Math 1113 – Precalculus – 4 Credit Hrs
Section 07; Spring 2018
MW 9:30-10:45 am; Friday 9:55-10:45 am; Pafford 204

Instructor: Mr. Ricky Johnson
Office: 106D Boyd Bldg., 1st Floor
E-mail: rjohnson@westga.edu
Office Hours: M 10:50-11:50, Tu 12:00-2:15; Wed 3:20-4:20; Fri 1:00-1:45; or by appointment

Prerequisites: A grade of C or better in MATH 1111 or an SAT Math score of at least 500 or an ACT Math score of at least 20. Math Department recommends a minimum ALEKS Placement score of 61 to be successful in the class.

Course Description: This course is designed to prepare students for calculus, physics and related technical subjects. Topics include an intensive study of algebraic and transcendental functions.

Text: College Algebra and Trigonometry, by Julie Miller and Donna Gerken (McGraw Hill Education), 1st ed. If you purchase a subscription to ALEKS, an online version of the textbook is included.

CourseDen: I will be using CourseDen at https://westga.view.usg.edu. to post any announcements and all grades – this includes tests, assignments, quizzes, final exam, and final grade. Please do not use courseDen to email me, use rjohnson@westga.edu instead.

Supplemental Instruction Hours: This class includes 2 hours per week of optional supplemental instruction. Time/Location TBA.

Calculator: You will need a graphing calculator. Calculators equivalent to the TI-83, 84, 85, and 86 will be allowed on exams as well as scientific calculators. Cell phone calculators, the TI-89 and other equivalent calculators will not be permitted.

Learning Outcomes: Students will be able to demonstrate:
1. An understanding of functions and how to graph functions
2. An understanding of operations on functions including function composition
3. An understanding of types of functions.
4. An understanding of rational functions and their graphs, including intercepts and asymptotes
5. An understanding of how to find the zeros of a polynomial and how to factor polynomials
6. An understanding of inverse functions and how to find them graphically and algebraically
7. An understanding of the properties of exponential and logarithmic equations
8. An understanding of how to solve exponential and logarithmic equations
9. An understanding of how to find the values of the trigonometric functions from right triangles and circles
10. An understanding of how to graph the trigonometric functions
11. An understanding of how to prove trigonometric identities
12. An understanding of how to use the sum, difference, double-angle and half-angle formulas for sine and cosine
13. An understanding of how to solve trig equations
14. An understanding of how to solve triangle using the law of sines and law of cosines
15. An understanding of polar coordinates and graphs
16. An understanding of how to analyze and solve applied problems

ALEKS: It is recommended students in MATH 1113 have an ALEKS Account. Go to www.aleks.com to purchase an account. To purchase the subscription, you can either buy an access code at the bookstore or pay directly on the website. To activate a subscription on aleks.com, you will need to enter the following course code when you register: NWRPP-MXFN9. There are detailed instructions on how to enroll in ALEKS on our course in CourseDen. *Note, an online version of our textbook is included with your subscription.
**ALEKS modules:** 13 interactive learning modules, each consisting of problems from topics we will cover in class must be completed by certain due dates. Once the due dates have passed, your score for each module will be calculated based on the number of topics you have mastered from that module. There are a set of modules that are all due before each of our 4 in-class tests. After the due date for a module has passed, you will no longer be able to improve your score for that particular module.

**ALEKS Quizzes:** There will be 14 online ALEKS quizzes (every Monday). Each quiz will cover topics we covered in class the week before. The quizzes become available to take from 6 pm Sunday until the next day Monday at midnight. Once a quiz is started, you will have a limited amount of time to complete it. You may attempt each quiz 2 times (highest score is kept). Extensions for quiz due dates will not be granted for any reason. However, your lowest 3 quiz scores will be dropped. At the end of the semester, the average of your top 11 quizzes will be calculated and you will receive BONUS points that can be applied to your tests. See “Bonus Points” below.

**Overall ALEKS score:** 50% from modules, 50% from quizzes. Lowest 3 quiz scores will be dropped. This score will NOT be part of your final course grade. However, at the end of the semester, your overall ALEKS score may replace your lowest in-class test score (if it is higher.)

