

# MATH 1001: QUANTITATIVE REASONING

Fall 2021 CRN: 94075-026

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<b>Instructor:</b>	Dr. Joshua Miller	<b>Time:</b>	MW 11:00-12:15
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**Prerequisites:** Placement based on the mathematics placement policy.

**Course Description:** This course emphasizes quantitative reasoning skills needed for informed citizens to understand the world around them. Topics include logic, basic probability, data analysis and modeling from data.

NOTE: This course is an alternative in Area A of the Core Curriculum and is not intended to supply sufficient algebraic background for students who intend to take Precalculus or the Calculus sequences for mathematics and science majors.

**Drop-In Hours:** Feel free to drop-in anytime TR 10:00-12:00 (in-person or Webex), other times are available by appointment. Webex: [Drop-In Online Link](#)

**Office:** 25 Park Place, Office 1427.

## Textbook and Course Material:

- Blitzer: *Thinking Mathematically* 7<sup>th</sup> Edition.
- MyLab Math with E-text: MyLab Access Length: 18 weeks, ISBN 9780135903575.

*With MyLab Math access students can purchase a print version of the textbook for \$ 49.99, and it can be shipped free of charge.*

**Objectives:** This course is designed to help the student foster quantitative reasoning skills that will help them understand the world around them. Further we strive to develop logical and critical thinking, and become confident in using mathematics to analyze and solve problems in class and real-life.

**Attendance:** Attendance will be taken every class meeting, if you are not able to attend please contact me so we can discuss the material that is or will be missed.

**Homework/Quizzes:** **There will be weekly homework and quizzes that are managed using the MyLab Math system.** MyLab Math is an online software program that can accessed at <https://www.pearson.com/mylab> and features a variety of methods to help you practice and master the material. MyLab Math features an interactive textbook and homework problems that provide immediate feedback and guided help.

To start a quiz, MyLab Math requires that you meet the prerequisite of a 80% or higher score on the corresponding homework.

Note: When taking an online homework, utilize the built in **Learning Aides** which includes: **View an Example** or **Help me Solve This**.

**Watch MyLab Math for due dates on these assignments.**

**MyLab Math Questions:** To register for MyLab Math, you will need:

1. COURSE ID: [miller20327](#)
2. A valid email address, your GSU email is recommended.
3. Access code, note that for the first week you are able to register using the temporary access.
4. <https://www.pearson.com/mylab>

Be aware that MyLab Math does have scheduled down times, so be prepared in case that homework and quizzes are due during those scheduled times. whenever you have a technical issue with MyLab Math, please use the Pearson Support link: [Pearson Support](#).

**Tentative Course Outline:** We will cover the following chapters from the text: Chapter 1, 2, 3, 7, 8, 9, 10, 11, 12. Below is the tentative schedule, please note that the schedule can change depending on the pacing of the course.

Week 1	8/23: Introduction, 1.1-1.2	8/25: 2.1, 2.2
Week 2	8/30: 2.3, 3.1	9/1: 3.1, 3.2, 3.3
Week 3	9/6: Labor Day	9/8: 3.4, 3.5
Week 4	9/13: Review	9/15: Test 1
Week 5	9/20: 7.1, 7.2	9/22: 7.3, 7.6
Week 6	9/27: 9.1, 9.2	9/29: 9.3
Week 7	10/4: Review	10/6: Test 2
Week 8	10/11: 8.1, 8.3	10/13: 8.4, 8.5
Week 9	10/18: 8.6, 10.1, 10.2	10/20: 10.3, 10.4
Week 10	10/25: Review	10/27: Test 3
Week 11	11/1: 11.1, 11.2, Project Assigned	11/3: 11.3
Week 12	11/8: 11.4	11/10: 12.1, 12.2, Projects Due
Week 13	11/15: 12.3	11/17: 12.4
Week 14	11/22: Holiday	11/24: Holiday
Week 15	11/29: Review	12/1: Test 4
Week 16:	12/6: Last Day of Class	12/8: Final Exam 10:45-1:15

**Course Assignments:****Homework:**

- Online homework assignments may be attempted an unlimited number of times prior to the due date. The highest score is recorded.
- Homework assignments may be taken in any location and should be used to prepare for the quizzes. Since the homework assignments can be taken an unlimited number of times, you are able to practice these problems until you are able to complete them without any assistance.

**Quizzes:**

- To take the quiz, it is recommended that you have a minimum score of 80% on your corresponding homework assignment to be able to take the quiz.
- The quizzes can be attempted two times and your best score is recorded.

