

## MATH 110 Course Syllabus

**Instructor:** Gracie Conte

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**Office:** PH 404

**Office Hours:** M/T/F 10:00-11:00 (Thursday office hours are in PH 237)

**Course Coordinator:** Linda Green

**Email:** greenl@email.unc.edu

**Class Meets:** MWF 12:20 pm - 1:10 pm

**Class Room:** Phillips 332

**Class Section:** 003

### Materials

**ALEKS:** This class will use the ALEKS online system. Please sign up at [www.aleks.com](http://www.aleks.com) using the course code **FTH3P-JX336** here. ALEKS costs about \$100 for the semester. You can receive two free weeks of ALEKS if you are waiting for your code or unsure if you need to stay in this class by using the financial aid code **87915-4B9D0-0FDAD-D7C41**. Further instructions below.

**Textbook:** The textbook is *College Algebra* by Miller and Gerken, 2nd Edition. This textbook is a good reference for this class, but you are not required to buy it if you are comfortable using class notes and online explanations given in ALEKS instead. Homework assignments will be given from ALEKS, not from the textbook. When you purchase ALEKS, you can choose to include an ebook of the textbook for about \$10 more. I encourage you to do so, because the ebook includes many videos as well as additional problems and explanations.

**Piazza:** Please use Piazza instead of email to ask questions about homework problems and logistics. Other students and the instructors can answer them there for the benefit of all students. See details below.

**Calculator:** You will need a basic scientific calculator. A graphing calculator (e.g. TI-84 or TI-89), or a graphing calculator app, can be helpful for visualizing functions and checking answers on homework. Calculators will not be allowed on most quizzes and tests. Calculators will not be allowed on the final exam. Phone apps or calculators with internet access will not be permitted on any tests.

**Laptop:** Some class time is set aside to work on homework so you are required to bring your laptop to class.

**Math Help Center:** The Math Help Center in Phillips 237 is open for drop in tutoring M Th 10:00 6:00 and F 10:00 3:00. Students are expected to visit the Math Help Center for additional help and instruction outside of class.

**Other:** Supplementary materials will be posted on Sakai. Look for files in the resources folder.

### Placement:

Placement information is located online at

<http://math.unc.edu/forundergrads/placement-info>.

Students who received at least a 520 on the SAT Math Subject 1 or 2 test or at least a 27 on the ACT math portion already have placement credit (Math 110P) and do not need to take the class. Students who have not taken the SAT, ACT, AP, or IB test are eligible to enroll in Math 110. If you are not sure about your placement, please contact the course coordinator Linda Green at [greenl@email.unc.edu](mailto:greenl@email.unc.edu).

**Math 110 DOES NOT fulfill the Quantitative Reasoning requirement.** Math 110 should ONLY be taken by students who need to take Math 130 or classes in Chemistry, Statistics, or Exercise Sports Science that require it as a prerequisite.

**Course Description:** The main goal of Math 110 is to ensure your preparation for other courses. The course is divided into the following topics:

- Review of Exponent Rules, Factoring, Rational Expressions and Radicals
- Equations and Inequalities
- Functions and Graphs
- Systems of Equations
- Polynomials and Rational Functions
- Composition and Inverses of Functions

**Course Objectives:**

- Simplify expressions involving absolute value, exponents, and radicals.
- Simplify expressions by factoring.
- Solve linear and quadratic equations and equations involving absolute value or radicals or rational expressions.
- Solve inequalities using a sign chart.
- Construct equations for circles and graph circles from equations.
- Find the domain and range of functions.
- Graph linear, quadratic, polynomial, and rational functions and analyze their graphs.
- Apply transformations (shifting, stretching, shrinking, reflecting) to graphs of functions.
- Use equations to model exponential growth and decay.
- Solve equations involving exponents and logs.
- Solve systems of equations.
- Compose functions
- Find inverses of functions

**ALEKS:** This class will use the ALEKS online system for all homework, for before-class assignments, for periodic knowledge checks, and possibly for parts of tests. Please sign up at [www.aleks.com](http://www.aleks.com) using the class code **FTH3P-JX336**. The ALEKS program will give you a diagnostic test and then give you problems and explanations that adapt to your needs. In this way, you will only work on topics that you personally need to review, and you won't waste much time on problems that you already know how to do. Please budget at least 2 hours for the diagnostic test and give it your best effort, since an accurate diagnostic test will save you time in the long run. You do not have to complete it in one sitting, but please do complete it before the semester starts if at all possible.

