Math 1310 Syllabus

COURSE BASICS
Course Number:          MATH 1310: CRN 24571
Course Title:           Trigonometry and Conics
Credit Hours:           3
Term:                   Spring 2023
Meeting and Location:   9:00 – 10:20 TR @LART 205
Prerequisite Courses:   Math 1309 with a grade of at least “C” or placement by testing services

INSTRUCTOR INFORMATION
Instructor:             Dr. Lin Yin
Office Location:        Bell Hall 316
Contact
Instructor email:       ylin4@utep.edu
Course coordinator:     Guillermo Heredia Jr. at gherediajr@utep.edu
Math Department:        mathdept@utep.edu

Emails will be answered between 9:00am -5:00pm Monday to Friday. Emails received outside of these windows will be addressed during the next time period or at my discretion, whichever is sooner. Email: UTEP e-mail is the best way to contact me. I will make every attempt to respond to your e-mail within 24-48 hours of receipt. When e-mailing me, be sure to email from your UTEP student account and please put the course number in the subject line. In the body of your e-mail, clearly state your question. At the end of your e-mail, be sure to put your first and last name.

Office Hours:          TBA

REQUIRED TECHNOLOGY AND MATERIALS

Required:  You must have the Enhanced WebAssign access code. This gives you the full access to both the assignments and the e-book.

Calculator: A graphing calculator is recommended.

Online Components
You are required to have a Webassign account and the Enhanced WebAssign access code. Ensure your UTEP e-mail account is working and that you have consistent access to the internet and a stable web browser. Firefox, Google Chrome, and Safari are the most supported browsers for both Blackboard and WebAssign. Please use a computer and/or laptop to access Webassign to coursework.

Blackboard
Inside of the Blackboard course you will be able to see announcements, grades, and course materials.

WebAssign
WebAssign is an online Course Management System of Cengage, the publisher of our text. You must have reliable internet to take this course. Use the instructions below to access and register for WebAssign using your official UTEP email account. You will have a 14-day free trial so that you may access your coursework immediately.

Instructions to access and register for WebAssign:
To enter you course on WebAssign on January 17, go to www.webassign.net and follow these steps:
1)   Click on “Enter Class Key”
2)   Enter the class key given by your instructor, be sure to include all three sections given: utep 9006 8675
3)   Verify the section number and instructor name, then enter your information. Please make sure that you use your UTEP miners email and that you remember the password that you create.
4) The next time you log in, click on "Log In" and enter your UTEP miners e-mail and the password you created. **You are required to purchase an access code** to log in as soon as possible and before the grace period ends. If you purchased a new book from the UTEP bookstore, the code should have come with it. When entering the code, enter all the words and characters in the boxes appropriately.

**COURSE OVERVIEW**

Course Objectives and Learning Outcomes

Students are expected to have a clear understanding of the ideas of Trigonometry and Conics as a solid foundation for subsequent courses in mathematics and other disciplines as well as for direct application to real life situations. The content of the entire course covers topics from basic mathematics and develop them using practical and theoretical tools, building applications and making a strong support for Calculus classes.

Activities and Assignments:

All work, including homework, quizzes, and exams, will take place through WebAssign. Please use Mozilla Firefox, Google Chrome, or Safari since WebAssign works best with these browsers.

Three exams and a comprehensive final exam will be given. If it benefits you, the score you receive on the final exam will replace your lowest exam score.

Test Out:

If a student receives a grade of "D" or "F", then they may take a comprehensive TestOut exam in June (you will be emailed the exact date). A grade of 70% or better on the TestOut exam will replace a failing course grade with a grade of "C". (A grade change form will be signed and submitted by the coordinator, Mrs. Nada Al-Hanna).

Resources:

You will have course PowerPoint and video access through the Resources section of WebAssign and Blackboard. You can click on resources at the bottom of your WebAssign homepage and you will be able to access the Cengage lecture videos for each section that we cover. In Blackboard, I will provide Worksheets for each section that include notes and practice problems with solutions.

**Tutoring**

The MaRCS tutoring center offers free tutoring for math classes, their website has more information: [https://www.utep.edu/science/math/marcs/](https://www.utep.edu/science/math/marcs/)

There are several useful features in WebAssign designed to give extra help. These include “Watch it” and “Master it” links. These are published and have been enabled for every homework question in which they are available. The Ask Your Teacher feature of WebAssign is the best way to ask questions about your homework as it shows me the entire problem. You are encouraged to use this as your first method of contact whenever you have homework questions.

