NORTH CAROLINA STATE UNIVERSITY
DEPARTMENT OF MATHEMATICS

MA 111 Precalculus – Fall 2017

MA 111 is a 3-hour credit course. It is restricted to students whose major requires Calculus I (MA 141) or who are First Year College students. Other underclassmen may receive permission to enroll if their placement is high enough. Lifelong education students must place into the course using the placement test given in WebAssign. Students who do not meet the prerequisites will be disenrolled.

In MA 111 students will study real numbers, polynomial, rational, exponential, logarithmic, trig functions and graphs, and analytic trigonometry in order to prepare for Calculus I. This course also fulfills the university's General Education Requirement (GER) and therefore seeks to impart the following objectives for a GER mathematics course: students should be able to improve and refine mathematical problem-solving abilities; and develop logical reasoning skills. To help meet these objectives students will, by the end of the semester, be able to analyze real world problems by using mathematical models and use appropriate techniques for solving various types of equations.

Text

Precalculus: Algebra and Trigonometry, 1st edition, by Burns-Williams, NCSU Mathematics Department, 2013

The text we will be using is delivered through WebAssign. The students will pay for the pdf version of the book, the homework assignments and sample tests in one lump sum at the beginning of the semester through the WebAssign site for the course. Students should use the following website to access the materials: (http://webassign.ncsu.edu)

Calculator
Graphing calculators are not required. I allow students to use them in class while we are learning and exploring the new material. However, I do not allow the students to use a graphing calculator on tests. I do allow them to use a scientific calculator to aid with computations.

Using the Online Materials to Teach the Course
To facilitate a dynamic learning experience, the material from the book is presented as learning modules in Moodle. These are bonus materials that are provided for the students at no additional cost. Each of the objectives for the course is given as an observable student outcome. Material is presented in small "chucks" corresponding to each of the outcomes. Students are given the choice of viewing a video about the material/example or reading about it. They do not have to do both! Each method presents the same material. Students may choose which way they prefer to learn the material depending on their personal learning styles.

The material was designed to be completed in the following order: students take a pretest, they study material corresponding to the questions missed (directions are given in the quiz feedback in Moodle), after looking over the material students may take a Try It quiz for each of the objectives missed to regain the missed points, students then go to class to hear a lecture on the material (the material presented in class should be the harder material since the students can get much of the basics from the modules), then the student completes a homework assignment in WebAssign. We recently added a series of chapter tests at the end of each module that students may use as further review for each of the objectives in that module.

Students should think of the pretests as a roadmap to the material. Please encourage them to go through the preview/try it cycle before attending class. I encourage you to set up the due dates for the Preview quizzes to be 8:00 am on the day the material will be covered (see attached lecture schedule). As of right now, all of the Pretests, Try It quizzes and Chapter Tests are set to be due on the first day of exams at 8:00 am. Please let me know if you would like to change due dates for the pretests. It's not difficult and will help keep students on track.

Homework
Graded homework is assigned via WebAssign, (http://webassign.ncsu.edu) a web-based homework system. Please contact Jennifer Burt (jenn_burt@ncsu.edu) to have your assignments set up. There is a fee for students to use WebAssign. They can pay on the website with a check card or a credit card. They will be allowed to use WebAssign for a few days without paying, but they will be denied access to assignments if payment is not made by the due date listed on WebAssign. Assignments will be available beginning on the first day of class. The students have 5 submissions for each question. The final submission is the grade he/she receives on the assignment.

It is often helpful to the students if you set up discussion boards in WebAssign for each assignment. They may post questions about exercises and give hints to each other. The instructor should chime in occasionally as needed, but this is primarily their opportunity to help each other out.

Grades
The final grade is based on 60% major test average (4 tests), 25% final exam, 10% WebAssign average, 5% PreTest/Try It average. The 10% for WebAssign may also include in class quiz grades as well. Just make sure your students are aware of your grading policies at the beginning of the semester. As per the NCSU requirement, the plus/minus grading system will be in effect.

