



MATH 1111 G (CRN 705)
College Algebra
Spring Semester 2020

Instructor: Allen G. Fuller

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Office location: Instructional Complex 240

Office hours:

Monday: 9:00-9:30; 12:30-2:00

Wednesday: 9:00-9:30; 12:30-2:00

Friday: 9:00-11:00; 1:00-3:00

And by appointment

Class Location: Instructional Complex 310

Class Times: 9:30-10:45 Monday,
Wednesday

Course Description:

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

Pre or Co-requisites: Exemption from or Completion of Learning Support Mathematics

Required materials:

- **CALCULATOR:** A scientific calculator (for example, Texas Instruments, TI-30XIIS) is allowed. **Graphing calculators are NOT allowed.**
- **CLICKER:** Students are required to own a clicker, which can be purchased at the Bookstore, for this course. The clicker should have the student's name clearly printed on it and must be registered before the second day of class.
- **TEXT:** Sullivan, Michael. 2019. *Algebra & Trigonometry*. 11th edition. Pearson Prentice Hall. Access Card for MyLab Math ISBN : 9780321199911.

Area Requirements/Skills and Competencies:

This objective is directed toward the following general education expected outcome of the college:

Mathematical Skills: Students will demonstrate a basic knowledge of the fundamentals of college-level mathematics.

Specific Learning Outcomes:

Upon completion of College Algebra, students should have an understanding of:

1. Solving linear, quadratic, rational, radical, and absolute value equations and their applications.
2. Solving linear, quadratic, rational, radical, and absolute value inequalities and their applications.
3. The rectangular coordinate system and graphing equations in two variables.
4. Finding equations of, and graphing, lines and circles and their applications.
5. Fundamental concepts of functions, including composition of functions, and their application as mathematical models.
6. Fundamental properties of polynomials, the factor and remainder theorems, and the number of real zeros of a polynomial.
7. Solving systems of linear equations in two or three variables and applications.
8. The properties of exponential and logarithmic functions and their application to compound interest.
9. Solving exponential and logarithmic equations.

Learning Goals and Their Assessment

- A. **Foundational goals:** During the course, students should learn to do the following:
1. Master manipulation of numeric and algebraic expressions.
 2. Solve applied problems and determine if the answer makes sense.
 3. Develop some understanding, conceptually or numerically, of why the mathematical techniques they use are valid.
 4. Apply mathematical techniques in unfamiliar contexts.
 5. Learn mathematical ideas by reading.
- B. **Subject goals:** By the end of the course, students should be able to do the following:
1. Solve linear, quadratic, radical, absolute value, exponential, and logarithmic equations and systems of linear equations.
 2. Solve linear, absolute value, polynomial, and rational inequalities.
 3. Master graphing in the coordinate plane and interpreting graphs.
 4. Understand functions and composition of functions.
 5. Analyze the properties of linear, quadratic, circular, polynomial, exponential, and logarithmic graphs and functions.

C. How learning goals will be assessed: Students work will be assessed on their ability to understand conceptual and applied questions, to clearly demonstrate a series of mathematically correct steps to arrive at a solution, and to explain the solution. Assessment may occur in lecture preparation activities, homework assignments, student work during lecture, quizzes, and exams.

D. How students can accomplish these goals:

1. Prepare for lecture. Read the textbook and do the examples there (don't just look at how the book did it). Do any worksheets or other lecture preparation activities. Look over the previous lecture notes right before class.
2. Actively participate in the lecture. Ask questions.
3. Review the lecture. Read over your notes as soon as possible after the lecture. Where needed restate your notes so they make more sense to you.
4. Study mathematical concepts a little each day. Being able to do the problems is not enough. Explain ideas and how you solve problems as if you were teaching a class. Memorize formulas and rules, understanding why they are true will help.
5. Do the homework. Complete all of the problems, not just the ones you already know how to do. Work on the problems without looking at examples from online videos or the book; your goal is to learn math, not to learn how to copy material from a video. Check your work. Do not enter an answer unless you are certain it is correct.
6. Use resources. The student success center (SSC), professor office hours or review sessions, and student study groups can help you clarify things that are hard to understand and learn challenging concepts. In sections where it is available, supplemental instruction (SI) is an extremely useful resource.
7. Prepare for quizzes and exams. Do any practice quizzes or exams under test conditions. Make your own study guides. Make sure to get 8 hours of sleep the night before an exam.
8. Monitor your progress. If things are not going well, ask your professor for suggestions as soon as possible. Do not wait until the week before an exam.

