
Math 115 – College Algebra

Summer 2008 - Section 1, LH 303, MTWR 8:00-10:20 a.m.

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Office Hours: MTR 10:15-11:00 a.m., MWR 5:15:6:00 p.m., or *by appointment*

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Text: *Explorations in College Algebra, Third Edition*, by Linda Almgren Kime, Judith Clark, and Beverly Michael, John Wiley & Sons, 2005.

Class Notes for Math 115, College Algebra, Second Edition, by Ernie Solheid, Wiley 2006.

Calculator: You will need a scientific calculator that includes the exponential and logarithmic functions. Calculators may be used on exams and in fact will be necessary for certain problems.

Your e-mail address wanted: You are *required* to fill out the “Student Information Form” ([click here](#)) and submit it to mori@fullerton.edu no later than **today at 5:00 p.m.** **Do not** save the PDF file and attach to an e-mail. You need to **use the submit button** on the form and follow the instructions. I will send various communiqué through e-mail. Please provide an e-mail address that you check frequently. I will send a “test e-mail” tomorrow. If you do not receive this test e-mail, please see me on Thursday to resolve any problems there may be. In case you are not successful in e-mailing the form, simply send me an e-mail with all of the information requested on the form. **Note:** Any credits that you lose due to not establishing your e-mail connection with me on time will be your responsibility.

Course Objectives: Math 115 is designed to provide you with the necessary background to take either Math 120 or either of the one-semester calculus courses Math 130 and 135. The course is a detailed study of various families of functions---linear, power, polynomial, quadratic, exponential, and logarithmic---and their use in applications in the social and physical sciences.

Course requirements and Grading Policy:

Homework: Homework will be assigned daily, but will not be collected. However, there will be a quiz based on the content of each of the homework assignments on the due date. For a list of assignments due see <http://math.fullerton.edu/mori>.

Class work: During the course of the semester, there will be various class work assignments to be done in groups. Some of these assignments will require written work turned in during the class for a grade. To earn credit on class work, you must be in attendance and be an active participant in your group.

Exams: There will be four one-hour exams, and a comprehensive two-hour final exam. All the exams will be closed book and closed notes.

Percentages and Tentative Exam Dates:

<i>Quizzes</i>	<i>Class Work</i>	<i>Exam I</i>	<i>Exam II</i>	<i>Exam III</i>	<i>Exam IV</i>	<i>Final Exam</i>
10%	5%	15%	15%	15%	15%	25%
		Wed. 6/4	Thr. 6/12	Thr. 6/19	Thr. 6/26	Thr. 7/3

Letter Grades:

Percent	97-100	90-96	88-89	85-87	80-84	78-79	75-77	70-74	67-69	60-66	00-59
Grade	A+	A	A-	B+	B	B-	C+	C	D+	D	F

Make-up quizzes will not be given. Make-up exams will be given only in extreme instances and only with advanced permission of the instructor. Any student who does not take an exam at the scheduled time without prior consent of the instructor will receive a grade of zero on that exam. If any student feels that a sudden illness is sufficiently extreme to warrant a make-up exam, the instructor must be provided with documentation prepared by an appropriate authority.

Various Instructional Information

On all exercises on homework, quizzes, and exams in this course, you need to show your work and clearly indicate your reasoning in obtaining your answers in order to receive credit. This is particularly important for the homework problems since you may already have the answers in the back of the textbook. Obtaining the correct answer is not in general as important as understanding the procedure for doing so or being able to explain your reasoning in obtaining the answer. Anytime you answer a question in a problem, you should also provide justification for your answer. Many of the problems in this course will require a written explanation rather than a sequence of mathematical calculations. Your work should be organized and neatly written up using correct and complete English sentences. Your work in this course will be assessed not only on the mathematical content and correctness of the solution, but also on the presentation of the solution, the correct use of grammar and mathematical notation, and writing style.

I have the primary responsibility in this course for explaining the material, answering your questions, administering quizzes and exams, and grading homework, quizzes, and exams. For additional help when your instructor is not available, there are tutors in the Math Tutoring Center in MH-187 who should be able to answer many of your questions.

Accommodations for Students with Special Needs

On the CSUF campus, the Office of Disabled Student Services (DSS) has been delegated the authority to certify disabilities and to prescribe specific accommodations for students with documented disabilities. DSS provides support services for students with mobility limitations, learning disabilities, hearing or visual impairments, and other disabilities. Counselors are available to help students plan a CSUF experience to meet their individual needs. If you feel that you require such support services, contact the Office of Disabled Students Services, located in UH 101, at (714) 278-3117.

General Education Requirements

This course may be used to satisfy the General Education requirement III.A.1 (III. Disciplinary Learning, A. Mathematics and Natural Sciences, 1. Mathematics). A grade of “C” (2.0) or better is required to meet this General Education requirement. A grade of “C–” (1.7) or below will not satisfy this General Education requirement. This course achieves all of the general education goals for student learning in this category:

- a. To understand and appreciate the varied ways in which mathematics is used in problem-solving.
- b. To understand and appreciate the varied applications of mathematics to real-world problems.
- c. To perform appropriate numerical calculations, with knowledge of the underlying mathematics, and draw conclusions from the results.
- d. To demonstrate knowledge of fundamental mathematical concepts, symbols, and principles.
- e. To solve problems that require mathematical analysis and quantitative reasoning.
- f. To summarize and present mathematical information with graphs and other forms that enhance comprehension.
- g. To utilize inductive and deductive mathematical reasoning skills in finding solutions, and be able to explain how these skills were used.
- h. To explain the overall process and the particular steps by which a mathematical problem is solved.
- i. To demonstrate a sense of mastery and confidence in the ability to solve problems that require mathematical concepts and quantitative reasoning.

