MATH 1001
Quantitative Skills and Reasoning
Fall Semester 2015
Course Syllabus

Course Details: TR 11:00-12:15  Math 1001-D  CRN 694  Russell Hall #327

Instructor: Mr. Geoff Clement
Office: Russell Hall, Room 205
Office Hours: M-R 8-9 & 1-2, W 2-4, and other times by appointment
Other Tutoring: Student Success Center (Student Center, 2nd floor, above Bookstore)
Phone: 678-359-5820 or 359-5826 (MPS Division Office)
E-mail: gclement@gordonstate.edu
Website: http://faculty.gordonstate.edu/gclement/

PREREQUISITE: By invitation only
CREDIT: 3 semester Credit Hours for each class
CALCULATOR: TI-83/84 Plus or Higher (or Equivalent) is required.

TEXTBOOKS:

My Math Lab website: http://pearsonmylabandmastering.com
My Math Lab Course ID: clement69295
My Math Lab Technical Support: 1-800-677-6337

The text is highly recommended, and My Math Lab is required (My Math Lab does contain an e-text).

Welcome to Math 1001 and, for some of you, welcome to college! Do not expect this class or college to be just like high school. In college you are embarking on a career. Not only are you here to prepare for a career in the future, but college is now your job. To perform well, you need to make college your priority. Here you will be treated as an adult who has selected this class as your job. As with a job, you will be required to perform at a high level to keep your job. This will include attendance and quality of work. You wouldn’t walk into your boss’s office on the first day and say “Hey! I’m so and so, and I’m going to enjoy working here; however, I need to let you know up front that I’ll be missing many of my work days, I will complete many of my duties late, and my overall job effort will be average or below”.

College is not simply taking a few courses to get a diploma. College is not a trade school where you will take courses that only pertain to the career that you wish to pursue. College is an experience that is designed to teach you to think, to broaden your understanding of the world, and to give you the skills to grow and improve yourself for the rest of your life. You need to leave your preconceptions of this class, college, and yourself behind. Through your experience in college and this class, you can grow beyond who you have been and who you have limited yourself to be. Your growth and your success in this class and in college will depend less upon your natural gifts or talents and more upon your willingness to change, grow, apply, and, above all, work.

Some mottos to live by: Do your best! Rise to the challenge! Live and learn!

COURSE DESCRIPTION

This course is “an introduction to quantitative skills and reasoning using set theory, logic, descriptive statistics, elementary probability, and modeling of real world data and phenomena.” The topics will include functions and graphs, linear, quadratic and other polynomial functions, as well as exponential and logarithmic functions. Math 1001 does not fulfill the Core Curriculum Area A requirement for science majors.
To do well in the course, you must practice many problems outside of class, ask questions in class until you have a complete understanding of each concept, and prepare for tests by reviewing problems worked in class. You need to maintain a notebook and bring it to class every day. All of your My Math Lab assignments need to be labeled with the chapter and section and your work placed in your notebook.

This course will emphasize student preparation, critical thinking, and problem solving. To do well in the course, you should read the assignment ahead of time and prepare questions, do problems in My Math Lab as soon after class as possible, and prepare for tests 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. This course demands your time and effort! First, study the examples worked in class as well as those in the textbook, then practice, practice, practice problems. And then practice some more!

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**

The primary outcome for a student who successfully completes a MATH 1001 course is the achievement of a certain level of proficiency in using and analyzing quantitative information. The focus is upon the methodology and skills needed to analyze quantitative information for the purpose of making decisions, judgments, and predictions. This will entail defining problems by means of numeric, graphic, or symbolic representations of real-world phenomena, identifying and pursuing methods of solution, deducing consequences, formulating alternatives, and predicting outcomes. To this end, students who successfully complete a MATH 1001 course will:

1. acquire skills that will enable them to construct logical arguments based on rules of inference and to develop strategies for solving quantitative problems;
2. have developed number sense sufficiently to be able to put numbers, expressed in a variety of ways (such as decimal, fraction, percentage, and scientific notation), into perspective;
3. interpret the many different uses and abuses of percentage;
4. understand the difference between causation and correlation and be able to interpret statistics presented graphically;
5. understand and appropriately use the meaning of central tendency, variation, and the significance of different distributions;
6. understand and appropriately use basic concepts of statistical inference;
7. understand and appropriately use a variety of mathematical models reflecting real-world phenomena. Specifically, a student will be able to distinguish among linear, quadratic and exponential growth models (functions).