***Graduate students must have each of their tests and their final exam approved by the MA 111 coordinator*.**

Attendance
Attendance is expected everyday the class meets. To encourage students to attend, the students who have 4 or fewer absences may count their lowest grade of the major tests 1/2 the weight of the other tests when determining their final average. NO DISTINCTION IS MADE BETWEEN EXCUSED AND UNEXCUSED ABSENCES. I always count students tardy if they miss less than 10 minutes of class (either at the beginning or the end or class). 3 tardies = 1 absence. It is the responsibility of a tardy student (less than 10 minutes) to request that his/her absences be changed to a tardy at the end of class. Please see me if you would like to discuss other options for encouraging attendance other than the policy above. I've seen many different ones that can be very effective.

Syllabus
As you have already heard, there is a long list of items that needs to be included in your course syllabus and provided to your students. Your best bet is to set up a home page on the World Wide Web and use the syllabus template created by the mathematics department. Seyma Bennett (bennett@ncsu.edu) is the person you need to contact to get help setting up a webpage if you do not yet have one. A copy of your syllabus or a link to it should be included in Moodle.

If you have never taught this course before, I will be happy to discuss any concerns you might have. Just stop by SAS 3242. There are several topics that I know from past experience tend to give these students fits…

Brenda Burns-Williams

MA 111 - Lecture Schedule (MWF)
Fall 2017

Dates		Module	Topic(s)
Wed	8/16	Calculus Related Factoring Mod 1	 Worksheet (supplement) Functions, Domains, Difference Quotient
Fri	8/18	Mod 2 Mod 3	Sum, Difference, Product, Quotient of Functions and the domains Graphs of Functions, Properties of Graphs, Library of Functions
Mon	8/21	Mod 4 Mod 5	Piecewise Defined Functions Graphing using Translations, stretches, compressions, and reflections
Wed	8/23	Mod 6	Setting Up Word Problems
Fri	8/25	Mod 7, 8	Quadratic and Polynomial Functions
Mon	8/28	Mod 9	Rational Functions
Wed	8/30	Mod 9	Rational Functions
Fri	9/1	Mod 10	Composition of Functions
Mon	**9/4**	**Labor Day Holiday**	**NO CLASS**
Wed	9/6	Review for Test	
Fri	**9/8**	**Test 1**	**Calculus Related Factoring Worksheet** **Modules 1-10**
Mon	9/11	Mod 11	Inverse Functions
Wed	9/13	Mod 11	Inverse Functions
Fri	9/15	Mod 12	Exponential Functions
Mon	9/18	Mod 13	Logarithmic Functions
Wed	9/20	Mod 14 / Mod 15	Using Exp/Log Models/ Log Identities
Fri	9/22	Mod 15	Solving equations
Mon	9/25	Mod 16	Exponential and Logarithmic Models
Wed	9/27	Review for Test	
Fri	**9/29**	**Test 2**	**Modules 11-16**
Mon	10/2	Worksheet (Supplement) Mod 17	Regions Bounded by Curves Worksheet (Supplement) Angles
Wed	10/4	Mod 18	Right Triangle Trigonometry
Thurs - Fri	**10/5 – 10/6**		**Fall Break – NO CLASS**
Mon	10/9	Mod 19	Trigonometry of any angle/ Reference Angle
Wed	10/11	Mod 19	Trigonometry of any angle/ Reference Angle
Fri	10/13	Mod 20	Unit Circle
Mon	10/16	Mod 20	Unit Circle
Wed	10/18	Mod 21	Graphs
Fri	10/20	Mod 21	Graphs
Mon	10/23	Mod 21	Review
Wed	**10/25**	**Test 3**	**Regions Bounded by Curves Worksheet** **Modules 17-20**
Fri	10/27	Mod 22	Inverse Trig Functions
Mon	10/30	Mod 22	Inverse Trig Functions
Wed	11/1	Mod 23	Sum, Difference, Double Angle Formulas
Fri	11/3	Mod 24	Solving Trig Equations
Mon	11/6	Mod 24	Solving Trig Equations
Wed	11/8	Mod 24	Solving Trig Equations
Fri	11/10	Mod 25	Solving Right Triangles
Mon	11/13		Review
Wed	11/15		Review
Fri	**11/17**	**Test 4**	**Modules 21-25**

Mon	11/20	Mod 26	Law of Sines
Wed - Fri	**11/22 – 11/24**		**THANKSGIVING HOLIDY – NO CLASS**
Mon	11/27	Mod 27	Law of Cosines
Wed	11/29		Review
Fri	12/1		Review – Last Day of Classes