**Class Activity Settings**

Homework Assignments

All homework will be completed on WebAssign. Each question has 5 attempts. I recommend you get help after the 3rd incorrect submission rather than waiting until you are out of attempts to get help.

Quizzes

After a few sections of homework, you will have a 60-minute timed quiz over that material. The quizzes may contain problems you have not seen previously, but they will be based on the same concepts. Each question has 3 attempts. The password for all quizzes is the word **ready**.
Exams
To review for each exam, an exam review will be available one week prior to the exam date, on WebAssign. The review is a homework score, so be sure to complete the reviews. The exams will be available on WebAssign for a 24-hour period on the date specified by the course calendar and listed below. The exam itself is timed at 120 minutes (two hours) and will have an accessible scientific calculator. **You have two attempts at each problem.**

The password for all exams is the word **ready**.

Retake Exams
A retake exam, for improvement, will appear on WebAssign after the original exam according to the class calendar and listed below. The best grade of the two will be recorded. You do not have to take the retake exam if you are satisfied with your original exam score. The retakes will be available on WebAssign for a 24-hour period on the date specified. The exam itself is timed at 120 minutes (two hours) and will have an accessible scientific calculator. You will have two attempts at each problem.

The password for all retake exams is the word **ready**.

**Timed Assignments:**
For all timed assignments, the clock begins once you open the assignment. This clock will not stop for any reason, not even if you log out. For this reason, it is important to check for any updates on your computer prior to beginning the timed assignments. The due date will change to reflect the time limit for timed assignments once you begin the quiz or exam.

**Course Schedule:**
A comprehensive course schedule is attached as the last pages of this syllabus. Semester highlights are included.

- January 17th
  - First Day of Classes
- February 1st
  - Census Day (Last day to drop without a W)
- March 13-17th
  - Spring Break (No Classes)
- March 30th
  - Drop Day (Last day to drop with a W)
- May 4th
  - Last Day of Class Meetings
- May 8 – 12th
  - Final Exams Week

**Grading Policy**
You will be graded on homework, quizzes, in-class exams, and a final exam. Letter grades are determined according to the following scale:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Score</th>
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<tbody>
<tr>
<td>A</td>
<td>90-100</td>
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<td>B</td>
<td>80-89</td>
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<td>C</td>
<td>70-79</td>
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<td>D</td>
<td>60-69</td>
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<tr>
<td>F</td>
<td>&lt;60</td>
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**Drop Policy**
The Drop Date for this semester is Thursday, March 30, 2023, before 5:00 PM Mountain Time. No drops will be approved after this date or time.

Students who decide to drop the course must process a drop form by sending an email from your miners email account to records@utep.edu by March 30th before 5:00 PM Mountain Time. Please note that the College of Science will remain aligned with the university and will not approve any drop requests after that date.
Make-up Policy

Homework
An automatic homework extension can be requested within 7 days after the due date. To do so, log in to WebAssign and click on My Assignments. Scroll to the assignment you want to extend and click Request Extension. Select “Automatic” and “Accept” the extension. The new due date will be 48 hours from the time the extension is requested. Note, this means that time due will also change. No penalty will be applied to problems submitted after the original due date. You may not view the answer key to a homework assignment prior to requesting the automatic extension for it.

Quiz
An automatic homework extension can be requested within 7 days after the due date for 15% penalty. Quizzes are available before their due date. Please make plans to take the quiz early to avoid the penalty.

If you feel like you have some extenuating circumstance or have an excused absence that will keep you from completing the assignment or quiz in a timely manner, please contact me right away and be prepared to show supporting documentation.

University Sponsored Events:
These include conferences, student athletes’ competitions, etc... The student needs to inform me of any traveling conflicts before they leave and make adequate arrangements to make up the missed material with one week of returning. Failure to do so, will result in the forfeiture of points.

Exams
A make-up exam will only be given in extraordinary circumstances such as, severe illness or death in immediate family, and with appropriate documentation (e.g. doctor’s note).

Alternative Means of Submitting Work in Case of Technical Issues
I strongly suggest that you submit your work with plenty of time to spare if you have a technical issue with the course website, network, and/or your computer. You can email me a proof of the technical issue with either a screen shot of the WebAssign issue or email from your internet provider of an outage in your area.

