Math 112 / Trigonometry / 40554 /TR/ 8:15am-10:00 / MET 208 / Sp '13
41548 /TR/ 1:15pm-3:00 / JEF 105

Instructor: Liz Coleman   **Office:** GRV 214   **"Office hours"**: MWF 9:10-10:10 GRV 107; (Thur. noon-1 office hour alternates weekly with math dept meeting) TR 12:00-1:00pm JEF 105; Phone: 541-383-7414   Email: ecoleman@cocc.edu   Web: http://www.cocc.edu/ecoleman/

(This is the full version of the syllabus, the short form was handed out in class)

Prerequisite: Math 111, College Algebra, with a grade of B- or better.

Textbook: *College Algebra and Trigonometry* 3rd ed. packaged with WebAssign software, by James Stewart, ISBN:9781133532897 or ebook version only with Web Assign. Alternatively, you can just order the ebook version on line for $75, ISBN: 9780538738101

Calculators: A graphing calculator is required, the TI83 or 84 is recommended.

Attendance: Attendance is mandatory the first week and necessary thereafter if you plan on succeeding in this course. ***You will be dropped if you miss a class the first week***

WebAssign (I will not be using Black Board this term):

You must have a WebAssign account linked to this class to continue to be enrolled in this class. **One of your first assignments is to be enrolled in WebAssign by 3 pm on Friday Oct. 4.**

To sign up for a WebAssign account for this class go to http://www.webassign.net/ and click on I Have a Class Key (far right side under LOG IN). The institution is: cocc.

The class key is:
   For section 40554 (meets in MET 208a.m.) the class key is: **cocc 2340 0764**
   For section 41548 (meets in JEF 105) the class key is: **cocc 6130 0062**

Make sure to verify you're in the correct class with the correct crn section!

If you already have an account from Math 111, or are retaking 112 and created an account prior to this term, please check "I already have a Web Assign account". If you've never signed up for Web Assign using this text book then check "I need to create a Web Assign account".

Check out the WA Quick Start guide: http://www.webassign.net/manual/WA_Student_Quick_Start.pdf
       Be sure to use a username (COCC preferred) and password that you can remember!

Please *do not* use your cell phone or lap top during class.   Have the ringer turned off, and do not use it for text messaging -- it's too distracting.

IF YOU STOP COMING TO CLASS PLEASE REMEMBER TO OFFICIALLY DROP THE CLASS OTHERWISE, YOU WILL RECEIVE AN "F" FOR YOUR GRADE.

NOTE: You will only learn by doing; math is not a spectator subject. You should plan on **reading the text prior to class and take notes during class**. I encourage you to ask questions during lectures pertinent to the topic being discussed.

  Disclaimer: *The contents of this syllabus are subject to revision at the discretion of the instructor.*

WEEK:	*Tentative* weekly schedule for Math 112 Fall 2013
First: Oct 1	Cover the syllabus, which includes how the class is structured. This week we'll be covering the concepts of angles, angle measure in degrees & radians, **the "standard" angles,** coterminal angles, arc length, and area of a sector. Trigonometric functions and the unit circle will be introduced and defined. Read sections 6.1 & 6.3 for HW's #1 - #3. HW due dates will be posted in class and on WebAssign (WA). Make sure you get signed up on WA before the next class, deadline is Oct. 4th. **QUIZ A: The "standard" angles in degrees and radians. Hand out "Cone" project.**
Second: Oct 8	**Project 1 – Graphs of Sine & Cosine**. Read 6.3&7.2 for HW#4. Some key concepts for graphing are amplitude, period, and phase shift. **QUIZ B: Trig functions of the "standard" angles.**
Third: Oct 15	More on graphing the trig functions, **Proj 2 - Graphs of Sine, Cosine & Tangent**. Read 7.3 for HW's #5&6 and get handouts that go along with HW's #5&6.
Fourth: Oct 22	**Project 3 – Fitting a cosine curve to a data set** and more on graphing. **QUIZ C: Graph Sine, Cosine and Tangent.**
Fifth: Oct 29	<u>First Test is scheduled for this week</u> over HW's 1-6, quizzes A-C, proj's 1-3. Right triangle trigonometry. Hand out and group work. Read 6.2.
Sixth: Nov 5	Right triangle trig, applications, and the reciprocal trig functions. Read 6.2 and 6.4 for HW's #7-#10. **Climber Project and Proj 4, all 6 trig functions and their graphs.**
Seventh: Nov 12	Mon. Veteran's Day	**Law of Sines and Law of Cosines**. Read 6.5 and 6.6 for HW's #11&12. Introduction to simplifying trig expressions. Read 8.1 for HW's #13&14. Hand out and group work.
Eighth: Nov 19	Wrap up Law of Sines and Cosines. Sum and Difference formulas. Read 8.2-8.4 for HW's #15&16. **Proving trig identities project. Non-right triangle "protractor" project.** <u>The 2nd test is scheduled for this week</u>; HW's #7-12 and some previous material.
Ninth: Nov 26	Sum and Difference formulas. Double angle formulas. Solving basic trig equations. Read 8.4 for HW#17 and 6.4&7.5 for HW#18. **QUIZ D (if time).**	Thanksgiving, College is closed Thurs & Fri
Tenth: Dec 3	More on solving tri equations and inverse trig functions REVIEW for the final!
Eleventh: Dec 9-13	**Final exam:** 8:15am class in MET 208: <u>Thursday, Dec 12, 8:00am-10:00</u> 1:15pm class in JEF 105: <u>Tuesday, Dec 10, 1:00pm-3:00</u>

