

MATHEMATICS
Student Learning Outcome Alignment Form

Course Prefix/Number: MATH 1316

Course Title: Plane Trigonometry

Core Objective	Course SLO	General Learning Activities	Assessment
Critical Thinking Skills	Use the concepts of trigonometry to solve applications	Students will collect data and use trig functions to create a mathematical model that represents the data. Students will then test their models to verify the validity of the model they created.	<p>The assignment will be to choose and gather two sets of data and construct a scatter plot for each data set then use knowledge of trigonometric functions to create an equation that models each set of data. Students will test their models to evaluate whether their models are valid. They will then analyze their results and make a comparison of the two sets of data.</p> <p>This will be assessed using the Critical Thinking Skills</p>
Communication Skills	Use the concepts of trigonometry to solve applications	Students will collect data and use trig functions to create a mathematical model that represents the data. Students will then test their models to verify the validity of the model they created.	<p>The assignment will be to communicate in a written report and class presentation the results of their data collection, analysis and comparison. The report and presentation will include a scatterplot of the data, the mathematical model/equation that represents the data, and a comparison of the data.</p> <p>The Communication Skills rubric will be used to assess communication skills.</p>

<p>Empirical & Quantitative Skills</p>	<p>Use the concepts of trigonometry to solve applications</p>	<p>Students will collect data and use trig functions to create a mathematical model that represents the data. Students will then test their models to verify the validity of the model they created.</p>	<p>The assignment will be to use graphing techniques to plot the data on a scatter plot then apply knowledge of trigonometric functions to create a mathematical model/equation that represents the data. Students will then test their model to check its validity.</p> <p>The Empirical and Quantitative Skills rubric will be used to assess empirical and quantitative skills.</p>
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CRITICAL THINKING VALUE RUBRIC

Adapted for Texarkana College from the AAC&U Critical Thinking VALUE Rubric

Definition

Critical thinking is a habit of mind characterized by the comprehensive exploration of issues, ideas, artifacts, and events before accepting or formulating an opinion or conclusion.

	Does Not Meet Any Expectations 1	Meets Few Expectations 2	Meets Expectations 3	Exceeds Some Expectations 4	Exceeds All Expectations 5
Explanation of Issues	Did not state issue.	Issue is stated without clarification or description.	Issue is stated but description leaves some terms undefined, ambiguities unexplored, boundaries undetermined and/or backgrounds unknown.	Issue is stated, described, and clarified so that understanding is not seriously impeded by omissions.	Issue is stated clearly and described comprehensively, delivering all relevant information necessary for full understanding.
Evidence	Does not identify the basic components of an issue	Information is taken from sources without any interpretation. Viewpoints of experts are taken as fact, without question	Information is taken from sources with some interpretation but not enough to develop a coherent analysis or synthesis.	Information is taken from sources with enough interpretation to develop a coherent analysis or synthesis.	Information is taken from sources with enough interpretation to develop a comprehensive analysis or synthesis.
Influence of Context and Assumptions	Did not show awareness of the issue.	Show an emerging awareness of present assumptions.	Questions some assumptions. Identifies relevant information when presenting a position.	Identifies own and others' assumptions and several relevant contexts when presenting a position.	Thoroughly analyzes own and others' assumptions and carefully evaluates the relevance of contexts when presenting a position.
Student's Position	Takes no position on issue	Specific position is stated but is simplistic and obvious.	Specific position acknowledges different sides of an issue.	Specific position takes into account the complexities of an issue. Others' points of view are acknowledged within position.	Specific position is imaginative. Limits of position acknowledged. Other points of view are synthesized.

Conclusions and Related Outcomes	Does not use previously learned information in new situations.	Conclusion is inconsistently tied to some of the information discussed; related outcomes are oversimplified.	Conclusion is logically tied to information; some related outcomes are identified.	Conclusion is logically tied to a range of information, including opposing viewpoints; related outcomes are identified clearly	Conclusions and related outcomes are logical and reflect student's informed evaluation and ability to place evidence and perspectives discussed in priority order
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Communication RUBRIC

Adapted for Texarkana College from the AAC&U Critical Thinking VALUE Rubric and Making Learning Real

Definition

Written communication is the development and expression of ideas in writing.

Oral Communication is a prepared, purposeful presentation designed to increase knowledge, to foster understanding, or to promote change in the listeners' attitudes, values, beliefs, or behaviors.

Visual Communication is the use of images to persuade, entertain, inform, and enlighten an observing audience of products, ideas, and messages.

