Math 111
College Algebra
Spring 2020

Instructor

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Old Main 404

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Course Description

This is a course in algebra, similar to high school courses in algebra except that the pace will be faster. We will begin with some review of real-number concepts, and proceed into linear equations in one variable, mathematical modeling, polynomials, rational expressions, functions, lines, exponents, and radicals, equations, inequalities, and polynomial and rational functions.

Course Objectives

On successful completion of the course, students will be able to:

- Identify, distinguish, perform algebraic operations and find solutions to equations using the integer, rational, real and complex number systems.
- Use common algebraic methods to solve linear, quadratic, polynomial, radical, and absolute value equations and inequalities.
- Translate the written problem and create algebraic models to solve real-life problems.
- Use and create algebraic functions.
- Demonstrate your understanding of introductory language of mathematics through the use of proper mathematics notation.

Required Materials

Intermediate Algebra for College Students, 7th Edition, by Robert Blitzer. No other supplies are required for the course. You do NOT need to purchase any subscriptions to MyMathLab or workbooks related to this textbook.
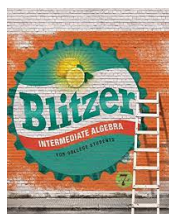
You will not be expected to bring your textbook to class. If you prefer to purchase or rent an electronic version of the text, you're welcome to do so.
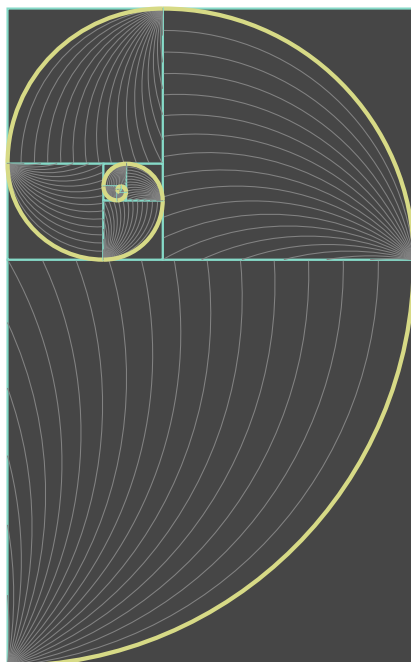
Office Hours

Monday 2:00 - 3:30

Tuesday 1:00 - 3:00

Wednesday 9:00 - 10:00

Thursday 8:00 - 9:30

and by appointment

Course Website

https://integral-domain.org/lwilliams/Math111/

Course Components

Quizzes

Keeping up with the homework will ensure that you are prepared for the quizzes, which will feature problems very similar to those in the homework. Quizzes will be completed online via Moodle, and you will have a window outside of class time to complete each quiz. Quizzes must be completed during this time; you will not be permitted to take a quiz after the due date without making prior arrangements.

Your lowest quiz grade, including a missed quiz, will be dropped when calculating your final grade.

Exams

There will be four midterm exams given throughout the semester, in addition to the final exam. The material on the exams will be similar to topics covered on quizzes and homework. The midterm exams will also be delivered via Moodle.

Your lowest exam grade (including a missed exam) will be replaced by your final exam grade, if your final exam grade is better. A grade of 0 on an exam due to academic dishonesty will *not* be replaced by the final exam grade.

If you will be unable to complete an exam before the availability window on Moodle closes for an excused reason (medical issue with note, University athletics or other event, etc), please let me know as soon as possible to arrange an alternative test.

Final Exam

The final exam is cumulative, including material from all sections covered in class. Most questions on the final will be taken (with minor modifications) from homework, quizzes, and previous exams.

You are required to take the final exam for this course regardless of your average on earlier exams or quizzes. If you will not be able to take the final exam at its scheduled time, please make alternate arrangements as soon as possible. Final exams may be made up for excused absences only.

The final exam is scheduled for **Wednesday May 6**.

Progress

Quiz and exam grades will be posted on Blackboard throughout the semester.

