1216	E	910 pts & fewer

Assignment Category Descriptions

Category	Description
Course Orientation Quiz	This is a quiz over topics discussed in this syllabus and orientation!! 😊
Homework Assignments	For each set of notes, you have an assignment. These assignments are assigned through a program called Knewton Alta. Knewton Alta is an ADAPTIVE and MASTERY BASED system. There are a minimum number of questions that you are required to answer correctly to achieve mastery of an objective. If you struggle with an objective, you will be assigned more questions and possibly some more instruction. Knewton Alta assignments may be completed late. Every day a Knewton Alta assignment is late will reduce your score by 5%.
Discussions	<p>Discussion threads will be posted in Brightspace throughout the term. You need to answer the discussion thread questions to the best of your ability. Discussions are graded on the following criteria:</p> <p>30 points: The student:</p> <ul style="list-style-type: none">• consistently posted insightful comments and questions that prompted on-topic discussion.• consistently helped clarify or synthesize the ideas of peers.• stated his or her disagreements or objections clearly, yet politely.• replied to questions or prompts from a peer or instructor.• participated/posted in the discussion at least 3 of the 7 DAYS per week (with initial post by Tuesdays @ 11:59pm)!!

Category	Description
	<p>24 points: The student:</p> <ul style="list-style-type: none"> • was notably lacking in one or two of the items listed above. • consistently had to be prompted or coaxed to participate. • usually, but not always, expressed herself or himself clearly. • participated/posted in the discussion at least 2 of the 7 DAYS per week (with initial post by Tuesdays @ 11:59pm)!! <p>18 points: The student:</p> <ul style="list-style-type: none"> • was consistently lacking in two or more of the items listed above. • was extremely reluctant to participate, even when prompted. • rarely expressed himself or herself clearly. • participated/posted in the discussion at least 1 of the 7 DAYS per week (with initial post by Tuesdays @ 11:59pm)!! <p>0 points: The student:</p> <ul style="list-style-type: none"> • frequently attempted to draw the discussion off topic. • was rude or abusive to peers or instructor. • Consistently failed or refused to participate at all, even when specifically prompted or questioned. • participated/posted in the discussion 0 of the 7 DAYS per week (with initial post by Tuesdays @ 11:59pm)!!
Module Quizzes	<p>These are to check your understanding of the material. Each module quiz has questions based on the previous module.</p> <p>Module Quizzes may be submitted late with a 10% deduction each day past the due date.</p>
Final Exam	This exam covers material from the entire term!!

Grades will typically be posted within 1 week after the assignment's due date. Please allow additional time for return of test and project grades – providing you with detailed and meaningful feedback is important to me.

Return of Graded Work

Grades will typically be posted within 1 week after the assignment's due date. Please allow additional time for return of test and project grades – providing you with detailed and meaningful feedback is important to me.

Section 6: Student Resources & Support

Brightspace Support Portal

If you are experiencing technical issues inside Brightspace, please visit the 24/7 Brightspace Help Portal by going to the *Need Help with Brightspace?* found in the right-hand column of the Brightspace home page. If you would like more information about using Brightspace tools, visit the *Learn to Use Brightspace* link on the main navigational menu of the Brightspace home page.

The Brightspace Support Portal offers 24/7/365 access to:

- Live chat
- Phone support (1-877-325-7778)
- Email ticketing system
- Searchable database of solutions to common issues

Note: The Brightspace Support Portal and the IT Help Desk cannot grant you access to course materials or assist you with accessing/retaking quizzes or viewing grades without my authorization. If you have trouble accessing materials or experience an issue with tests in the course, please post to the General Questions discussion in the course first.

For other technical issues or questions, such as logging into the portal, contact the IT Help Desk using the contact information listed below.

IT Help Desk

Submit an IT Help Desk ticket through the “My Help Desk” button in your [student portal](#).

ADCL 63

231-348-6617

helpdesk@ncmich.edu

Regular Business Hours

Monday – Thursday 8:30 am – 7 pm EST

Friday – 8:30 am to 5 pm EST

**Hours may vary – check the [North Central website](#) for up-to-date information.*

Evenings, Weekends, Holidays

24/7 after-hours support: 231-622-7239

Library

The Library is the hub for all of your research, printing, and technology needs. You have access to more than a million print and online resources, such as books, newspaper and journal articles, videos, and government documents. Laptop computers and study rooms are also available to check out. Library staff are happy to help you locate information and assist with creating citations for class assignments.

231-439-6345

Visit the [North Central Library](#) online
library@ncmich.edu

Hours

Monday – Thursday 8 am – 7 pm EST

Friday – 8 am to 5 pm EST

**Hours may vary – check the [North Central website](#) for up-to-date information.*

Writing Center

The [North Central Writing Center](#) offers FREE writing help for all students. Services include developing writing ideas, guiding research, assistance with organization, coaching in grammar and punctuation, learning APA and MLA formatting, and more. Make an appointment on the Writing Center website or just walk in! Can't make it to campus? That's okay... Remote appointments are available through phone or video chat.