**Piazza:** Instead of emailing the instructor with questions about homework problems or logistics, please post your questions on Piazza. Other students and the instructors can answer them there for the benefit of all students. If you were not already automatically added to Piazza, you can register yourself here: [piazza.com/unc/spring2018/math110](http://piazza.com/unc/spring2018/math110)

**Quizzes and Warm-Up Tests:** Before each test, there will be a graded warm-up test given in class - students will complete problems similar to test problems, first individually and then in groups. Each warm up test is divided into two grades, participation and correctness. Each portion is worth 10 points for a total of 20 points. If time permits, there will be weekly quizzes given in class. No make-ups will be given for warm-up tests or quizzes. However, if a student misses a warm-up test, their actual test score will be substituted for their warm-up test score.

**Tests:** You will take 3 closed-book, closed-notes tests. Test dates are listed on the Math 110 Semester Schedule. Tests may be given through ALEKS, or on paper, or as a combination. The tentative test dates are as follows:

- Test 1 2/2/2018
- Test 2 3/2/2018
- Test 3 4/4/2018

NO MAKEUPS WILL BE GIVEN.

**Final Exam:** The final exam is given in compliance with UNC's final exam regulations and calendar, and will not be given prior to this exam date. In order to take a make-up exam after this date, you must have an official examination excuse, signed by a Dean or authorized agent of the Dean. You must bring this excuse and a picture ID to the make-up exam.

**The comprehensive final exam will be on Thursday, May 3 from 4:00 pm 7:00 pm.**

**Grading:**

Aleks Objective:	5%
Aleks Pie Completion	5%
Quizzes:	3%
Warm up Tests:	3%
Test 1:	16%
Test 2:	16%
Test 3:	16%
Final Exam:	36%

The lowest test score will be replaced with with the final exam score if the final exam score is higher. Course letter grades will be assigned as follows.

92.5 - 100	A	72.5-76.4	C
89.5 - 92.4	A-	69.5 - 72.4	C-
86.5 - 89.4	B+	66.5 - 69.4	D+
82.5 - 86.4	B	59.5 - 66.4	D
79.5 - 82.4	B-	0 - 59.4	F
76.5 - 79.4	C+		

There are no grades of D- or F+.

University policy does not allow a course grade to be changed unless there has been a verifiable clerical error in the grade calculation.

**There are no extra credit opportunities.**

**Late work:** No late tests or make-up tests will be given. Students who need to miss a test for a UNC athletic team event, UNC academic field trip, or religious holiday can take the test in absentia or in advance with at least a week advance notice and written documentation. No other exceptions will be made. For homework, because the ALEKS scores are weighted half for objectives and half for pie completion, ALEKS topics completed before the due date will earn full credit (objective completion points and pie completion points), and topics completed after the due date will earn half-credit (pie completion points only). For ALEKS before-class assignments, no late work will be accepted. If at least 75% of students complete the mid-semester survey, the lowest before-class assignment will be dropped. If at least 75% of students complete the course evaluation at the end of the semester, the second lowest before-class assignment will be dropped.

**Honor Code:** It is expected that each student in this class will conduct him or herself within the guidelines of the UNC Honor System, described at <http://studentconduct.unc.edu/students>.

In this class, all tests and exams are closed book and closed notes. All tests and exams must be completed individually, and it is an instance of cheating to give or receive help on a test or exam, except from the instructor, with the exception of warm-up tests, which may have a group component. On homework assignments and in-class problem-solving exercises, students are encouraged to work together in pairs or small groups, provided that all participants are contributing and the collaboration benefits the learning of all involved. Simply copying or trading answers is an instance of cheating. If you are not sure if collaboration is permitted, please ask!

