# Trigonometry Fall 2016 Mathematics 4A

Section #58912



Unit circle

E

secθ D

**Instructor:** Dr. John Heathcote Class Times: MTWTh 11:00 am-12:50 pm

**Office:** FEM – 1B (in the math center) **Classroom**: CCI - 206

**Phone:** 638-3641 ext. 3215

**e-mail:** john.heathcote@reedleycollege.edu

**Office Hours:** Monday, 10:00-10:50AM, 1:00-1:50PM

Wednesday, 10:00-10:50AM Friday, 10:00-10:50AM

On-Duty in the RC Math Center (FEM-1): Friday, 11:00-11:50 AM

Canvas Course Site: All course materials (and links to recorded class lectures)

will be available on the course management site on Canvas. You can access Canvas by using the "Quick Links" drop-down

menu on the Reedley College webpage.

<u>Optional Text</u>: Precalculus, with MML access code, 6<sup>th</sup> Edition, Lial, Hornsby, Schneider, and Daniels, Pearson, 2017, ISBN 978-0-13-430699-5

Required Online Access: MyMathLab Online site for Precalculus, 6th Edition, Lial, Hornsby, Schneider,

and Daniels

You must access our MyMathLab site directly from the Canvas course management site for this course.

The full e-text is available from the MyMath Lab site.

**Notebooks:** To keep a good record of your notes in class and your work on your online assignments, you should have one (or two) notebooks for this course. Be ready to take notes during lecture. When you complete online assignments, keep your work organized so that you can refer to it later!

**Calculators** will be necessary for some calculations. I would recommend a graphing calculator such as a TI-83 or TI-84. When we use calculators for graphing trigonometric functions, I will be demonstrating with a TI-84 Plus. <u>Graphing calculators can be checked out from the library</u>. If you do not have a graphing calculator, you will at least need a scientific calculator (with buttons for sin, cos, tan) for calculations during the course. PHONES ARE NOT ALLOWED TO BE USED AS CALCULATORS.

**Advisories:** English 125 and 126

**Prerequisites:** Mathematics 102 and 103 or equivalent

**Catalog Description:** The study of trigonometric functions, their inverses and their graphs, identities and

proofs related to trigonometric expressions, trigonometric equations, solving right triangles, solving triangles using the Law of Cosines and the Law of Sines, polar coordinates, and introduction to vectors.

**Grading:** 50% Tests

20% Final Exam 15% Homework

15% In-Class Activities and Worksheets

Grading Scale: 90-100% A

80-89.9% B 70-79.9% C 60-69.9% D < 60% F

**Tests:** Approximately three tests will be given throughout the term. These tests will usually cover one chapter from the textbook. The tests will be announced ahead of time. If you will not be able to attend class for a test, you need to make prior arrangements to take the test at another time. If you are sick on the day of a test, you must contact the instructor by phone or email **before the start class**. If you do not show up for a test without notifying the instructor, you will receive a zero for that test.

**Final Exam:** It is important to learn the material in this class and to retain that material. So, a <u>comprehensive final exam</u> will be given during the final class meeting (Wednesday, Oct. 12, 11:00am-12:50pm).

**Homework:** "Practice makes perfect" is particularly true in mathematics. Therefore, it is critical that you do your homework and put in a good effort in using that homework as a way to learn and practice the material. You will submit your assignments on the MyMathLab site for this course. Deadlines will typically be on Tuesday and Thursday nights.

**Late Work:** It is important that you stay up to date on the work in this class. So, you need to submit your homework on time. Late homework will not receive full credit.

Worksheets and In-Class Activities: Often in class, there will be a worksheet assigned to follow up on the concepts that we are practicing in the course. These worksheets will be collected and graded. It is important that you work through these worksheets and ask for help as necessary. Also, at times, there will be other in-class activities that are also collected and graded. If you miss one of these activities, you will need to obtain the work from the instructor and submit the worksheet by the following class period to receive full credit.

**Attendance and participation:** It is important that you come to class every day and *participate actively*. Arrive on time. Late students not only miss important material but also distract the rest of the class.