Attendance Policy:
You are expected to work toward completion of the course assignments daily. Attendance in this course is measured by the completed tasks. Failing to complete tasks is equivalent to being absent. Failure to complete assignments for several weeks may result in you being dropped from the course.

Accommodation Policy:
Students requesting an accommodation based on a disability must register with the UTEP Center for Accommodations and Support Services (CASS). Contact the Center for Accommodations and Support Services at 915-747-5148, or email them at cass@utep.edu, or apply for accommodations online via the CASS portal. No notes taker for this class, because I have all notes on Blackboard.

Military Statement:
If you are a military student with the potential of being called to military service or training during the semester, you are encouraged to contact me as soon as you receive your orders.

Please contact me immediately if you fall ill during the semester so that we can work together to formulate a strategy to help you get caught up as soon as you are physically able.
<table>
<thead>
<tr>
<th>WK</th>
<th>Dates</th>
<th>Sections Covered</th>
<th>Assignments Due</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1/16-1/22</td>
<td>Getting Started with WebAssign</td>
<td>01/19 at 11:59pm MST</td>
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<tr>
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<td>4.1 Radian and Degree Measure</td>
<td>01/22 at 11:59pm MST</td>
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<td>4.2 Trig Functions: The unit Circle</td>
<td>01/22 at 11:59pm MST</td>
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<td>1/23-1/29</td>
<td>4.3 Right Triangle Trigonometry</td>
<td>01/26 at 11:59pm MST</td>
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<td>4.4 Trigonometric Functions of Any Angle</td>
<td>01/29 at 11:59pm MST</td>
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<td>QUIZ 1 (4.1-4.4)</td>
<td>01/29 at 11:59pm MST</td>
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<td>3</td>
<td>1/30-2/05</td>
<td>4.5 Graphs of Sine and Cosine</td>
<td>02/02 at 11:59pm MST</td>
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<td>4.6 Graphs of Other Trig functions</td>
<td>02/04 at 11:59pm MST</td>
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<td>4.7 Inverse Trigonometric functions</td>
<td>02/05 at 11:59pm MST</td>
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<tr>
<td>4</td>
<td>2/06-2/12</td>
<td>4.8 Applications and Models</td>
<td>02/09 at 11:59pm MST</td>
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<td>5.1 Using fundamental Identities</td>
<td>02/11 at 11:59pm MST</td>
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<td>QUIZ 2 (4.7-4.8)</td>
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<td>2/13-2/19</td>
<td>5.2 Verifying Trigonometric Identities</td>
<td>02/16 at 11:59pm MST</td>
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<td>QUIZ 3 (5.1-5.2)</td>
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<td>5.3 Solving Trigonometric Equations</td>
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<td>QUIZ 4 (5.3)</td>
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<td>2/20-2/26</td>
<td>5.4 Sum and Difference Formulas</td>
<td>02/23 at 11:59pm MST</td>
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<td>5.5 Multiple Angles/Product-To-Sum Formulas</td>
<td>02/26 at 11:59pm MST</td>
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<td>QUIZ 5 (5.4-5.5)</td>
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<td>2/27-3/05</td>
<td>Exam 1 Review</td>
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<td>EXAM 1 Due on 03/02 at 11:59pm MST</td>
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<td>6.1 Law of Sines</td>
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<td>6.2 Law of Cosines</td>
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<td>QUIZ 6 (6.1-6.2)</td>
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<td>Exam 1 Retake Due 03/10 at 11:59pm MST</td>
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<td>6.3 Vectors in the Plane</td>
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<td>6.4 Vectors and Dot Products</td>
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<td>QUIZ 7 (6.3-6.4)</td>
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<td>3/20-3/26</td>
<td>6.5 The Complex Plane</td>
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<td>6.6 Trigonometric Form of a Complex Number</td>
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<td>QUIZ 8 (6.5-6.6)</td>
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<td>3/27-4/02</td>
<td>Exam 2 Review</td>
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<td>Exam 2 Due on 03/28 at 11:59pm MDT</td>
<td>03/28 at 11:59pm MDT</td>
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<td>11</td>
<td>04/03-4/09</td>
<td>10.2 Introduction to Conics</td>
<td>04/06 at 11:59pm MDT</td>
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<td>QUIZ 9 (10.2)</td>
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<td>4/10-4/16</td>
<td>10.3 Ellipses</td>
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<td>10.4 Hyperbola</td>
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<td>QUIZ 10 (10.3-10.4)</td>
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<td>10.5 Rotation of Conics</td>
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<td>10.6 Parametric Equations</td>
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<td>QUIZ 11 (10.5-10.6)</td>
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<td>4/24-4/30</td>
<td>10.7 Polar Coordinates</td>
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<td>10.8 Graphs of Polar Equations</td>
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<td>15</td>
<td>05/01-5/07</td>
<td>QUIZ 12 (10.7-10.8)</td>
<td>05/01 at 11:59pm MDT</td>
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<td>Exam 3 Review</td>
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<td>EXAM 3 Due on 05/4 at 11:59pm MDT</td>
<td>05/04 at 11:59pm MDT</td>
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<td>16</td>
<td>5/08-5/12</td>
<td>Exam 3 Retake</td>
<td>05/09 at 11:59pm MDT</td>
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</table>
Exponents and Radicals