Grade Scale:

89.5% +	79.5 – 89.4%	69.5 – 79.4%	59.5 – 69.4%	Less than 59.5%
A	B	C	D	F

Grading Scheme:

The student's final grade will be computed as follows:

Participation	5%
Homework	10%
Quizzes	15%
Tests	50%
<u>Final Exam</u>	<u>20%</u>
TOTAL	100%

Assessments:

- A. Class participation based upon the daily "Clicker Questions." Students getting at least 1/3 of the clicker questions correct will earn the maximum of 1 participation point for the day. Students attempting but getting less than 1/3 of the questions correction will earn 0.3 participation points for the day. Students who do not respond to clicker questions will get a zero for participation for the day. **In order for me to award participation points, you will need to e-mail me your clicker ID number!!**
- B. Homework will be completed on-line via [MyLab Math](#). The homework assignments are listed there. Our course ID number is fuller18609. Please login to [MyLab Math](#) as soon as possible. **The due dates of the homework assignments are given in MyMathLab and will NOT be extended. There are no exceptions to this policy. Please make your plans accordingly.**
- C. There will be quizzes approximately every Monday. Quizzes will be at the end of class. **There will be NO make-up quizzes.** However, I will drop your lowest three quiz grades.
- D. There will be four (4) in-class tests given during the semester. The dates of these exams are: Wednesday, February 5; Monday, March 2; Monday, March 30; and Monday, April 27, 2020. **If a make-up test is required, there will be 20% penalty unless there is a documented medical excuse or documented death in the immediate family.** A make-up test **must** be taken within **48 hours** of your return to class or by the last day of class (whichever comes first), after which you receive a grade of zero
- E. There will also be a comprehensive Final Examination given on Wednesday, May 6, 2020, 10:15 AM – 12:15 PM. Gordon College policy states the Final Examinations must be taken at the scheduled time with the following exception. Students who have three or more finals on the same day may petition to take the third and/or fourth exam on another day or days. Student Petition forms are available in the Academic Affairs Office (Lambdin Hall 347). Please make your plans accordingly.
- F. If your grade on the Final Exam is higher than your highest test score, then the grade on the Final Exam will replace your lowest test score.

Student Rights and Responsibilities:

- A. **Title IX:** Gordon State College is committed to providing an environment free of all forms of discrimination and sexual harassment, including sexual assault, domestic violence, dating violence and stalking. If you (or someone you know) has experienced or experiences any of these incidents, know that you are not alone. All faculty members at Gordon State College are mandated reporters. Any student reporting any type of sexual harassment, sexual assault, dating violence, domestic violence or stalking must be made aware that any report made to a faculty member under the provisions of Title IX will be reported to the Title IX Coordinator or a Title IX Deputy Coordinator. If you wish to speak with someone confidentially, you must contact the Counseling and Accessibility Services office, Room 212, Student Life Center. The licensed counselors in the Counseling Office are able to provide confidential support. Gordon State College does not discriminate against any student on the basis of pregnancy, parenting or related conditions. Students seeking accommodations on the basis of pregnancy, parenting or related conditions should contact Counseling and Accessibility Services regarding the process of documenting pregnancy related issues and being approved for accommodations, including pregnancy related absences as defined under Title IX.
- B. **ADA and 504:** If you have a documented disability as described by the Americans with Disabilities Act (ADA) and the Rehabilitation Act of 1973, Section 504, you may be eligible to receive accommodations to assist in programmatic and/or physical accessibility. The Counseling and Accessibility Services office located in the Student Center, Room 212 can assist you in formulating a reasonable accommodation plan and in providing support in developing appropriate accommodations to ensure equal access to all GSC programs and facilities. Course requirements will not be waived, but accommodations may assist you in meeting the requirements. For documentation requirements and for additional information, contact Counseling and Accessibility Services at 678-359-5585.
- C. **House Bill 280:** For information regarding House Bill 280, see the University System of Georgia at the following link: <http://www.usg.edu/hb280>.
- E. **Religious Holidays:** Gordon State College acknowledges that the academic calendar can sometimes conflict with major holidays from among our diverse religious traditions. If a student must miss class due to the observance of a religious holiday, that absence may be excused. To be excused, the student must inform his/her instructors before the absence and make alternate arrangements for any work due at the time of the absence. An excused absence for the observance of a religious holiday does not excuse student from responsibility for required course work.
- F. **Hightower Collaborative Learning Center & Library:** The Hightower Collaborative Learning Center & Library offers Gordon State students specialized library research assistance. Students can meet with their personal librarians for one-on-one help in each discipline, major, or course to search and evaluate information sources effectively. Go to schedule an

appointment by clicking the **Personal Librarian** tab or click on the **Presentation Practice Room** tab to make a reservation. For immediate help, call **678-359-5076** or stop by the Circulation/Check-Out Desk. You can also [Ask a Librarian](#) or drop by the Circulation/Check-Out Desk. Check the library's for [website](#), [hours](#), [electronic resources](#), and [LibGuides](#) (subject- or class-specific research guides).