Course Description: Mth 112 is a course designed to examine in detail the applied, real–world, and theoretical mathematical implications of the trigonometric functions. The symbolic, numerical, and graphical representations of these functions and their applications form the core of the course. Emphasis will be on solving problems symbolically, numerically and graphically and understanding the connections among these methods in interpreting and analyzing results.

Mth 112 has the competencies from Mth 111: Precalculus as prerequisites; the course is college-transferable. Mth 112 is a 4 credit hour (quarter system) course.

Performance Based Outcomes in Mathematics:
Students who successfully complete any mathematics course at Central Oregon Community College will be able to:

1. *Work independently to explore mathematical applications and models, and to develop algebraic/symbolic, graphical, numerical, and narrative skills in solving mathematics problems.*

2. *Work as a member of a group/team on projects or activities that are designed to explore mathematical applications and models.*

3. *Use both written and oral skills to communicate about mathematical concepts, processes, complete mathematical solutions and their implications.*

4. *Use a variety of problem solving tools including symbolic/algebraic notation, graphs, tables, and narratives to identify, analyze, and solve mathematical problems.*

5. *Develop mathematical conjectures and use examples and counterexamples to examine the validity and reasonableness of those conjectures.*

6. *Create and analyze mathematical models of real world and theoretical situations, including the implications and limitations of those models.*

7. *Use appropriate technologies to analyze and solve mathematics problems, and verify the appropriateness and reasonableness of the solution(s).*

Specifically, students who complete Math 112: Trigonometry will be able to:

*   model and solve applied, real–world, and theoretical mathematical problems involving right–triangle and oblique–triangle trigonometry. [1, 2, 4, 5, 6]

*   model and solve problems using symbolic, graphic and numeric strategies and translate among written descriptions, symbolic, graphic and numeric representations of trigonometric functions.

*   use a graphing calculator to create trigonometric graphs that represent mathematical models, determine appropriate viewing windows and accurately interpret and draw inferences regarding the meaning and limitations of the graphs. [4, 5, 6, , 7]

*   understand, apply, and interpret the meaning of trigonometric identities to solve trigonometric equations.

*   model and solve problems involving vectors in two dimensions both algebraically and graphically and understand the relationship between the methods and solutions.

Grading:	Weight	Approximate grading scale:	
Homework (on WebAssign)	10%	**A⁻, A:**	90%-100%
Quizzes, Projects, in class work	25%	**B⁻,B⁺:**	80%-89.9%
Exams (2 @ 20% each)	40%	**C,C⁺:**	70%-79.9%
Final	25%	**D:**	60%-69.9%
Total	100%	**F:**	‹59.9%

Exams: There will be 2 exams and one final given throughout the quarter. *Tentative* dates for the exams and material covered are as follows:

Exam 1: Week 5 - Covers: HW's 1-6, Quizzes A-C, and Projects 1-3;

Exam 2: Week 8 - Covers: HW's 7-14 and some previous material;

All tests and quizzes are closed book and no notes.

MAKE-UP EXAMS ARE GIVEN WITH <u>PRIOR</u> ARRANGEMENT ONLY.

Final exam: : 8:15am class in MET 208: <u>Thursday, Dec 12, 8:00am-10:00</u>

1:15pm class in JEF 105: <u>Tuesday, Dec 10, 1:00pm-3:00</u>

The final is comprehensive, including material from quizzes, homework and projects.

