

MATH 123 – Finite Math – Updated August 19, 2014

Instructor	Tyler Moss, Visiting Assistant Professor
Email	jtmoss@mix.wvu.edu
Office	Engineering Lab Building 101C
Office phone	304-442-3307
Class room/time	ELAB 201 MWF 9-9:50
Office Hours	Mon. 1-4 Tue. 2-4 Wed. 1-4 Fri. 1-2 Some of these hours will be in the Math Tutorial Lab.

Catalog Data MATH 123 Finite Math (3-0) 3 (Grade of C or better in MATH 93, or 1 unit of high school algebra and an ACT score of 19 or higher). Fundamentals of algebra: functions and graphs; linear functions; introduction to exponential and logarithmic functions; solving linear and quadratic equations; matrices.

Textbook Lial/Hungerford/Holcomb, *Mathematics with Applications*, Tenth Edition, Addison Wesley 2011.

Chapters Covered Chapter 1, sections 1,2,3,4,5,6,7
Chapter 2, sections 1,2,3,4,5
Chapter 3, sections 1,2,3,4,5,6
Chapter 4, sections 1,2,3,4
Chapter 6, sections 1,2,3(OPT),4(OPT)
Chapter 7, sections 1,2,3(OPT)

Reference None

Objective Upon completion of this course the student should have good algebraic manipulative skills and good graphing techniques.

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

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.

This course satisfies GEC 2: Basic Mathematical Skills and Scientific Inquiry. The use of quantitative and scientific knowledge effectively.

Grades	Homework	approx. 1% each	15%	A	90-100%
	3 Quizzes	5% each	15%	B	80-90%
	3 Tests	15% each	45%	C	70-80%
	Final exam (cumulative)		25%	D	60-70%
				F	0-60%

Homework There will be approximately fifteen collected homework assignments this semester.

Quizzes Three quizzes will be given through the semester.

Tentative quiz dates 29 Aug, 1 Oct, 3 Nov.

Exams Three 1-hour exams will be given through the semester. One final exam will be given according to the University schedule. If your score on the final exam is higher than another exam score, then I will replace your lowest exam score with the final exam score. No make-up exams will be given after the exam date. If you have a legitimate excuse, you may schedule with me for an early exam. Otherwise, if you are not in class to take an exam on the exam day, you will receive a zero for that exam.

Tentative test dates 15 Sep, 20 Oct, 21 Nov. Your Final Exam is scheduled according to the WVU Tech Finals Schedule.

Topics

1. Basic Algebra (9 days)
 - (a) Exponential notation and algebraic expressions
 - (b) Multiplication of algebraic expressions
 - (c) Factoring
 - (d) Fractional expressions
 - (e) Exponents and radicals
 - (f) First degree equations
2. Graphs, lines, and inequalities (7 days)
 - (a) Graphs
 - (b) Equations of lines
 - (c) Linear models
 - (d) Linear inequalities
3. Quadratic equations and inequalities (3 days)
 - (a) Quadratic equations
 - (b) Quadratic inequalities
4. Functions and graphs (8 days)
 - (a) Functions
 - (b) Graphs of functions
 - (c) Applications of linear functions

- (d) Quadratic functions
 - (e) Applications of quadratic functions
 - (f) Polynomial functions
5. Exponential and logarithmic functions (8 days)
- (a) Exponential functions
 - (b) Logarithmic functions
 - (c) Applications of logarithmic functions
 - (d) Applications of exponential functions
6. Systems of linear equations (4 days)
- (a) Eliminating a variable
 - (b) The Gauss-Jordan method
 - (c) Matrix operations
 - (d) Matrix products
7. Linear programming
- (a) Graphing linear inequalities in two variables
 - (b) Linear programming: the graphical method
 - (c) Applications of linear programming

Computer usage There are no planned computer-based assignments for this course. However, students should regularly check email for announcements or other communication regarding the class.

Laboratory Projects None

ABET Category Content Mathematics – Credit 3 or 100%

Tutoring The math department has a math tutorial lab open from 8am to 4:30pm. Free tutoring will be available from your math professors and some math majors during some of these hours. Free tutoring is also available through Student Support Services, which is located in Old Main, and the Student Success Center, which is located in the library.

Class Policies All electronic devices must be turned off and put away during class; disruptions can distract your professor and your fellow students. Graphing calculators are not allowed. You are not allowed to use your phone as a calculator. Anyone caught cheating including things like copying another students answers or using a cheat sheet or an unapproved device will receive a zero for the quiz or exam and will be reported to the appropriate university authorities. Inappropriate behavior in the classroom will not be tolerated.

Social Justice Statement The West Virginia University community is committed to creating and fostering a positive learning and working environment based on open communication, mutual respect, and inclusion.

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 (304.981.6210). For more information on West Virginia University's Diversity, Equity, and Inclusion initiatives, please see <http://diversity.wvu.edu>.

Academic Integrity 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, I will enforce rigorous standards of academic integrity in all aspects and assignments of this course. 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 Student Conduct Code http://studentlife.wvu.edu/office_of_student_conduct/student_conduct_code. 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 me before the assignment is due to discuss the matter.

Disclaimer The professor reserves the right to make any necessary adjustments and/or modifications to this syllabus.