

Math 114-62: College Math Preparation Level 3: Intermediate Algebra

De Anza College Winter 2019

Instructor: Lindsay Merrill merrilllindsay@fhda.edu (408) 864-8774
*Please contact me via **email**. Note: there are **THREE** letter "l"s in a row in my email!*

Class Hours:

Monday and Wednesday 6:30 – 8:45 pm Room G5 (next to the football stadium)

Office Hours:

Monday and Wednesday 5:00 – 5:30 pm Room S43 (in the tutoring lab)

Description: Application of exponential and logarithmic functions, rational functions, and sequences and series to problems. Emphasis on the development of models of real-world applications and interpretation of their characteristics.

Prerequisite: Qualifying score on the Math Placement Test within last calendar year; or MATH 212 or equivalent with a grade of C or better.
Advisory: EWRT 211 and READ 211 (or LART 211), or ESL 272 and 273

Materials

Required: - Textbook: Intermediate Algebra for College Students, 7th edition (By Blitzer. ISBN: 9780134178943) (*Renting the book, using an e-book, etc., are all fine*)

- Scientific Calculator (non-graphing) like the TI-30XS MultiView™ or the TI-30X IIS. You should be able to find one for somewhere between \$8-\$15.

-A few different colors of pencils/pens (you'll be grading your own quizzes and will need a second color)

-A notebook and paper to take notes in and do homework on.

Highly Recommended:

-Graphing paper-- this will make your homework and class work much easier. (You can find loose leaf graphing paper sold in plastic shrink wrap like you would find lined paper. You may also use a composition notebook or spiral bound notebook and just cut out / pull out the paper. You may also use "engineering paper" which is a light green graphing paper. You may use graphing paper for everything you do in the class if you desire.)

Attendance Daily, on-time attendance is crucial for your success and expected in order to earn full class participation points. It is very difficult to catch up on missed material after missing a 2+ hour class, so please make attendance a priority. If you miss classes, you will find it difficult to pass the course since we cover so much material in each 2+ hour class session. Please do what you can to stay for the entire class each day. Repeated absences will affect your participation grade. We will have a 10-minute break during each class for you to walk around, eat a snack outside the classroom, go to the restroom, answer texts, etc.

Electronics Policy

Cell phone use is *not permitted* in class. Please turn your cell phones on silent and keep them packed away in your backpack. Repeated cell phone use will hinder your ability to learn the mathematics we are discussing that day and will distract those around you. If cell phone use becomes an issue, I will have you turn off your phone and store it at the front of the class until class is over. **Cell phones may not be used as calculators.** If you have an emergency situation that may require your attention during class (e.g., a sick child), please speak to me at the beginning of class.

You may use a scientific calculator in this course (included on most quizzes and exams). You may *not* use a graphing calculator on quizzes or exams, so please do not rely on one when you do your homework.

Add/Drop Deadlines

The final day to add this course is January 19th, 2019.

The final day to drop this course without a “W” is January 21st, 2019. The final day to drop this course is March 1st, 2019. Students are responsible for dropping themselves from the course if desired. Any student on the roster at the end of the term (regardless of attendance and participation) will be assigned a grade.

Grading Categories

Class Participation	10%
Homework Projects	20%
Quizzes	5%
Exams	15%
Final Exam	25%
<i>Total</i>	25%
	100%

Letter Grade scale

A:	$93\% \leq score < 100\%$
A-:	$90\% \leq score < 93\%$
B+:	$87\% \leq score < 90\%$
B:	$83\% \leq score < 87\%$
B-:	$80\% \leq score < 83\%$
C+:	$77\% \leq score < 80\%$
C:	$70\% \leq score < 77\%$
D:	$60\% \leq score < 70\%$
F:	$score < 60\%$

I reserve the right to modify any details on this syllabus as necessary during the term.

Grading Categories

Class Participation (10%)

Participation in class (being in class, participating in group discussions, class discussions, focusing during individual work time, etc.) is an essential part of learning mathematics. 10% of your grade is based upon how well you are engaged in class. These points will be awarded at the instructor's discretion. Students will vary in how comfortable they are presenting in front of the class or talking in group discussions, so please discuss individual concerns with the instructor. If you are in class, are on time, work hard, and engage during individual and group work, you will earn full points.

Homework (20%)

Homework will consist of problems from the book, additional problems provided by the instructor, and exam reviews. Homework is typically due at the beginning of class, the Monday after the homework is assigned (*unless otherwise indicated on the schedule or via email- this will vary when we don't have class Mondays or when we have exams*). Each homework assignment will be worth 10 points. 10 points will be given **for completion**—adequate work is shown and answers are provided for each problem assigned. Use the answers for selected problems given in the back of your book to check your work as you go. Late homework will only be awarded up to 5 points (for completion).

