Math 1316.030 Spring 2022
Trigonometry with Analytic G

Syllabus Statement:

PDFs posted in Blackboard for this course are intended for print purposes only. If you use assistive technology to complete your coursework, an alternative format may better meet your needs. Please contact your instructor to obtain an alternative format and to discuss appropriate software or other accommodations for the best student experience.

Instructor: Juan Montemayor

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Phone: (325)486-5438
Office: MCS 219F

Office Hours:
MF: 10-11 AM, 2:00-3:30 PM W: 8-9:00 AM, 2:00-3:00PM TTh: 8:45-9:30 AM 2:00-3:30 PM

Course Information

Course Description – see course content at end of syllabus

A review of basic algebraic concepts such as factoring polynomials and solving equations. Introduction to trigonometric ideas such as angles, definition of trigonometric functions, inverse functions, graphs of various functions, identities, equations of trig. functions, polar coordinates, parametric and polar equations and their graphs, and some conic graphs and equations. Additional topics may be covered as needed.
See course content for additional description of topics.

Prerequisite Skills

You should have basic arithmetic skills that allow you to perform calculations with and without the use of a calculator. You should be able to follow written and oral/verbal instructions. Some basic use of computer technology. You should have above average knowledge of basic algebra.

Other Prerequisite Skills

Be able to access Internet websites, use ASU Library resources as needed, and have some proficiency with Microsoft Word and the ability, curiosity, and desire to learn more. Be able to use Blackboard and able to learn how to submit documents in PDF format. Although we do not make as much use of the calculator as you would like, make sure you are able to use non-graphing calculators. If you do happen to have graphing calculators – use them to check your homework problems. Answers should be non-calculator based. Not allowed on quizzes or exams.
Be able to follow directions such as how and where the math lab is located – same for your professor's office (all professors). Understand the **instructor's definition of studying** – not the day before an exam, but studying throughout the semester.

Student Learning Outcomes and Course Content

1. **The students will demonstrate factual knowledge including the mathematical notation and terminology used in this course.** Students will read, interpret, and use the vocabulary, symbolism, and basic definitions used in trigonometry including definitions of the six trigonometric functions; types of angle measure and notation; equations of conic sections; representing equations in polar coordinates; and the definition of vectors.

2. **The students will describe the fundamental principles including the laws and theorems arising from the concepts covered in this course.** Students will identify and apply the laws and formulas that result directly from the definitions; for example, the fundamental identities, properties of angles and triangles, characteristics of the trigonometric functions, inverse trigonometric functions, polar equations (including graphs), and formulas for converting between polar and rectangular coordinates.

3. **Students will apply course material along with techniques and procedures covered in this course to solve problems.** Students will use the facts, formulas, and techniques learned in this course to prove identities and solve trigonometric equations; and solve various types of triangle problems, distance and navigation problems, and linear and angular velocity problems.

4. **The Student will develop specific skills, competencies, and thought processes sufficient to support further study or work in this field or related fields.** Students will acquire a level of proficiency in the fundamental concepts and applications necessary for further study in academic areas requiring trigonometry as a prerequisite, or for work in occupational fields requiring a background in trigonometry. These fields might include education, business, finance, marketing, computer science, physical sciences, and engineering, as well as mathematics.

Course Content

Textbook: Is not required for class instructions but feel free to use the following text as a guide and for additional examples. My notes will normally be sufficient.

Trigonometry: A Unit Circle Approach, Tenth Edition, by Sullivan. The following chapters including the particular sections listed are covered. (See textbook "Contents.")

1. **Graphs and Functions.** Graphs of Equations in Two Variables; Circles; Functions and Their Graphs; Properties of Functions; Library of Functions; Piecewise-defined Functions; Graphing Techniques: Transformations; One-to-one Functions; Inverse Functions

2. **Trigonometric Functions.** Angles and Their Measure; Trigonometric Functions: Unit Circle Approach; Properties of the Trigonometric Functions; Graphs of the Sine and Cosine Functions; Graphs of the Tangent, Cotangent, Cosecant, and Secant Functions; Phase Shift; Sinusoidal Curve Fitting

3. **Analytic Trigonometry.** The Inverse Sine, Cosine, and Tangent Functions; The Inverse Trigonometric Functions (continued); Trigonometric Equations; Trigonometric Identities; Sum and Difference Formulas; Double-angle and Half-angle Formulas; Product-to-Sum and Sum-to-Product Formulas

4. **Applications of Trigonometric Functions.** Right Triangle Trigonometry; Applications; Law of Sines; Law of Cosines; Area of a Triangle

5. **Polar Coordinates; Vectors.** Polar Coordinates; Polar Equations and Graphs; Vectors; The Dot Product; Vectors in Space; The Cross Product

6. **Analytic Geometry.** The Parabola; The Ellipse; The Hyperbola; Polar Equations of Conics; Plane Curves and Parametric Equations

Course Delivery

This is a face-to-face course with online components. Students are expected to have access to Blackboard.[1] From time to time, the class lecture – including completed notes – may be recorded and published to make available to those unable to attend class. No guarantee of this happening or of the quality of the recording. Not being in class will be considered being absent from class.

