

Roane State Community College
Division of Mathematics and Sciences
MATH 1130 College Algebra
Fall 2018 Syllabus

INSTRUCTOR INFORMATION:

Name: **Dr. Michelle Phipps**

Office: **M137**

Office Hours: **Fridays 7:30 – 9:15**

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COURSE INFORMATION

Course Type: Traditional, in-class attendance required

Day and Time: **Tuesday and Thursdays 8:00 – 9:10; Also some scheduled Fridays**

Credit Hours: **3**

Course Description: A course in algebraic functions, their properties and uses-equations, inequalities, graphs, systems of linear equations, analytical geometry including ellipse and hyperbola. Applications are in the mathematics of finance as well as the laws of growth and decay in other areas.

Prerequisites for the course: Two years of high school algebra and one year of geometry with an ACT of 21 or above or appropriate mathematics learning support courses and MATH 1000.

TBR Learning Outcomes for Mathematics:

1. Build on the competencies gained through the study of two years of high school algebra and one year of high school geometry.
2. Use mathematics to solve problems and determine if the solutions are reasonable.
3. Use mathematics to model real world behaviors and apply mathematical concepts to the solution of real-life problems.
4. Make meaningful connections between mathematics and other disciplines.
5. Use technology for mathematical reasoning and problem solving.
6. Apply mathematical and/or basic statistical reasoning to analyze data and graphs.

Course Topics:

- Chapter 1 Equations and Inequalities

- Chapter 2 Graphs
- Chapter 3 Functions and their Graphs
- Chapter 4 Linear and Quadratic Functions
- Chapter 5 Polynomial and Rational Functions
- Chapter 6 Exponential and Logarithmic Functions
- Chapter 7 Analytic Geometry
- Chapter 8 Systems of Equations and Inequalities

Specific Course Competencies: The student who completes the course shall be able to

1. Apply the properties of exponents, the student will demonstrate an ability to use rational exponents.
2. Simplify and perform basic operations with rational expressions as well as simplify complex rational expressions.
3. Solve linear equations using the fundamentals of elementary algebra.
4. Solve application problems involving linear equations including mixture problems.
5. Solve systems of linear equations (two equations with two unknowns).
6. Solve quadratic equations using a variety of techniques including factoring and the quadratic formula.
7. Solve quadratic equations that have complex solutions as well as those with real number solutions.
8. Perform operations and simplification of complex numbers including powers of i .
9. Solve radical equations.
10. Solve equations that are in quadratic form.
11. Solve other equations that may involve the use of the methods for solving quadratic equation.
12. Solve and graph linear and quadratic inequalities.
13. Graph linear equations in the Cartesian coordinate system.
14. Determine the equation of a line, which satisfies certain specified conditions.
15. Solve word problems involving variation, using both direct and inverse proportionality.
16. Graph quadratic equations in the Cartesian coordinate system.
17. Identify and stretch parent functions including square root, reciprocal, and absolute value.
18. Graph polynomial functions of degree greater than 2.

19. Find the real zeros of a polynomial function using synthetic division.
20. Graph exponential and logarithmic functions.
21. Solve exponential equations
22. Apply the concepts of exponential functions to the study of compound interest and exponential growth and decay.
23. Solve logarithmic equations.
24. Identify and graph conic sections, including circles, parabolas, ellipses, and hyperbolas (ellipses & hyperbolas in standard form only with center at origin).
25. Graph circles including ones which involved completing the square.

TEXTBOOKS AND SUPPLEMENTARY MATERIALS

Textbook: *College Algebra Tenth Edition* by, Michael Sullivan – Students will only need to purchase a MyMathLab Students Access Kit, ISBN: 9780321199911

Calculator: A basic scientific calculator is required. A graphing calculator is not allowed for this course.

GRADING AND EVALUATION

Grading procedure: This class is scored on total points. There are 600 possible total points.

Grading Scale: Grades for Roane State will be assigned the following scale: A: 90-100%; B: 80-89%; C: 70 -79%, D: 60-69%, F: below 60%.

Assignments and Evaluations: There will be four 100 point exams. (Three unit exams and a comprehensive final exam). There will be a window of three days to make up a missed unit exam. The final exam is mandatory and failure to complete the exam will result in a grade of incomplete for the semester. In addition, homework assignments will be worth a total of 100 points.

Homework Policy: Homework will be assigned and collected daily (25 times) and will be graded in the following manner. Two problems per assignment will be chosen by me. For those two problems, 1 point will be given for each problem attempted and 1 point will be given for each problem that is worked and correctly answered. Thus each homework assignment will be worth 4 points for a total possible homework score of 100 points.

PLAGIARISM AND ACADEMIC INTEGRITY

Academic Misconduct includes, but is not limited to, **Plagiarism, Cheating, Fabrication and Facilitation**. Academic misconduct is prohibited. Upon identification of misconduct, an instructor has the authority to assign an “F” or a zero for the exercise, the examination, or the entire course. Students guilty of academic misconduct that would typically result in the grade of

“F” for the course will not be permitted to drop the class in which the academic misconduct occurred. The instructor will contact the appropriate Division Dean who will then contact Records and request that an administrative hold be placed on the course in question. The instructor will notify the student of the appropriate due process/appeal procedure. The administrative hold will remain in place until the academic misconduct matter is concluded.

STUDENTS WITH DISABILITIES

Qualified students with disabilities will be provided reasonable and necessary academic accommodations if determined eligible by the appropriate disability services office staff. Prior to granting disability accommodations in the course, the instructor must receive written verification of a student's eligibility for specific accommodations from the disability services office staff. It is the student's responsibility to initiate contact with the disability services staff and to follow the established procedures for having the accommodation notice sent to the instructor.

PREVENTING SEXUAL DISCRIMINATION AND HARASSMENT

Title IX of the Education Amendments of 1972 prohibits sex discrimination against any participant in an educational program or activity that receives federal funds. Title IX covers discrimination in programs, admissions, activities, faculty-to student sexual harassment, and student-to student sexual harassment. RSCC's policy against sexual harassment extends not only to employees of the college, but to students as well. If unlawful sexual harassment or gender-based discrimination is encountered, please bring this to the attention of the class professor, or contact Mr. Odell Fearn, Title IX Coordinator, at (865)354-3000 ext. 4212 or ext. 4679 or email at fearnao@roanestate.edu.

TECHNICAL SUPPORT AND ADDITIONAL STUDENT RESOURCES

CTAT

If you are having problems logging into your course on Momentum, timing out of your course, using your course web site tools please call CTAT at (865)882-4556, M-F, 9-5, EST.

HELP DESK

For all other technical problems call Help Desk at (865)354-3000 Ext 4357 from any phone to be connected directly to the Help Desk.

LEARNING CENTER

Roane State's Learning Centers are a resource for extra help understanding assignments and course content. The Learning Centers offer tutoring in many subjects. For more information,

visit the learning center website: [Learning Center \(Website\)](http://www.roanestate.edu/?61433-Learning-Center)
(<http://www.roanestate.edu/?61433-Learning-Center>)

EMERGENCY SITUATION RESPONSE

To assist in preserving your personal safety, the Roane State Police Department recommends that you view the [Run Hide Fight](http://www.roanestate.edu/?10249-Options-to-Survive-an-Active-Shooter-on-Campus-Run-Hide-Fight) video (<http://www.roanestate.edu/?10249-Options-to-Survive-an-Active-Shooter-on-Campus-Run-Hide-Fight>) that is taught to the members of RSCC Faculty and Staff. If after viewing this video you have any questions please contact any member