

MA 111: Pre-Calculus

Fall 2019

11:45am-12:35pm M W F

Sas 2201

Instructor: Elizabeth Dempster**Office:** SAS 3250**Email:** ejdempst@ncsu.edu**Teaching Assistants:****Office:****Email:**

Course Description: (3 credit hours) Course Description: Study of real numbers, polynomial, rational, exponential, logarithmic, trig functions and all their graphs. The course is designed to prepare the student for Math 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 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 in blue books. Turn in 3 small blue books and 1 large blue book by Monday, September 23 and have the t.a.'s check off your name that you've turned them in. This is worth +2 points extra credit on the first test. If you turn them in after the first test, there will a small grade penalty.

Attendance and Participation Policy: Attendance will be taken at the beginning of class. Our plan is to take attendance Monday, Wednesday and Fridays through the first test; after that the Monday and Wednesday's will be optional attendance days to get help or ask questions about materials in the video lectures and the **Part 1 Webassign** assignments. Friday will be the mandatory "In class work day". We need to you to come prepared to work in groups on the applied problems that we've assigned for the modules. After the work day, you should be able to do the **Part 2 Webassign** problems but you may need to visit the help room, office hours or class optional settings to get more help. We are counting on you coming and working. We will take roll for not just attending (passively showing up) but also for coming ready and willing to engage and work with the teaching staff and the fellow students.

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 assignment. The **Part 1 assignments** are due weekly the Thursday night before the in class work day. The **Part 2 assignments** are much shorter but has the problems that are harder and similar to the ones you will be working on during the class workday. The Part 2 assignments are all due the Wednesday before they test they cover.

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

Test 1: Friday, September 27th

Test 2: Friday, October 25th

Test 3 Friday, November 22nd

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.

Final Exam: The final exam will be held according to NCSU calendar, 11:45 MWF class has the exam on Friday, Dec 13th 8am-11am The final exam date is scheduled by the University and can only be changed if you have 3 within 24 hours and departmental approval ahead of time. Make your travel plans accordingly since travel plans are not an excuse to move an exam time.

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):

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

General Class Expectations:

1. This class is a blended class so you will need to take responsibility for your own learning and set your own pace within our guidelines. The beginning of each week you should be watching **the videos** that pertain to each module. Before or after the videos, do **the self check quizzes** in Moodle. These should allow you to assess yourself as far as how well you remember a certain topic. After watching videos and doing the self check quizzes, students complete the **Part 1 Webassigns** before the in class workday. After the in class workday, students should start and continue to work on the **Part 2 Webassigns**. The Part 2 Webassigns are not due until the Wednesday before the test. There are **3 in class tests** and **1 final exam**. The course is designed and structured based on what you must know and have a working knowledge of in order to do well in Math 141; Calculus for Scientists and Engineers. Our hope is that course will give you a strong basis and a strong mathematical confidence to take with you into the Calculus sequence and above!
2. Check your email and Moodle site regularly. Any announcement made by email is saved under announcements on our Moodle page.
3. Please 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."**

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. 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

Date	Section	Topic
9/21 W0	Orientation	Overview of Course
9/26 W1	Cycle A - Modules 1& 2	Functions and Absolute Values
9/2 W2	Cycle B - Modules 3 & 4	Functions and Operations
9/9 W3	Cycle C- Modules 5 & 6	Linear and Quadratic Functions
9/16 W4	Cycle D- Modules 7 & 8	Polynomials and Piecewise defined
9/23 W5	Review and Test	Test #1 Modules 1-8
9/30 W6	Cycle E - Modules 9 & 10	Rational Functions and Inverse Functions
10/7 W7	Cycle F - Modules 11 & 12	Exponential and Logarithmic Functions
10/14 W8	Cycle G - Modules 13 & 14	Equations & Applications with Exp. and Logs
10/21 W9	Review and Test	Test #2 Modules 9-14
10/28 W10	Cycle H-Modules 15 &16	Angles & Right Triangle Trig.
11/4 W11	Cycle I - Modules 17 &18	All Angles & Graphs of Trig. Functions
11/11 W12	Cycle J - Modules 19 & 20	Inverse Trig. Funcs & Solving Trig. Equations
11/18 W13	Review and Test	Test #3 Modules 15-20
11/25 W14	Cycle K-Module 21	Distance Formula; Circles & Ellipses [T-giving Break]
12/1 W14	Cycle K -Module 22	Conic Sections - Parabolas & Hyperbolas
12/8	Exams	