

Math 122 - Quantitative Skills and Reasoning, Fall 2021
Course Syllabus

Instructor: Brian Leary

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Office hours: Mon: 1-2, Tues: 10-11 & 6pm-7pm (online), Wed: 1-2, Thurs: 11-12, Fri: 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 301, MWF 2:00-2:50 pm

Course website: community.wvu.edu/~bal0018/math122F21.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/Hornsby/McGinnis, *Beginning and Intermediate Algebra*, 6th edition

Catalog Data: MATH 122. Quantitative Skills and Reasoning. 2 Hr. An introductory study of quantitative and reasoning skills needed for success in science, technology, engineering, and mathematics.

Prerequisite: Placement by ACT/SAT Math score or satisfactory performance on placement test.

Course Objective: Upon completion of the course the student should have the arithmetic and basic algebra skills needed for most majors. This will also give students in math related disciplines such as science, technology, engineering and mathematics the prerequisite skills needed for the higher-level mathematics courses.

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

1. Perform basic arithmetic operations with integers, rational and real numbers including multiplication, division, addition and subtraction.
2. Solve linear equalities and inequalities in one variable.
3. Find the slope of a line and graph linear equations graphically.
4. Add, subtract, multiply and divide polynomials.
5. Find the greatest common factor of a polynomial.
6. Factor trinomials and use some special factoring techniques on other polynomials.
7. Add, subtract, multiply and divide rational expressions.
8. Simplify radical expressions.
9. Add, subtract, multiply and divide radical expressions.

Topics:

1. Linear Equations in Two Variables (8 days - Chapter 3):
 - (a) Linear Equations
 - (b) Rectangular Coordinates
 - (c) The Slope of a Line
 - (d) Slope-Intercept Form
 - (e) Point-Slope Form
 - (f) Linear Inequalities
2. Factoring and Applications (12 days - Chapter 5):
 - (a) The Greatest Common Factor
 - (b) Factoring by Grouping
 - (c) Factoring Trinomials
 - (d) Special Factoring Techniques
 - (e) Solving Quadratic Equations
3. Rational Expressions and Applications (10 days - Chapter 6):
 - (a) Multiplying and Dividing Rational Expressions
 - (b) Least Common Denominators
 - (c) Adding and Subtracting Rational Expressions
 - (d) Complex Fractions
 - (e) Solving Equations with Rational Expressions
4. Roots and Radical Expressions (8 days - Chapter 10):
 - (a) Radical Expressions
 - (b) Rational Exponents
 - (c) Simplifying Radicals
 - (d) Adding and Subtracting Radicals
 - (e) Multiplying and Dividing Radicals

Grading: Your final grade will be based on quizzes, four exams during the semester, attendance and the final exam. There are 500 total points in the course, and your score will be based on the following areas:

- Exams - 4 exams, each worth 100 points for a total of 400 points, 80% of course score
- Quizzes - 8 quizzes, each worth 10 points, for a total of 80 points, or 16% of course score
- Attendance/Participation - worth 20 points, or 4% of course score
- Final exam - pass/fail (see below)

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

Attendance/Participation: I will be taking regular attendance in the class, with credit for attendance beginning on August 30. From that point on, there will be approximately 40 lectures. For every 2 lectures you miss, you will lose 1 of your 20 points for attendance. Therefore, if you miss fewer than 2 lectures, you will maintain your full 20 points, which will be 4% of your total course grade. Additionally, poor attentiveness or lack of participation in class may result in the loss of a point. (Note: Excused absences such as participation in athletics or clubs will not count toward your total of absences; however, having numerous excused absences may result in a reduction of the allowed unexcused absences as a proportion of the total potentially attended lectures. See me for clarification if you are concerned this may apply to you.)

Homework: Homework will have no direct impact on your grade. However, I will assign optional homework problems that I highly suggest you work on. In particular, quiz problems will be taken from these homework problems.

Exams: There will be a total of four 50 minute exams given during the regular lecture time throughout the course. They are tentatively scheduled for Friday, September 10; Wednesday, October 6; Wednesday, November 3; and Friday, December 3. 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.

Final Exam: The Final Exam will be a 110 minute pass/fail exam and will be given on the final exam date and time, which has been set by the university as 1:00 - 2:50 pm on Wednesday, December 15. It will not raise or lower your grade, but it will determine if you keep your current letter grade or fail the course.

Quizzes: There will be a quiz given on Friday of most weeks in which there is no exam. This will be a 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 assigned in the optional homework. Your lowest quiz score will be dropped from grade computation, and there will be 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.

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>.