



# Course Syllabus

College of Natural Sciences  
MTH/209 Version 5  
College Mathematics I

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## Course Description

This course continues the demonstration and examination of various algebra concepts that was begun in MTH/208: College Mathematics I. It assists in building skills for performing more complex mathematical operations and problem solving than in earlier courses. These concepts and skills should serve as a foundation for subsequent quantitative business coursework. Applications to real-world problems are emphasized throughout the course.

## Policies

Faculty and students/learners will be held responsible for understanding and adhering to all policies contained within the following two documents:

- University [policies](#): You must be logged into the student website to view this document.
- Instructor policies: This document is posted in the **Course Materials** forum.

University policies are subject to change. Be sure to read the policies at the beginning of each class. Policies may be slightly different depending on the modality in which you attend class. If you have recently changed modalities, read the policies governing your current class modality.

## Course Materials

Rockswold, G. K., & Krieger, T. A. (2009). *Beginning and intermediate algebra with applications and visualization*. (2nd ed.). Boston, MA: Addison-Wesley.

All electronic materials are available on the student website with more at my personal class Webpage.

You may bring a laptop to class (to access the textbook) - or bring a printed form of that week's chapter of the e-book textbook. We will be practicing algebra almost continually throughout the course – you **must** bring a pad of **paper** and pens/**pencils**/erasers and a **calculator** (most smartphones have a built in calculator – as do the Windows and Mac operating systems – those will work just fine.)

**So that you may practice the problems and attend the course lecture BEFORE completing the homework – mathematical homework is due (via MyMathLab) Tuesday night at 6pm after the class that homework is due. Then you have Wed-Thur to complete the reading for the next week.**

<b>Week One: Systems of Linear Equations</b>			
	<b>Details</b>	<b>Due</b>	<b>Points</b>
<b>Objectives</b>	<p>1.1 Solve systems of linear equations, linear inequalities, and linear equations with three variables.</p> <p>1.2 Solve word problems with three variables.</p> <p>1.3 Apply systems of linear equations to real-world problems.</p>		

<b>Readings</b>	<b>Read</b> Ch. 4 (Section 1–4) & Ch. 9 (Section 1) of Beginning and Intermediate Algebra With Applications and Visualization.		
<b>Participation</b>	<b>Participate</b> in class discussion.		2
<b>Discussion Questions</b>	<b>Respond</b> to weekly discussion questions.		2
<b>Nongraded Activities and Preparation</b>	<p><b>Resource:</b> University of Phoenix Material: Using MyMathLab®</p> <ul style="list-style-type: none"> <li>Complete the MyMathLab® orientation by clicking on the <b>MyMathLab®</b> link on your student website and selecting <b>MyMathLab® Orientation</b> under the Homework and Tests tab.</li> <li>Complete the Week One Self-Check on MyMathLab® after completing your Week One individual assignment. Results from this self-check help to generate your study plan.</li> </ul> <p><b>Become</b> familiar with the Center for Mathematics Excellence and the live coaching services available by selecting the <b>Online Math Coaching Available</b> link located in Week One of the MTH/209 web page.</p>		
<b>Learning Team Instructions</b> Learning Team Charter	<p><b>Resource:</b> Learning Team Toolkit</p> <p><b>Complete</b> the Learning Team Charter.</p>		
<b>Individual MyMathLab® Exercises</b>	<b>Complete</b> the Week One assignment in MyMathLab®.		10

### *Week Two: Nonlinear Expressions*

	<i>Details</i>	<i>Due</i>	<i>Points</i>
<b>Objectives</b>	<p><b>2.1</b> Factor polynomial expressions.</p> <p><b>2.2</b> Simplify rational expressions.</p> <p><b>2.3</b> Multiply, divide, add, and subtract rational expressions.</p> <p><b>2.4</b> Simplify radical expressions and complex numbers.</p> <p><b>2.5</b> Apply nonlinear expressions to real-world problems.</p>		
<b>Readings</b>	<b>Read</b> Ch. 6 (Sections 1–4), Ch. 7 (Sections 1–4), & Ch. 10 (Sections 1–3 & 6) of the text.		
<b>Participation</b>	<b>Participate</b> in class discussion.		2
<b>Discussion Questions</b>	<b>Respond</b> to weekly discussion questions.		2