Please refer to this Health and Safety web page2 for updated information about campus guidelines as they relate to the COVID-19 pandemic.

Required Texts and Materials – Textbook is not required

My notes will be sufficient for both in class notes and homework assignments.
There are cases in which you will be required to print assignments (quizzes – tests – homework).
You may print both notes and assignments as needed.
If you feel that you need additional help, you may find it in the following textbook or some other internet site of your choosing. *Trigonometry: A Unit Circle Approach*, Tenth Edition, by Sullivan. The following chapters including the particular sections listed are covered. (See textbook "Contents.")
Not needed but feel free to buy for additional resources.

Technology Requirements

Answers must always be non-calculator based but you can use calculators for basic arithmetic operations and to check your homework – not to complete your homework. I normally do not allow laptops or phones in the classroom. Due to our current and possible future situation, I am allowing you to bring your laptops or phones for class purposes – not for social reasons. You may have to submit documents back to me (quizzes and tests) and that will require use of your phone. There may be a learning curve so do not panic (ASU IT services are available at 325-942-2911. Do not miss deadlines. All submitted documents must be submitted on time and as PDF documents. I am not using Top Hat but if you have other classes that use it and you have the knowledge to use it, then feel free to use it in this class.

Communication

We do not keep the same working hours. Keep that in mind when you send an email at 2:00 AM. The instructor will try to respond to emails and/or telephone messages within 24 hours during working hours Monday through Friday. In the event you do not hear from me, please send me a second and even a third message. I will not be ignoring you but I may be swamped with information – information overload and your email may have gotten lost in the pile. Weekend messages may not be returned until Monday.

Written communication via email: All private communication will be done exclusively through your ASU email address. Your other emails will be of no use for course work. Check frequently for announcements and policy changes – like daily. In your emails to faculty, include the course name and section number in your subject line.

Virtual communication: Office hours and/or advising will be done in person or with the assistance of the telephone and Blackboard Collaborate.
Remember that you are sharing blackboard space with the entire class. Keep it official – as much as possible. Work group is encouraged – feel free to do join in, work together. Quizzes and Exams are to be completed as individual work. Exams must be taken in class. You will not be allowed to take exams online. See instructor for additional information.

Grading

Evaluation and Grades

Course grades will be determined as indicated in the table below.

Assessment	Percent of Total Grade
Homework 13 assignments – will drop lowest 3 No late work will be accepted – late papers will not be graded and will be given a grade of zero	12 %
Quizzes 13 assignments – will drop lowest 3 Must be in class to take quiz	8 %
Exams Four regular exams plus a final exam No make – ups on missed exams	80 %
Total	100%

Grading System

Course grades will be dependent upon completing course requirements and meeting the student learning outcomes.

The following grading scale is in use for this course:

A = 90.00-100 points B = 80.00-89.99 points
C = 70.00-79.99 points D = 60.00-69.99 points
F = 0-59.99 points (Grades are not rounded up)
Any other grade point average will be left up to instructor. No grade will be curved up.

Assignment and Activity Descriptions

All assignments (Exams, quizzes, and homework) will be turned in as PDF documents. Scan the document (this does not mean to take a picture – a picture may be part of the process – you are scanning), save the document in PDF format on your computer – or however your phone stores it, submit through blackboard as a PDF document (no other way). No late work will be accepted. There is no reason to miss an assignment and I will drop enough homework assignments and quizzes to account for missing one or two of them. In the event that you have a good reason and the instructor accepts your reason for missing one single exam, the final exam may replace the grade of missed exam.

General Policies Related to This Course

All students are required to follow the policies and procedures presented in these documents:

- Angelo State University Student Handbook[3]
- Angelo State University Catalog[4]

Academic Integrity

Students are expected to maintain complete honesty and integrity in all work. Any student found guilty of any form of dishonesty in academic work is subject of disciplinary action and possible expulsion from ASU.

The College of Science and Engineering adheres to the university's Statement of Academic Integrity.[5]

Accommodations for Students with Disabilities

ASU is committed to the principle that no qualified individual with a disability shall, on the basis of disability, be excluded from participation in or be denied the benefits of the services, programs or activities of the university, or be subjected to discrimination by the university, as provided by the Americans with Disabilities Act of 1990 (ADA), the Americans with Disabilities Act Amendments of 2008 (ADAAA) and subsequent legislation.

