

MTH-040 INTRODUCTION TO ALGEBRA COURSE SYLLABUS

**James A. Rhodes State College
Division of Arts and Sciences**

**5 Credit Hours
5 Contact Hours**

ADA Accommodations

The Learning Center provides free education assistance to any Rhodes State College student who is enrolled for credit. Students are responsible for informing the instructor of any instructional accommodations and/or special learning needs by the end of the first week of the quarter. Assistance is available to eligible students through The Learning Center, Science Building Room 151, or call (419) 995.8039 [adopted from a statement provided by the Learning Assistance Program].

Mathematics Mission Statement

The mission of the Rhodes State College mathematics department is to provide mathematical Mathematics foundations for underprepared students and the mathematics courses needed for the different technologies at Rhodes State College. The courses furnish students with mathematical concepts pertinent to our programs of study and allow flexibility in career and educational choices.

Dean of Arts & Sciences Division: Will Wells
Chair of Mathematics Department: Mary Ann Hovis

I. OVERVIEW

Math 040 is an introduction to algebra with an emphasis on linear equations, linear inequalities, and systems of linear equations and inequalities. This course will introduce students to principles needed to express word problems correctly as equations or inequalities and solve them. Linear graphs, quadrant graphs, and formulas found in most business applications will be studied.

This course is designed to give students the necessary background for Finite Mathematics for Business, MTH-119.

Prerequisite: MTH-030 with a grade of C or better, or placement.

Lecture and Class: 5 hours of lecture and 0 lab hours per week.

II. TEXT AND MATERIALS/SUPPLIES

Angel, Allen R. Elementary Algebra for College Students, Early Graphing, 2nd Edition
Prentice Hall, 2004

OPTIONAL: Student's Solutions Manual to accompany Elementary Algebra for College Students, Early Graphing. 2nd Edition Prentice Hall, 2004.

Student's Study Guide to accompany Elementary Algebra for College Students, Early Graphing. 2nd Edition Prentice Hall, 2004.

CALCULATORS: Students are required to have a TI-83 Plus or TI-83 Silver Edition or a TI-84 (any type) calculator. Any questions on calculators can be answered by your instructor.

III. COURSE OBJECTIVE

A. GENERAL

1. Real numbers.
2. Linear equations and inequalities in one variable.
3. Functions.
4. Equations for lines.
5. Systems of linear equations and inequalities in two variables.
6. Quadratic functions and their graphs.
7. Exponents.

B. SPECIFIC

The student should be able to:

1. Perform operations with real numbers
2. Perform operations using order of operation rules
3. Use the distributive law
4. Combine like terms (simple polynomials)
5. Solve linear equations in one variable
6. Solve linear inequalities in one variable
7. Use formulas
8. Solve linear application problems
9. Graph linear functions
10. Write the equation of a line in point-slope and slope-intercept form
11. Graph linear inequalities
12. Solve systems of linear equations in two variables graphically, by substitution, and by addition methods

13. Solve application problems using systems of equations
14. Solve systems of inequalities
15. Evaluate square roots
16. Use laws of exponents and scientific notation
17. Evaluate square roots
18. Solve quadratic equations using the quadratic formula
19. Graph quadratic functions

IV. SCHEDULE OF INSTRUCTION TOPICS

A. Real Numbers

1. Study Skills for Success in Mathematics
2. The Real Number System
3. Exponents, Parentheses and Order of Operations
4. Properties of the Real Number System

B. Solving Linear Equations and Inequalities

1. Solving Linear Equations with the Variable on Both Sides of the Equation
2. Ratios and Proportions
3. Inequalities in One Variable

C. Formulas and Applications of Algebra

1. Formulas
2. Changing Application Problems into Equations
3. Solving Application Problems
4. Geometric Problems
5. Motion, Money, and Mixture

D. Graphing Linear Equations

1. The Cartesian Coordinate System and Linear Equations in Two Variables
2. Graphing Linear Equations
3. Slope of a Line
4. Slope-Intercept and Point-Slope Forms of a Linear Equation
5. Graphing Linear Inequalities
6. Functions

E. Systems of Linear Equations

1. Solving Systems of Equations Graphically
2. Solving Systems of Equations by Substitution
3. Solving Systems of Equations by the Addition Method
4. Applications of Systems of Equations
5. Solving systems of Linear Inequalities

F. Exponents and Polynomials

1. Exponents
2. Negative Exponents
3. Scientific Notation
4. Addition and Subtraction of Polynomials (if time)

G. Roots and Radicals

1. Evaluating Square Roots

H. Quadratic Equations

1. Solving Quadratic Equations by the Quadratic Formula
2. Graphing Quadratic Equations

V. SCHEDULE OF ACTIVITIES

Chapters 3-5, and parts of 1,2,6,9 and 10 will be covered from the text. For additional information, see attached sheet identified as COURSE OUTLINE.

TENTATIVE COURSE OUTLINE

The tentative course outline is as follows. This schedule may vary, as students may need more time on some subjects and less on others.

