

MATH 111-01 – College Algebra COURSE SYLLABUS · SPRING 2023

INSTRUCTOR:	Roger Griffiths	OFFICE HOURS:	
OFFICE:	Old Main 305	Tues: 09:00 - 10:20	
EMAIL:	rgriffiths@mercyhurst.edu	Tues: 1:00 - 1:50	
PHONE:	(814) 824-2123	Wed: 10:00 - 10:50	
CLASS TIME:	Mon, Wed, Fri: 9:00 - 9:50, (3 semester credits)	Thur: 08:00 - 09:20	(Zoom)
LOCATION:	Hirt M214	Fri: 10:00 - 10:50	
WEB:	www.integral-domain.org/rgriffiths/courses/m111/		
TEXTBOOK:	<i>Intermediate Algebra for College Students</i> , (7th Edition) by Robert Blitzer		

COURSE DESCRIPTION

A course in algebra fundamentals, topics include sets, relations, functions, exponents and radicals, equations, inequalities, and polynomial and rational functions.

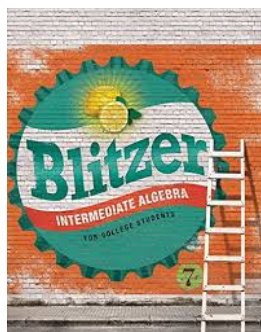
This is a course in algebra, similar to high school courses in algebra except that the pace will be faster.

LEARNING OBJECTIVES

By the end of this course, you will have acquired many mathematical tools which include the ability 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.

TEXTBOOK



Intermediate Algebra for College Students, 7th Edition, by Robert Blitzer. You will need this textbook, and be sure to check the edition when purchasing your textbook; other editions have similar material, but the assigned problems may be different. No other materials are required for this class. You do NOT need to purchase a subscription to MyMathLab or pay to access any other online resources; so you may purchase a used textbook without the access code. If you prefer to purchase an electronic version of the text or rent it for the semester, you're welcome to do so.

MOODLE

At the beginning of the semester, you will receive a code to register for our course on Moodle. This is a free site created for this course by the Mercyhurst Mathematics Department. While most materials will also be posted on Blackboard, you will need to access Moodle for the course quizzes and exams. You will receive an email to your Mercyhurst address with further information on creating your Moodle account.

CALCULATORS

You will not be required to have a calculator for this class. They are not recommended for this course, and you are strongly encouraged to avoid using a calculator while working on homework.

EVALUATION

Your letter grade in this course will be based on:

- 100 points: **Quizzes** Your quiz average (percentage) out of 100 points, will drop 1 quiz score
 - 400 points: **Exams:** 4 exams at 100 points each
 - 200 points: **Final Exam** Cumulative Final exam worth 200 points
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- 700 points: **Total points** in the course

And assigned according to the following scale:

Total Class Points	Percent %	Letter Grade
630 - 700	90 to 100	A
609 - 629	87 to 89	B+
560 - 608	80 to 86	B
539 - 559	77 to 79	C+
490 - 538	70 to 76	C
420 - 489	60 to 69	D
0 - 419	Below 60	F

- ✓ Your overall performance in the course is measured by the total number of points you accumulate relative to the maximum 700 points possible. Your letter grade in this course will be based on the distribution above, the standard scale used in the Mathematics Department.
- ✓ Class attendance and/or class participation is not factored into your grade.
- ✓ These are the only points possible in this class, there is no extra credit (or 'make up'), your asking for extra credit is a clear indication that you have not read this syllabus.

COURSE POLICIES

- ✓ You are responsible for all that is announced or covered in class even if you are absent.
- ✓ You are responsible for all the material in a given section unless told otherwise, use the course schedule and suggested homework as a guide.
- ✓ A prerequisite for additional help outside the classroom is regular class attendance.
- ✓ Every student is required to establish a *class contact*, that is, a fellow classmate that you may contact in case you are having a problem with a particular homework exercise at night/weekend or in the event you miss class, you can get the class notes from them.
- ✓ If you miss class, you are responsible for getting the notes from your 'class contact' (see above).