	Does Not Meet Any Expectations 1	Meets Few Expectations 2	Meets Expectations 3	Exceeds Some Expectations 4	Exceeds All Expectations 5
Quality of Information and Organization	Presentation lacks main points and related details. Information lacks connection to the presentation topic. Information is not organized.	Main points are not clear and lack significant detail. Some information is linked to the presentation topic. Information is loosely organized.	Main points are somewhat clear but could use more detail. Most information is linked to the presentation topic. Information is organized.	Main points are clear and detailed. Information is linked to presentation topic. Information is well organized.	Main points are very clear and very detailed. Information is directly linked to presentation topic. Information is very organized.
Nonverbal Communication	Speaker appears very uneasy and insecure. Speaker faces away from the audience or makes no eye contact. Speaker appears disengaged from the audience. Speaker uses few body motions or gestures or has gestures or movements that distract the audience.	Speaker appears uneasy and somewhat insecure. Speaker rarely faces the audience or makes eye contact. Speaker rarely appears to be engaging with the audience. Speaker uses few body motions or has gestures or movements that distract the audience..	Speaker appears generally at ease and confident. Speaker sometimes faces the audience and maintains eye contact. Speaker sometimes appears to be engaging with the audience. Speaker's body motions and gestures neither support nor detract from presentation.	Speaker appears fairly comfortable and confident. Speaker generally faces the audience and maintains good eye contact. Speaker generally appears to be engaging with the audience. Speaker uses body motions and gestures well.	Speaker appears very comfortable and confident. Speaker consistently faces the audience and maintains good eye contact. Speaker consistently appears to be engaging with the audience. Speaker uses body motions and gestures very effectively.
Quality of Verbal Communication	Speaker's voice is consistently too weak or too strong. Speaker fails to use inflections to emphasize key points and create interest or often uses inflections	Speaker's voice is frequently too weak or too strong. Speaker rarely uses inflections to emphasize key points and create interest or speaker sometimes uses	Speaker's voice is generally steady strong and clear. Speaker sometimes uses inflections to emphasize key points and create interest.	Speaker's voice is steady, strong, and clear. Speaker often uses inflections to emphasize key points and create interest. Speaker's	Speaker's voice is very confident, steady, strong, and clear. Speaker consistently uses inflections to emphasize key points or to create interest. Speaker's

	inappropriately. Speaker's talking paces is consistently too slow or too fast.	inflections inappropriately. Speaker's talking pace is often too slow or too fast.	Speaker's talking pace is appropriate.	talking pace is mostly appropriate.	talking pace is consistently appropriate.
Visual Tools	Visual aids demonstrate no creativity or clarity and are often difficult to read. Presentation is weakened by the visual tools.	Visual aids have limited creativity or clarity or are sometimes difficult to read. Presentation is not enhanced by the visual tools.	Visual aids are reasonably creative, clear, and easy to read. Presentation is sometimes enhanced by the visual tools.	Visual aids are usually creative, clear, and easy to read. Presentation is often enhanced by the visual tools.	Visual aids are very creative, clear, and easy to read. Presentation is consistently enhanced by the visual tools.
Appropriate Use of Vocabulary	Few or no terms are included in the presentation. May or may not be used appropriately. Lacks context.	Several terms are included in the presentation. May or may not be used appropriately. May lack context.	Most terms are included in the presentation. Generally used appropriately. Generally used in appropriate context.	All terms are included in the presentation. Used effectively. Used in context.	All terms are included in the presentation. Used in unique and creative ways. Used in context
Precision and Detail in Documents Produced	Written documents have numerous errors and lack detail. Little care taken in the production.	Documents may have some errors and show some detail. Some care has been taken in production.	Evident that written documents are correct and show a general attention to detail and accuracy. General care has been taken in production.	Clearly evident that written documents are correct, detailed and accurate. Care has been taken in production.	Documents are clear, well-constructed, accurate, and show attention to detail. Extra care has been taken in the production of written documents.
Overall Presentational Effectiveness	The presentation was weak and not effective.	The presentation was average and somewhat effective.	The presentation was good and effective.	The presentation was very good and effective.	The presentation was exceptional and extremely effective.

Empirical and Quantitative Skills RUBRIC

Adapted for Texarkana College from the AAC&U Critical Thinking VALUE Rubric

Definition

The ability to formulate an inquiry that is scientific or mathematical in nature, and then manipulate and analyze numerical data and/or follow an investigative process using empirical and/or quantitative reasoning to satisfy the inquiry and create informed conclusions.

