# MATH 1405 Pre-Calc Trigonometry

**Semester/Year:** Fall 2015

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| **Lecture Hours:** 3 | **Lab Hours:** 0 | **Credit Hours:** 3 |
| **Class Time:** 11:00-11:50 | **Days:** MWF | **Room:** PS 117 |

**Instructor's Name:** Mark Kuhlman

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| **Office:** PS 130 | **Office Phone:** 268-2369 | **Email:** mkuhlman@caspercollege.edu |

**Office Hours:** MWTH F 9:00-9:50 am and T 1:00-200 pm or by appointment or stop by my office because I'm usually there if I am not teaching.

**Course Description:** This course includes the study of circular functions, identities, trigonometric equations, applications of trigonometric functions, and conics.  It is designed for mathematics, science, and engineering majors preparing for the regular calculus sequence.

**Statement of Prerequisites:** In order to take this course, you must have received a C or better in MATH 1400, *or* received an ACT Composite Math score of 26 or better within the past year, *or* received an SAT score of 600 or better, *or* received a Compass Exam placement of College Algebra with a score of 65 or better.  If you are not sure that you have satisfied the prerequisite, please talk to me ASAP so that you can get into the appropriate math class.

**Goal:** The goal of this trigonometry course is to stress an algebraic, graphic and numeric approach to the study of angles, trig functions, equations, inequalities, identities and circular motion that would apply to math, science and engineering majors.  This class should also provide you with a background in trigonometry for further study in Calculus.

**Outcomes:** Students should:
1) Be able to use the definition of the six trigonometric functions using either the right triangle or the unit circle to evaluate trigonometric functions at standard angles without technology.
2) Be able to use trigonometric definitions to solve right triangle application problems.
3) Be able to graph functions involving sin(x), cos(x), and tan(x) and should understand the concepts of period, amplitude and phase shift.  Students should understand how to use technology to produce and analyze graphs.
4) Be able to use the basic trigonometric identities, the angle sum identities, and the multiple angle identities to prove or disprove additional statements concerning the six trigonometric functions.
5) Be able to use the law of cosines and the law of sines to solve application problems.
6) Be able to solve simple trigonometric equations both with and without technology.
7) Be able to apply their knowledge of trigonometry to at least two of the following application areas: vectors, parametric equations, polar coordinates, complex number representations, or conic sections.

**Methodology:** The instructor will explain the concepts and demonstrate models of problems using these concepts. He will use the TI 83 and/or 84 graphing calculators extensively. He will use the board to model and explain concepts and methods of solving problems. He will try to answer questions as

they arise and be available for the student to use as a resource. The textbook is the source of problems and some explanations. Please read it and feel free to ask questions about topics and problems not covered by the instructor.

**Electronics:** Any device that makes noise (cell phones, MP3 players, tablets, etc) must be turned off and put away during class time (phones can be in silent/vibrate mode—if there is a serious reason for having it on)

## Evaluation Criteria:

Participation Procedure:
You are expected to participate in this class and 10% of your overall grade accounts for it. Attendance is extremely important. You will need to be here to get the participation points. If you are going to miss an exam you must make arrangements with me to make it up before the next class meeting.

Homework Procedure:
Homework may be collected at the beginning of each class session after questions have been answered about the homework. Quizzes over the homework material for that class may be given in lieu of collecting the homework assignment. Remember that your homework grade accounts for 20% of your overall grade so being prepared and completing the homework assignments is very important to passing the course.

Exam Procedure:
There will be 3-5 examinations throughout the semester. I will count your best exam score twice. I will not completely throw out or disregard any examination score. The Final Exam will be a comprehensive final over the complete semester. It will be problems similar to problems on the 3-5 exams.

Grading Procedure:                          Probable Grade Scale:
Chapter Exams 50% of your grade                90 – 100  A
Homework        20% of your grade               80 – 89  B
Participation    10% of your grade               70 – 79  C
Final Exam        20% of your grade               60 – 69  D
                                                 Below 60  F

## Required Text, Readings, and Materials:
Precalculus With Modeling and Visualization: 5th Ed.: Rockswold, ISBN#0-321-82602-7 Pearson Education, Inc.

It is required that each student have their own graphing calculator. If you are going to buy a new calculator, it is recommended that you buy the Texas Instruments TI-83, TI-83+ or the TI-84+ as this is the overhead model we will use in class. There are some of these models available for rental in the mathematics lab. Other graphing models will work just as well if you are already familiar with the operation of these models. Texas Instruments, Hewlett-Packard, Casio and Sharp all make excellent calculators. These models I will allow and will work but I will only be able to help you operate them if you come see me in my office and if you have an instruction manual. More advanced calculators, such as the TI-89, **can't** be used during quizzes or exams.

## Class Policies: Last Date to Change to Audit Status or to Withdraw with a W Grade:
November 12th, 2015 will be the last day to drop this class without permission of the instructor. You will not be allowed to audit unless you attend class regularly for the whole semester. If you are thinking about changing your course status YOU MUST see me before this date!

**Student Rights and Responsibilities:** Please refer to the Casper College Student Conduct and Judicial Code for information concerning your rights and responsibilities as a Casper College Student.

**Chain of Command:** If you have any problems with this class, you should first contact the instructor to attempt to solve the problem. If you are not satisfied with the solution offered by the instructor, you should then take the matter through the appropriate chain of command starting with the Department Head/Program Director, the Dean, and lastly the Vice President for Academic Affairs.

**Academic Dishonesty:** (Cheating & Plagiarism) Casper College demands intellectual honesty.  Proven plagiarism or any form of dishonesty associated with the academic process can result in the offender failing the course in which the offense was committed or expulsion from school. See the Casper College Student Code of Conduct for more information on this topic.

**Official Means of Communication:**  Casper College faculty and staff will employ the student's assigned Casper College email account as a primary method of communication.  Students are responsible to check their account regularly. This is also, where you will find course evaluation links during course evaluation periods.

**ADA Accommodations Policy:**  If you need academic accommodations because of a disability, please inform me as soon as possible. See me privately after class, or during my office hours. To request academic accommodations, students must first consult with the college's Disability Services Counselor located in the Gateway Building, Room 344, (307) 268-2557, bheuer@caspercollege.edu .  The Disability Services Counselor is responsible for reviewing documentation provided by students requesting accommodations, determining eligibility for accommodations, and helping students request and use appropriate accommodations.

**Calendar or schedule indicating course content:**

## Math 1405
## Pre-Calc Trigonometry

### TENTATIVE SCHEDULE FALL 2015

| Week | Topics |
|------|--------|
| Week 1 | Course Introduction<br>Section 6.1 and 6.2 |
| Week 2 | Section 6.3 |
| Week 3 | Section 6.4 and 6.5 |
| Week 4 | Section 6.6<br>**Chapter 6 Test** |
| Week 5 | Section 7.1 |
| Week 6 | Section 7.2 |
| Week 7 | Section 7.2 and 7.3 |
| Week 8 | Section 7.4 and 7.5 |
| Week 9 | Section 8.1<br>**Chapter 7 Test** |
| Week 10 | Section 8.2 and 8.3 |
| Week 11 | Section 8.3 and 8.4 |
| Week 12 | Section 8.4 and 8.5 |
| Week 13 | Section 8.6 |
| Week 14 | Section 10.1<br>**Chapter 8 Test** |
| Week 15 | Section 10.2 and 10.3 |
| Week 16 | **Chapter 10 Test**<br>Review for Final Exam |
| Final Exam Week | Comprehensive Final Exam--Time to be announced later |