

Math 120-74 Beginning Algebra

Instructor: Terry L. Cox

e-mail: <mailto:coxterryl@jccmi.edu>

Phone number: 734- 649-7306

Class Time: Tuesday, Thursday 12:30-2:30

Class Room: 223

Office Hours: None. I am typically available before and after class. I will gladly make an appointment, if that is convenient. Just contact me in class, by phone, or by e-mail.

Purpose and Learning Objectives

Course Description:

Math 120 is the study of the following: variables and variable expressions, integers, laws of exponents, equations (linear, quadratic, rational, radical, and absolute value), linear inequalities, linear systems, coordinate graphing and problem solving.

Prerequisite(s): Math 098 or equivalent

Course Goals:

The purpose of this course is to develop a progressive understanding of more basic algebraic skills, concepts, and problem solving techniques; to obtain a sense of how and why algebra is used, and to be able to relate these problems and use the learned problem solving techniques to real life applications. Great emphasis will be placed on understanding of terms, concepts, principles and theories rather than cramming and memorization.

Math 120 Core Course Objectives:

Students completing Math 120 – Beginning Algebra should be able to:

1. Simplify basic algebraic, exponential, rational, and radical expressions using mathematical processes and symbol manipulation.
2. Use algebraic processes to solve linear, quadratic, rational, radical and literal equations and linear systems of equations.
3. Demonstrate understanding of concepts of linear equations by: graphing a linear equation, finding x-and y-intercepts, and finding the slope of a line.
4. Solve basic application problems using algebraic processes and procedural techniques.
5. Demonstrate knowledge of current technology and its uses and/or scientific issues.

Math 120 Associate Degree Outcomes

All courses at Jackson Community College address one or more of the institutionally defined Associate Degree Outcomes (ADOs). Math 120 contributes to the following outcomes:

ADO 3: Demonstrate computational skills and mathematical reasoning.

Demonstrate a basic knowledge of the structure of the real number system. .

Demonstrate computational skills using positive and negative numbers, fractions, and decimals, ratio and percents.

Demonstrate an understanding of algebra (manipulating algebraic expressions, solving linear equations, applying the rules of exponents), geometry and measurement, data and descriptive statistics.

Use and understand basic mathematical terminology.

Translate situations into mathematical symbols.

Represent mathematical information symbolically, visually, numerically and/or verbally.

Understand that connections exist between mathematics and real-world situations.

ADO 7: Rubric for Critical Thinking

Incorporate new knowledge with old.

Convert complex concepts into useful personal language.

Solve new problems in new contexts.

Course Information and Requirements

Attendance and Withdrawal Policy

"A person, who neglects his education, neglects his most valuable and vulnerable resource. He neglects his future." "Education is the best provision for old age."

Aristotle

1. **Office Hours:** None. However, I strongly encourage you to come to me first to get help outside of class. Please do not ever get behind because of lack of understanding. I always want to do my best to help you understand this thing called math. If your available time and mine do not match, then there are other alternatives for help outside of class. Always feel free to email me or call my cell phone number.

2. **Tutoring:** Math Tutors are available. Some of the tutors are available evening and weekends. There are Computer Tutorial Programs available for some of the courses as well.

3. **Study Groups:** I strongly encourage you to make a friend or friends in class that you can get together with outside of class. One of the best ways to study and to learn is by helping one another. Like "they" say, "Two heads are better than one."

From the three items above, I hope it is obvious that your success is of utmost importance to all of us here. There is never a need to feel lost because of lack of understanding. There are so many ways for you to obtain math tutoring outside of the regular classroom. There is always some type of math help available. As long as you are being responsible for your learning by attending class, doing the assigned homework and other classroom activities, asking questions in class, and seeking help outside of class from the instructor, the tutoring services and your fellow classmates, success will be yours!!!

4. **Homework:** You are responsible for the homework assignments. Attempt the homework assignments before attending lectures. The lecture periods will be used to clarify and re-emphasize

previous material and to introduce new material. If you fail to come to class, you will not only miss the lectures, but will also miss the quiz and homework review. You will consequently receive a poor grade, not because you cannot do math, but because you failed to show up in class. Remember, there is a strong positive correlation between attendance and performance. It has also been determined that for each hour spent in class, one should spend at least two hours studying and reviewing outside of class. Be sure to allow time to do your coursework, to ensure success.

