

**MA 111: Pre-Calculus**

Summer 2020

Online

**Instructor:** E. Dempster**Office:** SAS 3250**Email:** ejdempst@ncsu.edu

**Course Description:** (3 credit hours) Study of real numbers, polynomial, rational, exponential, logarithmic, trigonometric functions and all their graphs. The course is designed to prepare the student for MA 141 Calculus for Scientists and Engineers. By the end of this course, students should be able to:

1. Recognize and use proper notation, precise definitions and theorems when solving problems and communicating solutions.
2. Manipulate functions and equations algebraically into different forms given specific problem contexts.
3. Graph functions and equations to a required level of accuracy.
4. Solve equations and inequalities algebraically and graphically.
5. Write a function to model a given scenario and make predictions based on that model.
6. Adapt a general function to model a given scenario and make predictions based on that model.

**Textbook:** Openstax **Precalculus** textbook available for free download

<https://openstax.org/details/books/prec calculus>

Please download the pdf so you can see the page numbers. The homework in Webassign correlates to the exercises in this textbook.

**Blue Books:** All tests will be taken online. You will show all your work and circle answers then upload the pdf of the document onto Moodle.

**Attendance** zoom class attendance is not mandatory. Please come prepared to work in groups on applied problems that we've assigned for each module. During the work day, we will work on problems, review ideas and I'll lecture at the end on the overall ideas covered that week, perhaps showing more examples in time allows.

**Homework:** The WebAssign homework assignments are obtained, submitted, and graded online. I recommend keeping a written copy of your work and notes. It is very important that you keep up with this work. I highly recommend you print each assignment and work it with pencil and paper before submitting. Extensions may be requested via WebAssign, but there is a small penalty to help motivate you to keep up with the work in timely way.

Each module has two parts to the homework assignment. The **Part 1 assignments** are due weekly. The **Part 2 assignments** are much shorter, but include problems that are harder and similar to the ones you will be working on during the in-class workday. The **Part 2 assignments** are all due right the test covering those modules. The dates are all posted on Webassign.

**In-class tests:** We will have 3 tests.

Test 1: Friday, May 22nd

Test 2: Wednesday, June 3rd

Test 3: Friday, June 12th

If an in-class test is missed with an excused absence (i.e. for a university-approved reason, with supporting documentation), then a make-up test will be scheduled individually. If an in-class test is missed for an unexcused absence, that test will be given a score of 0. No make-ups will be allowed. Documentation for an excused absence must be provided within 1 week of the missed class. All absences that require a make up test or other special accommodations must go through the NCSU absence verification process; here is the link to that office

<https://dasa.ncsu.edu/students/absence-verification-process/>

**Final Exam:** The final exam will be held according to NCSU calendar.

**Calculator Policy:** There are NO GRAPHING CALCULATORS allowed on tests; you may bring a scientific or four-function calculator.

**Grade Disputes:** Answer keys for all tests will be posted on Moodle when the exams are returned in class. If a grading error is found after looking at the posted answer key then you should **provide a written explanation of the error, attached to the original test, to the instructor within 1 week.** Do not alter the original work. The entire test may be re-graded and the test grade is subject to remain the same, increase or decrease at the discretion of the instructor.

**Grading:** Your grade will be determined by the following break down:

Homework: 10%

Participation: 5%

In-Class Tests: 60% (20% each)

Final: 25%

A student's numerical average will be converted to a letter grade as follows (do not expect any additional rounding or curves):

<b>A+</b>	98 - 100	<b>A</b>	92 - 97	<b>A-</b>	90-91
<b>B+</b>	88 - 90	<b>B</b>	82-87	<b>B-</b>	80-81
<b>C+</b>	78-80	<b>C</b>	72-77	<b>C-</b>	70-71
<b>D+</b>	68-70	<b>D</b>	62-67	<b>D-</b>	60-61
		<b>F</b>	0 - 59		

**General Class Expectations:**

1. This class is an online class so you will need to take responsibility for your own learning and set your own pace within our guidelines.
  - (a) Watch the **video lectures** for the week's modules. Before or after the videos, do the **self check quizzes** in Moodle. These should allow you to assess how well you remember a certain topic.
  - (b) Complete the **Part 1 WebAssigns** . Attend zoom classes if you have questions.
  - (c) Work on the **Part 2 WebAssigns** after the in-class workday (on zoom)  
The **Part 2 WebAssigns** are not due until right before the test they cover.
2. Check your email and Moodle site regularly. Any announcement made by email is saved under announcements on our Moodle page.
3. Be **respectful and professional**. Via email, please identify yourself and the class clearly. Treat everyone in class (other students and myself) with respect and courtesy. In class, be active and engaged and come prepared. In office hours, be prepared to ask questions and work with others that are in the office hours time too.
4. Be accountable for your own education. You are responsible for resolving confusion about assignments, due dates, exam dates, accommodations, etc.
5. Do not submit work that is not yours. **It is understood that your name or signature on any assignment or attached to any online submission indicates your adherence to the NC State Honor Pledge: "I have neither given nor received unauthorized aid on this test or assignment."**
6. **No graphing calculators or cell phones or other devices that go to the internet** are allowed during tests and exams. You may have a simple non-graphing calculator. It is an honor code violation if you use a graphing calculator on an exam. It is also an honor code violation to access the internet in any way (phones, watches, etc) during an exam. Place all cell phones and other devices "off" and in your back pack or not on you during the exams to keep you from accidentally looking at it unintentionally during a test or exam.

**Disability Services:** Reasonable accommodations will be made for students with verifiable disabilities. To receive accommodations, students must register with Disability Services for Students at 1900 Student Health Center, Campus Box 7509, 919-515-7653. Here is their link: <https://dro.dasa.ncsu.edu/> Please see the Academic Accommodations for Students with Disabilities Regulations (REG02.20.1). You must discuss accommodations with me *prior* to a test date.

**Course Schedule:**

## Weekly Class Calendar of Topics

<b>Date</b>	<b>Cycle &amp; Module</b>	<b>Topic</b>
5/13 W0	Orientation	Overview of Course
5/14 W0	Cycle A - Modules 1& 2	Functions and Absolute Values
5/15 W0	Cycle B - Modules 3 & 4	Functions and Operations
5/18 W1	Cycle C- Modules 5 & 6	Linear and Quadratic Functions
5/20 W1	Cycle D- Modules 7 & 8	Polynomials and Piecewise defined
5/22 W1	Test	<b>Test #1</b> Modules 1-8
5/26 W2	Cycle E - Modules 9 & 10	Rational Functions and Inverse Functions
5/28 W2	Cycle F - Modules 11 & 12	Exponential and Logarithmic Functions
5/30 W2	Cycle G - Modules 13 & 14	Equations & Applications with Exp. and Logs
6/1 W3	Cycle G - Modules 13 & 14	Equations & Applications with Exp. and Logs
6/2 W3	Review	Modules 9-14
6/3 W3	Test	<b>Test #2</b> Modules 9-14
6/4 W3	Cycle H-Modules 15 &16	Angles & Right Triangle Trig.
6/8 W4	Cycle I - Modules 17 &18	All Angles & Graphs of Trig. Functions
6/9 W4	Cycle J - Modules 19 & 20	Inverse Trig. Funcs & Solving Trig. Equations
6/10 W4	Review	Modules 15-20
6/12 W4	Test	<b>Test #3</b> Modules 15-20
6/15 W5	Cycle K-Module 21	Distance Formula; Circles & Ellipses [T-giving Break]
6/16 W5	Cycle K -Module 22	Conic Sections - Parabolas & Hyperbolas
6/17	Exams	