**Assignments:** Starting Monday, January 22, there will be an assignment due every Monday at the beginning of class. These will be problems that I pick from the end of each section of our textbook. (If you do not purchase an ALEKS subscription – not recommended, you will need to purchase the textbook, so you will have access to these problems). I will usually assign them during the week before they are due and listed on CourseDen. Work MUST be shown for each answer to get credit. These assignment problems will NOT be graded for correctness. You are being graded on how much work you show for each answer. If you submit a list of solutions (even if all completely correct) you will receive a ‘0’. Each assignment is worth up to 3 points.

**Assignment Grading Scale:** 0 = did not turn in assignment or showed no work for any problems. 1 = showed work for some but less than half of the problems. 2 = showed work for at least half the problems. 3 = showed work for all except maybe 1 or 2 problems. No late assignments for ANY reason. Lowest 3 scores will be dropped. Since I am not grading for correctness, make sure you check the solutions (which will be posted on CourseDen the day they are due.)

**Group Quizzes:** Approximately 7-8 group quizzes. The quizzes WILL be graded for correctness. Except for the first quiz, a take-home quiz, I will ask you to watch a set of videos I have posted on CourseDen beforehand. The videos will be over a specific topic (one that we will NOT have gone over in class.) Then in class you will take a short quiz solving problems similar to the ones in the videos. You will be able to work with others and I can also help you during the quiz. No make-up quizzes will be given for any reason, but I will drop your lowest 2 scores.

**Tests:** 4 in-class tests, 100 points each. At the end of the semester, you may drop your lowest test score and replace it with your overall ALEKS score. After that, you may also have your lowest test score replaced with the score you receive on the final exam if higher. NO make-up tests for any reason (with the exception of participation in university approved activities - eg. athletic events - and you must notify me before the test.) If you miss a test, you can use 1 of the previous 2 options to replace it. There will be no make-ups for the Final Exam for ANY reason.

**Practice Problems:** Additional practice problems posted on CourseDen. These do NOT need to be turned in.

**Bonus Points**

There is a total of 20 bonus points that can be earned throughout the semester. These points will be added to the sum of your 4 in-class tests. Since a maximum of 400 points can be earned from the sum of the 4 tests, earning all 20 points is equivalent to a 5% bonus added to your overall test score average. There are 2 ways to earn the 20 points:

1. Up to 10 points may be earned from the ALEKS quizzes (every Monday). At the end of the semester you will receive a percentage of these points based on the overall average of these quizzes (after dropping the 3 lowest scores) EX: if your ALEKS quiz average is an 80% you will get 8 bonus pts.
2. Up to 10 points may be earned by going to the Math Tutoring Center (Boyd– room 205). You need to swipe your UWG ID card when entering and leaving. You will receive 1 bonus point for every day you visited the MTC (you must have stayed for at least 30 minutes) and received help from a tutor. You must turn in a completed verification form to me by April 30, 2018 (I will provide the form to you).

Example: Student earns 18 bonus points. The student’s total points from all 4 in-class tests (up to 100 pts each) is 342. 342/4 = 85.5. Student has 85.5% test average before the bonus. But with the bonus, now the student has 360 total points (342+18=360). 360/4 = 90. Student now has a 90% test average with the bonus.

Grading Policy: Final grade will be based on the following scale:
(A=90-100%, B=80-<90%, C=70-<80%, D=60-<70%, F=<60).

<table>
<thead>
<tr>
<th>4 Tests (tentative dates, subject to change)</th>
<th>50% (includes +5% bonus)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test 1 Wed, February 7</td>
<td></td>
</tr>
<tr>
<td>Test 2 Wed, February 28</td>
<td></td>
</tr>
<tr>
<td>Test 3 Wed, March 28</td>
<td></td>
</tr>
<tr>
<td>Test 4 Wed, April 25</td>
<td></td>
</tr>
<tr>
<td>Group Quizzes</td>
<td>10%</td>
</tr>
<tr>
<td>Assignments</td>
<td>15%</td>
</tr>
<tr>
<td>Final Exam(Comprehensive) Wed, May 2, 8:00-10:00 am</td>
<td>25%</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
</tr>
</tbody>
</table>

Attendance: Roll will be taken at every class. If you are late and miss the roll, you are absent. If you miss a class, you are still responsible for all material you may have missed including lecture notes and announcements. As stated earlier, there will be NO make-ups for missing a test, quiz, or the Final Exam.

