**Mathematics 1111 B (CRN 700)**

College Algebra

Spring Semester 2020

Monday, Wednesday, Friday 9:00-9:50

Instructional Complex 411

Instructor: Dr. S. Karmakar

Office: Instructional Complex 231

Office Hours: 10:00-11:00, 12:30-1:30 MWF

10:00-11:00 TR

And by appointment

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Web Page: <http://www.gordonstate.edu/Faculty/s_karmakar/>

Prerequisite: Exemption from or Completion of Learning Support Mathematics

Credit: 3-0-3

Calculator: A scientific calculator (for example, Texas Instruments, TI-30XIIS) is allowed. **Graphing calculators are NOT allowed**.

Text: Sullivan, Michael. 2019. Algebra & Trigonometry. 11th edition. Pearson Prentice Hall. Access Card for MyLab Math ISBN : 9780321199911

**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. 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.

**Course Objectives**

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.

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.

**Method of Evaluation**

1. Homework will be completed on-line via [MyLab Math](http://www.pearsonmylabandmastering.com/northamerica/mymathlab/). The homework assignments are listed there. Our course ID number is karmakar78296. Please login to [MyLab Math](http://www.pearsonmylabandmastering.com/northamerica/mymathlab/) 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.
2. 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 two quiz grades.

C. There will be four (4) in-class tests given during the semester. The dates of these exams are: Wednesday, February 5; Monday, March 7; Wednesday, April 1; Wednesday, April 29. **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

D. There will also be a **comprehensive Final Examination** given on **Wednesday, May 6, 2020 at 10:15 AM.** 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.

1. The student’s final grade will be computed as follows:

Homework 10%

Quizzes 10%

Tests 60%

Final 20%

E. 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.

F. The following grading scale will be used.

89.5 or above A 59.5 to 69.49 D

79.5 to 89.49 B Below 59.5 F

69.5 to 79.49 C

**Class Procedures**

A. **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.***

B. **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.

C. **Working Problems:** Most students will benefit by working *many, many* problems for practice. On the Tentative Course Outline is a list of suggested 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!

D. **Group Work:** I encourage students to work together on homework.

E. **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.

F. **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.

G. **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.

H. **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.

I.. **House Bill 280:** For information regarding House Bill 280, see the University System of Georgia at the following link: <http://www.usg.edu/hb280>.

J**. 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.

K. **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](http://www.gordonstate.edu/library/112) or drop by the Circulation/Check-Out Desk. Check the library’s for [website](http://www.gordonstate.edu/library/home), [hours](http://www.gordonstate.edu/library/personnel-hours), [electronic resources](http://www.gordonstate.edu/library/electronic-resources), and [LibGuides](http://libguides.gordonstate.edu/) (subject- or class-specific research guides).

L. **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.

M. **Electronic Devices Policy:** The use of electronic devices (iPhone, iPad, smartphones, tablets, laptops, iPods, etc.) is prohibited during class and testing.

N. **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.

**Office Procedures**

When you come to my office for help, please be prepared by doing the following.

1. Bring your textbook, your calculator, and you class notes.

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!!**

**Tentative Course Outline**

MATH 1111-B

Spring Semester 2020

| **Date** | **Section** | **Homework** |
| --- | --- | --- |
| Mon, Jan 13 | 1.1: Linear Equations | 1-69 odd; 77-82 all |
| Wed, Jan 15 | 1.1 (concluded) |  |
| Fri, Jan 17 | 1.2: Quadratic Equations | 1-77 odd |
| ***Mon, Jan 20*** | ***Martin Luther King, Jr. Holiday – No class*** |  |
| Wed, Jan 22 | 1.2: (concluded) |  |
| Fri, Jan 24 | 1.4: Radical Equations; Equations Quadratic in Form; Factorable Equations | 1-89 odd |
| Mon, Jan 27 | 1.4: (concluded) |  |
| Wed, Jan 29 | 1.5: Solving Inequalities | 1-91 odd |
| Fri, Jan 31 | 1.6: Equations and Inequalities Involving Absolute Value | 1-63 odd |
| Mon, Feb 3 | Catch-up Day |  |
| **Wed, Feb 5** | **TEST I** |  |
| Fri, Feb 7 | 2.1: The Distance and Midpoint Formulas | 1-43 odd |
| Mon, Feb 10 | 2.2: Graphs of Equations in Two Variables; Intercepts; Symmetry | 1-77 odd |
| Wed, Feb 12 | 2.2: (concluded) |  |
| Fri, Feb 14 | 2.3: Lines | 1-107 odd, 108-112 all |
| Mon, Feb 17 | 2.4: Circles | 1-43 odd, 45-46 all |
| Wed, Feb 19 | Catch-up Day |  |
| Fri, Feb 21 | 3.1: Functions | 1-77 odd |
| Mon, Feb 24 | 3.1 (concluded) |  |
| Wed, Feb 26 | 3.2: The Graph of a Function | 1-29 odd |
| Fri, Feb 28 | Catch-Up Day |  |
| **Mon, Mar 2** | **TEST II** |  |
| Wed, Mar 4 | 4.1: Properties of Linear Functions and Linear Models | 1-31 odd, 37-41 odd |
| Fri, Mar 6 | 4.3: Quadratic Functions and Their Properties | 1-61 odd |
| Mon, Mar 9 | 4.3 (continued) |  |
| Wed, Mar 11 | 5.1: Polynomial Functions and Models | 1-97 odd |
| Fri, Mar 13 | 5.1 (concluded) |  |
| ***Mon, Mar 16 – Mar 20*** | ***Spring Break !!!*** |  |
| Mon, Mar 23 | 5.4: Polynomial and Rational Inequalities | 1-47 odd |
| Wed Mar 25 | 5.5: The Real Zeros of a Polynomial Function | 1, 3, 5, 9, 11-19 odd  For 21-31 odd, only tell the maximum number of real zeros each polynomial function may have. |
| Fri, Mar 27 | 6.1: Composite Functions | 1-43 odd |
| Mon, Mar 30 | Catch up Day |  |
| **Wed, Apr 1** | **TEST III** |  |
| Fri, Apr 3 | 6.3: Exponential Functions | 1-33 odd, 35-42 all, 63-81 odd |
| Mon, Apr 6 | 6.4: Logarithmic Functions | 1-63 odd, 65-72 all, 73-107 odd |
| Wed, Apr 8 | 6.4: (concluded) |  |
| Fri, Apr 10 | 6.5: Properties of Logarithms | 1-69 odd |
| Mon, Apr 13 | 6.6: Logarithmic and Exponential Equations | 1-55 odd |
| Wed, Apr 15 | 6.6: (concluded) |  |
| Fri, Apr 17 | 6.7: Financial Models | 1-49 odd |
| Mon, Apr 20 | 12.1: Systems of Linear Equations: Substitution and Elimination | 1-55 odd |
| Wed, Apr 22 | 12.1: (concluded) |  |
| Fri, Apr 24 | 12.6: Systems of Nonlinear Equations |  |
| Mon, Apr 27 | Review | 1-53 odd |
| **Wed, Apr 29** | **TEST IV** |  |
| Fri, May 1 | Review for Final Exam |  |
| Mon, May 4 | Review for Final Exam |  |
|  |  |  |
| **Wed, May 6 10:15-12:15** | **FINAL EXAM** |  |