Grading

400 POINTS	Midterm Exams
	Four exams, 100 points each
	Lowest replaced by final if better
100 POINTS	Quizzes
	Quiz Average
	Lowest quiz grade dropped
200 POINTS	Final Exam
700 POINTS	Total Possible

Grading Scale

D	D+	C	C+	B	B+	A
420	469	490	539	560	609	630
60%	67%	70%	77%	80%	87%	90%

More Information About Quizzes and Exams on Moodle

Moodle is a Learning Management System, similar to Blackboard, that allows for flexible mathematics based quizzes and exams. We will be using Moodle for all class assessments: quizzes, midterms exams, and the final exam. There is no fee for using Moodle.

Accessing Moodle

At the beginning of the semester, you will receive an email (delivered to your Mercyhurst email address) with information on enrolling in the Moodle course. You will be required to create a password. Be sure to keep this password safe, and do not share your login information with other students in the course.

There is a mobile app available for Moodle, but it is not recommended for use in this course. A computer (desktop or laptop) or tablet is strongly recommended, as is using the Moodle website as opposed to the app.

If you already have a Moodle account and would like to use it rather than the new one generated for you, just let me know. You can link the course to any existing account.

Question Styles

The quizzes and exams you'll take on Moodle are based on homework problems from the textbook. Many questions are multiple choice, and others will require you to enter a numerical answer. When necessary, specific instructions will be provided with a question. Questions will be asked one at a time, so you can focus on each individual question as you work.

Time Restrictions

You will be required to finish each quiz or exam within a certain period of time (1 hour for quizzes and 2 hours for exams). Any work you have completed will be submitted at the end of this period, even if you have not finished the assessment.

Availability Windows

Each quiz and exam can only be submitted during its availability window. You will have a 12 hour period, from 9 am until 9 pm, in which to complete the quiz or exam on its due date.

Please note that once you begin a quiz or exam, you will be required to complete it within the given time period or before the end of the availability window, whichever comes first. For instance, if you have a 2 hour time limit on an exam that is due by 9 pm, starting the exam at 8 pm will give you only 1 hour to finish it. Be sure to allow yourself enough time to finish each assessment before you begin.

Grades

Your quiz and exam grades will be available immediately when the availability window closes. Grades will be transferred to Blackboard so you can keep track of your overall progress in the class.

Technical Support

The Moodle website has a support page with answers to many common questions: https://support.moodle.com/hc/en-us.
If you have questions or issues with the course itself, or if you encounter any problems with a quiz or exam, please notify me as soon as possible.

Other Course Information

- Please ask questions - in class, office hours, or tutoring - as soon as you feel stuck. Mathematics is a naturally cumulative subject. If you do not understand a particular topic, you will not understand topics that come after.

- There are other textbooks available in the library and in my office. Due to book prices, you may not want to invest in a second book, but it can be helpful to have alternate sources or see topics explained in other ways.

- I do not keep detailed lecture notes. It is highly recommended that you establish contacts among your classmates to get notes in case you miss class.

- I will attempt to answer email as quickly as possible, but please allow up to 24 hours for a response (particularly on weekends).

- Attendance is not required, but coming to class regularly will give you the best chance of earning your desired grade. You are responsible for any work material covered in your absence. Please contact me if you are absent for an extended period.

- You are neither expected nor required to purchase any materials for the course aside from the required textbook. Graphing calculators and mathematical software could be used to check your work, but should not be relied on to do the work for you.

Learning Differences

Mercyhurst University is committed to making reasonable accommodations to assist individuals with disabilities in reaching their academic potential. Students with disabilities requiring accommodations should consult with the Learning Differences Office to discuss eligibility for services or submit the online accommodation request to the Director of Equal Opportunity Programs (DEOP) at ada@mercyhurst.edu.

For students requiring accommodations for learning differences, it is the policy of Mercyhurst University that it is the student's responsibility to provide documentation of his/her disability to the DEOP.

Students are advised to request accommodations at the time of acceptance or prior to the start of the semester. Students may request accommodations at any time throughout the program, however accommodations are not retroactive.

Academic Honesty

Students are required to uphold academic integrity throughout the course. In particular, plagiarism of any sort, unauthorized collaboration on exams, quizzes and other assignments, and other incidences of academic dishonesty will be handled according to the policies set forth in the Student Handbook.