Disabilities: Students with documented disabilities (through West Georgia’s Accessibility Services) will be given all reasonable accommodations. Adjustments needed in relation to test-taking must be brought to the instructor's attention well in advance of the test (at least one week prior).

Other Course Policies:
1. Cell phones should be set to an inaudible setting or turned off.
2. All electronic correspondence between student and instructor should be by way of your UWG email account.
3. Arriving late and leaving early is discouraged as it is distracting and disrespectful.
4. Additional course policies: http://www.westga.edu/assetsDept/vpaa/Common_Language_for_Course_Syllabi.pdf

IMPORTANT DATES:

First Day of Class: Monday, January 8
Drop Ends: Wednesday, January 10
Last Day to Withdrawal with W: Wednesday, February 28
Last Day of Class: Monday, April 30
Final Exam: Wednesday, May 2, 8:00-10:00 am

No classes:
Monday, January 15 (MLK Day)
Friday, March 9 (Math Day)
March 19-23 (Spring Break)
FIRST WEEK TASKS

1) **Read the syllabus**
   If you have a question regarding anything in the syllabus, please email me. The syllabus is a “contract” of you and the classroom policies. As your instructor, I must follow all policy that is listed on the syllabus to remain fair to all students. You can find a copy of the syllabus at any time during the semester in CourseDen.

2) **Purchase the ALEKS 360 access code and register for my class.**
   Go to [www.aleks.com](http://www.aleks.com) and click on New Student Sign up. You will need my course code (this is found on the first page of the syllabus) to register and purchase an Access Code (18 week). Detailed instructions on how to enroll in ALEKS are on courseDen. If you are awaiting financial aid, you can gain two weeks of temporary access. See courseDen for the temporary financial aid access code.

3) **TAKE THE ALEKS KNOWLEDGE CHECK**
   After you enroll in my class on ALEKS, it will go through a short tutorial. After the tutorial, you can start the Knowledge Check.
   *The Knowledge Check will test your current knowledge of the course material. Please, do not receive any help during this test. The course will then tailor to your needs as a student, and will cover content you struggle with in more detail. You will need around 1 hour for the Knowledge Check.

   *ALEKS will give you random Knowledge Checks (Progress Checks) throughout the semester. When given a Knowledge Check, do your best to answer each question to the best of your ability. If you fail to answer a question correctly, they will include this content within the modules for you to study. They do NOT affect your scores in any way.

4) **Review the algebraic topics listed below and work on “Quiz 1” due Wed, 1/17**
   These topics are not covered in this class’s curriculum; however, I find most students at least need a “refresher” on the topics. These topics are covered in Chapter R and Chapter 1 of our textbook. There are short videos that you can watch if you need help with some of these topics. The link for these videos can be found on CourseDen: “Link to Algebra Review Videos”. Please contact me if you need additional help. Tutoring is encouraged.
   i) Properties of Exponents (R.2)
   ii) Reducing Radicals (R.3/R.4)
   iii) Polynomials (R.4)
   iv) Factoring two, three, and four term polynomials (R.5)
   v) Rational Expressions (R.6)
   vi) Linear and Rational Equations (1.1/1.2)
   vii) Complex Numbers (1.3)
   viii) Quadratic Equations (1.4)
   ix) Inequalities (1.7)

   Good luck this semester!!
Tentative Course Schedule

*Note: Bonus ALEKS quiz is due every Monday by midnight starting Mon, 1/22/2018. You have from 6pm the night before to the next day Monday at midnight to take it.

