THE UNIVERSITY OF TOLEDO
COLLEGE OF NATURAL SCIENCES AND MATHEMATICS
DEPARTMENT OF MATHEMATICS AND STATISTICS
SYLLABUS
FALL 2020

COURSE:	MATH-1330-005 Trigonometry (CRN 40874)
CREDIT HOURS:	3
PREREQUISITES:	MATH-1320 with minimum grade of C–, or minimum ACT score of 22, or minimum SAT score of 520, or minimum score of 61 on the math placement test
PROFESSOR:	Jim Anderson
OFFICE:	Online through Blackboard
OFFICE HOURS:	Monday 4:30 - 5:30 Tuesday 11:30 - 12:30 Wednesday 1:30 - 2:30 Thursday 9:30 - 10:30, 3:30 - 4:30 Friday 8:30 - 9:30, 2:30 - 3:30 Other times are available by appointment.
E-MAIL:	jim.anderson@utoledo.edu
WEBPAGE:	http://www.math.utoledo.edu/~janders
COURSE WEBPAGE:	http://www.math.utoledo.edu/~janders/1330
DAILY SCHEDULE:	The Daily Schedule link on Blackboard will provide the links to the Study Problems and the due dates for all assignments.
LECTURE:	MWF 10:00 - 10:55 am Online through Blackboard
TEXTBOOK:	Precalculus, First Ed., Julie Miller and Donna Gerken, McGraw-Hill 2017 Access to a PC or Mac connected to the web and on which you have privileges to install browser plug-ins. (for ALEKS, below) An e-book and the ALEKS access will be provided to you through your technology fee. This e-book and the ALEKS access will be available to you after you register for ALEKS using the ALEKS link on Blackboard. The directions for registering are given below.
COURSE DESCRIPTION:	Definitions and graphs of trigonometric functions and their inverses, solving trigonometric equations, applications and topics in analytic geometry. This course is not applicable toward the undergraduate Math major requirements. No credit given for students who have credit for MATH-1340.

COURSE INSTRUCTION: You are to prepare for each class by looking at and working some of the Study Problems. You will **not** turn in the Study Problems. However, you will use the Study Problems to help you with the Pre-Class Problems, which will be done using ALEKS through Blackboard and will be due before class starts. You will have three attempts at the Pre-Class Problems in order to obtain your best score. Some of the Study and Pre-Class Problems will be discussed in class and then you will work on the In-Class Problems. The In-Class Problems are similar to the Study and Pre-Class Problems. The In-Class Problems will not be graded. However, you will turn in the In-Class Problems at the end of class so that I can look over your work. The In-Class Problems will also be used to keep a record of attendance in the class. After class is over, you will work on the Post-Class Problems using ALEKS through Blackboard. You will have three attempts at the Post-Class Problems in order to obtain your best score. The Post-Class Problems are similar to the Study, Pre-Class, and In-Class Problems. Your ability to work on the Pre-Class and In-Class Problems will probably be determined by your pre-class preparation with the Study Problems.

COURSE OUTLINE: We will cover Chapters 4, 5, 6, and 7.4. Your semester grade for this course will be based on the following:

ALEKS Pre-Class (7.5 pts.) / Post-Class (42.5 pts.) Problems	50 pts.
2 Exams (worth 100 pts. each)	200 pts.
Final Exam	150 pts.
TOTAL	400 pts.

Your final exam percentage can be used to replace your lowest exam score if this percentage is higher. The dates for the exams will be announced in class and posted on the Daily Schedule for the course.

BONUS POINTS: You will have a chance to earn bonus points during the semester.

ALEKS: Register for ALEKS through the Blackboard link. Go to your MATH-1330-005 course listed on Blackboard. Click on the ALEKS link.

The "Welcome to ALEKS!" screen will be displayed with the following two choices:
No, I have never used ALEKS before.
Yes, I have an ALEKS login name.

You want to choose the "No, I have never used ALEKS before." option. Then click Continue.

The "Registration" screen will be displayed with the following:
Your personal information.
Your email address.
Review and Accept Terms of Use
Then click Continue.

The "Account Paired" screen will be displayed with the following:
Your ALEKS account has been securely paired with your institution account.
Then click Continue.

The "Welcome to your ALEKS class management experience!" screen will be displayed with the following:
Continue
Then click Continue.

The "My Classes" screen will be displayed with the following:
You are now enrolled in **Trigonometry FA20 - 005 MWF 10:00 - 10:55.**

NOTE: You must complete the ALEKS Initial Knowledge Check before you will be able to work on any of the ALEKS activities.

GRADE INFORMATION: All your scores and course grade will be posted on Blackboard after the first and second exams and before the Final Exam if time permits. In order to determine your ALEKS Pre-Class/Post-Class Problems Score, you will divide your ALEKS percentage score by two.

GRADING CRITERIA:

A	400 – 372	C	307 – 292
A–	371 – 360	C–	291 – 280
B+	359 – 348	D+	279 – 268
B	347 – 332	D	267 – 252
B–	331 – 320	D–	251 – 240
C+	319 – 308	F	Below 240

These numbers could go lower if there is a curve for the exams.