\[ a^0 = 1, \quad a \neq 0 \]
\[ \frac{a^x}{a^y} = a^{x-y} \]
\[ (a^x)^y = a^{xy} \]
\[ \left( \frac{a}{b} \right)^x = \frac{a^x}{b^x} \]
\[ \sqrt[n]{a^m} = a^{m/n} = (\sqrt[n]{a})^m \]
\[ a^{-x} = \frac{1}{a^x} \]
\[ (ab)^x = a^x b^x \]
\[ \sqrt[n]{a} = a^{1/n} \]
\[ \sqrt[n]{\left( \frac{a}{b} \right)} = \frac{\sqrt[n]{a}}{\sqrt[n]{b}} \]

Quadratic Formula

If \( p(x) = ax^2 + bx + c, \ a \neq 0 \) and \( b^2 - 4ac \geq 0 \), then the real zeros of \( p \) are \( x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a} \).

Special Factors

\[ x^2 - a^2 = (x-a)(x+a) \]
\[ x^3 - a^3 = (x-a)(x^2 + ax + a^2) \]
\[ x^3 + a^3 = (x+a)(x^2 - ax + a^2) \]
\[ x^4 - a^4 = (x-a)(x+a)(x^2 + a^2) \]
\[ x^4 + a^4 = (x^2 + \sqrt{2}a)(x^2 - \sqrt{2}a + a^2) \]
\[ x^n - a^n = (x-a)(x^{n-1} + ax^{n-2} + \cdots + a^{n-1}) \]
\[ x^n + a^n = (x+a)(x^{n-1} - ax^{n-2} + \cdots + a^{n-1}), \text{ for } x^2 + 1 = (x+1)(x^2 - x + 1) \]
\[ n \text{ odd} \]
\[ x^{2n} - a^{2n} = (x^n - a^n)(x^n + a^n) \]

Binomial Theorem

\[(x + a)^2 = x^2 + 2ax + a^2\]
\[(x - a)^2 = x^2 - 2ax + a^2\]
\[(x + a)^3 = x^3 + 3ax^2 + 3a^2x + a^3\]
\[(x - a)^3 = x^3 - 3ax^2 + 3a^2x - a^3\]
\[(x + a)^4 = x^4 + 4ax^3 + 6a^2x^2 + 4a^3x + a^4\]
\[(x - a)^4 = x^4 - 4ax^3 + 6a^2x^2 - 4a^3x + a^4\]
\[(x + a)^n = x^n + na^{n-1} + \frac{n(n-1)}{2!}a^2x^{n-2} + \cdots + na^{n-1}x + a^n\]
\[(x - a)^n = x^n - na^{n-1} - \frac{n(n-1)}{2!}a^2x^{n-2} - \cdots - na^{n-1}x + a^n\]

Examples

\[ (x + 3)^2 = x^2 + 6x + 9 \]
\[ (x^2 - 5)^2 = x^4 - 10x^2 + 25 \]
\[ (x + 2)^3 = x^3 + 6x^2 + 12x + 8 \]
\[ (x - 1)^3 = x^3 - 3x^2 + 3x - 1 \]
\[ (x + \sqrt{2})^4 = x^4 + 4\sqrt{2}x^3 + 12x^2 + 8\sqrt{2}x \]
\[ (x - 4)^4 = x^4 - 16x^3 + 96x^2 - 256x + 256 \]
\[ (x + 1)^5 = x^5 + 5x^4 + 10x^3 + 10x^2 + 5x + 1 \]
\[ (x - 1)^5 = x^5 - 5x^4 + 10x^3 - 10x^2 + 5x - 1 \]