<table>
<thead>
<tr>
<th>Week</th>
<th>Week beginning Mon:</th>
<th>Sections (from the textbook) to be covered during the week:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1/8/2018</td>
<td>Introduction and Prequiz Assessment&lt;br&gt;Ch R/Ch 1: Algebra Review&lt;br&gt;2.3: Functions and Relations</td>
</tr>
<tr>
<td>2</td>
<td>1/15/2018</td>
<td>(No class Mon 1/15)&lt;br&gt;Take-home Quiz #1 – due Wednesday, 1/17/2018&lt;br&gt;2.6: Transformations of Graphs&lt;br&gt;2.7: Analyzing Graphs of Functions and Piecewise Defined Functions</td>
</tr>
<tr>
<td>3</td>
<td>1/22/2018</td>
<td>HW Assign 1 – due In-class Monday, 1/22/2018&lt;br&gt;2.8: Algebra of Functions and Function Composition&lt;br&gt;3.1: Quadratic Functions</td>
</tr>
<tr>
<td>4</td>
<td>1/29/2018</td>
<td>HW Assign 2 – due In-class Monday, 1/29/2018&lt;br&gt;3.2: Polynomials&lt;br&gt;3.3: Polynomial Division&lt;br&gt;3.4: Zeros of Polynomials&lt;br&gt;3.5: Rational Functions</td>
</tr>
<tr>
<td>5</td>
<td>2/5/2018</td>
<td>HW Assign 3 – due In-class Monday, 2/5/2018&lt;br&gt;3.6: Polynomial and Rational Inequalities&lt;br&gt;Test 1 --- Wednesday, 2/7/2018 (Sections 2.3 – 3.4)&lt;br&gt;4.1: Inverse Functions</td>
</tr>
<tr>
<td>6</td>
<td>2/12/2018</td>
<td>HW Assign 4 – due In-class Monday, 2/12/2018&lt;br&gt;4.2: Exponential Functions&lt;br&gt;4.3: Logarithmic Functions&lt;br&gt;4.4: Properties of Logarithms</td>
</tr>
<tr>
<td>7</td>
<td>2/19/2018</td>
<td>HW Assign 5 – due In-class Monday, 2/19/2018&lt;br&gt;4.5: Exponential and Logarithmic Equations&lt;br&gt;4.6: Modeling with Exponential and Logarithmic Functions&lt;br&gt;5.1: Angles and Their Measures</td>
</tr>
<tr>
<td>8</td>
<td>2/26/2018</td>
<td>HW Assign 6 – due In-class Monday, 2/26/2018&lt;br&gt;5.2: Right Triangle Trigonometry&lt;br&gt;Test 2 --- Wednesday, 2/28/2018 (Sections 3.5 – 4.6)&lt;br&gt;5.3: Trigonometric Functions of Any Angle</td>
</tr>
<tr>
<td>Week</td>
<td>Date</td>
<td>Assignments and Important Dates</td>
</tr>
<tr>
<td>------</td>
<td>----------</td>
<td>---------------------------------</td>
</tr>
</tbody>
</table>
| 9    | 3/5/2018 | HW Assign 7 – due In-class Monday, 3/5/2018  
5.4: Trigonometric Functions Defined on the Unit Circle  
5.5: Graphs of Sine and Cosine  
(No class Friday, 3/9/2018 – Math Day) |
| 10   | 3/12/2018| HW Assign 8 – due In-class Monday, 3/12/2018  
5.6: Graphs of Other Trigonometric Functions  
5.7: Inverse Trigonometric Functions |
| 11   | 3/19/2018| SPRING BREAK NO CLASSES 3/19 – 3/23 |
| 12   | 3/26/2018| HW Assign 9 – due In-class Monday, 3/26/2018  
6.1: Fundamental Trigonometric Identities  
Test 3 --- Wednesday, 3/28/2018 (Sections 5.1 – 5.7)  
6.1: Fundamental Trigonometric Identities |
| 13   | 4/2/2018 | HW Assign 10 – due In-class Monday, 4/2/2018  
6.2: Sum and Difference Formulas  
6.3: Double Angle and Power-Reducing Formulas  
6.5: Trigonometric Equations |
| 14   | 4/9/2018 | HW Assign 11 – due In-class Monday, 4/9/2018  
6.5: Trigonometric Equations  
7.1: Applications of Right Triangles  
7.2: Law of Sines |
| 15   | 4/16/2018| HW Assign 12 – due In-class Monday, 4/16/2018  
7.2: Law of Sines  
7.3: Law of Cosines  
8.1: Polar Coordinates |
| 16   | 4/23/2018| HW Assign 13 – due In-class Monday, 4/23/2018  
8.1: Polar Coordinates  
Test 4 --- Wednesday, 4/25/2018 (Sections 6.1 – 7.3)  
8.2: Graphs of Polar Equations |
| 17   | 4/30/2018| HW Assign 14 – due In-class Monday, 4/30/2018  
Last Day of class – Monday, 4/30/2018 (Review day for Final Exam)  
Final Exam – Wed, May 2, 8:00-10:00 am (covers All sections 2.3 – 8.2) |