

Course Syllabus
Math 1111-27: College Algebra (3 credit hrs.)
Fall Term, 2019
University of West Georgia

Instructor: Dr. David G. Robinson, Humanities #221, 678-839-4137
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Office Hours: MW 12:15 – 1:45 p.m., Fri. 10 – 10:50 a.m., 1 – 2:10 p.m.

Class Meetings: MW 9:30 – 10:45 a.m., Boyd #301
These will consist primarily of lectures and question-and-answer sessions. All reading will be assigned in advance of the meeting thereon. (See attached schedule.)

Text/Resources: **Required:** Hard copy or (free) downloadable PDF version of *Algebra & Trigonometry*, OpenStax College, Rice University, 2015 (Chs. 1 – 6, 11)

Required: Graphics calculator (**TI-83/84** or an equivalent)

Prerequisites: High-school algebra

Course Description: This course is a functional approach to algebra that incorporates the use of technology. Emphasis will be placed on the study of functions, and their graphs, inequalities, and linear, quadratic, piece-wise defined, polynomial, rational, exponential and logarithmic functions. Appropriate applications will be included.

Main Topics: *Algebraic Expressions* (§ 1.1 – 1.6): Types of real numbers, intervals, inequalities, absolute values, laws of arithmetic, expansion and factoring of algebraic expressions, laws of exponents and radicals, polynomials, factorization, rational expressions
Equations and Inequalities (§ 2.1 – 2.7) Coordinates, graphs, slope, linear and quadratic equations, complex numbers, linear and absolute value inequalities
Functions and Graphs (§ 3.1 – 3.7, 4.1 – 4.2, 11.1 – 11.2): Function notation, domain and range, rate of change, slope of a curve, linear transformations of graphs, operations on functions, inverse functions, linear models, systems of linear equations
Polynomial Functions (§ 5.1 – 5.5): Quadratic functions and parabolas, polynomials and their graphs, polynomial factorization, polynomial division, zeros of polynomials, applications.
Exponential and logarithmic functions (§ 6.1 – 6.7): Exponential functions, log functions, graphs, exp/log equations, exponential growth and decay models

Objectives: Besides developing and deepening your understanding of the topics mentioned above, there are some general skills you should improve upon along the way in order to be able to carry what you learn in this course into future courses of study and future work situations. These include:

- use of appropriate mathematical terminology and notation
- construction and use of tables, graphs and formulas
- recognition of function types
- equation-solving (by hand and by machine)
- curve sketching (on paper as well as on a calculator)
- translation of practical problems into mathematical models and vice versa

Evaluation Procedures: Your understanding of the material and your progress toward the aforementioned objectives will be evaluated on the basis of your performances on *five written tests and a comprehensive final exam*. (See attached schedule for details.)

Homework problems from the text or from class will be assigned regularly. These are for practice, self-evaluation and class discussion. (Nearly all test questions will be based directly on the HW exercises!) Be prepared to discuss them as soon as possible after they are assigned.

Evaluation Criteria: Grades on all work will be based upon

- accuracy of information (including calculations and use of mathematical notation and terminology)
- depth and breadth of solutions
- logic and clarity of arguments
- neatness and clarity of presentation
- correctness of grammar and spelling
- thoroughness and timeliness of work
- intellectual honesty and creativity
- achievement of personal potential
- relative difficulty of the assignment/test

Grades: My scale for converting numerical grades (i.e., percentage points) to letter grades will be as follows:

89-100 A, 77-88 B, 65-76 C, 50-64 D, below 50 F

Your final grade will be based on your *four test scores* (one worth 15%, three worth 20% each) *and a comprehensive final exam* (25%). However, you may also earn up to 4 points of ‘extra credit’ by maintaining a *superior record of attendance* - i.e., *one point per period of zero absences from class meetings between successive tests*. [Note: An absence here means a class day in which you are not present (in body or mind!) for the duration of the class meeting, *regardless of the reason*.]

Important Policies and Reminders:

- Attendance is important! However, should you find for some reason that you must miss a class meeting, remember that you are still responsible for any and all material you may have missed during your absence.
- Cell phones should be turned *off* during class meetings. If you need to make or receive a call/text, please excuse yourself from the class and take care of your business outside the classroom.
- *Tests must be taken at the prescribed times (see attached schedule), except by prior permission from the instructor, which will only be given under the direst of circumstances (serious illness, e.g.). In order for you to obtain such permission, I must be notified of your “dire circumstances”, by e-mail, phone, or otherwise, before the test is over. Otherwise you will almost certainly receive a score of zero for that test.*
- *The Math Tutoring Center is in Boyd #205 and is open daily at the posted times.*
- *All electronic correspondence between student and instructor about matters pertaining to this course should be by way of your UWG e-mail account.*
- I assume you will abide by the *SUWG Honor Code*. So will I! Anyone caught cheating - which means *representing someone else’s work as your own* - will receive a grade of zero for that assignment/test.
- Please carefully read the information at the following link, as it contains important material pertaining to your rights and responsibilities in this class: <https://www.westga.edu/UWGSyllabusPolicies/>

Disabilities Act/Accessibility for the Course: If you are a student who is disabled as defined under the Americans with Disabilities Act and require assistance or support services, please notify me and provide me with a copy of your packet from Student Services. The university will provide you with resources for any audio/visual needs that you may have with the learning management system or course content. Please contact UWG Accessibility Services for more information.