



WACO, TEXAS

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**COURSE SYLLABUS  
AND  
INSTRUCTOR PLAN  
TERI BARNES**

**TRIGONOMETRY  
MATH 1316 SECTION 30  
This is a 16-Week Course**

McLennan Community College is committed to providing you with every resource you need to reach your academic goals including your safety. We will continue to monitor the evolving situation with COVID 19 and adjust our safety guidelines to make sure we offer a safe environment for you and our faculty. Please make sure to consult your faculty and the MCC website at <https://www.mclennan.edu/crisis-management/coronavirus-updates/index.html> on any changes to these guidelines.

**FALL 2022**

*"AN EQUAL OPPORTUNITY INSTITUTION"*

TRIGONOMETRY  
MATH 1316

**Course Description:**

Provides a study of trigonometric functions and their graphs, trigonometric identities and equations, solutions of triangles, complex numbers, polar coordinates, vectors, analytic geometry, and applications of each. Graphing calculator required.

Semester Hours 3 (3 lec).

**Prerequisites and/or Corequisites:**

Prerequisite: MATH 1314, or high school precalculus, or consent of division director.

**Course Notes and Instructor Recommendations:**

This course has a major component (MyMathLab) that requires a good working knowledge of the computer. Online access is needed at a speed that will facilitate streaming video and downloading of materials

**Instructor Information:**

Instructor Name:	Teri Barnes
MCC E-mail:	tbarnes@mcclennan.edu
Office Phone Number:	254 299-8880
Office Location:	MATH 210
Office Hours:	TBA

**Required Text & Materials:**

**This course is being offered as Inclusive Access—this means you do not purchase a book. The electronic course information is included in tuition payments.**

**No hard copy text required**



Graphing calculator required.

**MCC Bookstore Website :** <http://www.mclennan.edu/bookstore/>

**Methods of Teaching and Learning:**

MyMathLab is the online component that will house the course information. Homework will be done online in this environment. Lecture notes, reference materials, and instructor videos, as well as text videos/resources are available there as well.

**Course Objectives and/or Competencies:**

Upon completion of Math 1316, the student will be able to:

1. Use the basic terminology trigonometry and convert between degrees and radians
2. Perform calculations and applications using trigonometric ratios based on right triangles
3. Graph the trig functions, including vertical shift, phase shift, change in period, and change in amplitude
4. Establish, prove, and apply trigonometric identities
5. Solve trigonometric equations
6. Apply the law of sines and law of cosines to solve triangles, find the area of triangles, and solve application problems
7. Convert between polar and rectangular coordinates
8. Manipulate angle formulas including half angle, double angle, sum and difference
9. Solve application problems involving angular and linear speed, trigonometric functions and vectors
10. Find powers of complex numbers using DeMoivre's Theorem
11. Graph polar equations

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This course will use a variety of internal and external assessments to assess the Core Objectives of critical thinking, communications, and empirical/quantitative reasoning as described below.

- Critical Thinking: Students will use inductive and deductive reasoning, explore problems using the process of inquiry, analysis, evaluation, and synthesis. Assessment will include discussion, independent practice, collaborative experience, instructional technology, a comprehensive final using a departmental test bank and/or CAAP test.
- Communications: Students will submit written assignment(s) involving topics related to Plane Trigonometry or other mathematics that they then share with their instructor and/or colleagues in class via written, oral, and/or visual methods. These assignments may include board work, class time explanation, case study presentation, poster board presentation, and small group presentation that will be assessed using a departmental rubric.
- Empirical/Quantitative: Students will work on various mathematical problem solving skills throughout the course. The course focuses on the manipulation and analysis of numerical data or observable facts. These may be presented in application problems and problem skill sets in which students demonstrate their ability to reach informed conclusions using the mathematical process. Assessment will include discussion, independent practice, collaborative experience, instructional technology, a comprehensive final using a departmental test bank and/or CAAP test.

The department may also use the CCSSE test as an indirect measure of student perception on the coverage of core objectives. Additionally, student GPAs, retention levels and success in following courses may be used to evaluate the effectiveness of student learning.

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**Suggested Course Outline or Schedule:**

