

# Math 1060-004 Syllabus

Spring 2018

## **MATH 1060-004**

### **Trigonometry**

Spring 2018

Meeting time: MWF 9:40–10:30

Instructor: Daniel Smolkin

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Office: CSC 208

Office hours: MF 8:30–9:30am, or by appointment

Course website: we'll be using canvas.

## **Course Description**

Trigonometry is the study of angles, triangles, and periodic functions. We will study all of these things, as well as some topics in analytic geometry and complex numbers. The main goal of this class will be to improve your quantitative reasoning skills and prepare you for future math classes, such as calculus.

The following is the official list of “expected learning outcomes” for this course:

1. Understand trigonometric function definitions in the context of the right triangles and on the unit circle.
2. 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.
3. Solve applications problems using principles in trigonometry.
4. Represent and interpret real world contexts situations using radian trigonometric functions.
5. Use trigonometric inverses correctly, understanding the domain/range restrictions.
6. Verify trigonometric identities, using proper logic and use trigonometric identities to evaluate expressions.
7. Solve trigonometric equations.
8. 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.
9. Be able to convert to and from rectangular and trigonometric-form coordinates (polar coordinates).
10. Graph complex numbers in a plane, perform operations on such numbers and use DeMoivre's theorem to find roots and powers of complex numbers.
11. Understand geometry and arithmetic operations with vectors and use vectors in application problems.
12. Use parametric equations in application problems and be able to convert between parametric and non-parametric representation of functions.
13. Understand and explain arithmetic with complex numbers using trigonometry.

## Prerequisites

One of the following:

- A passing grade (C or better) in one of: Math 1010, Math 1050, Math 1080
- A score of at least 23 on the math section of the ACT
- A score of 540 or better on the SAT
- The appropriate score on the Math Placement exam given through the Testing Center.

Please see me if you do not meet any of these requirements.

## Course text

Our textbook is *Precalculus*, 9th Edition/2013 Edition, by 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. If you would like, you may also purchase a loose-leaf version of the text for \$40. I'll post more information soon about how to purchase the textbook and access it online.

## Important Dates

- Exam 1: Friday, February 16
- Exam 2: Friday, April 13
- **Final exam: April 27, 1–3pm. (This is a departmental final exam!!!)**

## Grading

Grading will be based on homework, quizzes, worksheets, and exams. Each student's grade for the course will be broken down in the following way:

Homework	Quizzes/Worksheets	Exam 1	Exam 2	Final
15%	20 %	20 %	20 %	25 %

Here's the grading scale I'll be using:

A	A-	B+	B	B-	C+	C	C-	D+	D	D-	F
> 94	90–93	87–89	84–86	80–83	77–79	74–76	70–73	67–69	64–66	60–63	< 60

## Course Policies

**Calculators:** A calculator may be useful for the homework. However, calculators will not be allowed during exams and quizzes.

**Homework:** All of our homework this semester will be on WebAssign. Truth be told, I'm not a huge fan of WebAssign, but this decision is out of my hands. If you have complaints about WebAssign, I'd be happy to suggest people to reach out to about it. I'll have more information soon about how to sign up for WebAssign. Homework will generally be due Fridays before class.

**Quizzes:** We will be having weekly quizzes each Friday at the end of class (except for exam days).

**Notecards:** I'll give everyone three notecards—one green, one yellow, and one red. Please bring these to class each day. From time to time, I'll ask everyone to hold up a notecard indicating how comfortable they feel with a particular concept—green for very comfortable, yellow for so-so, and red for not comfortable.

**Attendance:** Attendance is not mandatory. However, I will be giving weekly quizzes and worksheets during class. It's your responsibility to find out what you missed if you don't attend class. Please check the course canvas page or ask your classmates before e-mailing me.

**Cheating** will not be tolerated. Any homework, quiz, or exam on which we determine a student has cheated will receive a 0. **Calculators will not be allowed for exams and quizzes. Cell phones must be turned off during exams.**

**It is your responsibility to tell me as soon as possible if you will be missing an exam. You will not be able to make up an exam unless you let me know two weeks ahead of time that you'll be missing it.** There will be no make up quizzes.

## Tips for success

**Office hours:** I encourage everyone to stop by office hours if you have any questions about the course, or even if you just want to say hi. Office hours are a great opportunity to get one-on-one help, which is usually more effective than large lectures (and frankly, I enjoy holding office hours more than lecturing). My office is in JWB 307. If you can't make the scheduled office hours (MF 8:30am–9:30am) feel free to e-mail me and set up an appointment—my schedule should be fairly open in the afternoons.

**Online discussion:** We'll be using the website Piazza to facilitate online discussions. I encourage everyone to use this site to form your own study groups, and to ask each other questions about the homework. I'll tell the TA to answer questions on canvas from time to time, and I'll try to do so myself as well. More information coming soon about how to join Piazza.

**The math tutoring center** is a great place for (free!) student help. The tutoring center is located in room 155 of the T. Benny Rushing Mathematics Center, adjacent to the first floors of LCB and JWB (it's sort of in the basement). Their website is <http://www.math.utah.edu/ugrad/tutoring.html>. Their hours are 8am–8pm MTWH and 8am–6pm on Fridays.

The department has **video lectures** corresponding to this course available at <http://www.math.utah.edu/Lectures>

For students convinced that they cannot do the math, there is an excellent website called Understanding Mathematics by Peter Alfeld, available at <http://www.math.utah.edu/~pa/math.html>

## Course schedule (tentative)

Week of...	Sections
January 8	4.1, 4.2, 4.3
January 15	4.4, 4.5. No school Monday
January 22	4.6, Review of inverse functions, 4.7
January 29	4.8, 5.1, 5.2
February 5	5.3, Review
February 12	Review. Exam Friday, February 16.
February 19	5.4, 5.5. No school Monday
February 26	6.1, 6.2
March 5	6.3, 6.4
March 12	6.5, 10.1, 10.2
March 19	Spring break. Enjoy!
March 26	10.3, 10.4, 10.5
April 2	10.7, 10.8
April 9	Review for Exam 2. Exam Friday, April 13.
April 16	Review for Final.
April 23	Review for Final. <b>Final exam, Friday, April 27, 1pm–3pm</b>

## ADA Statement

The University of Utah seeks to provide equal access to its programs, services and activities for people with disabilities. If you will need accommodations in the class, reasonable prior notice needs to be given to the Center for Disability Services, 162 Olpin Union Building, 801-581-5020. CDS will work with you and the instructor to make arrangements for accommodations.

All written information in this course can be made available in alternative format with prior notification to the Center for Disability Services.