Chapter No.	Week No.	Topic
1	1	Real Numbers
2	1,2	Solving Linear Equations and Inequalities
3	3	Formulas and Applications of Algebra
4	4,5	Graphing Linear Equations
5	6, 7	Systems of Linear Equations
6	7, 8	Exponents
9	9	Roots and Radicals
10	10	Quadratic Equations

VI. LABORATORIES, CLINICALS

There are no specific classes set aside for labs. Each class is conducted with time for students to work problems and discuss those problems with their instructor as a group. In this respect, every class is best described as a class/lab, because each student will be actively doing problems in each class.

VII. SPECIAL OR ADDITIONAL COURSE REQUIREMENTS

Working homework problems is the most important activity for success. Students should be sure to allow time in their schedules for working homework problems each night.

No children, cell phones, or pagers in class without prior permission of the instructor.

VIII. ATTENDANCE

Given the volume of material covered in the class, students are:

- 1. expected to be in class the entire time the class is in session and;**
- 2. responsible for everything presented or covered in class.**

Attendance is an important part of the grade you receive for this course. Regular attendance is needed to gain an understanding of the course's content and to satisfactorily demonstrate required competencies. Lack of attendance will negatively impact the earned grade and if flagrant, could result in a grade of "E."

Student Conduct: Students are responsible for helping to maintain the decorum of the classroom. Therefore the following behaviors are deemed unacceptable: habitual attendance/punctuality problems; disruptive behavior (to include eating or sleeping during class, holding private conversations during class, performing antics during class, deriding or embarrassing other students and/or racist or sexist comments or behaviors); or any other activity which tends to compromise the academic integrity and subvert the process of education. As outlined in the Rhodes State Student Code of Conduct, students in violation of these guidelines may be removed from the class or exposed to other disciplinary measures.

Information about Withdrawals:

- ✓1. Before 5:00 p.m. of the 4th Friday of a quarter, a student may withdraw from a course and no mark will be entered on their official permanent record.
- ✓2. Between 5:00 p.m. of the 4th Friday and 5:00 p.m. of the 7th Friday of a quarter, a student may withdraw from an course and their official permanent record shall bear the notation of "W".
- ✓3. After the 7th Friday documented and extenuating circumstances will be required to withdraw from a course.

✓**PROPER PAPERWORK** must be done by the student. Please see catalog for more details.

IX. **TESTING AND EVALUATION PROCEDURES**

Please note the following policy on missing an exam or quiz:

If a student is absent on an exam or a quiz day, a score of zero will be recorded unless other arrangements are made with the instructor.

Class specific information is provided on an additional sheet.

X. **COURSE BIBLIOGRAPHY AND STUDENT REFERENCE**

Angel, Allen R. Elementary Algebra for College Students, Early Graphing, 2nd Edition
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OPTIONAL: Student's Solutions Manual to accompany Elementary Algebra for College Students, Early Graphing. 2nd Edition Prentice Hall, 2004.

Student's Study Guide to accompany Elementary Algebra for College Students, Early Graphing. 2nd Edition Prentice Hall, 2004.

Video tapes for additional help are available in the Skills Center SCI 240.

Math Pro 5 – on desktop in Skills Center & Rooms

Students may obtain free tutoring in the Skills Center SCI 240.

XI. **PLAGIARISM**

Plagiarism is the use of someone else's writing without giving proper credit - or perhaps without giving any credit at all to the writer of the original material. Whether plagiarism is intentional or unintentional, it represents a serious academic offense that can be easily avoided by adhering closely to the following advice. A student must document his/her source of information whenever she/he:

1. uses a direct quotation.
2. copies a table, chart, or diagram.
3. Constructs a table from data provided by others.
4. Paraphrases a passage in his/her own words.
5. presents specific examples, figures, or factual information taken from a specific source and used to explain or support his/her judgments (James M. McCrimmon, Writing With A Purpose, p. 499)

In addition to this definition, the Instructional Division of Rhodes State College, considers plagiarism to include: (1) submitting the work of another student, (2) copying from another student, or (3) using unauthorized notes or crib sheets to complete assigned work.

Academic Honesty. All class members are assumed to be honest. Attempting to deceive, defraud, or use dishonesty for one's own gain cannot be tolerated in any form. Cheating during any class activity is unethical and compromises the integrity of the college and subverts the process of education (note: individual programs may impose greater penalties). Cheating may result in a grade of "0" for the activity. Instructors may report questionable behavior to the office of the Vice President for Academic Affairs who will bring the incident to the attention of the Academic Misconduct Committee. Students are encouraged to review the Code of Student Conduct in the college's catalog for specific details and examples of academic dishonesty.

Submitting Substantially The Same Work. Submitting substantially the same work to satisfy requirements for one course that has been previously submitted and satisfied the requirements for another course, without permission of the instructor for which the work is being submitted and without including the original work for comparison is not permitted. See Section 10.5, paragraph 5 of the code of Student Conduct.

This syllabus can be changed at the discretion of the instructor and/or chair of the program.