

# Math 212-22: College Math Preparation Level 2: Beginning Algebra

De Anza College      Fall 2018

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**Instructor:** Lindsay Merrill      [merrilllindsay@fhda.edu](mailto:merrilllindsay@fhda.edu)      (408) 864-8774

*Please contact me via email. Note: there are THREE letter "l"s in my email!*

**Class Hours:**

Monday and Wednesday      1:30 – 3:45 pm      Room G10 (next to the football stadium)

**Office Hours:**

Monday and Wednesday      4:45 – 5:15 pm      Room S43

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**Description:** Application of linear functions, quadratic functions and linear systems 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 210 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)

- 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.)

-A ruler (any size, any kind—for drawing precise graphs of lines)

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

**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. 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 October 6<sup>th</sup>, 2018.

The final day to drop this course without a “W” is October 7<sup>th</sup>, 2018. The final day to drop this course is November 16<sup>th</sup>, 2018. 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.

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### **Grading Categories**

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

### **Letter Grade scale**

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

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## *Grading Categories*

### **Class Participation (10%)**

Participation 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 due at the beginning of class, one class period after it is assigned (unless otherwise indicated on the schedule or via email). Each homework assignment will be worth 20 points. 10 points will be given for completion—adequate work is shown and answers are provided for each problem assigned. The remaining 10 points will be given for 5 arbitrarily chosen problems that I will grade and for which I will give feedback (2 points per problem). 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 10 points (for completion) and may not contain the feedback provided for on-time homework.

### **Projects (5%)**

Students must complete two projects during the term. 1) A "Math History" mini research project and 2) A "Math in the Media" project.

***Math History project:*** Students will choose a portion of mathematical history that interests them, do some research about it, and prepare a brief report (in writing, diagrams, pictures, etc.) that explains what they learned or 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.

***Math in the Media project:*** 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.

### **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 Monday, December 10, 2018 from 1:45-3:45 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 that you have not learned the material when we take quizzes or exams. 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!
- 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! If your schedule allows, taking a break after class to clear your head and eat a snack, and then working on homework for 45 minutes until my office hour begins will be a valuable use of your time! 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.

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

## Class Schedule

Class	Date (2018)	Sections Covered	Topic(s)	Quizzes (start of class)
1	Mon, Sept 24	Syllabus etc., 1.1-1.3	Real Numbers, variables, equations, graphing	
2	Wed, Sept 26	1.3-1.5	Graphs of equations, manipulating and solving equations	
3	Mon, Oct 1	1.1, 4.1-4.2	Inequalities in one variable	Quiz 1
4	Wed, Oct 3	2.1-2.3	Functions	
5	Mon, Oct 8	1.1-1.5, 2.1-2.3, 4.1-4.2	The algebra of functions and <i>Review for Exam 1</i>	Quiz 2
6	Wed, Oct 10	<b>Exam 1</b>		
7	Mon, Oct 15	2.4	Linear functions: standard form and slope-intercept form	
8	Wed, Oct 17	2.5	Linear Functions: the point-slope form of a line, parallel and perpendicular lines	
9	Mon, Oct 22	2.4-2.5	Linear Functions	Quiz 3
10	Wed, Oct 24	3.1-3.2	Systems of linear equations	
11	Mon, Oct 29	4.4	Linear inequalities in two variables	Quiz 4
12	Wed, Oct 31	1.5, 2.4-2.5, 3.1-3.2, 4.4	<i>Review for Exam 2</i>	Quiz 5
13	Mon, Nov 5	<b>Exam 2</b>		
14	Wed, Nov 7	1.6, 5.1-5.2	Integer exponents, Polynomials, Multiplication of polynomials	
-	Mon, Nov 12	Veterans Day- No class		
15	Wed, Nov 14	5.3, 7.1, 7.3	Factoring polynomials, Radical expressions	Quiz 6
16	Mon, Nov 19	5.7, 8.1	Quadratic relationships and functions	
17	Wed, Nov 21	7.7, 8.1-8.2	Complex roots, quadratic functions, and the quadratic formula	Quiz 7
18	Mon, Nov 26	8.3	Graphing quadratic functions	
19	Wed, Nov 28	1.6, 5.1-5.3, 5.7, 7.1, 7.3, 7.7, 8.1-8.3	<i>Review for Exam 3</i>	
20	Mon, Dec 3	<b>Exam 3:</b>		
21	Wed, Dec 5	<i>Review for Final Exam</i>		
22	Mon, Dec 10	<b>Final Exam: 1:45- 3:45 pm</b>		

