MA 112A College Algebra

Syllabus

Dr. Darien Lauten  
Spring, 2004
Mon., Wed  2:30 – 3:45  
Three credits

Office Location:  Regis top (third) floor  
Phone:  Office: 603 897 8602  
Office Hours:  M:  2:00 –  2:30 (Mem), 4 –  5 PM (Regis)  
T:  10:00 - 12:00 (Regis), 2:00 - 4:00 (Regis)  
W:  2:00 –  2:30 (Mem), 4 –  5 PM (Regis)  
e-mail address:  dlauten@rivier.edu

Note that the ½ hour office hours are conducted in the classroom of the course they precede.  All students from any course are welcome during those times.

Brief Course Description:  Course topics include, but are not limited to, absolute value, linear and quadratic equations and inequalities in one and two variables, systems of equations, polynomials, rational expressions and functions, exponents and radicals, linear and quadratic functions, and direct and inverse variation.


Required Materials (bring to every class meeting):  A three-ring binder with pockets, hole punch, miniature stapler, and a 6” ruler, two colored pencils.  You are also expected to have a graphing calculator and its manual.  The overhead-projector calculator used in class will be a TI-83, and your instructor is most familiar with the TI-83.

Course Objectives:

- To involve students in the active doing of mathematics
- To engage students in mathematical thinking and problem solving
- To develop students’ abilities to approach algebra topics graphically, numerically, symbolically, and verbally
- To engage students in developing mathematical models of problems and in solving problems
- To help students learn to read mathematics and to become independent learners of mathematics
- To develop students’ conceptual understanding of the major ideas of algebra
- To engage students in the solution of problems, especially open-ended problems
- To develop students’ abilities to write clearly and concisely about mathematical ideas and problem solutions
- To help students learn basic algebraic techniques
- To develop students’ abilities to work together
- To give students hands-on experience on the effective and appropriate use of calculators.

Teaching Strategies:

- Active student engagement in group work and discussions
- Exploratory, intuitive activities that involve students in doing mathematics
- Lecture and group discussions with an expectation of student participation and questioning
- Student reading of mathematics and studying of examples
- Student writing about mathematical ideas
- Problem solving
Course Requirements:
- Homework (collected or checked each class period)
- Active participation and engagement in full-class and small-group discussions and activities
- A short quiz at least once each week
- Tests
- Final examination

Examinations:
Note that any test may contain items from previously tested chapters. Algebra builds in complexity. Each new idea depends on your understanding of previously learned concepts. Dates to be finalized on course assignment outline.
- Final Examination Monday, December 8, 2003

Methods of Assessment and Computation of Grades:
Preparation for each class and timely completion of homework 20%
Active engagement in class activities and discussions, attendance, punctuality, and respect for others 10%
Quizzes (10% of quiz grades will be dropped) and graded assignments 25%
Tests, and final examination 45%

Resources
Mathematics Conference Room (in Regis Hall, see the MACS Administrative Assistant if the room is locked). Please feel free to use the Mathematics Conference Room whenever a faculty meeting is not being held (see schedule on door). You may bring snacks and beverages as long as you clean up after yourself.
FYI: The Math Conference Room:
- Contains Algebra books with solutions for your use.
- Is a great place to meet others from your class for collaboration on assignments.
- Is one of the places where the free math tutor holds tutoring sessions.
- Is near my office for quick questions when you get stuck.
- Is a cozy place to study. (You can bring food as long as you clean-up after yourself.)
See the campus-wide email message (to your Rivier account) for the tutor's hours
Please visit during my office hours and send email with your questions.