<b>Nongraded Activities and Preparation</b>	<b>Complete</b> the Week Two Self-Check on MyMathLab <sup>®</sup> after completing your Week Two individual assignment. Results from this self-check help to generate your study plan. Refer to the University of Phoenix Material: Using MyMathLab <sup>®</sup> for more information.		
<b>Learning Team Instructions</b> Week Two Learning Team Exercises	<b>Complete</b> the Week Two Learning Team Exercises presented by your facilitator.		
<b>Individual MyMathLab<sup>®</sup> Exercises</b>	<b>Complete</b> the Week Two assignment in MyMathLab <sup>®</sup> .		10

### *Week Three: Nonlinear Equations*

	<i>Details</i>	<i>Due</i>	<i>Points</i>
<b>Objectives</b>	<b>3.1</b> Solve quadratic equations by factoring. <b>3.2</b> Solve rational equations and formulas. <b>3.3</b> Solve proportion and variation problems. <b>3.4</b> Solve equations involving radical expressions. <b>3.5</b> Solve quadratic equations. <b>3.6</b> Apply nonlinear equations to real-world problems.		
<b>Readings</b>	<b>Read</b> Ch. 6 (Sections 6–7), Ch. 7 (Sections 6–7), Ch. 10 (Section 5), & Ch. 11 (Sections 3–4) of the text.		
<b>Participation</b>	<b>Participate</b> in class discussion.		2
<b>Discussion Questions</b>	<b>Respond</b> to weekly discussion questions.		2
<b>Nongraded Activities and Preparation</b>	<b>Complete</b> the Week Three Self-Check on MyMathLab <sup>®</sup> after completing your Week Three individual assignment. Results from this self-check help to generate your study plan. Refer to the University of Phoenix Material: Using MyMathLab <sup>®</sup> for more information.		
<b>Learning Team Instructions</b> Week Three Learning Team Exercises	<b>Complete</b> the Week Three Learning Team Exercises presented by your facilitator.		
<b>Learning Team Instructions</b> Sustainability Practices Presentation	<b>Review</b> the Learning Team assignment due in Week Five. <b>Select</b> a multimedia presentation application and seek faculty approval.		

Application			
<b>Individual MyMathLab® Exercises</b>	<b>Complete</b> the Week Three assignment in MyMathLab®.		10

**Week Four: Nonlinear Functions, Sequences, and Series**

	<b>Details</b>	<b>Due</b>	<b>Points</b>
<b>Objectives</b>	<p><b>4.1</b> Evaluate absolute value, polynomial, rational, radical, and quadratic functions.</p> <p><b>4.2</b> Perform operations on functions.</p> <p><b>4.3</b> Identify composite and inverse functions.</p> <p><b>4.4</b> Evaluate exponential and logarithmic functions.</p> <p><b>4.5</b> Identify arithmetic and geometric sequences.</p> <p><b>4.6</b> Evaluate arithmetic and geometric series.</p> <p><b>4.7</b> Apply nonlinear functions, sequences, and series to real-world problems.</p>		
<b>Readings</b>	<b>Read</b> Ch. 8 (Section 4), Ch. 10 (Section 4), Ch. 11 (Sections 1 & 5), Ch. 12 (Sections 1–3) & Ch. 14 (Sections 1–3) of the text.		
<b>Participation</b>	<b>Participate</b> in class discussion.		2
<b>Discussion Questions</b>	<b>Respond</b> to weekly discussion questions.		2
<b>Nongraded Activities and Preparation</b>	<b>Complete</b> the Week Four Self-Check on MyMathLab® after completing your Week Four individual assignment. Results from this self-check help to generate your study plan. Refer to the University of Phoenix Material: Using MyMathLab® for more information.		
<b>Learning Team Instructions</b> Week Four Learning Team Exercises	<b>Complete</b> the Week Four Learning Team Exercises presented by your facilitator.		
<b>Individual MyMathLab® Exercises</b>	<b>Complete</b> the Week Four assignment in MyMathLab®.		10

