Math 1113 – Precalculus – 4 Credit Hrs
Section 07; Spring 2019
MW 9:30-10:45 pm Miller Hall 2213; Fri 9:55-10:45 pm; Callaway Bldg Sci 120

Instructor: Mr. Ricky Johnson
Office: 106D Boyd Bldg., 1st Floor
E-mail: rjohnson@westga.edu
Office Hours: MW 11:00-12:00; or Tu, Th 3:30-5:00; 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.

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, Abramson, Openstax. Student can download for free at https://openstax.org/details/books/algebra-and-trigonometry. Students should go to “Download a PDF” and download the High Resolution version.

CourseDen: I will be using CourseDen at https://westga.view.usg.edu to post any announcements, videos, lecture notes, grades (tests, MyOpenMath score, bonus points, worksheets, and final exam), and solutions. 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

MyOpenMath: 15% of final grade. All students are required to register an account at www.myopenmath.com. It costs nothing. This is where all homeworks, quizzes, and bonus problems will be done. Students need to use the course ID: 43418 and enrollment key: rej7878 when creating an account. Your total MyOpenMath score is comprised of: homework (70%), quizzes (30%).
**MyOpenMath Homework:** Weekly online homework assignments that must be completed by the due dates shown. After the due dates, scores will not be recorded, but you can still access the assignment for review. You will be allowed 3 attempts for each problem. The lowest 2 homework scores will be dropped.

**MyOpenMath Quizzes:** Weekly online quizzes due within 1 day after every homework due date. 2 attempts per problem (30% penalty after 1st attempt). Note, once a quiz is started you will have a limited amount of time to complete it – usually about 3 hours. The lowest 2 quiz scores will be dropped. If you log out, the timer keeps going.

**MyOpenMath Bonus Problems:** Weekly bonus problems due the same day as the homeworks. 1 bonus point per problem. Only 1 attempt per problem.

**MyOpenMath LatePasses:** No extensions will be granted for any reason on any assignment in MyOpenMath. However, you will be granted 4 LatePasses that can be used to extend the due date of a homework or a quiz (but not for bonus problems) by 72 hours (3 days). You may only use 1 LatePass per homework (or quiz). After 72 hours past the due date, a LatePass cannot be used. If using a LatePass, your score will be reduced by 30%. **Note, if you have accessed the assignment after the due date in review mode, the LatePass will not work.**

**Tests:** 50% of final grade. 4 in-class tests, 100 points each. At the end of the semester you may have your lowest test score replaced with the score you receive on the final exam if higher (this includes a missed test). **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. There will be no make-ups for the Final Exam for ANY reason as well.

**Test Retakes:** At the end of the semester if your myopenmath overall score is 60% or higher, you are eligible to retake one of the first 3 tests. Test retake day will be on the last day of class Monday, April 29. You may also use this option if you missed a test (provided your myopenmath overall score is at least 60%).

**Worksheets:** 10% of final grade. Except for test weeks, there will be weekly worksheets handed out on Monday and due no later than class time Friday. Bring them to class because occasionally you will be given time to work on them during class. Note, I will not accept late submissions for any reason. I will NOT accept them by email either. They MUST be turned in to me during class only. These cannot be made-up if missed. Lowest 2 scores dropped.

**Worksheet Grading:** You will receive 1 point for each problem worked and completed (regardless of correctness). In addition, I will randomly select 3 problems (the same 3 for everyone) to grade for correctness. If correct, 3 points for each. At the end of the semester, the lowest 2 scores will be dropped. Solutions will be posted on CourseDen the day they are due. Note, you must show all work, or you will not receive credit for a problem.

**Student-Instructor Meeting:** If you come to my office for a brief 5 to 10 minute meeting by Friday, February 8, you will receive **40 bonus points.** The purpose is to review the results of your prequiz, determine if any outside resources are needed, and discuss any concerns you may have regarding the course. You can come anytime during my office hours or we can schedule a time if you are not available during those hours.

**Bonus Points**
You will be able to earn anywhere from 300-400 bonus points throughout the semester. The bonus points will be worth 4% added to your overall test average. There are 4 ways to earn bonus points:

1. Up to 20 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 2 bonus points 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 Monday, April 29, 2019 (form is on courseDen).
2. Up to 20 points (combined) may be earned by attending tutoring sessions at: a) The Center for Academic Success (Room 200 of the University Community Center) or b) The Precalculus Tutoring Lab Program. or c) Supplemental Instruction. You will receive 2 bonus points for each session.
3. 40 points from Student-Instructor meeting. Meeting must happen by Friday, February 8.
**Example:** The student’s test average from all 4 in-class tests is 89. Student earns 300 bonus points out of a maximum of 400 bonus points. Therefore, since \((300/400) * 4 = 3\), student earns a 3% bonus. Student’s test average is now 92.