**Any missed homework or quiz may be completed for at most 85% of the total assignment grade.**

**Tests:**

- There are four in class exams.
- The final exam is required and is comprehensive.

**Project:**

- The project for this course will be done in Excel, see the tentative schedule for the date it will be assigned and is due. More information on the project will be made available closer to the date it is assigned.
- Basic instructions for Excel will be given.

**Grade Breakdown:**

Homework	15%
Quizzes	10%
Test (4 at 12.5% each)	50%
Project	5%
Attendance	5%
Final Exam	15%
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Total	100%

**Note:** If your Final Exam score is higher than your lowest test score, it will replace the lowest test score in the determination of your final course grade. The overall average in your online grade book may be incorrect due to unattempted assignments not being set to zero. Your homework and quiz overall average are correct ONLY after work not attempted has been assigned a 'zero'.

**Calculate your Grade:** The Course Grade is computed by using the following formula:

$$\text{Score} = .15(\text{HW}) + .10(\text{Quiz}) + .50(\text{Test 1} + \text{Test 2} + \text{Test 3} + \text{Test 4})/4 + .05(\text{Project} + \text{Attendance}) + .15(\text{Final})$$

**Grading Scale:**

Grade	A+	A	A-	B+	B	B-	C+	C	D	F
Range	97-100	93-96	90-92	87-89	83-86	80-82	77-79	70-76	60-69	0-59

**Rounding:** When determining the final course average, grades will be rounded in the usual way. For example, a grade of 86.5 will be rounded to an 87, a grade of 86.4 will be rounded to an 86.

**Exam Dates and Covered Materials:**

Test 1: September 15, Chapters 1,2,3

Test 2: October 6, Chapters 7,9

Test 3: October 7, Chapters 8,10

Project Due: November 10

Test 4: December 1, Chapter 11,12

Final Exam,: 12/8, 10:45-1:15 (required and comprehensive)

**Withdrawal:** October 12th is the last day for regular withdrawal which avoids the grade of “F” or “WF”.

**Calculator Policy:** You are free to use any **stand alone** calculator, i.e. not a part of your cell-phone or similar device, or any graphing calculator. Remember that you will be asked to provide work for the questions on your tests and the final. **Calculators are not allowed to be shared during any exam unless permitted by your instructor.**

**Policies:**

**Make-Up Policy:** No make-up exams will be given unless in some extreme situations, like university-approved excuses which must be verified in writing. If feasible, written notification in advance is required. Otherwise, it allows two working days for notification. Excuses must have some form of written verification, such as a doctor’s note. Absence from the final exam will result in a grade of F for the course unless arrangements are made **PRIOR** to (one week before) the administration of the test. Absences are taken care of through the Dean of Students online form: [Click here](#).

**Incomplete Policy:** Assignment of incompletes by an instructor follows the university policy on incompletes. In particular, incompletes can be assigned at the discretion of the instructor and not the student. The student must have completed most of the major assignments of the course (generally all but one). The student must be earning a passing grade in the course in the judgment of the instructor. A schedule for completion of assignments must be approved prior to the assignment of the incomplete.

**Cheating & Plagiarism Policy:** Cheating/plagiarism will not be tolerated on any work. A first occurrence will result in a grade of 0 on the assignment for all concerned parties as well as an Academic Dishonesty form being filed with the Dean of Students. A second occurrence will result in a grade of F for the course for the concerned parties and a second Academic Dishonesty form being filed.” Also refer to the university Policy on Academic Honesty. For example: This course is conducted in a manner consistent with the university policy on academic honesty at [Code of Conduct](#).

**Unauthorized Public Posting and Distribution Policy:** The selling, sharing, publishing, presenting, or distributing of instructor-prepared course lecture notes, videos, audio recordings, or any other instructor-produced materials from any course for any commercial purpose is strictly prohibited unless explicit written

permission is granted in advance by the course instructor. This includes posting any materials on websites such as Chegg, Course Hero, OneClass, Stuvia, StuDocu and other similar sites. Unauthorized sale or commercial distribution of such material is a violation of the instructor's intellectual property and the privacy rights of students attending the class, and is prohibited. Failure to abide by these limitations constitutes a violation of the Policy on Academic Honesty and will be treated accordingly.

**Disruptive Student Conduct in Classroom or Other Learning Environment:** The university's disruptive student policy applies and students should familiarize themselves with the relevant parts of the student code of conduct at [Code of Conduct](#).