Help and Feedback: If you need help on your homework or would like feedback on returned homework assignments, you may come to my office hours. *Students who come to a session of office hours to get help or feedback will get one bonus point to apply to a homework assignment.*

Projects (5%)

Students must complete two projects during the term. 1) The "Mathematics in the Media" project and 2) the "Mathematics in our World" mini research project.

Mathematics in the Media, project 1: Students will choose a movie or TV show from a list provided to them and watch it sometime during the semester. They will complete a brief report, answering questions about what they watched and learned. Students will be provided additional ideas, resources, and instructions in class and via email.

Mathematics in our World, project 2: Students will choose a mathematical topic we are learning about in class and do research about how it is applicable in our modern world. Students will prepare a brief report (in writing, diagrams, pictures, etc.) that explains what they learned and found interesting. This project is meant to be flexible and students can be creative and discuss their ideas for how they might complete this project with the instructor. Students will be provided additional ideas, resources, and instructions in class and via email.

Quizzes (15%)

There will be a quiz every few days in class (Approximately 7 total quizzes, subject to change.) These quizzes will take place at the beginning of class on the days indicated in the schedule and are intended to give you and the instructor immediate feedback regarding how well you are understanding the current material. **There will be no make-up quizzes allowed.** The two lowest quiz scores will be dropped to accommodate real-life incidents that happen (e.g., traffic jam), but you should work extra time into your commute, if necessary, to make sure you can make it to class on time. Please bring a brightly colored (e.g., red, green, neon) pen or pencil to class to use to grade your quiz.

Exams (25%)

Exams will take place in class on the dates indicated on the schedule. **No make-up exams will be allowed.** To accommodate for emergency circumstances (e.g., car accident, emergency doctor visit), your final exam score can take the place of a “0” on *one* missed exam *with the instructor’s approval*. (This will not be allowed if you just procrastinate studying and don’t want to take an exam.)

Scientific calculators will be allowed on the exams, but *graphing calculators are not allowed*. You may not use your cell phone as a calculator. Cell phone use during an exam may be grounds for dismissal and a “0” on the exam. During exams, students must turn off their cell phones and place their phones, backpacks and other belongings at the front of the class near the teacher.

You are allowed a 3-inch x 5-inch index card (or 3”x5” piece of paper) of notes on each exam. Deciding how to make wise use of this note space will improve your test preparation and can be a valuable part of studying for an exam. We will discuss strategies for preparing your note card during class.

Final Exam (25%)

The final for this class is on Wednesday, March 27th from 6:15-8:15 pm. **There will be no make-up opportunities.**

Scientific calculators will be allowed on the final exam, but *graphing calculators are not allowed*. You may not use your cell phone as a calculator. Cell phone use during an exam may be grounds for dismissal and a “0” on the final exam. During the final exam, students must turn off their cell phones and place their phones, backpacks and other belongings at the front of the class near the teacher.

You are allowed one 8.5-inch x 5.5-inch (half of a normal-sized sheet of printer paper) page of notes on the final exam. Deciding how to make wise use of this note space will improve your test preparation and can be a valuable part of studying for this exam. We will discuss strategies for preparing your note card during class.

Academic Integrity

Cheating will not be tolerated. When you work together on homework, do your own work. Do not just copy another person's work. Problem solve together, fix errors together, but *do your own work*. If you cheat on homework it will be very apparent on exams that you have not learned the material. Cheating on a quiz or exam will result in an automatic 0 on that assessment. Multiple instances of cheating is grounds for being dropped from or failing the course.

Disruptive Behavior

Please be respectful to the instructor and to other students in class. Do not talk over other people or have side conversations during group work or whole-class instruction. Do not answer phone calls or texts during class. If you have a sick child or other issue that requires you to have your phone on, please talk to me ahead of time, turn the phone on silent, and step out of class to take emergency calls. Do not come to class intoxicated. If your behavior is impeding others' ability to participate in class and learn mathematics, you will be asked to leave. If you are respectful to yourself and those around you, we will get along fine.

