

Math 100A-Math 1

Fall 2004

MWF 10:00-10:50 am.

Instructor: Dr. Terri Magnus, Regis Hall

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Office hours: Please let me know whenever you need help. You are invited to stop by my office whenever I am there or make an appointment. I will also respond to e-mail questions. M 3:30-6 pm., W 9-10 am., Th 4:30-6 pm., and F 9-10am, 1-2pm or by appointment. Also available via e-mail.

Textbook: *Mathematics in Action: An Introduction to Algebraic, Graphical, and Numerical Problem Solving*, 2nd edition, by the Consortium for Foundational Mathematics, Boston: Addison Wesley Longman, Inc., 2004.

Required materials:

- 3-hole notebook paper for taking notes and completing assignments (graph paper is also acceptable and will be useful at times). Fringe from tearing out pages from a spiral notebook is not acceptable.
- sharpened pencils
- 3-ring binder with dividers to separate completed classwork and homework from notes *
- calculator with exponents (x^y , y^x , or \wedge) and square roots $\sqrt{\quad}$ that displays large numbers in scientific notation. If you plan to take MA112, MA130, or MA165, a graphing calculator such as TI-83 will be required in those courses. MA110 requires a calculator with statistical capabilities.
- ruler with inches and centimeters
- small stapler

* Homework and classwork must be submitted periodically to the instructor. These should be kept in the same order as the text either completed and left in the text itself or in a section of your binder separate from class notes. You will need to be able to pull out and reinsert pages. Students planning to complete all in-class work in the textbook itself may not need a large binder, but must write out work neatly and keep a separate notebook for notes. You will be asked to turn in homework to be graded and are encouraged to write out these assignments on a separate sheet of paper and then place them in your binder after they are graded.

Brief course description: Reinforcement and application of basic mathematical skills including signed numbers, fractions, proportions, order of operations, graphs, functions, linear and quadratic equations, and verbally stated problems. Students will work in small groups to tackle real-world problems and the class will discuss the mathematical skills used.

Course Objectives: A student successfully completing this course should be able to

- perform multi-step calculations involving whole numbers, fractions, decimals, and signed numbers.
- convert between percentage, decimal, and fractional representation.
- identify when two fractions are equivalent.
- recall and apply basic geometric formulas for perimeter and area.
- translate a verbal problem into mathematical notation and solve the problem.
- use proportions, percents, and averaging to solve verbal problems mathematically.
- interpret and construct basic relational tables and graphs.
- use mathematical strategies to address loosely defined problems.
- use variables to represent unknown quantities.
- simplify expressions involving variables, radicals, and/or exponents.
- combine binomial expressions by addition, subtraction, and multiplication.
- solve linear and quadratic equations of one variable.
- work with functional notation.
- graph a linear function and identify its slope and intercepts.
- graph a quadratic function and identify its vertex and intercepts.
- apply his/her mathematical skills to real world problems
- engage in mathematical thinking, logical reasoning, and mathematical discussions
- explore, to read, and to visualize mathematics
- become independent learners of mathematics
- develop an appreciation of mathematics

Teaching Strategies:

- Exploratory, intuitive activities that involve students in the active doing of mathematics
- Large and small group discussions, and activities
- Student writing about mathematical ideas and their own experiences in mathematics learning

- Assignments that both reinforce basic mathematical skills and invite the student to apply these skills to new problems
- Math lab with peer tutors to assist individuals and small groups in mastering course material
- Tests and quizzes to measure students understanding of material covered

Course Requirements:

- Homework collected on a regular basis, some of these may be written summaries of your group’s solution to a multistep problem, others will ask you to solve problems, still others may ask you to write reflections on the learning process
- Active participation and engagement in full-class, small-group, and individual activities
- Organized binder demonstrating completion of all classwork and homework.
- Regular attendance at class meetings
- Weekly attendance at a math lab until an average of 85% on tests is maintained
- Quizzes
- Tests

Quizzes: On alternate Fridays, there will be a short quiz to test your comprehension of the basic skills learned.

Tests: October 8, November 5, December 3

Final Exam: Comprehensive! Saturday, December 18, 9-11am

Math Lab: In addition to the department peer tutoring and my office hours, I hope to assemble a group of students who will work specifically with groups of MA100 students helping them learn the material for this course. All MA100 students will be required to meet once or twice with a math lab leader during the first few weeks. After the first test, students with a test average of less than 85% may be required to meet with a lab leader on a regular basis. All students are encouraged to seek help from the lab leader, peer tutoring, or the instructor whenever they have questions on a section. Lab leaders, tutors, and the instructor will not do your homework for you, but rather assist you in learning the material needed to complete the assignments. Come at the agreed upon time; lab leaders will not stay beyond the designated time. Be sure to bring your text, pencil, paper, and calculator with you.