Other important dates:	Oct 4	Last day to begin attendance in a new class
	Oct 11, 5pm	Tuition due and last day for full refund
	Nov 11	Veteran's Day, College is closed
	Nov 15, 5pm	Last day to drop class with no grade on transcript
	Nov 28&29	Thanksgiving Holiday, College is closed
	Dec 4, 6pm	Last day to withdraw, receive a "W" grade (need instructor's signature)
	Dec 9-13	Finals Week

Homework, Quizzes, Group Work and Projects:

Homework (HW) will be assigned in class and due dates will be posted in class and on WebAssign, (WA). Bonus points (10% of your correct work points added back) will be awarded for HW submitted by midnight of the due dates. The absolute deadline for HW is two nights prior to the day in which the test for the material will be held. No late HW will be accepted after the deadline. The homework is only available on WebAssign.

Quizzes will be given occasionally throughout the term and announced in class and on WA for their scheduled time. If you miss a quiz, you may make it up during my office hours **within a week** of the originally scheduled date.

Group Work is handed out one or two times a week and generally will be collected the next class. It needs to be turned in on time if you want it graded and back to you in a timely manner and **up to a week late only**.

Projects will be handed out throughout the term and generally collected up to 2 weeks later. Due dates will be posted in class. Late projects will be accepted **only up to a week late**, but may not be returned to you before the test. Projects handed in early will be awarded a 5% bonus!

Any work handed MUST be presented:

- neat and in <u>PENCIL ONLY (points will be deducted for pen)</u>.

- your name -first and last, and class meeting time in the <u>*upper-most right-hand corner of the page.*</u>

- **no frilly edges.**

- Points will be deducted for incorrect notation, wrong answers, and infractions to presentation.

- **Always show any and all necessary work for full credit. Leave at least 2 spaces empty between each problem.**

- Staple more than one paper together; please do not fold the corners together or paper-clip papers together. Use both sides of the paper.

Instructional Methods: Lecture, small group work, and discussion. *It is highly recommended that you read the assigned section(s) before class.* There is also a WebAssign (on line computer) component for working on, and turning in, your homework.

Dropping a Class/Audits: The end of the 7th week of the term is the last day to change from a grade to an audit, or vice versa. This date is also the last day to drop a course without receiving a W on your transcript. After the 7th week and by the end of the Wednesday prior to finals week, you may drop a course and receive a W on your transcript only with permission from your instructor

ADA statement: "Students with documented disabilities who may need accommodations, who have any emergency medical information the instructor should know of, or who need special arrangements in the event of evacuation, should make an appointment with the instructor as soon as possible, no later than the first week of the term. Students may also wish to contact the COCC Disability Office in BEC, (541) 383-7583."

Student Insurance: Students are not covered by medical insurance while on campus or involved in college classes and activities. Students are responsible for their own medical and dental insurance coverage.

COCC Non-Discrimination Policy: Central Oregon Community College is an affirmative action, equal opportunity institution. It is the policy of the Central Oregon Community College Board of Directors that there will be no discrimination or harassment on the basis of age, disability, gender, marital status, national origin, race, religion, sexual orientation, or veteran status in any educational programs, activities or employment. Persons having questions about equal opportunity and non-discrimination, please contact Human Resources for referral to the appropriate personnel, 383-7236.

<u>*Disclaimer:*</u> *The contents of this syllabus are subject to revision at the discretion of the instructor.*

Assignment Check Off/Coleman/Math 112: below is a list of the Quizzes, Projects, and in-class work you can expect throughout the term. There may be slight changes.

Assignment	Due	Worth	Your Score
First day activity: Naming the Standard Angles	10-1	32pts	
Quiz A (Id. all standard angles degrees/radians)	10-8	32pts	
1st day activity cont.: val's of trig func's at the st. angles		16	
Quiz B (Id. the val's of trig functions at the st. angles)		45	
Cone Project		30	
Project 1 (Graphs of Sine and Cosine)		36	
Group Work (1) Graphing and Graph Reading		48	
Homework 5 handout		24	
Homework 6 handout		24	
Group Work (2) Fill-in-the-blank and tangent graph		40	
Group Work – Arc Length Handout		20	
Project 2 (Graphs of Sine, Cosine and Tangent)		40	
Quiz C (Graphs of the Sine, Cosine & Tangent functions)		30	
Geometric Representation for the Trig Functions		24	
Project 3		32	
Right Triangle Trig. Handout		18	
Project 4 (Graphs of all 6 trig functions)		36	
Climber Project		20	
Warm–up protractor project		10	
Non-right triangle handout – Law of Sines		24	
Non-right triangle handout – Law of Sines and Cosines		30	
Ambiguous case protractor project		30	
Sum/Difference/Double angle handout		25	
Trig Identities Handout		30	
Final Review		20	
Test 1		100	
Test 2		100	
Quiz D (if time)		30	