

## Syllabus for College Algebra/Calculus Preparation 81550 Class MA 111 – 02

**CLASS TIME:** 12:00 – 12:50 pm

**ROOM:** WEST 3805

**INSTRUCTOR:** Dr. TRUONG, Bao

**OFFICE:** Jamrich 2216

**OFFICE PHONE:** 906-227-1610

**EMAIL:** [btruong@nmu.edu](mailto:btruong@nmu.edu)

**OFFICE HOURS:** MTWR 11 – 11:50 am, or by appointment

**FAX:** (906) 227-2010

**PREREQUISITES:** Placement exam or MA100 (C- or better). Also, students who do not register for the WebAssign homework by the Monday of the week after class starts will be dropped from the course for non-attendance.

### Course Description:

The study of quadratic and higher degree polynomials and rational expressions, exponential and logarithmic equations and functions. Emphasis on exponential and logarithmic functions. This course satisfies the foundations of natural science- mathematics requirement [Division III]. Students who complete this course should be able to demonstrate a basic understanding of mathematical logic; use mathematics to solve scientific or mathematical problems in college classes; express relationships in the symbolic language of mathematics; and appreciate the role of mathematics in analyzing natural phenomena.

**Instruction Delivery:** Modified on-campus.

This course will meet on campus and will have a face-to-face component but probably will include a subset of the class meeting at any one time. Some students will meet face-to-face on Monday & Wednesday and the rest will be in class on Tuesday & Thursday. Those students not in class may be observing class via Zoom.

1. Student needs to check the schedule of face-to-face classes each week on EduCat.
2. Each student is assigned a seat in the room. It is fixed during the semester for tracking the spread of COVID 19, when needed.

### NMU's Mask Requirement:

Northern Michigan University is now requiring everyone on campus to wear a mask covering their mouth and nose. When indoors and in a public space, the university is asking all students and employees to social distance and requiring them to wear a mask.

### Websites for this class:

- 1) **Educat:** <https://educat.nmu.edu/> Course documents, gradebook, quizzes, exams, and discussion forums.
- 2) **WebAssign:** <https://www.webassign.net/> E-book and homework.

All you really need is an access code for the course. It can be purchased at the bookstore a student access for WebAssign or you may purchase it online with a credit or debit card. The course key is **nmu 9478 5620**.

Create your account *only* if you do not already have either a WebAssign or Cengage account. Use the Student Quick Start Guide to help in creating your WebAssign account:

[http://embed.widencdn.net/pdf/plus/cengage/5u3xt0ynyu/gui\\_webassign-stu-quick-guide.pdf?u=c8lcjz](http://embed.widencdn.net/pdf/plus/cengage/5u3xt0ynyu/gui_webassign-stu-quick-guide.pdf?u=c8lcjz). You automatically receive a 14-day trial allowing you to access course materials before purchasing.

Create these accounts Click **Create Account**.

1. Type the details for your new Cengage account.
2. Read and acknowledge your acceptance of the Cengage service agreement.

3. Click **Create Account**.

You are signed in to WebAssign with your new account and enrolled in your class.

Enroll yourself in each class section only once.

1. Go to <https://webassign.net/login.html> and click **Enroll with Class Key**.
2. Enter your class key and click **Enroll**.
3. If the correct class and section is listed, click **Yes, this is my class**.

If the listed class or section is not correct, click **No this is not my class** and try entering your class key again.

If the correct class is still not displayed, contact your instructor.

4. Sign in or create your account.

You must have your **NMU student e-mail address** to register the course on WebAssign.

All work is done online, so you need internet access. High speed internet access such as DSL or cable is required.

**WebAssign Resources:**

- Student Quick Start Guide: [http://embed.widencdn.net/pdf/plus/cengage/5u3xt0ynyui/gui\\_webassign-stu-quick-guide.pdf?u=c81cjz](http://embed.widencdn.net/pdf/plus/cengage/5u3xt0ynyui/gui_webassign-stu-quick-guide.pdf?u=c81cjz)
- Student user guides, recorded trainings, and self-training videos: [www.cengage.com/training/webassign](http://www.cengage.com/training/webassign)

**Required Textbook:** The textbook is included in the software in pdf form so you do not have to buy the text. You may purchase through the NMU bookstore or on the publisher's website.

**Required Devices:**

1. A computer is required to access two afore-mentioned websites to complete learning activities of the course.
2. You might need a smartphone for CamScanner app or a scanner.
3. You might need a Scientific or especially a Graphing Calculator that a useful tool in the study of Mathematics. You are encouraged to bring one to class every day and to use one to check your homework.

**Required Technical Skills:**

This online course uses both EduCat and publisher materials. There are minimal technical skills required of you to be successful in the course. Below is a list of technical skills you should have.