Additional Information:

A. This course is a functional approach to algebra that incorporates the use of appropriate technology. Emphasis will be placed on the study of functions, and their graphs, inequalities, and linear, quadratic, piece-wise defined, rational, polynomial, exponential, and logarithmic functions. Appropriate applications will be included. A primary goal of this course is to encourage students to think and to improve their logical reasoning abilities. The course emphasizes the use of algebraic skills and mathematical reasoning in problem solving

This course will emphasize student preparation, critical thinking, and problem solving. To do well in the course, you must read the assignment ahead of time and prepare questions, do problems from the text, and prepare for test by reviewing those problems worked in class and at home. Over the course of the semester, you should devote about two hours of outside work for each hour in class. College Algebra demands your time and effort! First, study the examples worked in class as well as those in the textbook, then practice, practice, practice problems.

This course, as many other courses, will emphasize the written communication of ideas to others. In this course, you will be communicating mathematical ideas. Just as it is important in an English course to use the proper format in your essays and term papers, it is important to use proper form when communicating mathematical ideas. You will learn how to write mathematics so that it can be understood by others. You should carefully study how mathematics is written in class as well as how it is written in the textbook. You should pattern your writing after these sources.

B. Skills Students Need To Succeed:

1. Health management. Get enough sleep, water, nutrition, and exercise. Manage stress.
2. Time management. Schedule 1 – 2 hours for studying math each day. Keep track of deadlines.
3. Strong work ethic. Learning math is a major commitment.
4. Curiosity. Even when the material seems boring, ask yourself why things work the way they do.
5. Adaptability. If you treat this course as a harder version of high school, you will fail.
6. Using resources. Asking questions and visiting the Student Success Center (SSC) is a sign that your education matters enough to you to take advantage of every available opportunity.
7. Self-awareness. Honestly assess which concepts you understand and which require more work. Keep track of what studying techniques work best for you.
8. High expectations. Don't settle for anything less than your best.

C. **Attendance:** Attendance at class is important. I will take attendance by passing an Attendance Sheet for you to sign. If your signature is not beside your name for a particular day, you are considered absent. It is your responsibility to make sure you sign the Attendance Sheet. Students are responsible for every instruction, every change in the

syllabus, and all material covered in class whether or not they are present. Students who enroll in the course late are responsible for material covered before they enrolled.

- D. **Tardiness:** Tardiness to class is NOT tolerated. I will give you a grace period of approximately five minutes to come into the classroom. During that time the door to the classroom will be left open. After that time, I will close the door to the classroom. If the door of the classroom is closed, you may not enter. **DO NOT ENTER THE CLASSROOM AFTER THE DOOR HAS BEEN CLOSED.**
- E. **Attire:** As in all professional environments, appropriate dress is required in the classroom. I reserve the right to refuse you admittance to class if I deem your attire to be inappropriate and/or distracting. Please dress appropriately.
- F. **Working Problems:** Most students will benefit by working many, many problems for practice. On the Tentative Course Outline is a list of suggested "Practice Problems" for each section covered. These are intended to give the student practice in specific concepts that are taught in class. The problems will not be graded. However, I strongly encourage you to work them to better prepare for the tests. I will use approximately the first ten minutes of class to answer any questions about the homework problems. Math is not a spectator sport!
- G. **Group Work:** I encourage students to work together on homework.
- H. **Academic Honesty:** Each student must do his or her own work on exams without any assistance from any outside source not specifically authorized by me. The student handbook details school policies on academic honesty.
- I. **Calculator Policy:** A scientific calculator (for example, Texas Instruments, TI-30XIIS) is allowed. **Graphing calculators are NOT allowed.** I will not provide calculators for your use. Also, sharing calculators during a test will be considered cheating.
- J. **Electronic Devices Policy:**
 - 1. **Cell Phone Use:** Studies show that use of a cell phone or similar device during lecture strongly impairs a student's ability to take notes and remember information later, and that students significantly underestimate how much cell phone use impairs their ability to learn (Sana et al [2]). In class texting has been linked to an average drop of half a letter grade in a course (Kamenetz [1]). Furthermore, use of electronic media by students reduces the ability of other students near them to take notes by 17% (Sana et al [2]).
Use of cell phones or other electronic communication devices during lecture is prohibited, except where explicitly allowed by the instructor. Unauthorized use can result in a loss of some or all of a student's participation points for the day, at the discretion of the instructor.