- ✓ If you miss class, you are responsible for getting the class administrative remarks/reminders from your 'class contact'.
- ✓ Email is great for **simple** communications, but more complex issues must be handled during office hours.
- ✓ I expect you to read this syllabus and get clarification of any items you do not understand during the first week of class. After that, if you send me an email asking me about something covered in this syllabus, that email will likely be disregarded.

HOMWORK

I do not collect or grade your written homework. You will be held accountable for the mastery of homework problems via the quizzes. As such, you get no credit for *merely attempting the homework*, your goal is to master each type of problem assigned.

HOMWORK SUGGESTIONS

- The textbook exercises typically begin with several groups of problems that cover small pieces of the material covered in that section. The exercises near the end of that section often put those ideas all together, necessitating mastery of the low-numbered exercises before attempting the latter. However, working only the low-numbered exercises will not prepare a student sufficiently for the quizzes or exams.
- **Homework is far and away the single most important part of any mathematics course** because this is when most (all) of the learning takes place. Homework problems will be assigned regularly and I expect you to do them. If you are unable to do a problem I expect you to find out how to do it.
- In studying mathematics, you must be careful not to let a tutor or friend *think* for you. It is essential that you can work problems **completely on your own, without help from any resource**, by the time of a quiz or exam.
- Remember, the general rule of thumb for a college level class is that one should put in at least 2 hours of work outside class for every hour in class. This means that you should be working on this course for about 6 hours a week outside of class.

QUIZZES

- Before you can get started with a graded quiz, you will need to complete a Quiz Tutorial on Moodle. This ungraded quiz is to help you get acquainted with the quiz layout and how to enter answers.
- Everyone is allowed to miss one quiz without penalty (for any reason - including forgetting the quiz); thus, there are NO make up quizzes. If you end up taking all of the quizzes, your low quiz score will be dropped.
- The quizzes serve as an immediate assessment of the extent to which you mastered a particular assignment. Good quiz results should serve as positive feedback, but poor quiz results suggest that you must go back and master that material. Repeatedly failing quizzes will almost certainly lead to failing the course, you must take immediate and corrective action if you ever do poorly on a quiz.

EXAMS

- There will be four midterm exams given throughout the semester, in addition to the cumulative final exam. The material on the exams will be similar to topics covered on quizzes and homework.
- There will be no late 'make-up' exams, as this is unfair to the rest of the class.
 - Exams are available for 17 hours, it is your responsibility to set aside time to take the exam during this window.
 - If you know in advance you will not be available during the block of time an exam will be available, let me know well in advance of the exam.
 - It is not a good idea to put off taking the exam until the last hours of availability.
- 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. A second missed exam will receive a grade of 0 (zero).

QUIZ AND EXAM POLICIES

- All quizzes and exams (including the final exam) will be delivered via Moodle; see section below for further information.
- You will only have one chance to take each quiz/exam.
- You will not be able to change your responses after submitting. You will not be required to submit any written work for your quizzes.
- If you experience any technical issues with a quiz/exam, let me know as soon as possible; you must let me know before the quiz closes.

YOU MAY:

refer to your textbook and course materials while taking quizzes.

YOU MAY NOT:

- refer to any materials besides the textbook or course materials. This includes solution manuals, web pages, etc. If it is not on Moodle, Blackboard, or in the textbook, do not use it while taking an exam!
- use mathematical software or apps such as Wolfram Alpha, CoCalc, Photomath, or any other utilities.
- ask for help or clarification from a classmate, friend, family member, online service such as Chegg, or anyone besides the instructor of the course.
- assist a classmate that requests help or information about a quiz or exam.

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.

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 (typically, 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 generally have a 12 hour period 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 midnight, starting the exam at 11 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 scores will be available immediately when the availability window closes. Correct answers and detailed solutions will be available the day after the quiz is available.

Grades will be transferred to Blackboard so you can keep track of your overall progress in the class. The gradebook for the class will be maintained on Blackboard.

SUPPORT

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 (before the quiz/exam ends).

