

# Trigonometry 1060-5, SPRING 2019

Instructor: Rebecca Noonan Heale

Pronouns: she/her/hers

What to call me: Rebecca or Dr. Noonan Heale

Office: JWB 213 (JWB is on President's circle, east of Kingsbury Hall)

Office Hours: Tuesdays 1:00 – 2:00 pm and Fridays 10:45-11:35 am

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

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

## Expected Learning Outcomes:

- 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.
- 14 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.

**Text:** The text and homework are available on the course canvas page entirely free. You may print or download any portion of the text, or may view it online.

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

**Homework:** All homework is to be completed on MyOpenMath. The link to homework assignments and due dates can be found on the course canvas page. *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 have unlimited attempts 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 approximately 10 quizzes (one each Friday that does not have an exam.) 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 Monday, Wednesday, and Friday, however, *there will be no class:*

Monday, January 21 (Martin Luther King Day)

Monday, February 18 (Presidents' Day)

Monday – Friday, March 11 – 15 (Fall Break)

**MIDTERMS:**

**Friday, March 1**

**Friday, April 12**

**FINAL: MONDAY April 29, 1:00PM – 3:00, Location to be announced. (see: <http://registrar.utah.edu/academic-calendars/final-exams-spring.php>)**

**There are no “make-up” exams.** Students who miss an exam or quiz will receive a “0” on the missed exam or quiz. The lowest Midterm may be replaced with the Final Exam score, if the Final Exam score is higher.

**Semester Grades** will be determined using the following weights:

15% homework

15% quizzes

20% 1<sup>st</sup> midterm

20% 2<sup>nd</sup> midterm,

30% Final exam

Note: The final will replace the lowest midterm score if the final is higher than the midterm.

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

100 ≥ N ≥ 93: A

93 > N ≥ 90: A-

90 > N ≥ 88: B+

88 > N ≥ 83: B

83 > N ≥ 80: B-

80 > N ≥ 78: C+

78 > N ≥ 73: C

73 > N ≥ 70: C-

70 > N ≥ 68: D+

68 > N ≥ 63: D

63 > N ≥ 60: D-

60 > N :E

**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/math1060New.html>

**Gradescope:** Quizzes will be graded with an online grading program, Gradescope. When quizzes are graded, an e-mail with a link to the graded quiz will be sent to your university e-mail address.

**Online Grades:** I will put your grades online on Canvas. You can get there easily from the main University of Utah website [www.utah.edu](http://www.utah.edu). To log in, you use the same student id and

password that you use for Campus Information System. I do my best to update the grades on a regular basis and keep everything accurate. However, I would advise you to check your grades often to make sure there were no data entry mistakes. I'm always happy to correct any mistakes I've made.

**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 & Access (CDA, formerly CDS). To do so, contact them at 801-581-5020 (V/TDD) to set-up an appointment. CDA will work with you and me to make arrangements for accommodations. All information in this course can be made available in alternative format with prior notification to CDA.

**Student Responsibilities:** All students are expected to maintain professional behavior in the classroom setting, according to the Student Code, spelled out in the Student Handbook. You have specific rights in the classroom as detailed in Article III of the Code. The Code also specifies proscribed conduct (Article XI) that involves cheating on tests, collusion, fraud, theft, etc. Students should read the Code carefully and know you are responsible for the content. According to Faculty Rules and Regulations, it is the faculty responsibility to enforce responsible classroom behaviors, beginning with verbal warnings and progressing to dismissal from class and a failing grade. Students have the right to appeal such action to the Student Behavior Committee. <http://regulations.utah.edu/academics/6-400.php>

**Addressing Sexual Misconduct.** Title IX makes it clear that violence and harassment based on sex and gender (which includes sexual orientation and gender identity/expression) is a civil rights offense subject to the same kinds of accountability and the same kinds of support applied to offenses against other protected categories such as race, national origin, color, religion, age, status as a person with a disability, veteran's status or genetic information. If you or someone you know has been harassed or assaulted, you are encouraged to report it to the Title IX Coordinator in the Office of Equal Opportunity and Affirmative Action, 135 Park Building, 801-581-8365, or the Office of the Dean of Students, 270 Union Building, 801-581-7066. For support and confidential consultation, contact the Center for Student Wellness, 426 SSB, 801-581-7776. To report to the police, contact the Department of Public Safety, 801-585-2677(COPS).

**Wellness Statement:** Personal concerns such as stress, anxiety, relationship difficulties, depression, cross-cultural differences, etc., can interfere with a student's ability to succeed and thrive at the University of Utah. For helpful resources contact the Center for Student Wellness at [www.wellness.utah.edu](http://www.wellness.utah.edu) or 801-581-7776.

**Classroom Social Equity:** I strive to be ethical, kind, fair, inclusive and respectful in my classroom and expect students to behave likewise. In this regard, I have these requests of you, my student:

1. Please do tell me, discreetly, if you have any sort of anxiety disorder, TBI, PTSD, C-PTSD, or any other challenge that would cause psychological harm to you by me calling on you in class. I want students to feel a little uncomfortable and stretched during class, while working on problems as a large group, but I definitely don't want to cause any human being harm. So, please discreetly tell me if that is the case for you and I will confidentially accommodate your request.
2. If your preferred name is different than your legal first/last name (the preferred name you chose does indeed show up in CIS on my roll sheet, but not yet in Canvas), please let me know. It also helps if you log into Canvas and go to Account (on far

left)-->Settings and change your Display Name to be the name you prefer to be addressed by.

3. If there is ever a time that you feel this course or the curriculum is not equitable, please email me or meet with me to discuss your concerns so I have a chance to address that.

**Additional Policies:** Due to experience, I have decided to make some additional policies regarding my classroom administration and grading.

- Laptops are not allowed in class, to avoid distracting other students. However, if you are writing digitally using a tablet, iPad, hybrid laptop, or similar device which can lay flat on your desk, that is totally fine.
- Cell phones should be put away during class. If there is an emergency situation, let me know. If you need to use your phone during class, please leave the classroom.
- I will kindly demand respectful behavior in my classroom.
- There will be no cursing nor negative ranting (for example, “math sucks”) on any written work turned in. The penalty for such things on written work will be a zero score on that assignment or test.
- Since I send out class announcements and messages through Canvas, it is important that you check Canvas regularly, or have announcements and messages forwarded to an email address that you check regularly.
- Please make sure you do your best throughout the semester, knowing the grading scheme and what's expected of you, and come talk to me if you need further study strategies. I am happy to brainstorm ideas to help you maximize your study strategies and improve your mathematical understanding. Please talk with me early on about any concerns with your grade.
- Cheating will result in a grade of zero for that homework, project, quiz or exam. Depending on the severity of the cheating, additional consequences may include failing the course.
- I reserve the right to change my policies stated in this syllabus at some point in the semester. If I do make a change to a policy, I will announce it in class on Canvas.