Tips to be Successful in this Class

- Come to class each time class is held. Do not be late and do not leave early.
- Participate in the activities in class. I have carefully designed the activities in each class session to give you the best opportunity to learn the mathematics. *Ask questions.*
- Make friends with other classmates and **form study groups**. Share contact info. Use each other as a resource to bounce ideas as you problem solve. Use each other as a resource if you miss a class session. Work on hard homework problems together. *Explain concepts to each other.* If you can explain a concept to someone, you know you understand it well. If you try to explain something and struggle, you know what you should study and practice more!
- Use the free tutoring available in the Math, Science and Technology Resource Center (S43). (Their hours are 9:00am - 6:00 pm on Mondays through Thursdays, and 9:00 am – 12:30 pm on Fridays.
- Most of your ability to learn math is based on how hard you work; it isn't based on "natural talent". *Those who work hard learn math better.* Plan to spend up to 10 hours a week outside of class doing homework, getting help, studying for quizzes or exams, doing projects, etc. If you are willing to work hard, you may be surprised how successful you can be!
- Use the following resources to help you learn better (but be sure you can do the math without their help!): www.wolframalpha.com ; www.desmos.com/calculator ; <https://www.khanacademy.org/math/algebra2>
- Come to office hours! If you would like help on your homework during my office hours, please come prepared having attempted the problem(s) for which you are requesting help. Making notes of where you are stuck is also helpful! Finding a few classmates to work with will make your homework time even more effective! Then, join me for office hours to get help where you're stuck.

Class Schedule

Class	Date (2018)	Sections Covered	Topic(s)	Quizzes (start of class)
1	Mon, Jan 7	1.6-1.7, 4.2	Class intro, syllabus, integral exponents, scientific notation, compound inequalities	
2	Wed, Jan 9	4.3, 6.1	Absolute values, rational expressions and functions (multiply and divide)	
3	Mon, Jan 14	6.2-6.3, 6.4 (part)	Rational expressions (add, subtract), simplify complex rational expressions, division of polynomials	
4	Wed, Jan 16	6.4 (part), Exam Review	Division of polynomials (long division), <i>Review for Exam 1</i>	Quiz 1
	Mon, Jan 21	Martin Luther King Jr. Day: No Class		
5	Wed, Jan 23	Exam 1		
6	Mon, Jan 28	6.6-6.8	Rational Equations (solving, formulas, and applications), modeling using variation	
7	Wed, Jan 30	7.1-7.3	Radical expressions and functions, rational exponents, multiply and simplify radical expressions	Quiz 2
8	Mon, Feb 4	7.4-7.6	Add, subtract, and divide radical expressions; multiply radical expressions (2+ terms), rationalizing denominators	
9	Wed, Feb 6		<i>Review for Exam 2</i>	Quiz 3
10	Mon, Feb 11	Exam 2		
11	Wed, Feb 13	9.1-9.2	Exponential functions, composite and inverse functions	
	Mon, Feb 18	President's Day Weekend: No Class		
12	Wed, Feb 20	9.3-9.4	Logarithmic functions and properties of logarithms	Quiz 4
13	Mon, Feb 25	9.5-9.6	Exponential and logarithmic equations, exponential growth and decay, modeling data	
14	Wed, Feb 27	10.1	Distance and midpoint formulas, circles	Quiz 5
15	Mon, Mar 4		<i>Review for Exam 3</i>	
16	Wed, Mar 6	Exam 3		
17	Mon, Mar 11	11.1-11.3	Sequence and summation notation	
18	Wed, Mar 13	11.1-11.3	Arithmetic sequences and sums	Quiz 6
19	Mon, Mar 18	11.1-11.3	Geometric sequences and sums	
20	Wed, Mar 20		<i>Review for Final Exam</i>	Quiz 7
21	Wed, Mar 27	Final Exam: 6:15-8:15 pm		