UNIVERSITY RESOURCES AND POLICIES

COVID RELATED SUGGESTIONS

- Face masks are not required, but please feel free to wear one if that is your preference. If you have any sort of cough you are strongly encouraged to wear one.
- A water bottle or cup with a lid (and preferably a straw) is permitted to be used in classrooms and labs.
- If you have a fever, shortness of breath or difficulty breathing, new loss of taste or smell, cough, or feel sick at all, please do not come to our classroom. Your health and the health of the Mercyhurst community is the first priority.

ADA ACCOMMODATIONS/ACADEMIC SUPPORT

Mercyhurst University values inclusion and is committed to the goal of providing equal opportunities for all. Mercyhurst abides by federal, state, and local laws in admissions, employment, academic programs, and all services provided.

Mercyhurst University is committed to complying with its obligations under the Americans with Disabilities

Act (ADA), Section 504 of the Rehabilitation Act and the Fair Housing Act to ensure that a person with a disability is granted reasonable accommodations, when such accommodations are necessary, to afford that person equal opportunity to obtain a Mercyhurst education and use university facilities. Please refer to the HUB: <https://lakersmercyhurst.sharepoint.com/sites/StudentsHub> and select the Services tab, then ADA Accommodations from the dropdown for instructions to request an accommodation. You may also contact Susan Reddinger, ADA Coordinator, ADA@mercyhurst.edu, 814-824-2362, Egan Hall 200.

For students with questions about Academic Support, please refer to the HUB: <https://lakersmercyhurst.sharepoint.com/sites/StudentsHub> and select the Academic Resources tab, then Academic Support for more information.

TITLE IX SEXUAL MISCONDUCT/SEXUAL HARASSMENT REPORTING

Mercyhurst is committed to providing an environment free from sex discrimination, including sexual harassment and sexual violence. Please refer to the HUB: <https://lakersmercyhurst.sharepoint.com/sites/StudentsHub> and select the Resources tab, then Title IX – Sexual Respect from the dropdown for more information. If you would like to file a sexual misconduct complaint, please contact Ann Miller, Title IX Coordinator and Compliance Officer, titleix@mercyhurst.edu, 814-824-2363. Please be aware that in compliance with Title IX, educators must report incidents of sexual assault/harassment, stalking, and domestic/dating violence. If you disclose any of these situations in class, in papers, or to me personally, I am required to report it to the Title IX Coordinator (or any of the Deputy Title IX Coordinators).