**Common Content and Topics:**

1. Sets and Set Operations
2. Logic
   - Negations, Quantifiers, Conditional Statements, Converses
   - Inductive and Deductive Reasoning, Valid Arguments
3. Basic Probability
4. Data Analysis
   - Basic Descriptive Statistics (Mean, Median, Mode, Standard Deviation)
   - Correlation, Causality, and Inferences
   - Interpreting Graphical Displays
   - Sampling and Randomness
5. Modeling from Data (Scatter Plots, Regression Lines)
   - Linear Models
   - Quadratic Models
   - Exponential and Logarithmic Models
METHOD OF EVALUATION

Tests – 60%. There will be four unit tests. Make-ups will be given only when your instructor excuses your absence. If you miss one test, this grade may be filled with your Final Exam score.

Comprehensive Final Exam – This comprehensive exam is multiple choice format and may also replace the lowest unit test. Students need to bring their Scantron form to the final. They are available in our college bookstore.

Extra time will not be given to complete tests, unless documentation is on file with the college specifying this requirement.

Quizzes/Daily Work – 20%. All daily assignments are due during class with a 20% penalty for assignments coming in late on the same day and a 0 for all missed deadlines.

My Math Lab Homework – 20%. Purchase the access code before the end of the first week of class! All deadlines are class time on the day of the test. Don’t let things “snowball”.

Grading Scale (with “rounding to the nearest whole percent”)

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<th>Percentage</th>
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<tr>
<td>90 – 100 %</td>
<td>A</td>
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<td>80 – 89 %</td>
<td>B</td>
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<td>70 – 79 %</td>
<td>C</td>
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<tr>
<td>60 – 69 %</td>
<td>D</td>
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<tr>
<td>0 – 59 %</td>
<td>F</td>
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OFFICE HOUR PROCEDURES

When you come to my office for help, please be prepared by doing the following.
1. Bring your textbook, your calculator, and your 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.

OTHER INFORMATION

A. Attendance: Attendance is important. All students are expected and urged to attend all classes. Students are responsible for every assignment, every instruction, and all material covered in class whether they are present or absent. You should obtain the name and phone number of a reliable classmate to contact, if you must be absent. Each absence makes it more difficult for you, the student, to acquire knowledge and increase learning. Punctuality is expected.

B. Working Problems: Most students will benefit by working many, many problems for practice. Math is not a spectator sport — Participate, and work hard!

C. Group Work: Feel free to work together on homework, but make it your goal to understand the material and develop the skills that we are modeling in class.

D. Academic Honesty: Each student must do his or her own work on each assignment without any assistance from any outside source. The penalty in our class is a 0 on the assignment and a report to our school MPS department chair. The student handbook details school policies on academic honesty.
E. **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.

**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.

F. **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.

G. **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
2. Leaving class early (other than an emergency)
3. Consistently late in arriving to class
4. Placing or receiving cellular phone calls or text messaging during class. Cell phones should be turned off and out of sight. No cell phone use of any capacity will be tolerated.
5. Listening to loud music through your headphones

H. **Calculator Usage:** Students will be allowed to use a scientific or a graphing calculator. We recommend the “Texas Instruments TI-30XIIS” which is the one used for the Compass exam. The TI-83 or TI-84 Plus graphing calculators are also excellent. You may not use a calculator such as Casio EX-115EX which simplifies radical expressions. You may not use the calculator on your cell phone.

