

College Algebra

M 121 – 800 Summer 2017

Online

Montana State University Billings
Department of Mathematics

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Course Materials [1] Textbook: Algebra and Trigonometry by Robert Blitzer, 5th Ed., ISBN-13:9780321837240.
[2] Online Companion: MyMathLab (mymathlab.com). To sign up in MyMathLab, you will need an access code which comes bundled when you purchase a new textbook. If you already have a textbook and do not want to purchase a new one, then you can buy just the access code online. In fact, you will have access to an electronic version of the textbook after you buy the access code. When you sign up for the course in MyMathLab, make sure to use the correct course id given in the attached *MyLab & Mastering Student Registration Instructions*.
[3] Graphing Calculator

Course Description 3 credits. Prerequisite: M 095 or appropriate placement score. A course that can meet the Mathematics requirement of General Education Courses, College Algebra introduces functions and associated equations. It covers the concepts of functions, linear and non-linear equations, complex numbers as solutions to quadratic equations, and systems of equations. Further, we investigate polynomial, rational, exponential and logarithmic functions and equations.

Learning Objectives

1. Simplify, factor, and perform any of the basic arithmetic operations on polynomials and rational expressions.
2. Perform arithmetic operations and simplify algebraic expressions with rational exponents including rationalize a denominator.
3. Solve linear, quadratic, and rational, exponential and logarithmic equations and be able to use each of these to model and solve applied problems.
4. Solve absolute value equations and inequalities and express solutions of inequalities in interval notation.
5. Identify relations vs. functions; use function notation; identify domain, range, intervals of increasing/decreasing/constant values; algebraically and graphically identify even and odd functions.
6. Find zeros, asymptotes, and domain of rational functions.
7. Evaluate and sketch graphs of piecewise functions and find their domain and range.
8. Use algebra to combine functions and form composite functions, evaluate both combined and composite functions and their graphs, and determine their domains.
9. Identify one-to-one functions, find and verify inverse functions, and sketch their graph.
10. Write logarithms as exponentials and vice versa.
11. Solve exponentials and logarithms using the one to one property or inverse properties.

12. Expand and condense logarithmic expressions.

Grading

Exam 1	12.5%	May 22 - 25, 2017
Exam 2	12.5%	June 6 - 9, 2017
Exam 3	12.5%	June 19 - 22, 2017
Exam 4	12.5%	June 27 - 30, 2017
Comprehensive Final Exam	25%	July 3 - 7, 2017
Online Homework	25%	

Scale:

A	A-	B+	B	B-	C+	C	C-	D+	D	D-	F
93	90	87	83	80	77	73	70	67	63	60	

Exams

There are four chapter exams for 12.5% each and a comprehensive final exam for 25%; see the dates noted above. You will have 3 hours for each exam and you may use a calculator, your book and notes during the exams.

If there is an extreme circumstance that prevents you from taking an exam during its designated time, then you will need to contact me as soon as possible. Depending on the nature of the situation, I may ask for a documentation from a proper authority, such as a note from a physician in the case of illness, or from the office of Vice Chancellor for Student Affairs in case of absence for special events. Please see *Montana State University Billings 2013-2015 General Bulletin* for more information. In all absences, the student is responsible for all requirements of the course.

Online Homework

The online MyMathLab homework is worth 25%. The homework problems focus on the understanding, interpretations and manipulations of the concepts discussed in class and the textbook. The problem sets closely correspond to the material covered in the class and will be assigned with deadlines throughout the semester. The website will provide you with immediate feedback when you submit your answers. You can attempt a problem any number of times. Some problems may take longer than others and hence I encourage you to start working on the problems well in advance of the due dates.

Getting Help

You are always welcome to stop by my office or email/call me at any time to see if I am available. You are also encouraged to work in groups as much as possible in understanding the concepts and homework problems. Often, having a second perspective helps in the understanding process. However, please do your homework on your own.

The Academic Support Center, located in the Student Union, offers free tutoring in many areas of mathematics, statistics, languages, sciences and more. See <http://www.msubillings.edu/asc/> for more information.

Academic Integrity

Montana State University Billings is built upon a strong foundation of integrity, respect and trust. All members of the university community have a responsibility to be honest and the right to expect honesty from others. Any form of academic dishonesty is unacceptable to our community and will not be tolerated. As college students you should be very familiar with the requirements for academic integrity. Any student found to have engaged in academic dishonesty of any form will meet with disciplinary action, including, but not limited to, a failing grade in the course. For further information, consult the *MSUB Student Policies & Procedures Handbook* available online at the university home page.