If this course is a prerequisite for your next math course, then you need to earn a C– grade in order to take that course.

WEBPAGE MISTAKES: I want all the material on the course webpage to be mistake free. So, if you find a mistake on the course webpage, you will receive one bonus point for notifying me about it by email or stopping by the office during office hours.

EXAM 1: Exam 1 will be given on Monday, September 28, from 10:00 to 10:55 am through Blackboard. It will cover Study, Pre-Class, In-Class, and Post-Class Problems 1 - 8, Lessons 1 - 6 in the Lecture Notes, and Pre-Exam (Word, PDF) Problems 1 - 12.

EXAM 2: Exam 2 will be given on Monday, November 2, from 10:00 to 10:55 am through Blackboard. It will cover Study, Pre-Class, In-Class, and Post-Class Problems 9 - 21, Lessons 7 - 11 in the Lecture Notes, and Pre-Exam (Word, PDF) Problems 13 - 21, 25, and 26.

FINAL EXAM: The final exam is comprehensive covering Study, Pre-Class, In-Class, and Post-Class Problems 1 - 24, Lessons 1 - 12 in the Lecture Notes, and Pre-Exam (Word, PDF) Problems 1 - 26 and will be given on Monday, November 30, from 10:15 am to 12:15 pm through Blackboard.

CALCULATORS: NO calculators will be allowed for any of the exams.

ATTENDANCE POLICY: You must attend class. You should arrive for class on time. You should not leave class early. You are responsible for all material which you miss if you are absent. Please read the University's missed class policy. If you know that you have to miss a class, you must notify me in writing or by email before your absence. In the case of an emergency, you must notify me as soon as possible. If you have an excused absence, you may make up an exam with the appropriate written documentation. If you miss a set of Pre-Class and Post-Class Problems and you email me the appropriate written documentation for your excused absence, then you will be allowed to make-up these problems. There is NOT any make-up work for an unexcused absence. The last day to withdraw from this class is Friday, October 23.

LECTURE NOTES

Lesson	Topic
1	Radian and Degree Measure
2	Definition of the Six Trigonometric Functions Using the Unit Circle
3	Reference Angles
4	Coterminal Angles
5	Definition of the Six Trigonometric Functions Determined by a Point and a Line in the *xy*-Plane
6	The Six Trigonometric Functions in Terms of a Right Triangle
7	Solving Right Triangles Applications Involving Right Triangles
8	The Graphs of the Trigonometric Functions
9	The Inverse Trigonometric Functions
10	Solving Trigonometric Equations
11	Basic Identities
12	Sum and Difference Formulas
13	Double-Angle Formulas
14	Half-Angle Formulas
15	The Law of Sines
16	The Law of Cosines
17	Vectors

LEARNING OBJECTIVES:

The objective of this course is to develop your mathematical skills, with emphasis on problems requiring the use of trigonometric functions. A more detailed list of learning objectives is given below. At least 70% of the course time will be devoted to these essential outcomes. These objectives are listed again in the chronological list of topics at the end of this syllabus.

- ***Representation***: Graphical, algebraic, numerical, and verbal representation of trigonometric and inverse trigonometric functions verbally, numerically, graphically and algebraically.
- ***Definitions***: Define the six trigonometric functions in terms of right triangles and the unit circle.

- ***Graphs***: Determine whether a trigonometric relation or given graph represents a function; perform transformations on graphs and operations with functions; determine intercepts, domain, range, intervals of monotonicity, vertex of a quadratic, asymptotes, symmetry; and match graphs to trigonometric definitions.
- ***Modeling***: Use trigonometric and inverse functions to model a variety of real-world problem-solving applications.
- ***Equations***: Solve a variety of trigonometric and inverse trigonometric equations, in degrees and radians for both special and non-special angles; solve application problems that involve such equations.
- ***Angles/Triangles***: Express angles in both degree and radian measure. Solve right and oblique triangles in degrees and radians for both special and non-special angles, and solve application problems that involve right and oblique triangles.
- ***Identities***: Verify trigonometric identities by algebraically manipulating trigonometric expressions using fundamental trigonometric identities, including the Pythagorean, sum and difference of angles, double-angle and half-angle identities.
- ***Vectors***: Represent vectors graphically in both rectangular and polar coordinates and understand the conceptual and notational difference between a vector and a point in the plane; perform basic vector operations both graphically and algebraically; solve application problems using vectors.

