Math 124 - College Algebra with Applications, Fall 2020
Course Syllabus

Instructor: Brian Leary

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    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: INN-B 311, MWF 8:00-8:50 am

Course website: community.wvu.edu/~bal0018/math124F20.html (as a backup website, I will also try to keep the eCampus site updated)

Course announcements and/or assignments 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: Lial/Hungerford/Holcomb/Mullins, *Mathematics with Applications*, 11th edition

Catalog Data: MATH 124. Algebra with Applications. Credits 3. Study of algebra with an emphasis on applications for science, business, technology, and social science. Topics include graphing and solving problems using linear, quadratic, square-root, logarithmic, and exponential functions, solving equations, performing operations on matrices.

Prerequisite: Placement by ACT/SAT Math score or grade of C or better in MATH 122.

Course Material: This course focuses on developing algebraic skills with the goal of applying these skills to model real-world situations and solve real-world problems.

An outline of the topics covered can be found on the next page.

Course Objective: Upon completion of the course the student should have good algebraic manipulative skills, and good graphing techniques. This course satisfies GEF 3 (Mathematics & Quantitative Skills).

Learning Outcomes: Upon successful 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 linear, quadratic, polynomial, and other equations.

3. Solve linear and quadratic inequalities.

4. Sketch graphs of linear and quadratic functions.

5. Work with logarithmic and exponential functions.

6. Solve a system of linear equations using matrix techniques.

Topics:

1. Basic Algebra (6 days - Chapter 1):

   (a) Exponential notation and algebraic expressions

   (b) Multiplication of algebraic expressions   (d) Rational expressions

   (c) Factoring   (e) Exponentials and radicals

2. Lines, Linear Equations, and Linear Inequalities (7 days - Sections 1.6, 2.1-2.4):

   (a) Graphs   (d) Linear models

   (b) Equations of lines

   (c) First degree equations   (e) Linear inequalities

3. Systems of Linear Equations (2 days - Sections 6.1-6.5):

   (a) Eliminating a variable   (c) Matrix operations (OPT)

   (b) The Gauss-Jordan method   (d) Matrix products (OPT)

4. Polynomial and Rational Equations and Inequalities (3 days - Sections 1.7 and 2.5):

5. Functions and Graphs (6 days - Chapter 3):

   (a) Functions   (d) Quadratic functions

   (b) Graphs of functions   (e) Applications of quadratic functions

   (c) Applications of linear functions   (f) Polynomial functions

6. Exponential and Logarithmic Functions (5 days - Chapter 4):

   (a) Exponential functions   (c) Exponential and logarithmic equations

   (b) Logarithmic functions   (d) Applications of exponential functions

7. Linear Programming (OPT - Sections 7.1-7.3)

   (a) Graphing linear inequalities in two variables

   (b) Linear programming: the graphical method

   (c) Applications of linear programming

Grading: Your final grade will be based on homework, quizzes, four exams during the semester, and the final exam. Your final course score will be computed as follows:

10% Homework + 5% Quizzes + 20% Exam 1 + 20% Exam 2 + 20% Exam 3 + 25% Cumulative Exam

There will also be an online exam given during final exams week. Provided that you have already passed the rest of the class with grade of D or better, this online exam will give you the opportunity to improve your grade by up to one letter grade.

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.

Exams: There will be a total of five exams. The first three exams will be 50 minute exams taken during the regular lecture time, and are tentatively scheduled for Friday, September 11; Friday, October 2; and Friday, October 30. There will be a cumulative exam given on Monday, November 23. This cumulative exam will also be a 50 minute exam taken during the regular lecture time. The final exam time has been set by the university as 8:00am-9:50am on Monday, December 7. During this time, an online exam will be administered to students with a passing grade. Make-up exams will be given to students with excused absences, provided the student notifies the instructor of their absence and desire to make-up the exam in a timely manner, which is usually no later than 24 hours after the missed exam.

Quizzes: There will be a quiz given on Friday of 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 versions of the problems in the homework. Only your best 5 quizzes will count toward your grade, and there will be absolutely NO make-up quizzes.

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.

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.

- 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.

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. [Available at: https://tlcommons.wvu.edu/qualitymatters/syllabus-policies-and-statements]