Learning mathematics is not a passive activity. As we progress through topics, students will be given problems in class to practice new skills. During this time, all students are expected to have paper out and to be actively working on these math problems with the rest of the class.

If you miss more than four class sessions, you may be dropped. (However, if you decide to drop the course, it is **your** responsibility to make the drop official in the Administrations and Records Office or else possibly receive a grade of F.)

# **Accommodations for Students with Disabilities:**

If you have a verified need for an academic accommodation or materials in alternate media (i.e., Braille, large print, electronic text, etc.) per the Americans with Disabilities Act (ADA) or Section 504 of the Rehabilitation Act, please contact me as soon as possible.

Please turn off all electronic devices before the start of every class period.

The use of these devices for calls, texts, or other activities is prohibited without previous approval from the instructor.

Add Date:Tuesday, August 23rdLast day to add a courseDrop Date:Tuesday, September 13thLast day to drop this course

**Holidays:** Monday, September 5<sup>th</sup> Labor Day

#### **Course Outline:**

Unit A:	Chapter 5 – Trigonometric Functions	Weeks 1-3
Unit B:	Chapter 6 – The Circular Functions and their Graphs	Weeks 3-5
Unit C:	Chapter 7 – Trigonometric Identities and Equations	Weeks 5-7
Unit D and Final Exam	Chapter 8 – Applications of Trigonometry and Review	Weeks 7-9

#### **Course Content:**

# **Student Learning Outcomes:**

Upon completion of this course, students will be able to:

- 1. Provide and analyze graphs of trigonometric functions.
- 2. Apply trigonometric techniques to solve problems in real world contexts.
- 3. Derive, use and prove trigonometric properties and identities.
- 4. Produce solutions to equations using skills developed in trigonometry

## **Objectives:**

In the process of completing this course, students will:

- 1. Identify special triangles and their related angle and side measures;
- 2. Evaluate the trigonometric function of an angle in degree and radian measure;
- 3. Manipulate and simplify a trigonometric expression;
- 4. Solve trigonometric equations, triangles, and applications;
- 5. Graph the basic trigonometric functions and apply changes in period, phase and amplitude to generate new graphs;
- 6. Evaluate and graph inverse trigonometric functions;
- 7. Prove trigonometric identities;
- 8. Convert between polar and rectangular coordinates and equations;
- 9. Graph polar equations;
- 10. Calculate powers and roots of complex numbers using DeMoivre's Theorem;
- 11. Represent a vector (a quantity with magnitude and direction) in the form and ai+bj

### **Academic Dishonesty**

Students at Reedley College are entitled to the best education that the college can make available to them, and they, their instructors, and their fellow students share the responsibility to ensure that this education is honestly attained. Because cheating, plagiarism, and collusion in dishonest activities erode the integrity of the college, each student is expected to exert an entirely honest effort in all academic endeavors. Academic dishonesty in any form is a very serious offense and will incur serious consequences.

**Cheating** is the act or attempted act of taking an examination or performing an assigned, evaluated task in a fraudulent or deceptive manner, such as having improper access to answers, in an attempt to gain an unearned academic advantage. Cheating may include, but is not limited to, copying from another's work, supplying one's work to another, giving or receiving copies of examinations without an instructor's permission, using or displaying notes or devices inappropriate to the conditions of the examination, allowing someone other than the officially enrolled student to represent the student, or failing to disclose research results completely.

**Plagiarism** is a specific form of cheating: the use of another's words or ideas without identifying them as such or giving credit to the source. Plagiarism may include, but is not limited to, failing to provide complete citations and references for all work that draws on the ideas, words, or work of others, failing to identify the contributors to work done in collaboration, submitting duplicate work to be evaluated in different courses without the knowledge and consent of the instructors involved, or failing to observe computer security systems and software copyrights. Incidents of cheating and plagiarism may result in any of a variety of sanctions and penalties, which may range from a failing grade on a particular examination, paper, project, or assignment in question to a failing grade in the course, at the discretion of the instructor and depending on the severity and frequency of the incidents.