ACADEMIC HONESTY

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

MATH 111 · SUGGESTED HOMEWORK · SPRING 2023

Section	Exercises
Day One	→ Carefully RE-READ and UNDERSTAND the Syllabus ←
§ 1.1: Algebraic Expressions	15, 17, 25, 49, 53, 57, 63, 65, 69, 73
§ 1.2: Operations with Real Numbers	1, 13, 19, 21, 37, 41, 49, 55, 59, 61, 85, 89, 91, 95, 99, 113, 123, 127, 129
§ 1.3: Graphing Equations	3-9, 31, 43, 57-60, 61, 64
§ 1.4: Solving Linear Equations	3, 11, 17, 19, 23, 25, 29, 31, 33, 37, 59, 65
§ 1.5: Problem Solving and Formulas	5, 7, 9, 35, 37, 41, 45, 61, 63, 71, 73
§ 1.6: Properties of Integral Exponents	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: Introduction to Functions	3, 15, 19, 21, 25, 31
§ 2.2: Graphs of Functions	3, 5, 11 - 18, 19, 23, 25, 29, 31, 37, 64 - 67
§ 2.3: The Algebra of Functions	9, 13, 15, 31, 37, 39, 43, 49, 51, 52, 53, 59
§ 2.4: Linear Functions (1)	1, 5, 17, 23, 27, 31, 33, 47, 51, 61, 62, 67
§ 2.4: Linear Functions (2)	9, 19, 25, 28, 37, 69, 75
§ 2.5: Equations of a line	3, 7, 11, 19, 21, 22, 23, 27, 33, 41, 45, 49, 53, 57
Exam 1	
§ 4.1: Solving Linear Inequalities	3, 7, 15, 19, 21, 25, 29, 33, 35, 43
§ 4.2: Compound Inequalities	1, 7, 9, 11, 13, 19, 21, 23, 27, 29, 31, 33, 41, 47, 49, 53, 55
§ 4.3: Eqns, Inequalities with Abs Value (1)	3, 7, 17, 21, 41, 43, 45, 51, 55, 57, 59, 61, 63, 71, 75
§ 4.3: Eqns, Inequalities with Abs Value (2)	15, 27, 65, 67, 69, 72, 73, 79, 81
§ 5.1: Polynomials and Poly Functions	1, 5, 11, 17, 19, 21-24, 25-28, 29, 39, 41, 49, 71, 105
§ 5.2: Multiplication of Polynomials	3, 5, 7, 15, 19, 21, 22, 25, 29, 43, 49, 53, 55, 71, 81, 99, 101, 105
§ 5.3: GCF and Factoring by Grouping	3, 7, 9, 21, 23, 31, 35, 39, 43, 47, 49, 55, 59, 61, 65, 67, 71, 73, 81
§ 5.4: Factoring Trinomials (1)	5, 9, 15, 17, 18, 21
§ 5.4: Factoring Trinomials (2)	35, 37, 39, 41, 49, 55, 57, 69, 71, 73, 81
§ 5.5: Factoring Special Forms (1)	1, 3, 7, 19, 23, 29, 33, 35, 39, 45, 49, 55, 65, 75
§ 5.5: Factoring Special Forms (2)	13, 21, 41, 47, 81, 85, 103
§ 5.6: A General Factoring Strategy	7, 11, 15, 17, 21, 37, 39, 47, 61, 63, 67, 69, 79
§ 5.7: Polynomial Equations and Apps	5, 11, 13, 15, 21, 25, 27, 29, 35, 37, 43, 45, 51, 55, 57

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MATH 111 · SUGGESTED HOMEWORK · SPRING 2023

Section	Exercises
Exam 2	
§ 6.1: Rational Expressions and Functions	1, 9, 13, 31, 37, 43, 49, 55, 61, 65, 67, 79, 81, 83, 89
§ 6.2: Adding Rational Expressions	3, 7, 9, 11, 19, 23, 25, 29, 31, 39, 41, 47, 51, 71
§ 6.3: Complex Rational Expressions	3, 7, 9, 13, 15, 19, 23, 27, 29, 39, 47, 49
§ 6.2: Adding Rational Expressions § 6.3: Complex Rational Expressions	49, 53, 55, 69 33, 41, 43, 50
§ 6.4: Division of Polynomials	3, 15, 25, 27, 33, 35, 45, 47
§ 6.6: Rational Equations (1)	3, 5, 9, 13, 15, 17, 19, 21, 23, 27
§ 6.6: Rational Equations (2)	11, 20, 22, 29, 35, 37, 39, 41, 47
Exam 3	
§ 7.1: Radical Expressions and Functions	1, 3, 5, 7, 9, 15, 17, 19, 33-53(odd), 61, 73, 77, 79, 81, 87
§ 7.2: Rational Exponents (1)	3, 5, 15, 17, 27, 29, 31, 45, 55, 57, 59, 61, 65, 71, 73, 75, 81, 87, 95, 99, 113, 115, 121, 123
§ 7.2: Rational Exponents (2)	13, 33, 37, 47, 51, 53, 72, 74, 77, 78, 96, 101, 103, 104, 114, 116, 122, 124
§ 7.3: Radical Expressions	1, 7, 11, 15, 17, 19, 21, 25, 27, 29, 33, 43, 49, 61, 65, 67, 69, 71, 75
§ 7.4: Radical Expressions	5, 7, 11, 13, 15, 21, 23, 31, 37, 45, 49, 53, 57, 67, 71
§ 7.5: Rationalizing Denominators	3, 5, 9, 13, 17, 21, 23, 29, 31, 39, 47, 49, 65, 81, 83, 87, 101
§ 7.6: Radical Equations (1)	7, 10, 11, 14, 17, 21, 25, 31, 39, 41
§ 7.6: Radical Equations (2)	19, 32, 43, 45
§ 7.7: Complex Numbers	1, 7, 15, 19, 23, 39, 63, 67, 73, 81
§ 8.1: Completing the Square § 8.2: The Quadratic Function (1)	1, 5, 35, 51, 55 3, 9, 13, 17, 37, 41, 45, 49
§ 8.2: The Quadratic Function (2)	38, 42, 46, 47
§ 8.4: Equations Quadratic in Form	1, 5, 7, 9, 13, 15, 25, 27, 33, 37
Exam 4	