Math 212 Homework Schedule

Class	Class Date (date given)	Date Due	Sections	Topic(s)	Book Problems (from "exercise set")	Other Problems
1	Mon, Jan 7	Mon, Jan 14	1.6-1.7, 4.2	Class intro, syllabus, Integral Exponents, Scientific Notation, Compound Inequalities	1.6: 7, 9, 19, 23, 29, 31, 33, 41, 45, 49, 55, 61, 79, 81, 97, 103 1.7: 5, 9, 17, 21, 33, 45, 51, 59-62 4.2: 1, 3, 5, 19, 21, 27, 35, 37, 45, 53	
2	Wed, Jan 9	Mon, Jan 14	4.3, 6.1	Absolute Values, Rational Expressions and Functions (Multiply and Divide)	4.3: 1, 7, 15, 21, 39, 52, 55, 67, 75, 97 6.1: 3, 5, 9, 13, 17, 19, 21, 23, 25, 37, 41, 55, 61, 75, 85, 109, 111	
3	Mon, Jan 14	Wed, Jan 23	6.2-6.3, 6.4 (part)	Rational Expressions (Add, Subtract), Simplify complex rational expressions, Division of polynomials	6.2: 3, 9, 21, 25, 29, 33, 43, 49, 79 6.3: 3, 15, 27 6.4: 3, 7, 11	
4	Wed, Jan 16	Wed, Jan 23	6.4 (part), Exam Review	Division of Polynomials (long division), <i>Review for Exam 1</i>	6.4: 13, 15, 27, 29 <i>Exam Review Homework</i>	<i>Practice Exam</i>
	Mon, Jan 21	Martin Luther King Jr. Day: No Class				
5	Wed, Jan 23		Exam 1			<i>Work on projects</i>
6	Mon, Jan 28	Mon, Feb 4	6.6-6.8	Rational Equations (solving, formulas, and applications), modeling using variation	6.6: 1, 3, 7, 11, 20, 23, 31, 51, 53, 64 6.7: 6, 29, 37 6.8: 21, 23, 25, 29	
7	Wed, Jan 30	Mon, Feb 4	7.1-7.3	Radical expressions and functions, rational exponents, multiply and simplify radical expressions	7.1: 9, 17, 25, 27, 29, 31, 39, 43, 51, 57, 67, 69, 91, 103 7.2: 1, 7, 15, 25, 31, 39, 47, 61, 69, 75, 87, 101, 125, 133 7.3: 7, 15, 19, 25, 31, 33, 37, 49, 57, 71, 79, 91	
8	Mon, Feb 4	Mon, Feb 11	7.4-7.6	Add, subtract, and divide radical expressions; multiply radical expressions (2+ terms), rationalizing denominators	7.4: 1, 5, 9, 15, 21, 27, 35, 41, 51, 59, 63, 81 7.5: 1, 5, 9, 27, 35, 55, 63, 85, 118, 119 7.6: 3, 13, 19, 27, 33, 37, 51, 53	
9	Wed, Feb 6	Mon, Feb 11		<i>Review for Exam 2</i>	<i>Exam Review Homework</i>	<i>Practice Exam</i>
10	Mon, Feb 11		Exam 2			<i>Work on projects</i>
11	Wed, Feb 13	Wed, Feb 20	9.1-9.2	Exponential functions, composite and inverse functions	9.1: 3, 5, 9, 11, 13, 15, 19, 23, 27, 31, 41, 43, 53 9.2: 1, 5, 13, 17, 21, 27, 33, 41, 45, 47, 49, 53, 76, 77	
	Mon, Feb 18	President's Day Weekend: No Class				<i>Finish Project 1</i>

12	Wed, Feb 20	Mon, Feb 25	9.3-9.4	Logarithmic functions and properties of logarithms	9.3: 1, 3, 5, 7, 9, 11, 13, 17, 23, 27, 35, 37, 45, 47, 49, 53, 55, 57, 61, 71, 73, 93 9.4: 1, 5, 11, 19, 25, 35, 39, 41, 47, 57, 61, 65	
13	Mon, Feb 25	Mon, Mar 4	9.5-9.6	Exponential and logarithmic equations, exponential growth and decay, modeling data	9.5: 3, 7, 13, 17, 21, 31, 37, 41, 47, 55, 59, 67, 75, 81, 99, 101 9.6: 1, 3, 5, 15, 37, 39, 42	
14	Wed, Feb 27	Mon, Mar 4	10.1	Distance and midpoint formulas, circles	10.1: 3, 7, 11, 15, 19, 23, 27, 31, 35, 37, 39, 41, 43, 47, 57, 61, 63, 65	
15	Mon, Mar 4	Wed, Mar 6		<i>Review for Exam 3</i>	<i>Exam Review Homework</i>	<i>Practice Exam</i>
16	Wed, Mar 6		Exam 3			<i>Finish Project 2</i>
17	Mon, Mar 11	Mon, Mar 18	11.1-11.3	Sequence and summation notation	11.1: 1, 5, 9, 13, 17, 21, 27, 33, 35, 37, 45, 59	Additional problems handed out in class
18	Wed, Mar 13	Mon, Mar 18	11.1-11.3	Arithmetic sequences and sums	11.2: 3, 5, 9, 13, 19, 23, 27, 31, 33, 35, 39, 43, 61, 71	
19	Mon, Mar 18	Wed, Mar 20	11.1-11.3	Geometric sequences and sums	11.3: 3, 5, 7, 9, 13, 15, 19, 21, 23, 25, 29, 33, 37, 39, 43, 55, 59, 61, 63, 75, 77, 97	
20	Wed, Mar 20		<i>Review for Final Exam</i>			<i>Practice Exam</i>
21	Wed, Mar 27		Final Exam: 6:15 - 8:15 pm			

Student Learning Outcome(s):

- *Evaluate real-world situations and distinguish between and apply exponential, logarithmic, rational, and discrete function models appropriately.
- *Analyze, interpret, and communicate results of exponential, logarithmic, rational, and discrete models in a logical manner from four points of view - visual, formula, numerical, and written.