Course Evaluations

Near the end of the semester, you will be asked to complete an online course evaluation. The evaluation will be completed in class during the last two weeks of the semester using any laptop, tablet, or mobile device. The response tool allows you to note aspects of the course that helped you learn, as well as aspects that might be modified to help future students learn more effectively. You will receive an email letting you know when the evaluation window for our class is open. Please note that these course evaluations are anonymous and instructors do not see the results until after the grades for the course are submitted.

SEMESTER SCHEDULE

Midterm Exam Dates:
Exam 1: Tuesday, February 11
Exam 2: Thursday, March 12
Exam 3: Tuesday, April 7
Exam 4: Friday, May 1

	Monday	Wednesday	Friday
	Jan 13 1.1 Algebraic Expressions, Real Numbers	**Jan 15** 1.2 Operations with Real Numbers	**Jan 17** Quiz *Add/Drop Deadline* 1.3 Graphing Equations
	Jan 20 *MLK Day*	**Jan 22** 1.4 Solving Linear Equations	**Jan 24** Quiz 1.5 Problem Solving
	Jan 27 1.6 Properties of Integral Exponents	**Jan 29** 2.1/2.2 Functions and their Graphs	**Jan 31** Quiz 2.3 The Algebra of Functions
	Feb 3 2.4/2.5 Linear Functions and Slope	**Feb 5** 3.1 Systems of Equations	**Feb 7** Quiz 3.1 Systems of Equations
E 1	**Feb 10** 4.1 Solving Linear Inequalities	**Feb 12** 4.2 Compound Inequalities	**Feb 14** 4.3 Absolute Value Equations
	Feb 17 4.3 Absolute Value Inequalities	**Feb 19** 5.1 Polynomials	**Feb 21** Quiz 5.2 Multiplication of Polynomials
	Feb 24 5.3 GCF, Factoring by Grouping	**Feb 26** 5.4 Factoring Trinomials	**Feb 28** Quiz 5.5 Factoring Special Forms
	Mar 2 *Spring Break*	*Mar 4* *Spring Break*	*Mar 6* *Spring Break*
E 2	**Mar 9** 5.5/5.6 Factoring Recap	**Mar 11** 5.7 Polynomial Equations	**Mar 13** 7.7 Complex Numbers
	Mar 16 8.1/8.2 Quadratics	**Mar 18** 8.2 Quadratics	**Mar 20** Quiz 6.1 Rational Expressions and Functions
	Mar 23 6.2 Adding Rational Expressions	**Mar 25** 6.3 Complex Rational Expressions	**Mar 27** Quiz 6.2/6.3 Rational Expressions
	Mar 30 6.4 Division of Polynomials	**Apr 1** 6.6 Rational Equations	**Apr 3** Quiz 6.6 Rational Equations
E 3	**Apr 6** 7.1 Radical Expressions and Functions	**Apr 8** 7.2 Rational Exponents	*Apr 10* *Easter Break*
	Apr 13 *Last day to withdraw* *Easter Break*	**Apr 15** 7.2 Rational Exponents	**Apr 17** Quiz 7.3 Multiplying and Simplifying Radical Expressions
	Apr 20 7.4 Adding, Subtracting, Dividing Rational Expressions	**Apr 22** 7.5 Rationalizing Denominators	**Apr 24** Quiz 7.6 Radical Equations
E 4	**Apr 27** 7.6 Radical Equations	**Apr 29** 8.4 Equations in Quadratic Form	**May 1** Review
	May 4 *Reading Day*	**May 6** **Final Exam**	

HOMEWORK LIST

Your homework will not be collected, but these problems (and similar questions) are likely to appear on quizzes and exams. Working on additional problems is highly recommended.