MATH 111-01 · COLLEGE ALGEBRA COURSE SCHEDULE · SPRING 2023

Monday	Wednesday	Friday
Jan 16 Course Introduction	Jan 18 § 1.1: Algebraic Expressions, Real Numbers	Jan 20 <i>Complete Quiz Tutorial</i> § 1.2: Operations with Real Numbers § 1.3: Graphing Equations
Jan 23 § 1.3: Graphing Equations § 1.4: Solving Linear Equations	Jan 25 § 1.5: Problem Solving and Using Formulas	Jan 27 <i>Quiz 1</i> § 1.6: Properties of Integral Exponents
Jan 30 § 2.1: Introduction to Functions § 2.2: Graphs of Functions	Feb 1 § 2.3: The Algebra of Functions § 2.4: Linear Functions (1)	Feb 3 <i>Quiz 2</i> § 2.4: Linear Functions (2) § 2.5: Linear Functions and slope
Feb 6 § 4.1: Solving Linear Inequalities	Feb 8 NO CLASS MEETING EXAM 1	Feb 10 § 4.2: Compound Inequalities
Feb 13 § 4.3: Eqns, Inequalities with Abs Value (1)	Feb 15 § 4.3: Eqns, Inequalities with Abs Value (2)	Feb 17 <i>Quiz 3</i> § 5.1: Polynomials and Poly Functions
Feb 20 § 5.2: Multiplication of Polynomials	Feb 22 § 5.3: Greatest Common Factors § 5.4: Factoring Trinomials (1)	Feb 24 <i>Quiz 4</i> § 5.4: Factoring Trinomials (2)
Feb 27 § 5.5: Factoring Special Forms § 5.6: A General Factoring Strategy	Mar 1 § 5.6: A General Factoring Strategy § 5.7: Polynomial Equations and Apps (1)	Mar 3 <i>Quiz 5</i> § 5.7: Polynomial Equations and Applications
Mar 6 No Class: Spring Break	Mar 8 No Class: Spring Break	Mar 10 No Class: Spring Break
Mar 13 § 6.1: Rational Expressions and Functions	Mar 15 NO CLASS MEETING EXAM 2	Mar 17 § 6.2: Adding Rational Expressions
Mar 20 § 6.3: Complex Rational Expressions	Mar 22 6.4: Division of Polynomials	Mar 24 <i>Quiz 6</i> § 6.6: Rational Equations (1)
Mar 27 § 6.6: Rational Equations (2)	Mar 29 § 7.1: Radical Expressions and Functions	Mar 31 <i>Quiz 7</i> §§ 6.2 & 6.3 (Review)
Apr 3 NO CLASS MEETING EXAM 3	Apr 5 No Class: Easter Break	Apr 7 No Class: Easter Break
Apr 10 No Class: Easter Break	Apr 12 § 7.2: Rational Exponents (1)	Apr 14 <i>Quiz 8</i> § 7.2: Rational Exponents (2)
Apr 17 § 7.3: Multiplying and Simplifying Radical Expressions	Apr 19 § 7.4: Adding, Subtracting, and Dividing Radical Expressions	Apr 21 <i>Pass/Fail Deadline</i> <i>Quiz 9</i> § 7.5: Rationalizing Denominators
Apr 24 § 7.6: Radical Equations (2)	Apr 26 § 7.7: Complex Numbers	April 28 <i>Last day to withdraw</i> <i>Quiz 10</i> § 8.1 Quadratics § 8.2: Quadratic Formula (1)
May 1 § 8.2: Quadratic Formula (2)	May 3 § 8.4: Equations in Quadratic Form	May 5 NO CLASS MEETING EXAM 4
	Wednesday May 10	FINAL EXAM