Dates	Lecture/Work	Tests/Objectives
Week 1	1.1 Angles 1.2 Angle Relationships and Similar Triangles 1.3 Trig Functions 1.4 Using Definitions of Trig Functions	
Week 2	Review	Exam Ch. 1
Week 3	2.1 Trig Functions of Acute Angles 2.2 Trig Functions of Non-Acute Angles 2.3 Finding Trig Functions Using a Calculator 2.4 Solving Right Triangles	
Week 4	3.1 Radian Measure 3.2 Applications of Radian Measure	Exam Ch. 2
Week 5	3.3 The Unit Circle and Circular Functions 3.4 Linear and Angular Speed Review	Exam Ch 3
Week 6	4.1 Graphs of Sine and Cosine Functions 4.2 Translations of Sine and Cosine	
Week 7	4.3 Graphs of the Other Circular Functions	Exam Ch. 4
Week 8	5.1 Fundamental Identities 5.2 Verifying Trig Identities 5.3 Sum and Difference Identities for Cosine	
Week 9	5.4 Sum and Difference Identities for Sine/Tangent 5.5 Double-Angle Identities 5.6 Half-Angle Identities	Exam Ch. 5
Week 10	Review 6.1 Inverse Circular Functions 6.2 Trig Equations I	
Week 11	6.3 Trig Equations II Review	Exam Ch. 6
Week 12	7.1 Oblique Triangles and Law of Sines 7.2 Ambiguous Case of Law of Sines	
Week 13	7.3 Law of Cosines	Exam Ch. 7
Week 14	8.1 Complex Numbers 8.2 Polar Form of Complex Numbers	
Week 15	8.5 Polar Graphs Review	Exam Ch. 8
Week 16		Final Exam

**Course Grading Information:**

1. Homework: There is a homework assignment for each section that is covered during the semester. Since the test questions will be similar to the homework problems they will be a good source of practice for the tests. Homework due dates will be posted online. You can work on homework assignments as many times as you want to improve your grade before the due date. Once the due date passes, your score is frozen. You can still access problems to practice, but you can't improve your score. Your homework average will count as 30% of your total average.
2. Tests: Seven chapter tests plus a comprehensive Final. Tests will count as 50% of the final average.

**Before each test is available, all homework assignments must be completed with at least a 70% score for that unit. A score of 0 will be assigned to that test if the student has not met this prerequisite for testing by the indicated due date.**

- There will be a time limit for the test
  - Tests may be in a style matching the homework questions.
3. Final Exam: A cumulative final exam is required. It will count 20% of the final average.
  4. You can check your grades using the "Gradebook" button on the left side of the MathLab component. The standard grading scale applies:

90 – 100 = A    80 – 89 = B    70 – 79 = C    60 – 69 = D    59 and below = F

**Late Work, Attendance, and Make Up Work Policies:**

Due dates are set for all homework and test dates are scheduled. If students do not make the deadlines, those grades become zero. Instructor has the right to adapt under special circumstances.

### **Student Behavioral Expectations**

Students are expected to maintain classroom decorum, that includes respect for other students and the instructor, prompt and regular attendance, and an attitude that seeks to take full advantage of the education opportunity.

### **MCC Attendance Policy:**

[Click Here for the MCC Attendance/Absences Policy](https://www.mclennan.edu/highlander-guide/policies.html)  
(<https://www.mclennan.edu/highlander-guide/policies.html>)

Click on the link above for the college policies on attendance and absences. Your instructor may have guidelines specific to this course.

Click on the link above for the college policies on attendance and absences. Your instructor may have additional guidelines specific to this course.

*\* You will need to access each link separately through your Web browser (for example: Internet Explorer, Mozilla, Chrome, or Safari) to print each link's information.*



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## ACADEMIC RESOURCES/POLICIES

### **Accommodations/ADA Statement:**

Any student who is a qualified individual with a disability may request reasonable accommodations to assist with providing equal access to educational opportunities. Students should contact the Accommodations Coordinator as soon as possible to provide documentation and make necessary arrangements. Once that process is completed, appropriate verification will be provided to the student and instructor. Please note that instructors are not required to provide classroom accommodations to students until appropriate verification has been provided by the Accommodations Coordinator. For additional information, please visit [www.mclennan.edu/disability](http://www.mclennan.edu/disability).

Students with questions or who require assistance with disabilities involving physical, classroom, or testing accommodations should contact:

[disabilities@mclennan.edu](mailto:disabilities@mclennan.edu)

254-299-8122

Room 319, Student Services Center

### **Title IX:**

We care about your safety, and value an environment where students and instructors can successfully teach and learn together. If you or someone you know experiences unwelcomed behavior, we are here to help. Individuals who would like to report an incident of sexual misconduct are encouraged to immediately contact the Title IX Coordinator at [titleix@mclennan.edu](mailto:titleix@mclennan.edu) or by calling Dr. Drew Canham (Chief of Staff for Diversity, Equity & Inclusion/Title IX) at (254) 299-8645. Individuals also may contact the MCC Police Department at 299-8911 or the MCC Student Counseling Center at MCC at (254) 299-8210. The MCC Student Counseling Center is a confidential resource for students. Any student or employee may report sexual harassment anonymously by visiting <http://www.lighthouse-services.com/mclennan/>.

Go to McLennan's Title IX webpage at [www.mclennan.edu/titleix/](http://www.mclennan.edu/titleix/). It contains more information about definitions, reporting, confidentiality, resources, and what to do if you or someone you know is a victim of sexual misconduct, gender-based violence or the crimes of rape, acquaintance rape, sexual assault, sexual harassment, stalking, dating violence, or domestic violence.

