MA 112 College Algebra

Syllabus

Instructor: Adele M. Miller

Brief Course Description:
Primary emphasis is development of skills in algebraic manipulation. Topics include a study of first and second equations and inequalities, functions and relations, and an introduction to analytic geometry. Graphing calculator required. Not available for credit to students who have successfully completed precalculus or calculus in high school or a course equivalent to MA 130 or higher. Exceptions must be approved by the chair of the department of mathematics and computer science.

Required Course Textbook:

Course Objectives:
To review number systems and the properties of real numbers.
To acquire skill in solving first and second degree equations.
To acquire skill in using and solving inequalities.
To acquire skill in operations with polynomials and algebraic fractions.
To review work in factoring and to learn new factoring techniques.
To learn about exponents and radicals.
To learn the basics of coordinate geometry and graphing techniques.
To learn how to apply the appropriate mathematical knowledge and skills to the solving of applications.


Teaching Strategies:
Part of the class meeting will be lecture, but all students are encouraged to ask questions and contribute ideas. Group discussion of the material will be an important learning tool. At the beginning of each class, we will discuss assignments from the previous class meeting to clear up any concerns or confusion. Questions are always welcome.

Course Requirements:
Students are expected to attend all classes, to be on time for classes, and to come prepared. You should do the assigned reading, solving the assigned problems, and formulate questions to raise in class. Never leave anything unclear.
Each homework assignment in the class will include two groups of problems: A and B. Part A will be checked in class, and part B will be collected at the beginning of the class meeting following the class in which they were assigned. Homework may not be handed in late. Absence is not an excuse for not getting your homework in on time. If you can't avoid an absence, please make sure that a friend, roommate, or classmate will deliver your homework to class. All work must be written neatly and clearly. Illegible work will not be graded. Please staple all work to be handed in. In every class, there will be a short written quiz on the material covered during the previous class.
We will have a mid-term exam on October 15. It will be a written test given in class.
We will have a final exam at the end of this course, which will also be a written test in class.

Grading Method:
- Written homework assignments: 30%
- Quizzes: 10%
- Attendance and active engagement in class activities: 10%
- Mid-term exam: 25%
- Final exam: 25%

Class Policies:
Students are expected to attend all classes and to be on time on classes. Attendance will be taken at the beginning of each class meeting. In case of illness or an emergency that require missing a class, please contact me-if at all
possible, before the class. Let me know of any anticipated absences as early as possible. If a student is absent more than three times, we will set up a meeting to discuss the advisability of remaining in the class. Your questions are always welcome. I will be available in the classroom for half an hour before the class (6pm-6:30pm) and an hour after class (9:00pm - 10:00pm) to address my unclear topics as necessary. You can also make an appointment with me, individually or in groups, by phone or by email. Please do not hesitate to contact me whenever you need some help.

Course Calendar:

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Reading/Assignments</th>
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<tbody>
<tr>
<td>week 1 and 2 August 27</td>
<td>Class Introductions. Course Syllabus</td>
<td>Kaufmann: Chapter 1 Assignment #1</td>
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<td>Basic Concepts</td>
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<tr>
<td>week 3 September 10</td>
<td>Algebraic Expressions</td>
<td>Kaufmann: review chapter 1; read sections 2.1-2.4; assignment #2</td>
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<tr>
<td>week 4</td>
<td>First-Degree Equations</td>
<td>Kaufmann: review sections 2.1-2.4</td>
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<tr>
<td>September 17</td>
<td>Read sections:2.5-2.7</td>
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<tr>
<td>week 5</td>
<td>First-Degree Inequalities</td>
<td>Kaufmann: review sections 2.5-2.7</td>
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<tr>
<td>September 24</td>
<td>Read sections:3.1-3.3</td>
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<tr>
<td>week 6</td>
<td>Polynomials</td>
<td>Kaufmann: review sections 3.1-3.3</td>
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<tr>
<td>October 1</td>
<td>Read sections:3.4-3.7</td>
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<tr>
<td>week 7</td>
<td>Factoring, Equations, and Problem Solving</td>
<td>Kaufmann: review sections 3.4-3.7</td>
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<td>October 8</td>
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<td>assignment #6</td>
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<tr>
<td>week 8</td>
<td>Midterm Exam</td>
<td>Kaufmann: review sections 4.1-4.4</td>
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<tr>
<td>October 15</td>
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<tr>
<td>Week</td>
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| 9    | October 22 | Relation Expressions         | Kaufmann: review sections 4.1-4.4  
read sections:4.5-4.7  
assignment #7 |
| 10   | October 29 | Fractional Equations         | Kaufmann: review sections 4.5-4.7  
read sections:5.1-5.3  
assignment #8 |
| 11   | November 5 | Exponents and Radicals       | Kaufmann: review sections 5.1-5.3  
read sections:6.1-6.4  
assignment #9 |
| 12   | November 12| Quadratic Equations          | Kaufmann: review sections 6.1-6.4  
read sections:6.5-6.6  
assignment #10 |
| 13   | November 19| Quadratic Inequalities       | Kaufmann: review sections 6.5-6.6  
read sections:7.1-7.3  
assignment #11 |
| 14   | November 26| Coordinate Geometry and Graphing Techniques:  
Linear Equations and Inequalities | Kaufmann: review sections 7.1-7.3  
read sections:7.4-7.6  
assignment #12 |
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<th>Date</th>
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<th>Notes</th>
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<tr>
<td>Week 15</td>
<td>Graphing Parabolas</td>
<td>Kaufmann: review all the material for final exam</td>
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<td>December 3</td>
<td>Circles, Ellipses, and Hyperbolas</td>
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<tr>
<td>December 10</td>
<td>Final Exam</td>
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