I. **COURSE RESOURCES**

You will need a pencil, a notebook (a loose-leaf binder is best), graph paper, and a straightedge. A folder for handouts is highly recommended.

This course is enhanced by a web-based course software package called My Math Lab. Feel free to
“Ask My Instructor” whenever you struggle, and use office hour help, as well.

There are also significant course resources in Desire2Learn/Brightspace. The course syllabi and course resources are on your instructor’s website at http://faculty.gordonstate.edu/gclement/.

Besides office hours, the SSC (Student Center 2nd floor) is available for tutoring assistance. Consider creating a study group with fellow classmates.

J. MIDTERM – Monday, October 5 – Withdrawals after this date will be an automatic ‘WF’ except in cases of hardship as documented and approved by processing a petition form through the Registrar.

**Keys to Success in this class:**
1. Have a goal for this class. Make this class a priority. You can succeed in this class!
2. Be on time every day. Don’t miss class; when you must, communicate to your instructors.
3. Review class notes just before and just after class.
4. Read the text. Study the examples. Keep up with the pace of the class.
5. Practice, practice, and then practice some more. Do homework as soon as possible after class.
6. Ask questions. You have the right; asking questions shows you care and will often help others.
7. Read the directions carefully. On tests, start by “unloading” important formulas and concepts.
8. Actively listen in class. Take good notes.
9. Use our tutoring center whenever you need help. Don’t let things snowball.
10. Correct any mistakes you make on quizzes and tests.
11. Be a lifelong learner. Live and learn! Rise to the challenge of college-level mathematics!

**Other tips:**
- Prepare for class. Read every page of the section that is to be covered in class the next class meeting. If nothing else, look at each topic heading and every diagram to at least have a clue about what is to be covered. Shortly after class, do all homework assigned and have a written list of questions about anything you don’t completely understand. Pace yourself by doing SOMETHING each and every day - without skipping a day.
- Take notes in class. Get plenty of exercise and rest. Eat properly. Be on time. Turn your cell phone off (not “vibrate”). Focus. Get your questions answered. Only write down the highlights of the class time – not every word. If you cannot attend class for some reason, please get someone else’s notes. Read over your notes. Fill in any extras that you recall from class time.
- Keep all homework and classroom notes organized in some way: for example, a 3-ring or spiral bound notebook. Keep the proposed schedule at the front of your notebook.
- Studying for an exam requires practice. If possible, you should try a sample timed test (with no help) the day before the real exam. The painful reality of this exercise will show you what to study more. Cramming everything in one day is similar to eating all your meals for a month on the last day. It doesn’t work! A little bit each day works much better.

**A final word:**
Treat this class like any job; take deadlines seriously. The schedule below is tentative but will give you a good idea of our pace. Keep up with your homework & studies; don’t let things “snowball”.
## Fall Semester 2015 SCHEDULE OF CLASSES

**Quantitative Skills & Reasoning:** Math 1001-D  TR 11:00-12:15  CRN 694  Russell Hall #327

**My Math Lab website:** [http://pearsonmylabandmastering.com](http://pearsonmylabandmastering.com)  **Course ID:** clement69295

### Section and/or Topics

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<th>Section</th>
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<th>Date</th>
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<tbody>
<tr>
<td>1A</td>
<td>Introductions, Recognizing Fallacies</td>
<td>R 8/13</td>
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<tr>
<td>1B</td>
<td>Propositions and Truth Values</td>
<td>T 8/18</td>
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<tr>
<td>1C</td>
<td>Sets and Venn Diagrams</td>
<td>R 8/20</td>
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<tr>
<td>1D</td>
<td>Analyzing Arguments, <strong>Quiz on 1A, 1B Due in MML</strong></td>
<td>T 8/25</td>
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<td><strong>Review, Sets Activity Due</strong></td>
<td>R 8/27</td>
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<td><strong>TEST #1, Journal I &amp; MML (1A-1D) Due, Personal Intro Due</strong></td>
<td>T 9/1</td>
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<tr>
<td>2A</td>
<td>The Problem-Solving Power of Units</td>
<td>R 9/3</td>
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### Labor Day Holiday