5. **Calculators:** Graphing Calculators (TI-83 or TI-84 preferred) are required for MTH 131, 132, 140, 151, etc. For MTH 120, a calculator is not required, but it would be advisable to have a scientific calculator that performs the basic operations (add, subtract, multiply, and divide), percents and fractions.

6. **Attendance:** Attendance is required and will be taken in some fashion daily (either by roll call or class work). Attendance will be included in the class work grade. Class work counts as 10% of your grade. If you do not plan to attend class regularly, you are advised to withdraw.

7. **Withdrawal:** You bear the sole responsibility for your withdrawal from this course just as you did when you registered for the course. The last day to withdraw can be found online through the academic calendar.

8. **Classroom Behavior:** As stated in the Student Handbook, misconduct for which students or visitors are subject to discipline are as follows:

1. Dishonesty, such as cheating, plagiarism, or knowingly furnishing false information to the College.
2. Forgery, alteration, or misuse of College documents, records or Identification.
3. Obstruction or disruption of teaching, lecturing. It takes all of us working together in a positive fashion to get the most out of our class. I am looking forward to sharing with you, a very positive and rewarding semester of mathematics. Not only do I look forward to your success, but I also hope you enjoy the learning process along the way.

Grading Procedures

Class work & Attendance:

Participation and involvement in class activities is expected.

***** Attendance will count 10% of the final grade.

Homework:

Your homework for this class is due on the date listed on the homework assignment sheet. Homework can be turned in late; but, your grade will be reduced by 10% for every class it is late.

***** Homework will count 10% of the final grade.

Quizzes:

The quizzes for this class will be take home quizzes and will be due as per the homework assignment sheet dates.

***** Quizzes will count 10% of the final grade.

Projects / Miscellaneous in & out of class assignments/ADO Requirement:

There will be various projects given throughout the semester that will be done as an in-class assignment or perhaps an out of class assignment. These assignments will pertain to material that we have covered in the past or current material. These assignments will be due on the date specified when the assignments are given and will not be accepted late.

***** These projects will count 5% of the final grade.

Exams:

There will be five exams that cover the topics of the text.

Any exam may be taken early if you notify me in advance.

Any missed exam will count as a zero.

EXAMS AS A GENERAL RULE MAY NOT BE TAKEN LATE FOR ANY REASON!!!

I realize that situations sometimes occur that are beyond our control. These times are generally infrequent and not usually on test days. These times may happen once a semester to only one or two people (and usually not to the same person). Therefore, in case of an extreme situation, if you must miss on the day of exam, the following procedure must be adhered to in order to make up the exam:

1. I must be notified before class begins on the day of the exam, that you will be missing the exam. You may email me or call me on my cell phone.
2. The missed exam must be taken before I return the graded exams. Typically, the next class session.

(Since you know the dates of the exams for the entire semester, it is expected that all appointments and activities you need to attend should be at times other than test day.)

***** Exams will count 50 % of the final grade.

Final Exam:

A comprehensive final exam will be given. The final may be taken early, but cannot, under any circumstances, be taken late.

***** The final exam will count 15% of the final grade.

Final Grade:

The final grade is calculated by adding:

(10% of the attendance) + (10% of the homework average) + (5% of project average) +
(10% of the quiz average) + (50% of the exam average) + (15% of the final exam score).

