Math 129 - Pre-Calculus, Fall 2020
Course Syllabus

Instructor: Brian Leary
Email: Brian.Leary1@mail.wvu.edu
Office: Learning Resource Center 323K

Office hours: Social distancing guidelines necessitate that I will only be able to meet in-person in my office by appointment. I will be available for virtual face-to-face office hours on Google Meet using the meeting code TechMathLeary during the following times:

MON: 10am-11am, TUES: 1pm-2pm & 6pm-7pm, WED: 1pm-2pm, FRI: 10am-12pm

Class Room/Time: CAR-B 100, 12:00-12:50 pm

Course website: community.wvu.edu/∼bal0018/math129F20.html (as a backup website, I will also try to keep the eCampus site updated)

Course announcements and possibly homework assignments will be posted on the website. 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.

Textbooks: Jay Abramson, *Algebra and Trigonometry*, available to download for free at
https://openstax.org/details/books/algebra-and-trigonometry.
Sundstrom & Schlicker, *Trigonometry*, available to download for free at
https://scholarworks.gvsu.edu/books/12/.

Catalog Data: MATH 129 Pre-Calculus Mathematics (4-1) Credits 4. A treatment of algebra, analytic geometry and trigonometry.

Prerequisite: ACT math score of 25 or higher.

Course material: This course covers the algebra skills and trigonometry content necessary to begin a study of calculus. The first half of the course will focus on solving equations and inequalities and on understanding different types of functions, while the last half will introduce trigonometric functions and their applications. A rough outline of the topics covered can be found on the next page.

Course Objective: Upon completion of this course the student should have good algebraic manipulation skills, and a basic knowledge of trigonometry, polar coordinates, and complex numbers.

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

1. Use the laws of exponents, and manipulate and simplify algebraic expressions containing fractional exponents, negative exponents, radicals, and fractions.
2. Solve algebraic and trigonometric equations, inequalities, and systems of equations.
3. Sketch graphs of algebraic and trigonometric functions.
4. Find the composition of functions, the inverse of a function, and the domain and range of a function.
5. Evaluate and graph trigonometric functions, particularly sinusoidal curves.
6. Use basic trigonometric identities and inverse trigonometric functions to simplify expressions and solve equations.
7. Solve right and oblique triangles.
8. Use the trigonometric form of a complex number to compute products, quotients, powers, and roots of complex numbers.
9. Convert from polar coordinates to rectangular coordinates and vice versa.

Topics:

1. Equations and Inequalities (10 days - Sections 2.2-2.7, 11.1, 11.2 in A&T)
2. Functions and Graphs (10 days - Sections 2.1, 3.1-3.7 in A&T)
3. Polynomial and Rational Functions (9 days - Sections 5.1-5.4, 5.6-5.7 in A&T)
4. Exponential and Logarithmic Functions (9 days - Sections 6.1-6.6 in A&T)
5. Trigonometric Functions (12 days - Sections 1.1-1.6, 2.1-2.5, 3.1-3.4 in T)
6. Trigonometric Applications (11 days - Sections 2.6, 3.5-3.6, 4.1-4.5, 5.2-5.4 in T)

Grading: This course combines the course material from MATH 126 and MATH 128. Therefore, I am essentially treating MATH 129 as two courses that you get one combined grade for. You must demonstrate knowledge of both algebra and trigonometry to pass the course. To that end, there will be a comprehensive algebra exam held during week 8, and a comprehensive trigonometry exam held before Thanksgiving. Failure to record at least a 60% grade on either of these comprehensive exams will disqualify you from receiving a C or higher in the course, which is the necessary grade to take the calculus sequence.
Besides those two cumulative exams, your final grade will also be based on homework, quizzes, and two other ordinary exams during the semester. Your final course score will be computed as follows:

15% Homework + 5% Quizzes + 15% Exam 1 + 25% Algebra Comprehensive Exam
+ 15% Exam 3 + 25% Trig Comprehensive Exam

If you maintain an 80% homework average or better in the course, you will be rewarded with the option of dropping one of the ordinary exams if it helps your grade. In that case, you will unlock the following alternate grading scheme:

15% Homework + 5% Quizzes + 20% (higher grade of the two ordinary exams) + 30% Algebra Comprehensive Exam + 30% Trig Comprehensive Exam

For everyone who records at least a 60% or better on each final exam, letter grades will be assigned using the full grading scheme(s) and the following cutoffs:
A: 90%, B: 80%, C: 70%, D: 60%, F: below 60%
There will also be an online exam given during final exams week. Provided that you have already earned the grade of D or better in the rest of the class, this online exam will give you the opportunity to improve your grade by up to one letter grade.

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.

Quizzes: There will be a quiz given most weeks in which there is no exam. This will be a very brief quiz given at the beginning of class, intended to test you with more immediacy than the exams and with less consequence. The problems that appear on the quiz will be taken from the homework problems I assign. Only your best 5 quizzes will count toward your grade, and there will be absolutely NO make-up quizzes.

Exams: The first algebra exam, which I call Exam 1, is tentatively scheduled for Wedneday, September 16. The algebra cumulative exam will be a two-day exam, tentatively scheduled for Thursday, October 15 and Friday, October 16. The first trigonometry exam, which I will call Exam 3, is tentatively scheduled for Friday, November 6. The trig cumulative exam will be a two-day exam, tentatively scheduled for Monday, November 23, and Tuesday, November 24. These will be 50 minute exams taken during the regular lecture time. There will be an additional online exam that will take place during the course final exam time, which has been set by the university, and will be Wednesday, December 9 from 10:00-11:50. 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.

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 virtually 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, and days of special concern/religious holiday statements. For these detailed policies of West Virginia University, please review:
https://tlcommons.wvu.edu/syllabus-policies-and-statements.

Class policies:

- Graphing or programmable 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.
- 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.

Special Notes:

- In ordinary circumstances, attendance of each lecture would be highly recommended. Regular attendance tends to lead to better understanding of the course material, which tends to lead to better performance on exams. However, the health and safety of everyone in our campus community depends largely on you making sure to stay away from campus if you feel symptoms of illness. If everything works the way it is supposed to work, every lecture will be streamed live online, so that you can still attend class remotely. While remote viewing of lectures is not quite the same as active in-person engagement in class, it's still a good way of learning the material and staying involved in the class.

- WVU is committed to maintaining a safe learning environment for all students, faculty, and staff. Should campus operations change because of health concerns related to the COVID-19 pandemic, it is possible that this course will move to a fully online delivery format. If that occurs, students will be advised of technical and/or equipment requirements, including remote proctoring software.

  In a face-to-face environment, our commitment to safety requires students, staff, and instructors to observe the social distancing and personal protective equipment (PPE) guidelines set by the University at all times. While in class, students will sit in assigned seats when applicable and wear the required PPE. Should a student forget to bring the required PPE, PPE will be available in the building for students to acquire. Students who fail to comply will be dismissed from the classroom for the class period and may be referred to the Office of Student Conduct for further sanctions.

  If a student becomes sick or is required to quarantine during the semester, they should notify the instructor. The student should work with the instructor to develop a plan to receive the necessary course content, activities, and assessments to complete the course learning outcomes.