Homework: Homework will be assigned regularly from the text and students are expected to bring their completed homework to the next class meeting. Some will be collected and graded. Others will be assessed during class. You may be asked to present problems at the board. Students will be asked to keep a binder of work to be submitted at the time of each test for assessment. Clarity of exposition is important and one should strive for well-written, polished solutions. For the most part, collaboration on homework with other class members is allowed, although solutions must be individually written up (in your own words, different examples wherever possible) and collaborators should be acknowledged.

Assessment and computation of grades:

Homework, assignments	14%
Quizzes	12%
In class activities and discussions/lab sessions	20%
Tests	36% (12% each)
Final Exam	18%

Classroom Policies:

- Active participation requires attendance and arrival to class in time with all materials (text, paper, pencil, calculator) out and ready for work when the class period begins.
- Respect your classmates as well as your instructor. Discussion in class will pertain to the topic of the course. All students have a right and responsibility to ask questions and give insight related to the understanding of course content.
- Participation in large and small group discussions is required and assessed for active engagement and contribution.
- The time spent on this course outside of class should average four to seven hours per week. This includes reading the textbook, reviewing class notes, doing assigned work, working on projects, and preparing for tests.
- All work turned in on tests, quizzes, and individual papers must be entirely your own. Behavior contrary to this will result in a grade of F on the test. On homework, acknowledge any ideas you received from others. Students should be aware of and adhere to the college’s policy on plagiarism.
- You are encouraged to study together outside of class. The work you turn in should be entirely your own, though. If you receive help in completing the homework, make sure you put away any notes, then write the answer in your own words, and give credit to your collaborators.
- Attendance will be taken each class period. You are expected to attend all classes. Much of the learning will take place in classroom activities that cannot be duplicated easily outside of class. If you miss class, you are responsible for doing all classroom activities you missed, getting the notes from a classmate, and turning in all work on the day it is due. If you miss more than two classes, you must meet with the professor to discuss the advisability of your remaining in the course for the

remainder of the semester. Except in unusual circumstances, missing over 20% of the classes (6) will result in an F for the course. You will be graded on contributions to in-class small group explorations and will not be able to make up these grades.

- If unforeseen and unavoidable circumstances keep you from attending class on the day of a test, you must contact the instructor immediately to explain the absence and, if approved, schedule a make-up. Documentation of the reason for absence and promptness in arranging a make-up is required.
- Attendance at a math lab session is required until you maintain an 85% test average. Lab leaders and other students should be treated with respect.

Americans with Disabilities Act (ADA): Rivier College wants to provide reasonable accommodations to students with disabilities. To accomplish this goal effectively and to ensure the best use of our resources, timely notice of a disability must be provided to the Office of Special Services for verification and for evaluation of available options. Any student whose disabilities fall within ADA should inform the instructor within the first two weeks of the term of any special needs or equipment necessary to accomplish the requirements for the course. To obtain current information on this procedure, contact the Office of Special Services at telephone extension 8497.

Guidelines for group work:

1. Every group member has the right and responsibility to contribute to the group's work. All members of the group are to be respected and listened to. If you find that you tend to dominate the group discussion, make an extra effort to enable and encourage other group members to participate.
2. Share your ideas with others. You'd be surprised how many weird and unlikely ideas will turn out to be right in this class! No idea or question is stupid.
3. Arrive prepared and ready to start. When discussing homework in a group, be sure to try all problems in advance and identify where you have questions.
4. During an in-class activity, do not ask the instructor for assistance until everyone in the group has the same question.
5. Take responsibility for your own learning. Share your strategies/questions with the aim of having others understand what you are getting at and where/why you are stuck. This is different from "I couldn't get ..." and expecting another student to show you their answer.
6. Avoid taking responsibility for someone else's learning (since they will not learn). Listen to others with the aim of understanding their strategies and questions. This is more beneficial (and harder) than just showing them how to do it your way.
7. Even when there are no questions, spend some time comparing resolutions. It feels great to show something amazing you've come up with or to share in someone else's solution. Take some time to enjoy these moments.
8. Have fun, but stick to task.

Mathematics is not a spectator sport. Just as one doesn't become a great athlete by watching games, one can't develop the skill of mathematics by watching the teacher. Give it a try! Take a break and come back to work at it some more. With practice will come understanding. You'll be amazed at what you can accomplish! Be sure to come see me whenever you need a little coaching or pep talk. I'm here for you!