

MATH 1060 Trigonometry, Spring 2018

Class Meetings: T, TH at 06:00PM-07:20PM in JTB 130

Instructor: Dr. Lei Wu

Email: lwu@math.utah.edu

Office Hours: T 5-6pm and TH 2-4pm in JWB 317, or by appointment.

Course Goal: Improve quantitative reasoning and prepare for future math learning in calculus, linear algebra, and discrete mathematics.

Prerequisite Information: C or better in (MATH 1010 OR MATH 1050 OR MATH 1080) OR Accuplacer CLM score of 60 or better OR ACT Math score of 23 or better OR SAT Math score of 540 or better.

Text: PRECALCULUS, 9th Edition, 2013 Larson. The University of Utah has negotiated special pricing for the text and WebAssign:

- For \$75 you may purchase the online version of the text with Enhanced Webassign. This price covers both 1050 and 1060.
- OPTION: if you would like, you may also purchase a loose-leaf version of the text for \$40. The text may be purchased at <http://www.cengagebrain.com/course/2609570>

Topics to be covered: Trigonometry, Topics in Analytic Geometry, and the Complex Numbers.

Expected Learning Outcomes:

- Understand trigonometric function definitions in the context of the right triangles and on the unit circle.
- Graph basic trigonometric functions and those with basic transformations. Be able to write an equation given a graph. Identify amplitude, periods, phase shifts from graphic and algebraic representations of functions.
- Solve applications problems using principles in trigonometry.
- Represent and interpret real world contexts situations using radian trigonometric functions.
- Use trigonometric inverses correctly, understanding the domain/range restrictions.
- Verify trigonometric identities, using proper logic and use trigonometric identities to evaluate expressions.
- Solve trigonometric equations.
- Solve for all measurements in any triangle, using the Pythagorean Theorem, trigonometric functions, the Law of Sines, and Law of Cosines in a variety of contexts and applications.
- Be able to convert to and from rectangular and trigonometric-form coordinates (polar coordinates).
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- Graph complex numbers in a plane, perform operations on such numbers and use DeMoivres theorem to find roots and powers of complex numbers.
- Understand geometry and arithmetic operations with vectors and use vectors in application problems.
- Use parametric equations in application problems and be able to convert between parametric and non-parametric representation of functions.
- Understand and explain arithmetic with complex numbers using trigonometry.
- Write an equation for a conic given a graph of the conic; given an equation of a conic, recognize the conic and be able to graph it.

Calculators: Calculators will be useful for homework, but will not be permitted on exams.

Homework: All homework is to be completed on Webassign. Due dates for homework assignments can also be found on Webassign. Late homework will not be accepted. You will be given ample time to do your assignments, you may ask me, the SI, or TAs questions or you may work with others on assignments. You may submit up to 10 answers for each prompt. Please note, homework is a substantial part of your grade for the course (15%), it is to your benefit to make success on the assignments a priority partial credit is better than no credit!

Quizzes: There will be a total of 10 quizzes. You must be in attendance to take the quiz, however the three lowest quiz scores will be dropped.

Attendance: Like any college course, attendance is not mandatory. Please note however, that concepts will be thoroughly explained and reviewed in class. Students who regularly attend score on average 30% higher on exams than those who do not.

Important dates:

Class will meet every Tuesday and Thursday, however, there will be no class:

Monday – Friday, March 19 – 23 (Spring Break)

MIDTERMS:

Thursday, February 15; Thursday, April 12.

FINAL:

Friday, April 27, 1:00 – 3:00 (see: <http://registrar.utah.edu/academic-calendars/final-exams-spring.php>). The location will be announced in class.

There are no make-up exams. Students who miss an exam or quiz will receive a 0 on the missed exam or quiz.

Semester Grades will be determined using the following weights:

- 15% homework
- 15% quizzes (There will be a quiz every Friday except the first Friday of the semester and on midterm days, the three lowest quiz scores will be dropped)
- 20% 1st midterm
- 20% 2nd midterm
- 30% Final exam
- Note: no scores will be dropped.

Semester letter grades will be converted from numerical semester scores (N) as follows:

$$\begin{array}{llll} 100 \geq N \geq 93 : A & 93 > N \geq 90 : A- & 90 > N \geq 88 : B+ & 88 > N \geq 83 : B \\ 83 > N \geq 80 : B- & 80 > N \geq 78 : C+ & 78 > N \geq 73 : C & 73 > N \geq 70 : C- \\ 70 > N \geq 68 : D+ & 68 > N \geq 63 : D & 63 > N \geq 60 : D- & 60 > N : E \end{array}$$

Mathematics Tutoring Center: Drop in, sit down, and if you have a question, someone will come by who can help you. There are also study areas free of tutors, a computer lab, group study rooms available through reservations, and group tutoring sessions that can be arranged to meet at a regular time. Located on 1st Floor of JWB or LCB. Open 8am-8pm MTWH; 8am-6pm F.

Video Lectures: Video lectures are available at: <http://www.math.utah.edu/lectures/>