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<tr>
<td>2B</td>
<td>Standardized Units: More Problem-Solving Power</td>
<td>T 9/8</td>
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<td>2C</td>
<td>Problem-Solving Guidelines and Hints</td>
<td>R 9/10</td>
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<td><strong>Review; Problem Solving Strategies (Any 5) Due</strong></td>
<td>T 9/15</td>
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<td><strong>TEST #2, Journal II &amp; MML (2A-2C &amp; Quiz on 2A-2B) Due</strong></td>
<td>R 9/17</td>
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<tr>
<td>5A-5B</td>
<td>Fundamentals of Statistics; Should You Believe a Statistical Study</td>
<td>T 9/22</td>
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<td>5C-5D</td>
<td>Statistical Tables and Graphs; Graphics in the Media</td>
<td>R 9/24</td>
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<td>5E, 6A</td>
<td>Correlation and Causality; Characterizing Data</td>
<td>T 9/29</td>
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<td>6B</td>
<td>Measures of Variation</td>
<td>R 10/1</td>
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<tr>
<td>7A-7B</td>
<td>Fundamentals of Probability; Combining Probabilities; <strong>Take-home Stats Activity Due</strong></td>
<td>T 10/6</td>
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<tr>
<td>7B, 7E</td>
<td>Combining Probabilities; Counting and Probability; Review; <strong>Quiz on 6A-6B Due in MML</strong></td>
<td>R 10/8</td>
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### Fall Break: October 12-13 (MT)

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<tr>
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<tbody>
<tr>
<td>9A</td>
<td>Graphing lines: Intercepts and slope; Finding equations of lines; Functions: The Building Blocks of Mathematical Models; <strong>Statistics Lab Project Due</strong></td>
<td>T 10/20</td>
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<tr>
<td>9B</td>
<td>Linear Modeling</td>
<td>R 10/22</td>
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<td>9B</td>
<td><strong>Linear Modeling Supplement Classwork, Old Faithful Geyser Classwork</strong></td>
<td>T 10/27</td>
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<td><strong>Review, Linear Modeling Supplement Due</strong></td>
<td>R 10/29</td>
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<td><strong>TEST #4, Journal IV &amp; MML (9A, 9B, Quiz on Lines) Due</strong></td>
<td>T 11/3</td>
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<td>4B</td>
<td>The Power of Compounding</td>
<td>R 11/5</td>
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<tr>
<td>8A-8B</td>
<td>Growth: Linear versus Exponential, Doubling Time and Half-Life</td>
<td>T 11/10</td>
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<td>8B</td>
<td>Logarithms (Supplement)</td>
<td>R 11/12</td>
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<tr>
<td>8C</td>
<td>Real Population Growth, <strong>Quiz on 8A-8B in MML</strong></td>
<td>T 11/17</td>
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<tr>
<td>Suppl.</td>
<td>Exponential Modeling Supplement, <strong>Exponential Modeling Supplement (#2 and #4) &amp; MML (8A-8C, 4B, 9C) Due</strong></td>
<td>R 11/19</td>
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<td><strong>Thanksgiving Holiday: November 25-27 (WRF)</strong></td>
<td>T 11/24</td>
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<td></td>
<td>Review for Final Exam/Study Guide, MML (Quadratic Functions: Graphing &amp; Applications) due</td>
<td>T 12/1</td>
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<td><strong>Final Exam (Wednesday, December 9 from 10:15-12:15)</strong></td>
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President’s Convocation: Sept 2 (M, 2:00 pm)  Labor Day: Sept 7 (M)  Midterm: October 5 (M)

Fall Break: October 12-13 (MT)  Thanksgiving Holiday: November 25-27 (WRF)

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**Do your best!  Rise to the challenge! Keep up with the pace! Live and learn!**