# Math 124 - Algebra with Applications, Fall 2023
## Course Syllabus

**Instructor:** Brian Leary
 **Email:** Brian.Leary1@mail.wvu.edu
 **Office:** Learning Resource Center 323K
 **Office hours:** Mon: 1-2, Tues: 6pm-7pm (online), Wed: 1-2, Thurs: 2-3, Fri: 10-11 & 1-2
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 313, MWF 2:00-2:50 pm
**Course website:** community.wvu.edu/∼bal0018/math124F23.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:** OpenStax *Intermediate Algebra 2e*, available to download for free at
 https://openstax.org/details/books/intermediate-algebra-2e.

**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. Linear Equations and Inequalities (11 days - Chapters 1, 2, 4 and Sections 3.1-3.3):

   (a) Order of Operations
   (b) First Degree Equations
   (c) Linear Inequalities

   (d) Equations of lines

   (e) Systems of Linear Equations

2. Polynomial Equations and Inequalities (11 days - Chapters 5, 6, 9):

   (a) Polynomial Expressions
   (b) Factoring

   (c) Quadratic Equations and Inequalities
   (d) Higher Degree Polynomials

3. Rational Equations and Inequalities (4 days - Chapter 7):

   (a) Manipulating Rational Expressions
   (b) Solving Rational Equations and Inequalities

4. Exponents, Radicals, and Logarithms (12 days - Chapters 8, 10):

   (a) Functions and Graphs
   (b) Simplifying Radicals
   (c) Exponents and Radicals

   (d) Exponential Functions and Applications
   (e) Logarithmic Functions
   (f) Exponential and Logarithmic Equations

**Grading:** Your final grade will be based on homework, quizzes, 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.

**Exams:** There will be three exams during the semester, tentatively scheduled for Friday, September 15; Friday, October 20; and Friday, November 10. These will be 50 minute exams taken during the regular lecture time. The final exam time will be set by the university, and is scheduled on Wednesday, December 13 from 1:00 pm to 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 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.

- 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.

**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.