**Student Support/Resources:**

MCC provides a variety of services to support student success in the classroom and in your academic pursuits to include counseling, tutors, technology help desk, advising, financial aid, etc. A listing of these and the many other services available to our students is available at <http://www.mclennan.edu/campus-resource-guide/>

College personnel recognize that food, housing, and transportation are essential for student success. If you are having trouble securing these resources or want to explore strategies for balancing life and school, we encourage you to contact a Success Coach by calling (254) 299-8226 or emailing [SuccessCoach@mclennan.edu](mailto:SuccessCoach@mclennan.edu). Students may visit the Completion Center Monday-Friday from 8 a.m.-5 p.m. to schedule a meeting with a Success Coach and receive additional resources and support to help reach academic and personal goals. Paulanne's Pantry (MCC's food pantry) provides free food by appointment to students, faculty and staff based on household size. Text (254) 870-7573 to schedule a pantry appointment. The Completion Center and pantry are located on the Second Floor of the Student Services Center (SSC).

**MCC Foundation Emergency Grant Fund:**

Unanticipated expenses, such as car repairs, medical bills, housing, or job loss can affect us all. Should an unexpected expense arise, the MCC Foundation has an emergency grant fund that may be able to assist you. Please go to <https://www.mclennan.edu/foundation/scholarships-and-resources/emergencygrant.html> to find out more about the emergency grant. The application can be found at [https://www.mclennan.edu/foundation/docs/Emergency\\_Grant\\_Application.pdf](https://www.mclennan.edu/foundation/docs/Emergency_Grant_Application.pdf).

**MCC Academic Integrity Statement:**

Go to [www.mclennan.edu/academic-integrity](http://www.mclennan.edu/academic-integrity) for information about academic integrity, dishonesty, and cheating.

**Minimum System Requirements to Utilize MCC's D2L|Brightspace:**

Go to <https://www.mclennan.edu/center-for-teaching-and-learning/Faculty-and-Staff-Commons/requirements.html> for information on the minimum system requirements needed to reliably access your courses in MCC's D2L|Brightspace learning management system.

**Minimum Technical Skills:**

Students should have basic computer skills, knowledge of word processing software, and a basic understanding of how to use search engines and common web browsers.

**Backup Plan for Technology:**

In the event MCC's technology systems are down, you will be notified via your MCC student email address. Please note that all assignments and activities will be due on the date specified in the Instructor Plan, unless otherwise noted by the instructor.

**Email Policy:**

McLennan Community College would like to remind you of the policy (<http://www.mclennan.edu/employees/policy-manual/docs/E-XXXI-B.pdf>) regarding college email. All students, faculty, and staff are encouraged to use their McLennan email addresses when conducting college business.

A student's McLennan email address is the preferred email address that college employees should use for official college information or business. Students are expected to read and, if needed, respond in a timely manner to college emails. For more information about your student email account, go to [www.mclennan.edu/student-email](http://www.mclennan.edu/student-email).

**Instructional Uses of Email:**

Faculty members can determine classroom use of email or electronic communications. Faculty should expect and encourage students to check the college email on a regular basis. Faculty should inform students in the course syllabus if another communication method is to be used and of any special or unusual expectations for electronic communications.

If a faculty member prefers not to communicate by email with their students, it should be reflected in the course syllabus and information should be provided for the preferred form of communication.

**Email on Mobile Devices:**

The College recommends that you set up your mobile device to receive McLennan emails. If you need assistance with set-up, you may email [Helpdesk@mclennan.edu](mailto:Helpdesk@mclennan.edu) for help.

You can find help on the McLennan website about connecting your McLennan email account to your mobile device:

- [Email Setup for iPhones and iPads](https://support.microsoft.com/en-us/office/set-up-an-outlook-account-in-the-ios-mail-app-b2de2161-cc1d-49ef-9ef9-81acd1c8e234?ui=en-us&rs=en-us&ad=us) (<https://support.microsoft.com/en-us/office/set-up-an-outlook-account-in-the-ios-mail-app-b2de2161-cc1d-49ef-9ef9-81acd1c8e234?ui=en-us&rs=en-us&ad=us>)
- [Email Setup for Androids](https://support.microsoft.com/en-us/office/set-up-email-in-android-email-app-71147974-7aca-491b-978a-ab15e360434c?ui=en-us&rs=en-us&ad=us) (<https://support.microsoft.com/en-us/office/set-up-email-in-android-email-app-71147974-7aca-491b-978a-ab15e360434c?ui=en-us&rs=en-us&ad=us>)

**Forwarding Emails:**

You may forward emails that come to your McLennan address to alternate email addresses; however, the College will not be held responsible for emails forwarded to an alternate address that may be lost or placed in junk or spam filters.

For more helpful information about technology at MCC, go to [MCC's Tech Support Cheat Sheet](#) or email [helpdesk@mclennan.edu](mailto:helpdesk@mclennan.edu).

**Disclaimer:**

The resources and policies listed above are merely for informational purposes and are subject to change without notice or obligation. The College reserves the right to change policies and other requirements in compliance with State and Federal laws. The provisions of this document do not constitute a contract.