231-439-6345

Located in the Library
writingcenter@ncmich.edu

Hours

Monday – 10 am – 5 pm EST

Tuesday – 10 am – 7 pm EST

Wednesday – 10 am – 7 pm EST

Thursday 10 am – 5 pm EST

**Hours may vary – visit the [Writing Center website](#) to make an appointment online.*

Learning Support Services (LSS)

LSS provides placement and other testing services, disability services, veterans services, academic mentoring, study support, tutoring, and other free resources to help students succeed.

Personal Online and On-Campus Tutoring

LSS offers FREE online and on-campus tutoring in many subjects. For detailed tutoring information, visit the [tutoring area of the North Central website](#) or visit the **Get Help** link in the top navigational menu of any page in Brightspace to access free online tutoring.

231-348-6682

Located in the SCRC

Hours

Monday – Friday, 8:30 am – 5 pm EST

**Hours may change – check the [North Central website](#) for up-to-date information.*

Advising & Financial Aid

To schedule an appointment with an advisor or to get assistance with FAFSA or financial aid questions, please click the “Make an Advising Appointment” link in the North Central portal or contact Student Services at:

- 231-348-6605 (Petoskey)
- 989-705-3775 (Gaylord)
- 231-597-0322 (Cheboygan).

Hours

Monday – Thursday 8:30 am – 5 pm EST

**Hours may vary – check the [North Central website](#) for up-to-date information.*

Complete Listing of Resources & Support

For a complete listing of student resources & support, please visit the [Student Services area of the North Central website](#), call 231-348-6605, or visit the Student & Community Resource Building on campus. The Student Services office is open Monday through Friday from 8:30 am to 5 pm EST (Hours may vary).

Section 7: Schedule

Module 1: May 10-16

- Functions and Function Notation
- Domain and Range
- Rates of Change & Behaviors of Graphs
- Algebraic Combinations of Functions
- Transformations of Functions
- Linear Functions
- Applications & Modeling with Linear Equations and Functions
- Absolute Value Equations
- Linear and Absolute Value Inequalities
- Complex Numbers
- Quadratic Equations
- Other Types of Equations

Due	Graded Activities
Wednesday @ 11:59 pm	<ul style="list-style-type: none"> • Syllabus Quiz • Introduction Discussion – Initial post
Sunday @ 11:59 pm	<ul style="list-style-type: none"> • Introduction Discussion – Must participate 3 of out the 7 days!! • 1. Cartesian Coordinates and Distances • 2. Circles • 3. Solve Linear Equations in One Variable • 4. Solve Rational Equations • 5. Finding Linear Equations • 6. Parallel and Perpendicular Lines • 7. Word Problems with Linear Equations • 8. Solving Real-World Applications • 9. Simplifying Powers of i • 10. Operations with Complex Numbers • 11. Solve Quadratic Equations by Factoring • 12. Complete the Square • 13. Solving Equations Using the Quadratic Formula • 14. Using the Pythagorean Theorem • 15. Solving Equations Involving Rational Exponents • 16. Solve Higher Order Equations with Factoring • 17. Solve Radical Equations • 18. Absolute Value Equations • 19. Solving Other Types of Equations • 20. Solve Rational Equations Which Lead to a Quadratic • 21. Use Radicals in Applications

Module 2: May 17-23

- Linear and Absolute Value Inequalities
- Functions and Function Notation
- Domain and Range
- Rates of Change & Behaviors of Graphs
- Composition of Functions
- Transformations of Functions
- Inverse Functions
- Linear Functions
- Modeling with Linear Functions

Due	Graded Activities
Tuesday @ 11:59pm	<ul style="list-style-type: none">• Module 2 Discussion – Initial post
Sunday @ 11:59 pm	<ul style="list-style-type: none">• Module 2 Discussion – Must participate 3 out of the 7 days!!• Quiz 1 – Module 1• 22. Using Interval Notation and Set Builder Notation• 23. Solving Inequalities in One Variable Algebraically• 24. Understanding Compound Inequalities• 25. Solving Absolute Value Inequalities• 26. Real-World Applications• 27. Determining Whether a Relation Represents a Function• 28. Determining One-to-One Functions and the Horizontal Line Test• 29. Function Notation• 30. Domain and Range and Toolkit Functions• 31. Piecewise Functions• 32. Graphical Properties of Functions• 33. Combinations of Functions• 34. Evaluate Composite Functions• 35. Properties of Composite Functions• 36. Transformations of Functions• 37. Even and Odd Functions• 38. Find Inverse Functions• 39. Interpretations of Linear Functions• 40. Applications of Linear Functions

