

Math 128 - Plane Trigonometry, Spring 2023 Course Syllabus

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Office hours: Mon: 11-12, Tues: 9-10 & 6pm-7pm (online), Wed: 11-12, Thurs: 2-3, Fri: 11-12
The Tuesday evening online office hour will be accessible through Google Meet with the meeting code TechMathLeary. Other office hours will be in person, and I may be available by appointment at additional times.

Class Room/Time: INN-B 302, MWF 1:00-1:50 pm

Course website: community.wvu.edu/~bal0018/math128S23.html (as a backup website, I will also try to keep the eCampus site updated)

Homework assignments and course announcements may be posted on the website or sent via email. Please be sure to check the website regularly, and to regularly check the email address you have on record. You are responsible for any information posted on the course website.

Textbook: Jay Abramson, *Algebra and Trigonometry*, 2nd ed, available to download for free at <https://openstax.org/details/books/algebra-and-trigonometry-2e>.

Catalog Data: MATH 128 Trigonometry (3-0) Credits 3. Trigonometric functions, identities, vectors, complex numbers, and trigonometric equations. This course satisfies GEF3 Mathematics & Quantitative Reasoning.

Prerequisite: MATH 124 or MATH 126 with minimum grade of C.

Course material: A rough outline of the topics covered can be found on the next page.

Course Objective: Upon completion of the course, the student should have a basic knowledge of trigonometry including trigonometric identities, exponents, logarithms, and complex numbers. The student will learn critical thinking skills and be able to express information in a mathematical setting.

Course Outcomes: Upon successful completion of the course, the student will be able to do the following:

1. Compute the values of the trigonometric functions of an angle.
2. Graph the trigonometric functions, in particular, sinusoidal curves.
3. Use basic trigonometric identities to simplify expressions, solve equations, and prove identities.
4. Solve right triangles, solve oblique triangles, and find the area of a triangle.
5. Use the properties of inverse trigonometric functions to simplify expressions.
6. Use the trigonometric form of a complex number to compute products, quotients, powers, and roots of complex numbers.
7. Convert from polar coordinates to rectangular coordinates and vice-versa.
8. Use mathematical analysis to solve various types of problems.

Topics:

1. Trigonometric Functions: Right Triangle and Unit Circle Trig (11 days - Chapters 7 & 8)
 - (a) Angles
 - (b) Unit Circle
 - (c) Trig Functions and Their Graphs
 - (d) Inverse Trig Functions
2. Analytic Trigonometry (9-10 days - Sections 10.1-10.2 & Chapter 9)
 - (a) Law of Sines
 - (b) Law of Cosines
 - (c) Verifying Trigonometric Identities
 - (d) Solving Trigonometric Equations
3. Polar Coordinates and Vectors (9 days - Sections 10.3-10.8)
 - (a) Polar Coordinates
 - (b) Graphs of Polar Equations
 - (c) Polar Form of Complex Numbers
 - (d) Vectors
4. Conic Sections (OPT, 5 days - Sections 12.1-12.3, 12.5)

Grading: Your final grade will be based on homework, three exams during the semester, and the final exam. Your final course score will be the maximum of the following two grading schemes:

- 10% Homework + 5% Quizzes + 20% Exam 1 + 20% Exam 2 + 20% Exam 3 + 25% Final Exam
- 10% Homework + 5% Quizzes + 25% (highest grade of the three exams) + 25% (middle grade of the three exams) + 5% (lowest grade of the three exams) + 30% Final Exam

Letter Grade Cutoffs: A: 90%, B: 80%, C: 70%, D: 60%, F: below 60%

Homework: Homework will be completed online with MyOpenMath.com. When you sign-up, you will use the Course ID and Enrollment Key given in class and posted on the eCampus site. Homework assignments will be due most Fridays. Note that most problems on the homework assignments may be resubmitted as often as needed until they are correct, so you should strive for a homework percentage near 100%!

Exams: There will be three exams: on Friday, February 10; Friday, March 10; and Friday, April 14. These will be 50 minute exams taken during the regular lecture time. The final exam time has been set by the university, and will be on Monday, May 1 from 1:00-2:50 pm. Make-up exams will only be given to students with excused absences, and such make-up exams must be scheduled within 24 hours of the missed exam.

Quizzes: There will be two or three quizzes throughout the semester. The dates of these quizzes will be announced at least a week in advance in class and on the course website, and will be on specific predetermined topics from the course.

Class policies:

- Graphing calculators will never be allowed during any exams. Scientific calculators will be considered on an exam by exam basis. You may use any calculator to help you do the homework if you wish, but you should keep in mind that you may be required to solve similar problems without a calculator on the quizzes and exams.
- While class attendance does not directly factor into your grade computation, attendance of each lecture is highly recommended. Regular attendance will tend to lead to better understanding of the course material, which tends to lead to better performance on exams.
- If you believe a problem on a homework assignment or midterm exam has been graded incorrectly, you must notify the instructor of your complaint within 7 days of the date the exam is handed back. If you are unable to retrieve your graded material at the time it is handed back, it is your responsibility to make arrangements with the instructor to retrieve the material at another time.

Getting Help: Always remember: asking for help when you need it is not a sign of weakness, but a sign of strength! Please feel free to attend my office hours or email me if you have questions about the course material. If you are unable to make it to my regularly scheduled office hours, I am willing to make an appointment to meet at another time if possible. Additionally, you can get help in the Math Tutoring Lab in LRC 323 from 8 AM to 4:30 PM. Free tutoring is also available through Student Support Services, located in Benedum 130, and the Student Success Center, located in the library on the second floor of LRC. Finally, I would also encourage the formation of study groups, to learn from each other and help each other learn.

Institutional Policies: Students are responsible for reviewing policies on inclusivity, academic integrity, incompletes, sale of course materials, sexual misconduct, adverse weather, as well as student evaluation of instruction, days of special concern/religious holiday statements, and the updated COVID-19 statement. For these detailed policies of West Virginia University, please review: <https://tlcommons.wvu.edu/syllabus-policies-and-statements>.