Your final grades will be based on the following scale:

Points Earned	Final Grade
90 – 100	4.0
85 – 89	3.5

80 – 84	3.0
75 – 79	2.5
70 – 74	2.0
65 – 69	1.5
60 – 64	1.0
55 – 59	0.5
00 – 54	0.0

Math 120-74 Course Calendar

Course: Math 120 (Beginning Algebra)
 Text: *Beginning Algebra, 10th edition*
 Author: Lial/Hornsby/McGinnis
 Instructor: Terry Cox coxterryl@jccmi.edu 734-649-7306

Day	Date	Sections	Topic
1	8/25/09	1.1	Fractions
2	8/27/09	1.2	Exponents, Order of Operations, and Inequality
		1.3	Variables, Expressions, and Equations
		1.4	Real numbers and the Number Line
3	9/1/09	1.5	Adding and Subtracting Real Numbers
		1.6	Multiplying and Dividing Real Numbers
		1.7	Properties of Real Numbers
		1.8	Simplifying Expressions
4	9/3/09	2.1	The Addition Property of Equality
		2.2	The Multiplication Property of Equality
		2.3	More on Solving Linear Equations
5	9/8/09	2.4	An Introduction to Applications of Linear Equations
6	9/10/09	2.5	Formulas and Applications from Geometry
		★ ★ ★ ★ ★ ★	More Topics from Geometry
7	9/15/09	2.6	Ratios and Proportions
		2.8	Solving Linear Inequalities
8	9/17/09	★ ★ ★ ★ ★ ★	Review for Exam #1
		★ ★ ★ ★ ★ ★	Exam #1 on Chapters 1&2
9	9/22/09	3.1	Reading Graphs: Linear Equation in Two Variables
		3.2	Graphing Linear Equations in Two Variables
10	9/24/09	3.2	Graphing Linear Equations in Two Variables
		3.3	The Slope of a Line
	9/29/09	★ ★ ★ ★ ★ ★	No class - Project Success Day - plan to attend
11	10/1/09	3.3	The Slope of a Line
		3.4	Equations of a Line
12	10/6/09	3.6	Functions
		4.1	Solving Systems of Linear Equations by Graphing
13	10/8/09	4.2	Solving Systems of Linear Equations by Substitution
		4.3	Solving Systems of Linear Equations by Addition
14	10/13/09	4.4	Systems of Linear Equations and Problem Solving
		★ ★ ★ ★ ★ ★	Review for Exam #2 on Chapters 3 & 4

15	10/15/09	☆☆☆☆☆☆ 5.1	Exam #2 on Chapters 3 & 4 The Product and Power Rules for Exponents
Day	Date	Sections	Topic
16	10/20/09	5.2 5.3 5.4 5.5	Integer Exponents and the Quotient Rule An Application of Exponents: Scientific Notation Adding and Subtracting Polynomials Multiplying Polynomials
17	10/22/09	5.6 5.7 6.1	Special Products Dividing Polynomials The Greatest Common Factor: Factoring by Grouping
18	10/27/09	6.2	Factoring Trinomials
19	10/29/09	6.3 6.4	More on Factoring Trinomials Special Factoring Techniques
20	11/3/09	6.5 6.6	Solving Quadratic Equations by Factoring Applications of Quadratic Equations
21	11/5/09	☆☆☆☆☆☆ 7.1	Review for Exam #3 on Chapters 5 & 6 The Fundamental Property of Rational Expressions
22	11/10/09	☆☆☆☆☆☆ 7.2	Exam #3 on Chapters 5 & 6 Multiplying and Dividing Rational Expressions
23	11/12/09	7.3 ☆☆☆☆☆☆	Least Common Denominators Career and Life Skills Project
24	11/17/09	7.4 7.5	Adding and Subtracting Rational Expressions Complex Fractions
25	11/19/09	7.6 7.7	Solving Equations with Rational Expressions Applications of Rational Expressions
26	11/24/09	8.1 8.2	Evaluating Roots Multiplying, Dividing, and Simplifying Radicals
27	12/1/09	8.3 8.4	Adding and Subtracting Radicals Rationalizing the Denominator
28	12/3/09	8.5 8.6	More Simplifying and Operations with Radicals Solving Equations with Radicals
29	12/8/09	☆☆☆☆☆☆ ☆☆☆☆☆☆	Review for Exam #4 on Chapters 7 & 8 Exam #4 on Chapters 7 & 8
30	12/10/09	9.1 9.3	Solving Quadratic Equations by the Square Root Property Solving Quadratic Equations by the Quadratic Formula
31	12/15/09	☆☆☆☆☆☆	Comprehensive Review
32	12/17/09	☆☆☆☆☆☆	Final Exam