The specific course learning goals for Math 115 College Algebra are as follows:

- a. To demonstrate an understanding of number systems—the integers, rational numbers, real numbers, and complex numbers—and an understanding of the operations and properties of real numbers.
- b. To develop an understanding of the concepts and procedures for manipulating and simplifying algebraic expressions, including polynomials, rational expressions, and radical expressions.
- c. To develop an understanding of the concepts and procedures for solving equations, inequalities, and systems of linear equations and their application to modeling real-world problems.
- d. To develop an understanding of the basic concepts and properties of functions.
- e. To develop an understanding of the fundamental classes of functions—linear, quadratic, polynomial, rational, exponential, and logarithmic—and their uses and application in modeling real-world problems.
- f. To understand how to analyze equations, inequalities, systems of equations, and functions graphically.

The General Education writing requirement in Math 115 shall be met and assessed by student writing assignments appropriate to the course, as required by the General Education writing requirement guidelines. Throughout the course, on homework, quizzes, and exams, students are required to write solutions to a variety of problems, both mathematically oriented and applied, and to provide written explanations of the procedures used to obtain solutions to such problems. Students’ work on these exercises will be assessed not only on the mathematical content and correctness of the solution, but also on the presentation of the solution, the correct use of grammar and mathematical notation, and writing style.

Academic Integrity: Students who violate university standards of academic integrity are subject to disciplinary sanctions, including failure in the course and suspension from the university. Since dishonesty in any form harms the individual, other students and the university, policies on academic integrity are strictly enforced. I expect that you will familiarize yourself with the academic integrity

guidelines found in the current student handbook (see <http://www.fullerton.edu/deanofstudents/judicial/policies.htm>).

Examples of actions that constitute academic dishonesty include, but are not limited to:

1. Unacceptable examination behavior – communicating with fellow students, copying material from another student’s exam or allowing another student to copy from an exam, possessing or using unauthorized materials, or any behavior that defeats the intent of an exam.
2. Plagiarism – taking the work of another and offering it as one’s own without giving credit to that source, whether that material is paraphrased or copied in verbatim or near-verbatim form.
3. Unauthorized collaboration on a project, homework or other assignment.
4. Documentary falsification including forgery, altering of campus documents or records, tampering with grading procedures, fabricating lab assignments, or altering medical excuses.

Emergency Evacuation: In the event of an emergency such as earthquake or fire:

- Take all your personal belongings and leave the classroom. Use the stairways located at the east, west, or center of the building.
- Do not use the elevator. They may not be working once the alarm sounds.
- Go to the lawn area towards Nutwood Avenue. Stay with class members for further instruction.
- For additional information on exits, fire alarms and telephones, **Building Evacuation Maps** are located near each elevator.
- Anyone who may have difficulty evacuating the building, please see the instructor.

Important Dates:

- June 2 (Monday) is the last day for students to add your course with a permit. All permits expire June 2.
- June 2 is the last day for students to drop without a “w”.
- June 24 is the last day for students to drop with a “w”.

Tentative Teaching Schedule

Date	Section	Topic
May 27 T 28 W 29 R	1.1, 1.2 1.3 1.4, 2.1, 2.3	Single variable data; Relationship between two variables Introduction to functions; Visualizing functions Change in the average rate of change; Slope
June 2 M 3 T 4 W 5 R	2.5, 2.6 2.7, 2.8 Exam Review Exam I 3.1, 3.2, 4.1	Constant rates of change; Linear functions and visualization Graphs and equations of linear functions; special cases System of linear equations Finding solutions to linear systems, Measuring time and space
June 9 M 10 T 11 W 12 R	4.2, 4.3, 4.4 4.4, 4.5, 4.6 4.7 Exam Review Exam II, 5.1, 5.2	Positive and negative integer exponent; Converting units Fractional exponents; Orders of magnitude Logarithm Base 10 Exponential growth
June 16 M 17 T 18 W 19 R	5.3, 5.4, 5.5 5.6 Exam Review Exam III, 6.1 6.2, 6.3	Linear vs. exponential functions; Exponential decay Visualizing exponential functions; A constant % change Examples of exponential growth/decay Solving exp. equations; Base e and continuous compounding; The natural logarithm
June 23 M 24 T 25 W 26 R	6.4, 6.5 8.1 Exam Review Exam IV, 8.2 8.3, 8.6	Log functions; transforming exponential functions to base e Intro to quadratic functions; Finding the vertex Finding the horizontal intercept; New functions from old
June 30 M July 1 T 2 W 3 R	8.6 Exam Review Exam Review Final Exam	New functions from old Comprehensive final exam