Student Disability Services is located in the Office of Student Affairs, and is the designated campus department charged with the responsibility of reviewing and authorizing requests for reasonable accommodations based on a disability. It is the student's responsibility to initiate such a request by contacting an employee of the Office of Student Affairs, in the Houston Harte University Center, Room 112, or contacting the department via email at ADA@angelo.edu. For more information about the application process and requirements, visit the Student Disability Services website.[6] The employee charged with the responsibility of reviewing and authorizing accommodation requests is:

Dallas Swafford
Director of Student Disability Services
Office of Student Affairs
325-942-2047
dallas.swafford@angelo.edu
Houston Harte University Center, Room 112

Incomplete Grade Policy

It is policy that incomplete grades be reserved for student illness or personal misfortune. Please contact faculty if you have serious illness or a personal misfortune that would keep you from completing course work. Documentation may be required. See ASU Operating Policy 10.11 Grading Procedures[7] for more information.

Plagiarism

Plagiarism is a serious topic covered in ASU's Academic Integrity policy8 in the Student Handbook. Plagiarism is the action or practice of taking someone else's work, idea, etc., and passing it off as one's own. Plagiarism is literary theft.

In your discussions and/or your papers, it is unacceptable to copy word-for-word without quotation marks and the source of the quotation. With math assignments, it is possible that group work may generate similar work. Exams should be individual work. It is expected that you will summarize or paraphrase ideas giving appropriate credit to the source both in the body of your paper and the reference list. This statement does not affect math work as much as work in other areas of study.

Papers are subject to be evaluated for originality. Resources to help you understand this policy better are available at the ASU Writing Center.9

Student Absence for Observance of Religious Holy Days

A student who intends to observe a religious holy day should make that intention known in writing to the instructor prior to the absence. See ASU Operating Policy 10.19 Student Absence for Observance of Religious Holy Day[10] for more information.

Title IX at Angelo State University

Angelo State University is committed to providing and strengthening an educational, working, and living environment where students, faculty, staff, and visitors are free from sex discrimination of any kind. In accordance with Title VII, Title IX, the Violence Against Women Act (VAWA), the Campus Sexual Violence Elimination Act (SaVE), and other federal and state laws, the University prohibits discrimination based on sex, which includes pregnancy, and other types of Sexual Misconduct. Sexual Misconduct is a broad term encompassing all forms of gender-based harassment or discrimination and unwelcome behavior of a sexual nature. The term includes sexual harassment, nonconsensual sexual contact, nonconsensual sexual intercourse, sexual assault, sexual exploitation, stalking, public indecency, interpersonal violence (domestic violence or dating violence), sexual violence, and any other misconduct based on sex.

You are encouraged to report any incidents involving sexual misconduct to the Office of Title IX Compliance and the Director of Title IX Compliance/Title IX Coordinator, Michelle Miller, J.D. You may submit reports in the following manner:

Online: Incident Reporting Form[11]
Face to Face: Mayer Administration Building, Room 210
Phone: 325-942-2022
Email: michelle.miller@angelo.edu

Note, as a faculty member at Angelo State, I am a mandatory reporter and must report incidents involving sexual misconduct to the Title IX Coordinator. Should you wish to speak to someone in confidence about an issue, you may contact the University Counseling Center (325-942-2371), the 24-Hour Crisis Helpline (325-486-6345), or the University Health Clinic (325-942-2171).

For more information about resources related to sexual misconduct, Title IX, or Angelo State's policy please visit the Title IX website.[12]

Information About COVID-19

Please refer to ASU's COVID-19 (Coronavirus) Updates[13] web page for current information about campus guidelines and safety standards as they relate to the COVID-19 pandemic.

Modifications to the Syllabus

This syllabus, including grade evaluation and course schedule, is subject to modification. In particular, the COVID-19 pandemic may require significant changes in course delivery and content on potentially short notice.

Course Schedule to be completed as the course progresses

Date	Topic or Module	Activities	Homework	Homework Due Date

[1] https://blackboard.angelo.edu/
[2] https://www.angelo.edu/covid-19/returning-to-campus/health-and-safety.php
[3] https://www.angelo.edu/student-handbook/
[4] https://www.angelo.edu/catalogs/
[5] https://www.angelo.edu/student-handbook/community-policies/academic-integrity.php
[6] https://www.angelo.edu/services/disability-services/
[7] https://www.angelo.edu/content/files/14197-op-1011-grading-procedures
[8] https://www.angelo.edu/student-handbook/community-policies/academic-integrity.php
[9] https://www.angelo.edu/dept/writing_center/academic_honesty.php
[10] https://www.angelo.edu/content/files/14206-op-1019-student-absence-for-observance-of
[11] https://www.angelo.edu/incident-form
[12] https://www.angelo.edu/title-ix
[13] https://www.angelo.edu/covid-19/

https://www.angelo.edu/covid-19/ of Academic Integrity is now on Page 97 in the Student Handbook, so use this link to get students to the right page: https://www.angelo.edu/live/files/27603-student-handbook-2020-21#page=97

- The Academic Affairs office has started using new software to maintain all the university operating policies and procedures. Consequently, these policy links have changed:
    - OP 10.11 Grading procedures: https://angelo.policystat.com/policy/10659448/latest/

      OP 10.19 Student Absence for Observance of Religious Holy Day: https://angelo.policystat.com/policy/10659368/latest/