**Student Accommodation:** Students who wish to request accommodation for a disability may do so by registering with the Access & Accommodations center (formerly, Disability Service), Email: [access@gsu.edu](mailto:access@gsu.edu), Web: [access.gsu.edu](http://access.gsu.edu), Phone: 404-413-1560. Students may only be accommodated upon issuance by the Office a signed Accommodation Plan and are responsible for providing a copy of that plan to instructors of all classes in which accommodations are sought. Students eligible for extra time will be given additional time for the tests as indicated in the Letter of Accommodation. However, no additional arrangement will be made for the online assignments as this privilege is already incorporated in the online assignments.

**Assessment of the Course:** Your constructive assessment of this course plays an indispensable role in shaping education at Georgia State. Upon completing the course, please take time to fill out the online course evaluation.

**Diversity Statement:** As your teacher, I value human diversity in my classes whether expressed through race and ethnicity, culture, political and social views, religious and spiritual beliefs, language and geographic characteristics, gender, gender identities and sexual orientations, learning and physical abilities, age, and social or economic classes. I promise to respect the value of every student in this this class, and all of my students are encouraged to share his or her unique perspective as an individual, not as a representative of any category. Multicultural and intercultural awareness and competencies are key leadership skills, and we intend to present material and classroom activities that respect and celebrate diversity of thought, background, and experience. One part of your collegiate education is to challenge assumptions and to provide new and sometimes challenging ways of looking at issues, however if you ever feel uncomfortable regarding content or perspectives that are presented or discussed by myself, guest speakers, or other students I encourage you to contact me immediately so that we can discuss those feelings. I would like to use your preferred language when addressing you, so please let me know if your preferred name (or the pronunciation of that name) differ from what we are using and we ask that each of you let us know your preferred gender pronouns. Your suggestions on how to incorporate diversity in this course in a meaningful way are appreciated and encouraged.

**Student Basic Needs:** Any student who faces challenges securing their food or housing and believes this may affect their performance in the course is urged to contact the Dean of Students for support. Furthermore, please notify the professor if you are comfortable in doing so. This will enable us to provide resources that we may possess. The [Embark program at GSU](#) provides resources for students facing homelessness.

**Learning Outcomes:** This course is designed to help the student learn (but not limited to) the following:

1. Interpret and use precise mathematical language, including (but not limited to) the areas of set theory and logic (Chapters 1,2,3)
  - Understand and use inductive/deductive reasoning.
  - Perform operations with sets and determine a set's cardinal number.
  - Construct truth tables and practice writing the converse, inverse, and contrapositive for a conditional statement.

2. Read, interpret, and present data in multiple representations, including graphs, functions, and linear systems. (Chapter 7)
  - Represent functions using graphs, equations, and tables to visualize and interpret relationships of real-life phenomena.
  - Select and apply appropriate procedures and formulas based on the understanding of concepts.
  - Use systems of linear equations to solve applied problems.
  - Understand and appropriately use a variety of mathematical models reflecting real-world phenomena. Specifically, a student will be able to distinguish between linear, quadratic, and exponential growth models and functions.
3. Be able to identify key components of financial security through an understanding of basic ideas involving savings, loans, and investments. (Chapter 8)
  - Solve applied problems that involve ratios and percents.
  - Understand and apply the compound interest formulas for periodic or continuous compounding to solve real-world financial problems including current and future values and annuity.
  - Be able to interpret and calculate financial information which includes interest and loans.
  - Compute the monthly payment and interest costs for a car loan.
4. Be able to solve real-world applied problems using the units of measurement and perform conversions using dimensional analysis. (Chapters 9, 10)
  - Be able to understand and convert between different units, and solve problems involving measurements for length, area, and volume.
  - Identify and measure perimeter and find the area of triangles, rectangles, and circles.
  - Understand and apply the Pythagorean theorem to solve geometry problems.
5. Understand and solve problems using the principles of probability and elementary statistics, including the counting methods and collecting, presenting, and interpreting data. (Chapters 11,12)
  - Utilize the Fundamental Counting Principle to determine the number of possible outcomes.
  - Solve problems involving permutations and combinations.
  - Calculate the probability of an event occurring.
  - Calculate and interpret the central tendency and dispersion of data.
  - Use the 68-95-99.7 rule for normal distributions.

**This syllabus is subject to change at the instructor's discretion. All changes to the course will be announced in class or at iCollege and all students are responsible for keeping track of such changes.**