CASPER COLLEGE COURSE SYLLABUS  
MATH 1405-02  
PRE-CALCULUS ALGEBRA & TRIGONOMETRY

Semester/Year: Fall 2015  
Lecture Hours: 3  
Lab Hours: 0  
Credit Hours: 3

Class Time: 11:00-11:50 a.m.  
Days: MWF  
Room: PS 117

Instructor’s Name: Jake McIntyre  
Instructor’s Office: PS 337  
Office Phone: 268-2769  
Email: jjmcintyre@caspercollege.edu

Office Hours: MTWThF from 10-10:50 a.m. and TTh from 11-11:50 a.m. or by appointment. I will also be in the Math Learning Center (PS 104) for an hour a week which I’ll announce in class.

**Statement of Prerequisites:** A “C” or better in MATH 1400; or an ACT score of 26 or better; or a COMPASS placement score in the College Algebra domain of 65-100 or Trigonometry domain of 0-60, within the past year.

**Course Description:** The study of the Unit Circle and right triangle approaches, including identities, trigonometric equations, applications of trigonometric functions, and conics. Designed for mathematics, science and engineering majors preparing for the regular calculus sequence.

**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 function concepts including: evaluating, operations, composition, inverses, and transformations.
2. Solve polynomial, exponential, and logarithmic equations and relate and interpret these solutions.
3. Be able to graph linear, polynomial, exponential, logarithmic, absolute value, square root, piecewise defined, and rational functions.
4. Be able to model and interpret real-world problems using polynomial equations or regressions.
5. Be able to solve systems of equations.
6. Be able to evaluate trigonometric functions.
7. Be able to graph trigonometric functions.
8. Be able to solve right triangles, and oblique triangles using the Law of Sines and Cosines.
9. Be able to solve trigonometric equations and relate and interpret these solutions.
10. Be able to verify trigonometric identities.
11. Be able to apply concepts of trigonometry such as; parametric equations, polar coordinates, vectors, complex number representation, or conic sections.
12. Solve problems using critical thinking and creativity
13. Use quantitative analytical skills to evaluate and process numerical data

**Required Text, Readings, Materials:**
- MyOpenMath Account (MyOpenMath is free!). You MUST sign-up for MyOpenMath, all assignments, grade keeping, and announcements will be done through MyOpenMath! (We will not be using Moodle). On the first day of class you will receive instructions on how to register for this course in MyOpenMath.
Methodology:
Instruction: Lectures will be given in class and recorded. Lecture Notes and Lecture Videos will be posted in MyOpenMath.

Online Work:
Section Homework: For each section covered there will be an online homework assignment. Online homework will be given through MyOpenMath and can be taken any time after they are opened until the due date which will be one week after the corresponding section is covered in class.

Section Practice: Each section will also have a Practice assignment. These homework assignments are done through MyOpenMath and will not be counted towards the grade unless you want to LEVEL UP!

Written Work:
Section Take-Home Quizzes: For each section a paper and pencil quiz will be posted in MyOpenMath which is to be printed out and completed within a week the section is covered in class. The problems in the quizzes will cover that section’s material and usually be more challenging; being applications, requiring of a proof, or some other written justification. These written quizzes are to be done using a pencil and paper and you must show all work to receive proper credit.

In-Class Projects/Labs: There will also be on occasion where we will do a project or lab. Some of these projects/labs will require technology (wolframalpha.com, Mathematica, Sage, Excel, etc.). Projects/Labs will also be due a week after assigned.

Casper College may collect samples of student work demonstrating achievement of the above outcomes. Any personally identifying information will be removed from student work.

Exams: In addition to the assignments and quizzes, there will be five exams. There will be a final comprehensive exam integrated into the Unit 4 Exam. The exams will be announced ahead of time. Poor attendance is not an excuse for missing an exam; it is your responsibility to know the dates of the exams. My policy on taking an exam late: Everyone has one chance to take an exam late, as long as you call and leave a message telling me why you aren't able to take the test on time, and take the exam in the Test Proctoring Center before the graded exams are handed back to the rest of the class. This option is to be used only for illness, emergencies, etc., and I reserve the right to refuse to allow someone to take a test late for non-emergencies, even if it is your first time (not being ready does not qualify as an emergency!). If you know ahead of time that you will be absent on the day of an exam, arrangements can sometimes be made to take the exam early. If you are involved in a sport or club that may cause you to miss class time, please let me know in advance. Information about the Test Proctoring Center will be provided.