	Does Not Meet Any Expectations 1	Meets Few Expectations 2	Meets Expectations 3	Exceeds Some Expectations 4	Exceeds All Expectations 5
Identification	The purpose, components, and variables of the investigation/project are not identified.	The purpose, components, and variables of the investigation/project are somewhat identified.	The purpose, components, and variables of the investigation/project are mostly identified	The purpose, components, and variables of the investigation/project are clearly identified..	The purpose, components, and variables of the investigation/project are clearly identified.
Assimilation	The information that is required for an analysis of all investigative components is not evident. If applicable, values are incorrectly translated into variables and no necessary formulas are present.	The information that is required for an analysis of all investigative components is somewhat evident. If applicable, values are incorrectly translated into variables and some necessary formulas are present.	The information that is required for an analysis of all investigative components is mostly evident. If applicable, some values are correctly translated into variables and most necessary formulas are present.	The information that is required for an analysis of all investigative components is evident. If applicable, most values are correctly translated into variables and all necessary formulas are present.	The information that is required for an analysis of all investigative components is clearly evident. If applicable, values are correctly translated into variables and all necessary formulas are present.
Analysis	Most investigative or quantitative components are not scrutinized. The steps followed are illogical and/or irrelevant to the desired result. The proper tools/ technology were not used and/or integrated	Some investigative or quantitative components are scrutinized. Some steps followed are somewhat logical and relevant to the desired result. The proper tools/ technology were	All investigative or quantitative components are somewhat scrutinized. The steps followed are mostly logical and relevant to the desired result. The proper tools/ technology were mostly	All investigative or quantitative components are scrutinized. The steps followed are logical and relevant to the desired result. The proper tools/ technology were used and mostly integrated into the	All investigative or quantitative components are methodically scrutinized. The steps followed are logical and relevant to the desired result. The proper tools/ technology were used and

	into the final product. Any notation is not consistent and not defined.	somewhat used and not integrated into the final product. Any notation is somewhat consistent but not defined.	used and somewhat integrated into the final product. Any notation is mostly consistent and defined.	final product. Any notation is consistent and well defined.	well integrated into the final product. Any notation is consistent and well defined.
Presentation	A summary of the analysis is either inadequately presented or not presented at all. The presented information is mostly incorrect, and/or of poor quality, and/or the terminology/figures are inaccurate and/or hard to understand. Few or no visual representations of evidence are acceptably scaled/ represent the analysis findings.	A partial summary of the analysis is presented. The presented information is somewhat correct, of adequate quality, and the terminology/figures are somewhat accurate and relatively easy to understand. Some visual representations of evidence are acceptably scaled and represent the analysis findings.	A summary of the analysis is presented. The presented information is mostly correct, of good quality, and the terminology/figures are mostly accurate and easy to understand. Most visual representations of evidence are acceptably scaled and represent the analysis findings.	A good summary of the analysis is presented. The presented information is correct, of good quality, and the terminology/figures are accurate and easy to understand. Most visual representations of evidence are well-scaled and/or well represent the analysis findings..	A concise summary of the analysis is presented. The presented information is correct, of high quality, and the terminology/figures are accurate and easy to understand. All visual representations of evidence are well-scaled and well represent the analysis findings.
Application	The integration does not include all steps of the investigation and does not lead to an accurate, nor complete conclusion that relates to the initial investigative argument.	The integration of most steps of the investigation lead to a somewhat accurate, partially complete conclusion that is relative to the initial investigative statement.	The coherent integration of most steps of the investigation lead to an accurate, mostly complete, acceptable conclusion that is relative to the initial investigative statement.	The coherent integration of all steps of the investigation lead to an accurate, mostly complete, relevant conclusion that is relative to the initial investigative statement.	The coherent integration of all steps of the investigation lead to an accurate, complete, relevant conclusion that is relative to the initial investigative statement.



Syllabus: Trigonometry

Course Number: MATH 1316

Semester & Year: Spring 2013

Instructor Information

Name: Kalie Schirmer

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Textbook Information

Trigonometry 9th Edition by Lial, Hornsby and Schneider, ISBN-13: 978-0-321-52885-8

MyMathLab (MML) by Pearson (this is an access code that can be purchased in the TC bookstore or online through the MyMathLab website)

*Textbooks purchased from the TC bookstore are packaged with a [MyMathLab](#) access code. If you purchase your book from another source you will need to purchase and access code separately.

A Graphing Calculator (preferably a TI-84)

Trigonometry Practice Final Exam (available in the TC bookstore)

Student Learning Outcomes for the Course

Upon successful completion of this course, students will:

1. Compute the values of trigonometric function for key angles in all quadrants of the unit circle measured in both degrees and radians.
2. Graph trigonometric functions and their transformations.
3. Prove trigonometric identities.

4. Solve trigonometric equations.
5. Solve right and oblique triangles.
6. Use the concepts of trigonometry to solve applications.

Student Requirements for Completion of the Course and Due Dates

Homework assignments are to be completed using MyMathLab (MML). You will receive full credit for assignments turned in on or before the date of the chapter test for that material. You will not receive credit for any homework assignments completed after the test date. At the end of the semester your lowest 3 homework grades will be dropped and will not count towards your homework average.

Tests – There will be a total of 6 chapter tests as follows:

Test 1: Chapter 1

Test 2: Chapters 2 & 7.1-7.3

Test 3: Chapter 3

Test 4: Chapter 4

Test 5: Chapter 5

Test 6: Chapter 6

Final Exam – There will be a multiple choice comprehensive final exam. You will need to bring your own scantron to the final exam. Practice final exams are available for purchase in the bookstore.