Disability Statement

If you have a physical, learning, or psychological disability and require accommodations, please let me know as soon as possible. You have the responsibility to identify yourself, request appropriate accommodations and reasonable modifications. You are encouraged to contact

Disability Support Services in College of Education Room 135, (406) 657-2283 (Phone), (406) 545-2518 (Video Phone).

Tentative Schedule	Day	Chapter/Section	MathLab Due
	May 15	Classes Begin on May 16	
		1.1 Graphs & Graphing Utilities	May 25
		1.2 Linear Equations & Rational Equations	May 25
		1.3 Models & Applications	May 25
		1.4 Complex Numbers	May 25
		1.5 Quadratic Equations	May 25
		1.6 Other Types of Equations	May 25
		1.7 Linear Inequalities & Absolute Value Inequalities	May 25
		EXAM 1, May 22 - 25	May 25
	May 26	2.1 Functions & Graphs	Jun 9
		2.2 More Functions & Graphs	Jun 9
		2.3 Linear Functions and Slope	Jun 9
		2.4 More on Slope	Jun 9
		2.5 Transformations of Functions	Jun 9
		2.6 Combinations of Functions; Composite Functions	Jun 9
		2.7 Inverse Functions	Jun 9
		2.8 Distance & Midpoint Formulas; Circles	Jun 9
		EXAM 2, June 6 – 9	Jun 9
	June 10	3.1 Quadratic Functions	Jun 22
		3.2 Polynomial Functions & their graphs	Jun 22
		3.3 Dividing Polynomials	Jun 22
		3.4 Zeros of Polynomial Functions	Jun 22
		3.5 Rational Functions & Their Graphs	Jun 22
		3.6 Polynomial & Rational Inequalities	Jun 22
		3.7 Modeling Using Variation	Jun 22
		EXAM 3, June 29 - 22	Jun 22
	June 23	4.1 Exponential Functions	Jun 30
		4.2 Logarithmic Functions	Jun 30
		4.3 Properties of Logarithms	Jun 30
		4.4 Exponential & Logarithmic Equations	Jun 30
		4.5 Exponential Growth & Decay; Modeling Data	Jun 30
		EXAM 4, June 27 – June 30	Jun 30
	July 3	Final Exam, July 3 – 7	Jul 7

The policies in this syllabus are subject to change. Minor changes will be announced in class and substantive changes shall be communicated in writing.

**See detailed Calendar and MyLab & Mastering
Student Registration Instructions on the next 2 pages.**

Calendar

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	May 15 1.1	16 1.2	17 1.3	18 1.4	19 1.5	20
21	22 1.6 Exam 1	23 1.7 Exam 1	24 Exam 1	25 Exam 1	26 2.1	27
28	29 Holiday	30 2.2	31 2.3	June 1 2.4	2 2.5	3
4	5 2.6	6 2.7 Exam 2	7 2.8 Exam 2	8 Exam 2	9 Exam 2	10
11	12 3.1	13 3.2	14 3.3	15 3.4	16 3.5	17
18	19 3.6 Exam 3	20 3.7 Exam 3	21 Exam 3	22 Exam 3	23 4.1	24
25	26 4.2	27 4.3 Exam 4	28 4.4 Exam 4	29 4.5 Exam 4	30 Exam 4	July 1
2	3 Final Exam	4 Final Exam	5 Final Exam	6 Final Exam	7 Final Exam	

To register for M 121-800 Summer 2017:

1. Go to www.pearsonmylabandmastering.com.
2. Under Register, select **Student**.
3. Confirm you have the information needed, then select **OK! Register now**.
4. Enter your instructor's course ID: [jacobson79435](#), and **Continue**.
5. Enter your existing Pearson account **username** and **password** to **Sign In**.
You have an account if you have ever used a Pearson MyLab & Mastering product, such as MyMathLab, MyITLab, MySpanishLab, MasteringBiology or MasteringPhysics.
 - > If you don't have an account, select **Create** and complete the required fields.
6. Select an access option.
 - > Enter the access code that came with your textbook or was purchased separately from the bookstore.
 - > Buy access using a credit card or PayPal account.
 - > If available, get temporary access by selecting the link near the bottom of the page.
7. From the You're Done! page, select **Go To My Courses**.
8. On the My Courses page, select the course name **M 121-800 Summer 2017** to start your work.

To sign in later:

1. Go to www.pearsonmylabandmastering.com.
2. Select **Sign In**.
3. Enter your Pearson account **username** and **password**, and **Sign In**.
4. Select the course name **M 121-800 Summer 2017** to start your work.

To upgrade temporary access to full access:

1. Go to www.pearsonmylabandmastering.com.
2. Select **Sign In**.
3. Enter your Pearson account **username** and **password**, and **Sign In**.
4. Select **Upgrade access** for **M 121-800 Summer 2017**.
5. Enter an access code or buy access with a credit card or PayPal account.