Module 3: May 24-30

- Quadratic Functions
- Power & Polynomial Functions
- Graphs of Polynomial Functions
- Dividing Polynomials
- Zeros of Polynomial Functions
- Rational Functions
- Inverses & Radical Functions
- Modeling & Variation

Due	Graded Activities
Tuesday @ 11:59pm	<ul style="list-style-type: none">• Module 3 Discussion – Initial post
Sunday @ 11:59 pm	<ul style="list-style-type: none">• Module 3 Discussion – Must participate 3 out of the 7 days!!• Quiz 2 – Module 2• 41. Characteristics of Parabola• 42. Writing Equations of Quadratic Functions• 43. Applications of Quadratic Functions• 44. End Behavior of Polynomial Functions• 45. Local Behavior of Polynomial Functions• 46. Write and Graph Polynomial Functions• 47. Long Division of Polynomials• 48. Synthetic Division• 49. Rational Zeros of Polynomial Functions• 50. Complex Zeros of Polynomial Functions• 51. Real-World Applications of Polynomial Equations• 52. Asymptotic Behavior of Rational Functions• 53. Graphs and Applications of Rational Functions• 54. Inverse Functions• 55. Direct and Inverse Variation

Module 4: May 31 – June 6

- Exponential Functions
- Graphs of Exponential Functions
- Logarithmic Functions
- Graphs of Logarithmic Functions
- Logarithmic Properties
- Exponential & Logarithmic Equations
- Exponential & Logarithmic Models

Due	Graded Activities
Tuesday @ 11:59 pm	<ul style="list-style-type: none">• Module 4 Discussion – Initial Post
Sunday @ 11:59 pm	<ul style="list-style-type: none">• Module 4 Discussion – Must participate 3 out of the 7 days!!• Quiz 3 – Module 3• 56. Evaluate and Write Exponential Functions• 57. Applications of Exponential Functions and Base e• 58. Exponential Function Graphs• 59. Relate Logarithms and Exponents• 60. Evaluate Logarithmic Expressions• 61. Logarithmic Function Graphs• 62. Rewrite Logarithmic Expressions Using Properties• 63. Solve Exponential Equations• 64. Solve Logarithmic Equations• 65. Exponential and Logarithmic Models

Module 5: June 7 – 13

- Systems of Equations: Two Variables
- Systems of Equations: Three Variables
- Non-linear Systems of Equations
- Matrices
- Gaussian Elimination
- Inverse Matrices

Due	Graded Activities
Tuesday @ 11:59pm	<ul style="list-style-type: none">• Module 5 Discussion – Initial post
Sunday @ 11:59 pm	<ul style="list-style-type: none">• Module 5 Discussion – Must participate 3 out of the 7 days!!• Quiz 4 – Module 4• 66. Graphing Systems of Linear Equations• 67. Solving Systems of Linear Equations• 68. Applications of Systems of Linear Equations• 69. Systems of Linear Equations in Three Variables• 70. Systems of Two Nonlinear Equations• 71. Graphing Nonlinear Inequalities and Systems of Inequalities• 72. Introduction to Matrices• 73. Matrix Multiplication• 74. Solving Systems with Gaussian Eliminations• 75. Inverse and Identity Matrices• 76. Solving Systems with Inverses

Module 6: June 14 – 20

- The Ellipse
- The Hyperbola
- The Parabola
- Sequences & Their Notations
- Arithmetic Sequences
- Geometric Sequences
- Series & Their Notations

Due	Graded Activities
Tuesday @ 11:59 pm	<ul style="list-style-type: none">• Module 6 Discussion – Initial Post
Sunday @ 11:59 pm	<ul style="list-style-type: none">• Module 5 Discussion – Must participate 3 out of the 7 days!!• Quiz 5 – Module 5• 77. Writing Equations of an Ellipse• 78. Graphing an Ellipse• 79. Applications of Ellipses• 80. Write an Equations of a Hyperbola• 81. Graphing Hyperbolas• 82. Graphing Parabolas• 83. Writing Equations of Parabolas• 84. Applications of Parabolas• 85. Introduction to Sequences• 86. Recursive Sequences• 87. Arithmetic Sequences• 88. Applications of Arithmetic Sequences• 89. Geometric Sequences• 90. Applications of Geometric Sequences• 91. Summation Notation and Arithmetic Series• 92. Geometric Series• 93. Applications of Series

Module 7: June 21 – 25 (Friday)

Due	Graded Activities
Thursday @ 11:59 pm	<ul style="list-style-type: none">• Final Discussion
Friday @ 11:59 pm	<ul style="list-style-type: none">• Final Exam