TOPICS TO BE COVERED: ***The learning objective(s) covered by that topic in addition to the Representation learning objective follow(s) in italics.***

1. Radian and Degree Measure (Section 4.1) ***Angles***
2. The Six Trigonometric Functions in Terms of a Right Triangle (Section 4.3) ***Triangles, Modeling***
3. Applications Involving Right Triangles (Section 6.1) ***Modeling***
4. Definition of the Six Trigonometric Functions Using the Unit Circle (Section 4.2) ***Definitions***
5. Reference Angles (Section 4.4) ***Definitions***
6. Coterminal Angles (Sections 4.1 and 4.2) ***Definitions***
7. The Graphs of the Trigonometric Functions (Sections 4.5 and 4.6) ***Graphs***
8. The Inverse Trigonometric Functions (Section 4.7) ***Definitions, Modeling***
9. The Graphs of the Inverse Trigonometric Functions (Section 4.7) ***Graphs***
10. Fundamental Trigonometric Identities (Sections 4.2, 4.3, 4.4 and 5.1) ***Identities***
11. Pythagorean Identities (Sections 4.2 and 4.4) ***Identities***
12. Solving Trigonometric Equations (Section 5.5) ***Equations, Modeling***
13. Sum and Difference Formulas (Section 5.2) ***Identities***
14. Double-Angle Formulas (Section 5.3) ***Identities***
15. Half-Angle Formulas (Section 5.3) ***Identities***
16. The Law of Sines (Section 6.2) ***Identities, Modeling***
17. The Law of Cosines (Section 6.3) ***Identities, Modeling***
18. Vectors (Section 7.4) ***Vectors, Modeling***

UNIVERSITY POLICIES:

POLICY STATEMENT ON NON-DISCRIMINATION ON THE BASIS OF DISABILITY (ADA)
The University is an equal opportunity educational institution. Please read The University's Policy Statement on Nondiscrimination on the Basis of Disability Americans with Disability Act Compliance.

ACADEMIC ACCOMODATIONS

The University of Toledo is committed to providing equal access to education for all students. If you have a documented disability or you believe you have a disability and would like information regarding academic accommodations/adjustments in this course please contact the Student Disability Services Office (Rocket Hall 1820; 419-530-4981; studentdisabilitysvs@utoledo.edu) as soon as possible for more information and/or to initiate the process for accessing academic accommodations. For the full policy see: http://www.utoledo.edu/offices/student-disability-services/sam/index.html

ACADEMIC POLICIES:

STUDENT PRIVACY

Federal law and university policy prohibits instructors from discussing a student's grades or class performance with anyone outside of university faculty/staff without the student's written and signed consent. This includes parents and spouses. For details, see the "Confidentiality of student records (FERPA)" section of the University Policy Page at http://www.utoledo.edu/policies/academic/undergraduate/index.html

MISSED CLASS POLICY

If circumstances occur in accordance with "The University of Toledo Missed Class Policy" (found at https://www.utoledo.edu/policies/academic/undergraduate/pdfs/3364-71-14%20Missed%20class%20policy.pdf) result in a student missing a quiz, test, exam or other graded item, the student must contact the instructor in advance by phone, e-mail or in person, provide official documentation to back up his or her absence, and arrange to make up the missed item as soon as possible.

ACADEMIC DISHONESTY

Any act of academic dishonesty as defined by the University of Toledo policy on academic dishonesty (found at http://www.utoledo.edu/dl/students/dishonesty.html) will result in an F in the course or an F on the item in question, subject to the determination of the instructor. Please note that any use of, or visibility of, a cell phone or smart watch (or any other device capable of connecting to the internet or storing information, or anything not approved by the instructor) during a test, quiz or exam will be considered academic dishonesty.

SUPPORT SERVICES:

TECHNICAL SUPPORT

If you encounter technical difficulties with Blackboard, please contact the UT Online Help Desk at (419) 530-8835 or utdl@utoledo.edu. The Help Desk offers extended hours in the evenings and on weekends to assist students with technical problems. When calling after hours, leave a detailed message, including your Rocket Number and phone number, and a UT Online staff member will respond on the next business day.

Technical questions related to on-campus Internet access, virtual labs, hardware, software, personal website hosting, and UTAD account management can be directed to UT's IT Help Desk at (419) 530-2400 or ithelpdesk@utoledo.edu.

Technical questions related to ALEKS can be directed to ALEKS Technical Support at 1-800-258-2374.

LEARNER SUPPORT

The University of Toledo offers a wide range of academic and student support services that can help you succeed:

Learning Resource Center
Mathematics tutoring is provided online by the Mathematics Learning and Resource Center (LRC), phone number (419) 530-2176.

eTutoring Services
The Ohio eTutoring Collaborative, in partnership with The University of Toledo, now provides online tutoring support for undergraduate UT students. eTutoring Services are offered in a wide array of subjects, including Writing, Math, Calculus, Statistics, Accounting, Biology, Chemistry, and Anatomy and Physiology.

eLibrary Services Portal
The eLibrary is a customized gateway to UT Libraries. It was designed to help you locate the best online library resources without leaving Blackboard.

Student Disability Services
Student Disability Services provides accommodations and support services to students with disabilities.

Counseling Center
The Counseling Center is The University's primary facility for personal counseling, psychotherapy, and psychological outreach and consultation services. The Counseling Center staff provide counseling (individual and group), mental health and wellness programming, and crisis intervention services to help students cope with the demands of college and to facilitate the development of life adjustment strategies.

Military Service Center
UT's Military Service Center recognizes the sacrifices of our service members and their families and is dedicated to helping them achieve continued success in life. They provide accessible educational and degree completion opportunities and a wide range of customized support services, including educational benefit processing, mentoring, advocacy, and networking.