1. Log in to your EduCat account (<https://educat.nmu.edu/>) and access course materials provided in EduCat.
2. Log in to your WebAssign account (<https://www.webassign.net/>) and complete learning activities.
3. Use a scientific or non-CAS graphing calculator (one that does not do algebra).
4. Be able to access the technologies used in this course, you will need Adobe Reader and Adobe Flash Player. If your computer does not have this software, you can go to the Adobe website at <http://www.adobe.com/products/> and download this software at no charge.
5. Use a scanner to scan a multiple page document into one pdf file and post it into Educat; CamScanner is an app for smartphones and the Lydia M. Olson library on campus has a great scanner.
6. Use email with attachments.
7. Use Zoom or another video conferencing application; you can download Zoom from <https://support.zoom.us/hc/en-us/articles/201362233-Where-Do-I-Download-The-Latest-Version->.

8. Capture work on your screen using the PrtSc key or some program (only necessary if you have questions on work done on your screen that you need to send me).
  - Windows instruction video (<https://www.youtube.com/watch?v=sPpYhwdYIes>)
  - Mac instructions (<http://www.printscreenmac.com/>)

**Course Objectives:** At the successful completion of this course the student will be able to:

- 1) Use properties, formulas and identities to evaluate mathematical expressions.
- 2) Perform operations with functions including polynomial, rational, exponential and logarithmic functions.
- 3) Analyze graphs of polynomial, rational, exponential and logarithmic functions.
- 4) Solve polynomial, rational, exponential and logarithmic equations and inequalities.
- 5) Model and solve real-life problems involving polynomial, rational, exponential and logarithmic functions.

**Student Learning Outcomes for College Algebra:**

1. Perform operations with functions, including composition of functions
2. Determine the inverse relation for a given function and sketch both the function and its inverse map
3. Solve quadratic equations.
4. Perform polynomial long division and synthetic division
5. Solving equations involving rational expressions, degree 1 and higher
6. Graph and determine the domain and range of a relation or function given its equation and/or graph (circles, quadratic, higher degree polynomials, rational, radical, exponential, logarithmic).
  - a. Determine the center and radius of a circle from its equation and construct the equation of a circle from its graph
  - b. Sketch of the graph of a polynomial function of degree three or larger given its factored form
  - c. Determine horizontal and vertical asymptotes of a rational function, and use that information to graph
  - d. Graph exponential and logarithmic functions and state asymptotes
7. Apply transformation to graphs of equations and to functions.
8. Use the following theorems (over the complex numbers): Remainder, Factor, Fundamental Theorem of Algebra, Rational Roots (with synthetic division), and Conjugate Roots to solve polynomial equations.
9. Convert equations between exponential and to logarithmic forms.
10. Apply the rules of logarithms involving logarithms of products, quotients, powers, and change of base
11. Solve logarithmic and exponential equations, emphasis on using the natural log and e.
12. Solve applied problems such as applications of polynomial, rational, radical, exponential and logarithmic functions.
13. Solve systems of equations including linear and nonlinear systems, and solve linear systems using matrices.

Evaluation of these learning outcomes will be done through assignments and exams.

You will meet the outcomes listed above through a combination of the following activities in this course:

**Communication (not graded):**

- a) **Email:** You must use your NMU student email address to register the course in WebAssign. Every time you email me, use your NMU student email address, add a subject line and close your email with a signature line with the student's full name and class ID. I will answer your email within 48 hours after I receive it.
- b) **Announcements:** Each time you log on to Educat you will see the announcement page. Most communication will be done through email, but you should check for new announcements.

**Attendance (not graded):** Students are expected to attend class on time, to have read the assignment reading and to be prepared to participate in class. University policy states that students are expected to attend all classes. However, illness or unexpected emergencies may arise so it is your responsibility to seek assistance from your instructors and your classmates. Note that “Each day you miss, it takes one day longer to be good.” If you are a member of an NMU athletic team, you must give the instructor an official copy of your away game schedule to receive an excused absence for classes you will miss due to your participation on the team and you have to complete the make-up assignment.

**Lecture and practice (not graded):** Video lectures and lecture notes are available for the course. You could find them on EduCat and WebAssign by clicking on the course content button. They will help you prepare for graded learning activities.

**Class Discussions (4%):** There are several class discussions in EduCat. Your first online assignment is to go to the discussion forum in EduCat and introduce yourself to the class. You are required to contribute to the class discussion. The discussion questions will help you to broaden your knowledge of unit concepts. You are required to post a response to the discussion question and post comments to other students’ postings.

**Online Homework (12%):** Each chapter has several online homework assignments in WebAssign. You should read the text section and watch lecture videos prior to attempting the homework. You have unlimited attempts to get 100% correct for the online homework assignments until the due date. The WebAssign program will not allow you to work beyond the due date. If you request an extension, a 10% penalty is applied to your assignment for each week past the due date.