## Math 212 Homework Schedule

Class	Date Given	Date Due	Sections	Topic(s)	Book Problems	Other Problems	
1	Mon, Sept 24	Wed, Sept 26	Syllabus etc., 1.1-1.3	Real Numbers, variables, equations, graphing	<b>1.1:</b> 17, 19, 22-24, 93-94, 110 <b>1.2:</b> 4, 9, 11, 17, 19, 22, 25, 28, 44, 53, 56, 60, 62, 76, 78, 91, 113, 149, 160 <b>1.3:</b> 17, 26, 44, 53-56, 62, 63		
2	Wed, Sept 26	Mon, Oct 1	1.3-1.5	Graphs of equations, manipulating and solving equations	<b>1.3:</b> 45, 81-82 <b>1.4:</b> 1-2, 7, 9-10, 21, 23, 27, 40-43, 55, 67-68, 81 <b>1.5:</b> 19, 25-26, 29, 32, 37, 43, 53, 59		
3	Mon, Oct 1	Wed, Oct 3	1.1, 4.1-4.2	Inequalities in one variable	<b>1.1:</b> 51, 54, 59, 67, 69, 71-72, 115 <b>4.1:</b> 1, 5, 9, 23, 25, 27, 47-49, 53, 55, 63 <b>4.2:</b> 27, 29, 31		
4	Wed, Oct 3	Mon, Oct 8	2.1-2.3	Functions	<b>2.1:</b> 4-5, 8-9, 15-16, 19, 23-24, 36, 43 <b>2.2:</b> 4-5, 11-18, 25-30, 33, 35, 37, 39, 42, 49-52 <b>2.3:</b> 1, 3, 5, 7, 9		
5	Mon, Oct 8	Wed, Oct 10	1.1-1.5, 2.1-2.3	The algebra of functions and <i>Review for Exam 1</i>	<b>2.3:</b> 11, 15, 17, 19, 23, 29, 34, 36, 46, 51-52	Exam Review	
6	Wed, Oct 10	<b>Exam 1</b>					
7	Mon, Oct 15	Wed, Oct 17	2.4	Linear functions: standard form and slope-intercept form	<b>2.4:</b> 8, 15, 20-21, 25, 27, 35, 37, 42, 45, 49, 55, 59, 61, 69, 77-78, 83		
8	Wed, Oct 17	Mon, Oct 22	2.5	Linear Functions: the point-slope form of a line, parallel and perpendicular lines	<b>2.5:</b> 1, 6, 9, 15, 18, 32, 35, 39, 43, 45-47, 50-51, 68, 76		
9	Mon, Oct 22	Wed, Oct 24	2.4-2.5	Linear Functions		Assigned in class and will be emailed. (Also take time to work on projects.)	
10	Wed, Oct 24	Mon, Oct 29	3.1-3.2	Systems of linear equations	<b>3.1:</b> 5, 9, 13, 17, 29, 33, 41, 45, 49, 53, 61, 65, 89, 91, 100		
11	Mon, Oct 29	Wed, Oct 31	4.4	Linear inequalities in two variables	<b>4.4:</b> 5, 14-15, 25, 31, 37, 59, 68, 90		
12	Wed, Oct 31	Mon, Nov 5	1.5, 2.4-2.5, 3.1	<i>Review for Exam 2</i>		Exam Review	
13	Mon, Nov 5	<b>Exam 2</b>					
14	Wed, Nov 7	Wed, Nov 14	1.6, 5.1-5.2	Integer exponents, Polynomials, Multiplication of polynomials	<b>1.6:</b> 7, 17, 31, 53, 62, 75, 77, 91 <b>5.1:</b> 7, 12, 15, 19-25, 27, 29, 37, 43, 47, 69 <b>5.2:</b> 4, 13, 19, 25, 31, 55, 63, 75, 91, 95, 100	Take time to work on your projects.	
-	Mon, Nov 12	<b>Veterans Day- No class</b>					

15	Wed, Nov 14	Mon, Nov 19	5.3, 7.1, 7.3	Factoring polynomials, Radical expressions	5.3: 3, 10, 15, 27, 38, 47, 51, 79, 87 7.1: 2, 4, 6-7, 15, 17, 21, 29, 39, 105 7.3: 21, 23, 25
16	Mon, Nov 19	Wed, Nov 21	5.7, 8.1	Quadratic relationships and functions	5.7: 3, 9, 14, 21, 47-50, 65-66, 105 8.1: 1, 6, 15, 75, 85, 86
17	Wed, Nov 21	Mon, Nov 26	7.7, 8.1-8.2	Complex roots, quadratic functions, and the quadratic formula	7.7: 1, 7, 9, 12 8.1: 9-10 8.2: 1, 3, 5, 11, 13, 25, 27, 29, 33, 35, 39, 43, 65-68, 79, 89
18	Mon, Nov 26	Wed, Nov 28	8.3	Graphing quadratic functions	8.3: 1-8, 17, 25, 28, 37, 45, 57, 63, 86-87
19	Wed, Nov 28	Mon, Dec 3	1.6, 5.1-5.3, 5.7, 7.1, 7.3, 7.7, 8.1-8.3	<i>Review for Exam 3</i>	
20	Mon, Dec 3	<b>Exam 3</b>			
21	Wed, Dec 5	Mon, Dec 10	<i>Review for Final Exam</i>		
22	Mon, Dec 10	<b>Final Exam: 1:45- 3:45 pm</b>			

**Student Learning Outcome(s):**

- \*Evaluate real-world situations and distinguish between and apply linear and quadratic function models appropriately.
- \*Analyze, interpret, and communicate results of linear and quadratic models in a logical manner from four points of view - visual, formula, numerical, and written.
- \*Demonstrate an appreciation and awareness of applications in their daily lives.