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

**Precalculus Tutoring Lab Program:** An optional personalized tutoring program. Students meet in groups of 3 or 4 with a tutor on a scheduled day for 1 hour per week. I will be signing up any interested students during our student-instructor meetings.

**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>Component</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>4 Tests (tentative dates, subject to change)</td>
<td>50% (includes +4% bonus)</td>
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<tr>
<td>Test 1 Mon, February 4</td>
<td></td>
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<tr>
<td>Test 2 Mon, February 25</td>
<td></td>
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<tr>
<td>Test 3 Mon, April 1</td>
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<tr>
<td>Test 4 Wed, April 24</td>
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<tr>
<td>MyOpenMath Total score</td>
<td>15%</td>
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<tr>
<td>Worksheets</td>
<td>10%</td>
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<tr>
<td>Final Exam (Comprehensive) Wed, May 1, 8:00 – 10:00 am</td>
<td>25%</td>
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<tr>
<td><strong>Total</strong></td>
<td>100%</td>
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**Videos:** On CourseDen are several videos related to the material covered in this course. Most are short (5-10 min). It is highly recommended that you watch them if you need extra help on a topic.

**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, worksheet, 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 7
- **Drop Ends:** Wednesday, January 9
- **Last Day to Withdrawal with W:** Wednesday, February 27
- **Last Day of Class:** Monday, April 29
- **Final Exam:** Wed, May 1, 8:00 – 10:00 am
- **No classes:** Monday, January 21 (MLK Day)
- **No classes:** Monday March 18- Friday March 22 (Spring Break)
## Tentative Weekly Course Schedule

<table>
<thead>
<tr>
<th>Introduction and Prequiz Assessment</th>
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<tbody>
<tr>
<td>Ch 1/Ch 2: Algebra Review</td>
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</tbody>
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### 3.1: Functions and Function Notation
- Domain and Range
- Rates of Change and Behavior of Graphs
- Composition of Functions
- Transformation of Functions

### 3.2: Domain and Range

### 3.3: Rates of Change and Behavior of Graphs

### 3.4: Composition of Functions

### 3.5: Transformation of Functions

### 4.1: Linear Functions

### 5.1: Quadratic Functions

### 5.2: Power Functions and Polynomial Functions

### 5.3: Graphs of Polynomial Function

**Test 1 --- Monday, 2/4/2019 (Sections 3.1 – 5.3)**
- Rational Function
- Inverse Functions
- Exponential Functions
- Graphs of Exponential Functions
- Logarithmic Functions
- Graphs of Logarithmic Functions
- Logarithmic Properties
- Exponential and Logarithmic Equations
- Exponential and Logarithmic Models

### 5.6: Rational Function

### 3.7: Inverse Functions

### 6.1: Exponential Functions

### 6.2: Graphs of Exponential Functions

### 6.3: Logarithmic Functions

### 6.4: Graphs of Logarithmic Functions

### 6.5: Logarithmic Properties

### 6.6: Exponential and Logarithmic Equations

### 6.7: Exponential and Logarithmic Models

**Test 2 --- Monday, 2/25/2019 (Sections 5.6 – 6.7)**
- Angles
- Right Triangle Trigonometry
- Unit Circle
- Other Trigonometric Functions
- Fundamental Trigonometric Identities
- Graphs of Other Trigonometric Functions
- Inverse Trigonometric Functions

**SPRING BREAK NO CLASSES 3/18 – 3/22**

### 8.1: Inverse Trigonometric Functions

### 9.1: Solving Trigonometric Equations with Identities

### 9.2: Sum and Difference Identities

**Test 3 --- Monday, 4/1/2019 (Sections 7.1 – 9.1)**
- Double-Angle, Half-Angle and Reduction Formulas
- Sum and Difference Formulas
- Solving Trigonometric Equations
- Non-Right Triangle: Law of Sines
- Non-Right Triangle: Law of Cosines
- Polar Coordinates

### 9.3: Double-Angle, Half-Angle and Reduction Formulas

### 9.4: Sum and Difference Formulas

### 9.5: Solving Trigonometric Equations

### 10.1: Non-Right Triangle: Law of Sines

### 10.2: Non-Right Triangle: Law of Cosines

### 10.3: Polar Coordinates

### 10.4: Polar Coordinates: Graphs

**Test 4 --- Wednesday, 4/24/2019 (Sections 9.1 – 10.4)**

Review for the Final Exam – Friday, 4/26/2019

**Optional Test Retakes – Monday, 4/29/2019**