**Week Five: Fundamentals of College Algebra Review II**

	<b>Details</b>	<b>Due</b>	<b>Points</b>
<b>Objectives</b>	<p><b>5.1</b> Review all objectives from Weeks One through Four.</p> <p><b>5.2</b> Analyze applications of mathematics.</p>		

<b>Readings</b>	<b>Review</b> all chapters from earlier weeks.		
<b>Participation</b>	<b>Participate</b> in class discussion.		2
<b>Discussion Questions</b>	<b>Respond</b> to weekly discussion questions.		2
<b>Learning Team Instructions</b> Week Five Learning Team Exercises	<b>Complete</b> the Week Five Learning Team Exercises presented by your facilitator.		
<b>Individual Final Exam</b>	<b>Complete</b> the Final Exam in MyMathLab®.		20
<b>Learning Team Sustainable Practices Presentation</b>	<p><b>Select</b> one of the three fields of sustainability listed below, read the corresponding scenario, and use the information in the scenario to create a presentation.</p> <ul style="list-style-type: none"> <li> <b>Health Care Economical Sustainability</b>   Imagine you own a health and wellness company. Your company employs numerous fitness trainers and exercise professionals. As part of your company's community outreach program, you have agreed to visit a meeting of the local nurses association. Your audience is personal trainers, nutritionists, and nurses. They require that all presentations include mathematical reasoning and concepts as part of the rationale. </li> <li> <b>Financial Sustainability</b>   Imagine you work as a business consultant. Companies and governmental entities hire your firm to make recommendations for streamlining business operations, such as to make companies more fiscally sound. You are asked by your supervisor to present at a local business conference on the subject of financial sustainability. Your audience is business analysts who are expecting your explanation to include mathematical rationale. You may address business issues related to private businesses, governmental operations, or personal finances. </li> <li> <b>Environmental Sustainability</b>   Imagine you work for the Environmental Protection Agency in the External Affairs Division (such as the Public Relations Division). Your job is to educate the public on environmental matters, including environmental sustainability. Your boss, the Director of External Affairs, asks you to visit a local high school on career day and present information relating to your field. The school has requested that the presentation relate to math, as you will be presenting during National Mathematics Awareness Week. </li> </ul>		20

	<p><b>Refer</b> to the University of Phoenix Material: Sustainability Problems. Various problems from each field are provided to you for examples.</p> <p><b>Select</b> 3 to 5 concepts from Weeks One through Four that could be applied in the field you selected.</p> <p><b>Create</b> a presentation that shows how these concepts apply to the field.</p> <p><b>Include</b> the following in your presentation:</p> <ul style="list-style-type: none"> <li>• An overview of the field including a definition of sustainability</li> <li>• An introduction to the mathematical concepts from the previous four weeks</li> <li>• An explanation of how math, learned in this course, is used in the field</li> </ul> <p><b>Cite</b> at least two sources in your presentation.</p> <p><b>Present</b> your activity using a multimedia application. Seek faculty approval for your chosen multimedia application by Week Three.</p> <ul style="list-style-type: none"> <li>• For Local Campus students, these are oral presentations of approximately 15 to 20 minutes.</li> <li>• For Online and Directed Study students, these are multimedia presentations with detailed speakers' notes.</li> </ul> <p>Examples of multimedia presentation tools include the following:</p> <ul style="list-style-type: none"> <li>• Voki™ speaking avatars</li> <li>• Microsoft® PowerPoint® presentations of at least 7 slides with detailed speakers' notes</li> <li>• Prezi™ presentations</li> <li>• VoiceThread™ collaborative multimedia slide shows</li> <li>• Digital Storyteller<sup>sm</sup> movies</li> <li>• Glogster™ interactive posters</li> <li>• Websites</li> </ul>		
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