Student Assessment

You have opportunity to earn points in the following 3 areas. Your final grade will be determined by the corresponding percentages.

(1) Homework	20%
(2) Chapter Tests	60%
(3) Final Exam	20%

Final Grade = $0.2 \times \text{homework average} + 0.6 \times \text{chapter test average} + 0.2 \times \text{final exam average}$

Grading Scale

Grade	
A	90-100
B	80-89
C	70-79
D	60-69
F	59-below

Class Schedule

See attached schedule.

Absentee Policy

Texarkana College's absentee policy allows instructors to withdraw a student from a course due to excessive absences. If a student leaves and returns during class or leaves the class before the class is over, he/she **may** be considered absent. Three tardies constitute one absence. It is the student's responsibility to check the syllabus for each instructor's tardy policy.

Faculty members **are not** obligated to provide opportunities for students to make-up missed assignments and tests as a result of a student's absence from class. The institution is not required to take attendance with the exception of workforce/vocational areas, where certification requirements require taking attendance. However, experience demonstrates that regular attendance enhances academic success. As such, students are expected to attend each meeting of their registered courses.

A student should not stop attending a class without formally withdrawing from the course by the institutions published Last Day for Students to Drop. If a student stops attending class after the published Last Day for Students to Drop, the student **may** receive a grade of "F" in the class. The instructor will submit the last date of attendance for students receiving a grade of "F" or "W".

Withdrawal from a course(s) **may** affect a student's current or future financial aid eligibility. Students should consult the Financial Aid Office to learn both short and long term consequences of a withdrawal.

EXCUSED ABSENCES

A student's absence due to school trips and/or school business will not be counted against a student's allowable number of absences. Military duty and absences for Holy Days (FBD LEGAL) are covered in a separate section of the catalog and the student handbook. These are the only excused absences that are considered by Texarkana College. Responsibility for work missed for any absence is placed on the student. Instructors are required to allow students to make up work missed if the absence is due to military duty* or religious holy days when students follow the correct notification procedures. Instructors are not required to allow students to make up work for absences due to other reasons.

**Students interested in Health Occupations should check with the division chair prior to entering the program.*

MAXIMUM ALLOWABLE ABSENCES

After official registration, the following number of unexcused absences will be the maximum allowable before a student **may** be dropped from the class. For Academic classes that meet twice a week, an instructor may withdraw a student from a course if they exceed 4 absences.

Make-up Policy

Absences for which you may make up missed tests include military duty, religious holidays, a death in the family, a documented medical emergency, or school functions provided that you follow the correct notification procedure. If you miss an exam, you must contact the instructor within 24 hours of the missed exam in order to schedule a make-up exam. The make-up exam must be completed in a timely manner. Make-up exams may be a different form of the test and may be given either in the testing center or in the Math Lab in the Physical Science building. Any homework assignments due on the day of the missed test may be turned in for full credit before the make-up test.

Academic Integrity Statement

Scholastic dishonesty, involving but not limited to cheating on a test, plagiarism, collusion, or falsification of records will make the student liable for disciplinary action after being investigated by the Dean of Students. Proven violations of this nature will result in the student being dropped from the class with an "F".

This policy applies campus wide, including TC Testing Center, as well as off-campus classroom or lab sites, including dual credit campuses. This information can be found in the Student Handbook at <https://texarkanacollege.edu>.

Disability Act Statement:

Texarkana College complies with all provisions of the Americans with Disabilities Act and makes reasonable accommodations upon request. Please contact Larry Andrews at 903.823.3283, or go by the Recruitment, Advisement, and Retention Department located in the Administration building for personal assistance.

If you have an accommodation letter from their office indicating that you have a disability which requires academic accommodations, please present it to me so we can discuss the accommodations that

you might need for this class. *It is best to request these changes at the beginning if not before the start of class* so there is ample time to make the accommodations.

Financial Aid:

Attention! Dropping this class may affect your funding in a negative way! You could owe money to the college and/or federal government. Please check with the Financial Aid office before making a decision.

Cell Phones:

Cell phone use is prohibited during class. If you are using a cell phone during class you may be asked to leave and counted absent for the day.

Course Correspondence:

Any course correspondence will be through TC student email. It is the student's responsibility to check his/ her TC email regularly for any information relating to the course.

Student Learning Outcomes

MATH 1316: Plane Trigonometry

1. Compute the values of trigonometric function for key angles in all quadrants of the unit circle measured in both degrees and radians.
2. Graph trigonometric functions and their transformations.
3. Prove trigonometric identities.
4. Solve trigonometric equations.
5. Solve right and oblique triangles.
6. Use the concepts of trigonometry to solve applications.