In addition to avoiding actual academic dishonesty, please avoid appearances of academic dishonesty. In particular, please silence and put away cell phones before any exams are handed out and please avoid the appearance of looking at other students papers. In order to maintain a proper testing atmosphere, the instructor may ask students to switch seats before or during an exam.

Students who observe a violation of the honor code should report it to the instructor. The instructor will report any suspected honor code violations to the Student Attorney General.

**Accommodations:** If there are any special circumstances that will affect your performance in the class, please contact the staff at the Academic Success Program, 919-962-7227, so that we can work together to meet your needs.

**Schedule:** The instructor reserves the right to make changes to the syllabus, including due dates and test dates. Changes to ALEKS due dates can be found on the ALEKS site. Other changes will be announced in class or via Sakai or email.

Week	Date	Section	Subject	BC	Hwrk Due
1	1/10	R.2, R.3, R.4	Introduction, Exponents and Radicals		1/16
	1/12	R.2, R.3, R.4	Exponents and Radicals		1/16
2	1/15	No Class	Dr. Martin Luther King Jr. Day		
	1/17	R.5, R.6	Factoring, Rational Expressions	1/17	1/25
	1/19	R.6	Rational Expressions		1/25
3	1/22	1.1, 1.4, 1.5, 1.6	Linear and Quadratic Equations	1/22	2/01
	1/24	1.1, 1.4, 1.5, 1.6	Rational Equations	1/24	2/01
	1/26	1.1, 1.4, 1.5, 1.6	Equations with Radicals and Exponents	1/26	2/01
4	1/29	1.6	Absolute Value Equations	1/29	2/01
	1/31	Review			
	2/01	<b>TEST 1</b>	R.2 - R.6, 1.1, 1.4 - 1.6		
5	2/05	1.7	Inequalities	2/05	2/08
	2/07	3.6	Polynomials and Rational Inequalities	2/07	2/08
	2/09	2.1, 2.2	Distance, Midpoints, Circles	2/09	2/15
6	2/12	2.4, 2.5	Lines	2/12	2/15
	2/14	2.4, 2.5	Parallel and Perpendicular Lines	2/14	2/15
	2/16	2.3	Functions	2.16	2/20
7	2/19	2.6	Transformations of functions	2/19	2/20
	2/21	3.1	Quadratic functions	2/21	3/01
	2/23	3.1	Quadratic functions Applications	2/23	3.01
8	2/26	3.2, 3.3	Polynomials	2/26	3/01
	2/28	Review			
	3/02	<b>TEST 2</b>	1.7, 3.6, 2.1 - 2.6, 3.1 - 3.3		
9	3/05	4.2	Exponential functions	3/05	3/10
	3/07	4.2, 4.6	Applications of exponential functions	3/07	3/10
	3/09	4.2, 4.6	Compound Interest and Continuous Growth	3/09	3/10
10	3/12	No Class	Spring Break		
	3/14				
	3/16				
11	3/19	4.3, 4.4, 4.5	Logarithmic functions and graphs	3/19	4/03
	3/21	4.3, 4.4, 4.5	Properties of logs	3/21	4/03
	3/23	4.3, 4.4, 4.5	Solving Exponential Equations	3/23	4/03
12	3/26	4.3, 4.4, 4.5	Solving Log Equations		4/03
	3/28	4.3, 4.4, 4.5	Doubling time and Half-Life	3/28	4/03
	3/30	No Class	Holiday		
13	4/02	Review			
	4/04	<b>TEST 3</b>	4.2 - 4.6		
	4/06	5.1, 5.4	Systems of Equations	4/06	4/10
14	4/09	5.1, 5.4	Applications of Systems of Equations	4/09	4/10
	4/11	3.5	Rational functions	4/11	4/15
	4/13	3.5	Rational functions continued	4/13	4/15
15	4/16	2.8	Composition of functions	4/16	4/22
	4/18	4.1	Inverse functions	4/18	4/22
	4/20	4.1	Inverse functions continued (QUIZ)		4/22
16	4/23	Additional Topics	Piecewise functions, even and odd		4/27
	4/25	Review			
	4/27	Review			
	5/03	<b>FINAL EXAM</b>	<b>Thursday, May 3rd at 4:00-7:00 pm (Room TBD)</b>		