[1] A. Kamenetz. "How to get students to stop using their cellphones in class". NPR Ed, Nov 10 2015.

[2] F. Sana, T. Westin, and N. Cepada. "Laptop multitasking hinders classroom learning for both users and nearby peers". Computers and Education,62:24-31, Mar 2013.

2. **Electronic Devices During Tests and Quizzes:** The use of electronic devices (iPhone, iPad, smartphones, tablets, laptops, iPods, etc.) is prohibited during quizzes and tests.

K. **Testing Procedure:** You will be asked to leave books and other personal items at the front of the room during tests and exams. For that reason, you may want to leave expensive electronic devices and other valuable articles in cars or at home. The instructor will remain in the classroom during tests and exams, but he/she cannot guarantee the safety of easily pocketed items.

L. **Statute of Limitations:** While the instructor does his best to accurately review and assess student work, instances may occur where an error in assigning a grade may occur. The student has exactly three class periods from the time of receiving a grade to ask the instructor to review the grade. After this time has elapsed, all grades will be considered carved in stone.

M. **Classroom Etiquette:** Students are expected to treat the instructor and other students with respect. Please refrain from the following during class time:

1. Talking with other students (other than during classroom or group activities).
2. Leaving class early (other than an emergency).
3. Leaving the desk to sharpen a pencil in the middle of a lecture.
4. Cell phones ringing during class. Placing or receiving cellular phone calls during class.
5. I-pods or other music listening devices should NOT be in use during class time.

N. **Gordon E-mail:** Your Gordon e-mail address is where all official communication from Gordon College is sent. This includes registration information, etc. Please check your Gordon e-mail account periodically for important information. You should also delete junk e-mail to keep your mailbox from getting full. If your mailbox is full, you may not receive important e-mail notifications. Also, if I need to communicate with you via e-mail, I will send the message to your Gordon e-mail account.

O. **Office Procedures:** When you come to my office for help, please be prepared by doing the following.

1. Bring you class notes and your calculator.
2. Make sure you have read the section in the text, read the class notes, and studied the examples.
3. Be prepared to show me at least two odd-numbered problems from the section that you have worked.
4. Bring your incomplete or incorrect solution to each problem about which you have a question.

5. Ask for help as early as possible. **Don't wait until the day of a test! I will *NOT* help you if you come for help the day of the test!!**

- P. **Harry's House:** The mission of [Harry's House](#) is to distribute food and toiletries to students to alleviate stress associated with short term food insecurity and other financial constraints in order to effectively reduce hunger and support educational success.

Tentative Lecture Schedule

Week of	Monday	Wednesday
Jan 13	Introductory Information 1.1: Linear Equations	1.1 (concluded) 1.2: Quadratic Equations
Jan 20	<u>Martin Luther King, Jr. Holiday – No class</u>	1.2 (concluded) 1.4: Radical Equations; Equations Quadratic in Form; Factorable Equations
Jan 27	1.4 (concluded)	1.5: Solving Inequalities
Feb 3	1.6: Equations and Inequalities Involving Absolute Value	TEST I 2.1: The Distance and Midpoint Formulas
Feb 10	2.2: Graphs of Equations in Two Variables; Intercepts; Symmetry	2.2 (concluded)
Feb 17	2.3: Lines	2.4: Circles
Feb 24	3.1: Functions	3.2: The Graph of a Function
Mar 2	TEST II 4.1: Properties of Linear Functions and Linear Models	4.3: Quadratic Functions and Their Properties (Midterm Day is Mar 5—Last day to withdraw and get W)
Mar 9	5.1: Polynomial Functions and Models	5.5: The Real Zeros of a Polynomial Function
Mar 16	<u>SPRING BREAK!!!!</u>	
Mar 23	5.4: Polynomial and Rational Inequalities	6.1: Composite Functions
Mar 30	TEST III 6.3: Exponential Functions	6.3 (concluded)
Apr 6	6.4: Logarithmic Functions	6.5: Properties of Logarithms
Apr 13	6.6: Logarithmic and Exponential Equations	6.7: Financial Models
Apr 20	12.1: Systems of Linear Equations: Substitution and Elimination	12.1 (concluded)
Apr 27	TEST IV	Review for Final Exam
May 4	Review for Final Exam	
Final Exam on Wednesday, May 6, 10:15 AM-12:15 PM		