Sec.	Problems
1.1	17, 25, 49, 63, 65, 69, 73
1.2	1, 13, 19, 21, 37, 41, 49, 55, 59, 61, 85, 89, 91, 95, 99, 113, 123, 127, 129
1.3	3-9, 31, 43, 57-60, 61, 64
1.4	3, 11, 17, 19, 23, 25, 29, 31, 33, 37, 59, 65
1.5	7, 9, 35, 37, 41, 45, 61, 63, 71, 73
1.6	17, 21, 23, 27, 35, 37, 39, 47, 49, 55, 61, 65, 71, 81, 87, 97, 103, 107, 109, 111, 119, 121, 123
2.1	3, 15, 19, 21, 25, 31
2.2	3, 5, 11 - 18, 19, 23, 25, 29, 31, 37, 64 - 67
2.3	9, 13, 15, 31, 37, 39, 43, 49, 51, 52, 53, 59
2.4	1, 9, 17, 19, 23, 27, 31, 33, 37, 47, 51, 61, 62, 67, 75
2.5	3, 7, 11, 19, 21, 22, 23, 27, 33, 41, 45, 49, 53, 57
3.1	1, 3, 7, 17, 31, 39, 45, 49, 55, 63, 65, 69, 75, 81, 83
4.1	3, 7, 15, 19, 21, 25, 29, 33, 35, 43
4.2	1, 7, 9, 11, 13, 19, 21, 23, 27, 29, 31, 33, 41, 47, 49, 53, 55
4.3	3, 7, 15, 17, 21, 27, 41, 43, 45, 51, 55, 57, 59, 61, 63, 65, 67, 69, 71, 72, 73, 79, 81
5.1	1, 5, 11, 17, 19, 21-24, 25-28, 29, 39, 41, 49, 71, 105
5.2	3, 5, 7, 15, 19, 21, 22, 25, 29, 43, 49, 53, 55, 71, 81, 99, 101, 105
5.3	3, 7, 9, 21, 23, 31, 35, 39, 43, 47, 49, 55, 59, 61, 65, 67, 71, 73, 81
5.4	5, 9, 15, 21, 35, 37, 39, 49, 55, 57, 69, 73, 81
5.5	1, 3, 7, 13, 19, 21, 23, 29, 33, 35, 39, 41, 45, 47, 49, 55, 65, 75, 81, 85, 103
5.6	7, 11, 15, 17, 21, 37, 39, 47, 61, 63, 67, 69, 79
5.7	5, 11, 13, 15, 21, 25, 27, 29, 31, 35, 37, 43, 45
7.7	1, 7, 15, 19, 23, 39, 63, 67, 73, 81
8.1	1, 5, 35, 51, 55
8.2	3, 9, 13, 17, 37, 38, 41, 42, 45, 46, 47, 49
6.1	1, 9, 13, 31, 37, 43, 49, 55, 61, 65, 67, 79, 81, 83, 89
6.2	3, 7, 9, 11, 19, 23, 25, 29, 31, 39, 41, 47, 49, 51, 53, 55, 69, 71
6.3	3, 7, 9, 13, 15, 19, 23, 27, 29, 33, 39, 41, 43, 47, 49
6.4	3, 15, 25, 27, 33, 35, 45, 47
6.6	3, 5, 9, 11, 13, 15, 17, 19, 20, 21, 22, 23, 27, 29, 35, 39, 41, 47
7.1	1, 3, 5, 7, 9, 15, 17, 19, 33-53(odd), 61, 73, 77, 79, 81, 87
7.2	3, 5, 13, 15, 17, 27, 29, 31, 33, 37, 45, 47, 51, 53, 55, 57, 59, 61, 65, 71, 72, 73, 74, 75, 77, 78, 81, 87, 95, 96, 99, 101, 103, 104, 113, 114, 115, 116, 121, 122, 123, 124
7.3	1, 7, 11, 15, 17, 19, 21, 25, 27, 29, 33, 43, 49, 61, 65, 67, 69, 71, 75
7.4	5, 7, 11, 13, 15, 21, 23, 31, 37, 45, 49, 53, 57, 67, 71
7.5	3, 5, 9, 13, 17, 21, 23, 29, 31, 39, 47, 49, 65, 81, 83, 87, 101
7.6	7, 10, 11, 14, 17, 19, 21, 23, 31, 32, 34, 39, 43, 45
8.4	1, 5, 7, 9, 13, 15, 25, 27