Leveling Up: You can level up your grades in two ways. If you complete the online Practice assignments in a section with a 100% score I will add 10 percentage points onto your online section homework score for that homework’s final score. Also if your online homework average is an 80% before a Unit Exam, I will give you a 10 point bonus on that Unit exam.

Evaluation Criteria:

<table>
<thead>
<tr>
<th>Grade distribution</th>
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<tbody>
<tr>
<td>Exams</td>
<td>60%</td>
</tr>
<tr>
<td>Online Work</td>
<td>20%</td>
</tr>
<tr>
<td>Written Work</td>
<td>20%</td>
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Percent needed for a specific grade
A = 90 – 100%
B = 80-89%
C = 79-79%
D = 60-69%
F = below 60%
Class Policies:

Respect for Others: To avoid disrupting the work of others, please plan to arrive at class on time and be prepared to work (i.e., have your pencil, eraser, book, paper, homework and calculator). Additionally, please feel free to offer your opinions and questions to the class, but do not carry on side discussions. Also refrain from leaving and returning the classroom during the allotted class time. Cell phones, pagers, beepers, laptops, etc. should be turned off during class and please refrain from text messaging. In general, students may not engage in an activity which the instructor deems disruptive or counter-productive to the goals of the class. Instructors have the responsibility to remove offending students from the class. Repetition of offensive behavior may result in expulsion from the class.

Attendance: Attendance will be taken for this class. Students who find themselves in the position of having to miss numerous classes may need to withdraw and take the course when regular attendance is possible. If you do not attend class you are still expected to be familiar with the material and be prepared for tests. If you just quit attending and do not officially withdraw, your grade will also be an “F”.

Calculator: You will be allowed to use a scientific (non-graphing) calculator for this course. It must have buttons for trigonometric functions (sin, cos, tan).

Where to Go for Help:
- My office. See the top of the syllabus for contact information and office hours.
- The Math Learning Center (also called the Math Lab) is a place you can go for help. Staff and student workers are there to answer questions, or you can go if you just need a place to do your math homework. The Math Learning Center is located in PS 104. The exact hours it is open will be announced, or you can look on the door. Make sure you get help as soon as you start having trouble!

Dates: Refer to the Casper College Class Schedule for important dates such as holidays and Finals.

Withdraw Deadline: April 14th (I will not give a “W” after the withdrawal deadline!)

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.

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.

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.
Changes: The instructor reserves the right to make any changes if deemed necessary. Information contained in this syllabus, other than the grading, make-up, and attendance policies, may be subject to change with advance notice, as deemed appropriate by the instructor. All changes will be announced in class or emailed to you, so absenteeism is no excuse for not being aware of all changes.

**Tentative Calendar:**
This schedule is tentative and subject to change.

**Unit 1**
1.1 Angles and Radian Measure
1.2 Right Triangle Trigonometry
1.3 Trigonometric Functions; The Unit Circle
1.4 Trigonometric Functions of Any Angle
1.5 Inverse Trigonometric Functions
1.6 Applications of Trigonometric Functions
   Review
   Exam 1

**Unit 2**
2.1 Graphs of Sine and Cosine Functions
2.2 Graphs of Other Trigonometric Functions
2.3 Verifying Trigonometric Identities
2.4 Sum and Difference Formulas
2.5 Double-Angle and Half-Angle Formulas
   Review
   Exam 2

**Unit 3**
3.1 The Law of Sines
3.2 The Law of Cosines
3.3 Area of a Triangle
3.4 Parametric Equations
3.5 Polar Coordinates
   3.6 Vectors
3.7 The Dot Product
   Review
   Exam 3

**Unit 4**
8.1 The Parabola
8.2 The Ellipse
8.3 The Hyperbola
   Review
   Exam 4/Final Exam