MATH 122 – Quantitative Skills and Reasoning – 5-day
Spring 2025

Instructor:	Prof. L. J. Fox, III
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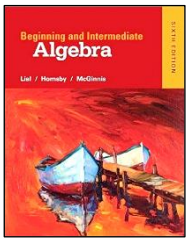
Office Hours:	*On Campus* – MW 12:30-1:20pm *Virtual via Google Meet* – TR 7:00-7:50pm, W 7:00-8:50pm
Website:	http://math122.ljfox3.com/
Course Description:	MATH 122 Quantitative Skills and Reasoning (5-0) Credits 2. An introductory study of quantitative and reasoning skills needed for success in science, technology, engineering, and mathematics.
Textbook:	Lial, Hornsby, McGinnis. *Beginning and Intermediate Algebra.* 6th edition., Pearson 2016.

Sections Covered:



1.1 Exponents, Order of Operations, and Inequality
1.2 Variables, Expressions, and Equations
1.3 Real Numbers and the Number Line
1.4 Adding and Subtracting Real Numbers
1.5 Multiplying and Dividing Real Numbers
1.6 Properties of Real Numbers
1.7 Simplifying Expressions
2.1 The Addition Property of Equality
2.2 The Multiplication Property of Equality
2.3 More on Solving Linear Equations
2.4 Applications of Linear Equations
2.5 Formulas and Additional Applications from Geometry
2.6 Ratio, Proportion, and Percent
2.8 Solving Linear Inequalities
3.1 Linear Equations and Rectangular Coordinates
3.2 Graphing Linear Equations in Two Variables
3.3 The Slope of a Line
3.4 Slope-Intercept Form of a Linear Equation
3.5 Point-Slope Form of a Linear Equation and Modeling
4.1 The Product Rule and Power Rules for Exponents
4.2 Integer Exponents and the Quotient Rule
4.3 (Instructor Option) Scientific Notation
4.4 Adding, Subtracting Polynomials …OMIT Graphing Polynomials
4.5 Multiplying Polynomials
4.6 Special Products
4.7 Dividing Polynomials
5.1 The Greatest Common Factor; Factoring by Grouping
5.2 Factoring Trinomials
5.3 More on Factoring Trinomials
5.4 Special Factoring Techniques
Summary Exercises: Recognizing and Applying Factoring Strategies
5.5 Solving Quadratic Equations Using the Zero-Factor Property
6.1 The Fundamental Property of Rational Expressions
6.2 Multiplying and Dividing Rational Expressions
6.3 (Instructor Option) Least Common Denominators
6.4 Adding and Subtracting Rational Expressions
6.5 Complex Fractions
6.6 Solving Equations with Rational Expressions
10.1 Radical Expressions …OMIT Graphs
10.2 Rational Exponents
10.3 Simplifying Radicals …OMIT the Distance Formula …OMIT Circles
10.4 Adding and Subtracting Radical Expressions
10.5 Multiplying and Dividing Radical Expressions
Sections 11.1, 11.2, and 11.3 may be covered as time permits.

Outcomes: Upon completion of this course, the student will be able to:

- Add, subtract, multiply, and divide integers, rational, and real numbers.
- Solve linear equations and inequalities in one variable.
- Find the slope of a line and graph linear equations.
- Add, subtract, multiply, and divide polynomials.
- Factor trinomials and use special factoring techniques on other polynomials.
- Add, subtract, multiply, and divide rational expressions.
- Simplify radical expressions.
- Add, subtract, multiply and divide radical expressions.

Grades: The final grade will be calculated based on

Quizzes:	15%	
4 Tests:	64%	(16% each)
Comprehensive Final Exam:	21%	

The three lowest quiz grades will be dropped.

Grade Scale:

A	90% – 100%	C	70% – 79%	F	0% – 59%
B	80% – 89%	D	60% – 69%		

Make-Up Policy: Quizzes **cannot** be made up. Make-up tests will be given only for students with excused absences. Students with excused absences must contact the instructor within 24 hours of the missed test to schedule a make-up.

Final Exam Rescue: If you earn a grade of at least 70% (C or better) on the Final Exam, you will receive a C for the course, even if your calculated average is lower. This is an option for students that may struggle early in the class but put in the effort to learn the material before the end of the term. *You should not count on this unless your grades are improving through the semester. The Final will be more challenging than the Tests as it covers more material.*

Calculators: Calculators will not be used in this course.

Academic Integrity Statement: The integrity of the classes offered by any academic institution solidifies the foundation of its mission and cannot be sacrificed to expediency, ignorance, or blatant fraud. Therefore, instructors will enforce rigorous standards of academic integrity in all aspects and assignments of their courses. For the detailed policy of West Virginia University regarding the definitions of acts considered to fall under academic dishonesty and possible ensuing sanctions, please see the West Virginia University Academic Standards Policy (http://catalog.wvu.edu/undergraduate/coursecreditstermsclassification). Should you have any questions about possibly improper research citations or references, or any other activity that may be interpreted as an attempt at academic dishonesty, please see your instructor before the assignment is due to discuss the matter.

Social Justice Statement: West Virginia University Institute of Technology is committed to social justice. I concur with that commitment and expect to maintain a positive learning environment based upon open communication, mutual respect, and non-discrimination. Our University does not discriminate on the basis of race, sex, age, disability, veteran status, religion, sexual orientation, color or national origin. Any suggestions as to how to further such a positive and open environment in this class will be appreciated and given serious consideration.

If you are a person with a disability and anticipate needing any type of accommodation in order to participate in this class, please advise me and make appropriate arrangements with the Office of Disability Services.

The instructor reserves the right to make changes to this syllabus at any time.