Classroom Policies
- Attendance will be taken each class period. You are expected to attend all classes. Missing classes will affect your grade, unless you provide a documented reason for your absence. If you miss class, you are responsible for getting the notes from a classmate and returning to class with all assignments up to date. To be "excused" from a class you must provide documentation from a professional source (physician, court, funeral director, campus nurse, etc.) If you must miss class because of serious illness or emergency, please inform me as far ahead as possible by note, email, or phone message. Students on athletic teams must provide written notice of forthcoming athletic events at least two class meetings before the absence.
- You are expected to seek help from the free mathematics tutors provided by the Department and the College. You are expected and required to visit the tutor and me during office hours regularly if you are experiencing difficulty.
- Assignments are due on the assigned date whether or not you are present in class. Full credit is given only for assignments handed in on time. Late assignments are worth ½ credit and must be submitted before the test on the chapter. If you must miss class, place your assignment in the mailbox by my office door.
- Ten percent of your quiz grades will be dropped. You may not make up a missed quiz. A quiz missed for any and all reasons counts in the 10% of dropped quiz grades as long as you miss no more than 10% of quizzes.
• In order to make up a missed test or final examination, you will need a note documented by an appropriate physician or other public figure. (See above). Again, quizzes may not be made up. (See above).
• Read and study each section before we discuss it in class. I intend to help you learn to read mathematics. You are responsible for all assigned material. I will try to cover all material in class before it is assigned. Studying each section means working out the book examples on your own.
• Class participation and active engagement in the class discussions and activities, and group work are required and will reflect in your grade.
• You should expect to average five to eight hours studying for this class each week. This includes reading the textbook, working out text examples on your own, reviewing and “filling-in” class notes, doing homework and graded assignments, and preparing for tests and examinations. If your studying requires significantly more time than this, please see me. You may be underprepared for the course and together we will need to discuss and seek a remedy for the situation. Similarly, if you are spending significantly less than this amount of time, perhaps you already know this material and should be in a different course.
• All work submitted on tests must be entirely your own. Test questions may not be discussed with other class members. Behavior contrary to this will result in a failing grade and written notification to the department chair and dean for appropriate action.
• If you miss more than 5.25 hours of class (three class meetings), your name will be turned in to the department chair and dean. You also must make an appointment to see me to discuss the advisability of your remaining in the course for the remainder of the semester.
• Any behavior that is disruptive to others will not be tolerated.
• Please silence cell phones in class. They are disruptive to the instructor and other students. If, in an emergency, you must respond to a silent incoming message, please leave the room quietly and respond in the hall after you have closed the classroom door quietly.
MA 112A College Algebra:
Specific student learning objectives and Tentative Assignment Outline for Spring of 2004

Professor: Darien Lauten, Ph.D.
Meeting Times: MW, 2:30 PM – 3:45 PM
Your grade will reflect how well you meet the following Expected Student Learning Outcomes:

Chapter P. Students will know or be able to:
- solve inequalities
- evaluate algebraic expressions
- simplify and evaluate expressions with exponents and radicals
- add subtract, multiple, divide, and factor polynomials
- determine domain of algebraic expressions
- graph points and lines
- apply midpoint and distance formulas

Chapter 1: Students will know or be able to:
- graph an equation
- solve linear, quadratic equations
- solve absolute value equations
- solve linear inequalities

Chapter 2: Students will know or be able to:
- find and use slopes to write and graph linear equations
- evaluate functions and find their domain
- Chapter 3. Students will know or be able to:
- write mathematical models for direct, inverse, and joint variation

Chapter 5. Students will know or be able to:
- recognize and evaluate exponential functions
- solve interest problems

Chapter 6. Students will know or be able to
- recognize and systems of equations using addition/subtraction, substitution, graphing
<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Sections in Book</th>
<th>Assignments</th>
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<tbody>
<tr>
<td>8</td>
<td>Apr. 14</td>
<td>5.1. Exponential Functions and Their Graphs</td>
<td>Reread 3.5: Do P. 314: 25, 31, 33, 35, 45, 49, 55</td>
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| Week 14 | Apr. 19, 21 | **6:1.** Solving Systems of Equations  
**6:2.** Two-Variable Linear Systems | 398: 1, 3, 5, 7, 9, 43, 47, 51, 56, 57a, b, 75,  
Read 6.1. Do examples 1 – 4, 6, 7. Learn information in boxes. Do  
P. 461: 1, 5, 7, 11, 17, 21, 29, 37, 51, 63, 67, 71  
Read 6.2. Do examples 1 – 6, 9 Learn information in boxes. Do P.  
473: 1, 3, 5, 7, 11, 17, 31, 35, 43 |
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<tr>
<td>Week 15</td>
<td>Apr. 26, 28 May 3</td>
<td><strong>Review</strong></td>
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**Review:** P. 17 Chapter P Test  
Chapter 1: P. 162: 1, 7, 9, 13, 16, 47, 130  
P. 166: 7, 9, 13, 30  
2:1, 2:2: P. 248: 1, 3, 7, 21, 25, 27, 29, 39, 51  
3:5. P. 321: 3:5: 99, 101, 103  
P. 325: 13, 16, 17  
5.1: P. 442: 1, 23, 31, 33, 35  
**6:1, 6:2:** P. 512: 1, 5, 11, 13, 15, 25, 27 |
| Week 16. Dec. 4 - 8 | **Final Examination** | Note: The final examination is cumulative. |