Please note that there are worked examples and videos in WebAssign, and additional resources in EduCat to help you with the homework. If you get stuck, use the help buttons on the computer, including Ask My Instructor. You should do your work in a notebook, showing all steps just as you would if you were going to hand it in. When you arrive at the answer, you will type it into the computer and immediately be told if it is wrong or right. This allows you to correct mistakes early, before any bad habits have developed. You are recommended to post your question on discussion board for help from peers and me.

**Quizzes (12%):** There is a quiz each week on EduCat. You have two attempts and get the better result. In addition, there are short quizzes for important problem solving techniques.

**Tests (48%):** There will be 4 tests. You have to upload your written solution to EduCat and submit your original work in class. You are only allowed one attempt on each test. To help you prepare there are practice tests for each chapter. *Make-up tests are not given.* If you miss a test, you will receive a score of 0. Your lowest test score will be replaced by the percentage of the final exam if it is better than your lowest test score. A university-approved excuse is required for rescheduling any test. Students with disabilities should work with Disability Services to arrange for taking tests.

Test 1: Friday 28

Test 2: September 18

Test 3: October 14

Test 4: November 13

**Final Exam (24%):** The final exam is comprehensive and must be taken in class on Campus

Monday November 23 for Group A

Tuesday November 24 for Group B

**Due dates:**

Due dates for each learning activities are posted in EduCat or WebAssign. I will review your test two or three days after the due date. I may give you partial credit for some problems that the computer counted wrong. You should review your test as well.

## Final Grade:

A	93% up	A –	90 – 92.9%		
B +	87 – 89.9%	B	83 – 86.9%	B –	80 – 82.9%
C +	77 – 79.9%	C	73 – 76.9%	C –	70 – 72.9%
D +	67 – 69.9%	D	60 – 66.9%	F	below 60%

Weighted percentage:	Homework	12%	Exams	48%
	Attendance	4%	Quizzes	12%
	Final	24% (comprehensive)		

**You must get at least 60% on Homework and 60% on Final in order to pass the course.**

## How much time should you spend each day on the class?

You should set aside 1-3 hours each day to learn the concepts and complete the assignments. You need to follow the calendar to keep up with the work. You must know the deadlines of learning activities! You should plan for one hour to read the section in the text and view the worked examples, and then spend 1-2 hours to do homework.

## How do I get help in the class?

- My office: See me during office hours or set up an appointment to meet via Zoom or in person..
- Mathematics Tutor Lab: Go to the math tutoring lab. More information is posted on Educat when available.
- All Campus Tutoring: Go to All Campus Tutoring (generally available on the weekends). Check their schedule at <https://www.nmu.edu/tutoring/>.

## Tips for Success:

Commit yourself to the class on day one. If you devote ample time to working on homework, reading the textbook and your notes, and thinking about the concepts we are learning, you will learn this material and you will learn it well. You will build a strong foundation for future math and science classes, as well as good study and organizational habits, which will be essential throughout your university studies. You have the ability to reach success if you commit yourself to excellence. Moreover, you do not have to reach success alone. Get to know your classmates, and learn with and from each other. Come to see me whenever you have questions.

## Email Etiquette Tips:

Did you know NMU provides email etiquette tips at <https://www.nmu.edu/etrpc/email-etiquette>? Please be respectful in all your correspondence with me or other students. This includes email, postings made on Discussion Forums, or any other forms of communication. **Please tell me what class you are in when you email me.** Additional information about NMU's expectations, acceptable standards of behavior, and procedures are in the Student Handbook at <https://www.nmu.edu/dso/studenthandbook>.

## Technical Support:

[WebAssign Student Help](https://www.webassign.net/manual/student_guide/introduction.htm) - [https://www.webassign.net/manual/student\\_guide/introduction.htm](https://www.webassign.net/manual/student_guide/introduction.htm)

WebAssign Tech Support: 800-354-9706 or at [WebAssign Tech Support](#)

NMU IT Services – <http://it.nmu.edu/helpdesk>

**Academic needs:**

If you have a need for disability-related accommodations or services, please inform the Coordinator of Disability Services in the Dean of Students Office at 2001 C. B. Hedgcock Building (227-1737). Reasonable and effective accommodations and services will be provided to students if requests are made in a timely manner, with appropriate documentation, in accordance with federal, state, and University guidelines.

There are many resources available to help you succeed in this class and as a student. Here are the links to many campus resources:

Student Handbook: <https://www.nmu.edu/dso/studenthandbook>

Health Center: <https://www.nmu.edu/healthcenter>

Online Student Services: <https://www.nmu.edu/student-service-center/services>

Computer Help Desk (IT): <https://it.nmu.edu/helpdesk>

Disability Services: <https://www.nmu.edu/disabilityservices>

Veterans Services: <https://www.nmu.edu/veterans>

Dean of Students: <https://www.nmu.edu/dso>

Olson Library: <https://lib.nmu.edu>

Counseling Center: <https://www.nmu.edu/counselingandconsultation>

Financial Aid: <https://www.nmu.edu/financialaid>

Everything else offered on this website: <https://www.nmu.edu/students>