

Instructor: C. L. Adair

Office: Hodge Room 220

Office Hours: TTh 2:00 p.m. – 2:50 p.m.; after 5:45 pm on TTh by appointment.

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Text: *Essentials of College Algebra, Alternate Edition* by Lial, Hornsby, Schneider

SMTH 121. College Algebra (3) Equations and inequalities, graphing, polynomial, rational, exponential, logarithmic, and other functions; matrices and systems of equations. Only one of SMTH 121 and 126 may be used to satisfy a mathematics requirement for general education or major credit.

Prerequisites: *appropriate score on placement test and high school Algebra I and II.*

For students who need a more intensive study, an expanded version of college algebra (SMTH 121A) is available. SMTH 121A is open to students who have an appropriate score on the placement test, have completed SMTH 120 with the mandatory lab, or if the student, in consultation with his or her advisor, determines that extra instruction is needed in order to succeed in SMTH 121.

Blackboard: <http://blackboard.sc.edu>

All assignments and handouts for this class are posted on Blackboard. If you don't know your username, you can find it in VIP under the Technology menu. On this menu, click on the SHOW ME button as described below:

Blackboard Username Lookup/Password Set:

If you do not know your USC Network Username/PW combination (or if you have forgotten your password), follow the instructions below. Please note that your instructor will notify you if Blackboard is being used in conjunction with a course.

- Login to VIP (<http://vip.sc.edu>)
(Forget your PIN ? Students should contact the Registrar's Office; faculty/staff should contact your departmental Human Resources representative)
- Click on the **Technology** link
- Click on **Show Me Network Username**
Your USC Network Username will be displayed and you will be prompted to choose your password. You must type in the password twice to verify your choice.
- Click on the **SET PASSWORD** button to set your new password

Password Rules:

Legal passwords can be a minimum of 5 characters and a maximum of 14. They can contain any alphanumeric character (A-Z/0-9) and the \$ sign. Case doesn't matter. Your password will expire every six months, or six months from the last time you re-set or change it (unless your departmental network manager has selected another expiration interval for your department -- check with your network manager for expiration rules for your unit).

Password Security:

If you enter your password incorrectly seven times when attempting to login, you will be locked out of Blackboard temporarily (this is a security feature for your protection). To get back in immediately, just go to VIP and return to the Technology link to re-set your password. **Change your password often to protect yourself.** You can also return to VIP/Technology link if you forget your password and need to re-set it.

Course Goals:

1. To develop an understanding of polynomial, rational, exponential, and logarithmic functions and their applications.
2. To improve proficiency in oral and written mathematical communication.
3. To develop the ability explain the reasoning behind mathematical relationships.
4. To cultivate an inquiring disposition toward mathematics.

MyMathLab:

You will need to go to <http://www.coursecompass.com/> and register. On the page below under **Students**, click on **Register**.



Follow the directions to complete the process. The course ID for this class is **adair66374**. The Student Access Code is found in your Student Access Kit that accompanies the text.

Course ID **adair66374**



Homework:

Homework will be collected on a daily basis. Three problems will be chosen at random for grading (one from the beginning, one from the middle, and one from the end of the list of assigned problems). The following rubric will be used: 1 point for copying the problem correctly, 2 points for copying the problem and attempting a solution which is incorrect, 3 points for a solution that is in the right direction but contains significant errors, 4 points for a solution that is correct except for a minor error, 5 points for a correct solution. Homework must be done in **pencil** and must be neat in order to be accepted for grading.

Homework must be submitted at the beginning of class, unfolded with multiple pages stapled. Late homework will not be accepted. The homework grade will account for 10% of your final grade in this class.

Daily Quizzes:

There will be a five-minute quiz each class period consisting of one fill-in-the-blank question and one homework problem from the assignment submitted the previous day of class. The fill-in-the-blank question tests knowledge of definitions, terminology, and theorems. The daily quiz average will count as the equivalent of an hour test - 15% of the final grade. (No makeups are given - absences count as 0. The four lowest grades are dropped in computing the quiz average at the end.)

Honor Code:

Your grade on everything in the course is to be based on your own work. Cheating in any form is a violation of the honor code (available in the student handbook), and will be reported to the Dean of Students. A first offense will result in a zero for the exercise/test. If the offense is not the first (whether in this class or another) the consequence will likely be more severe, including possible failure for the course.

Students who admit responsibility or who are found responsible for an academic integrity violation through the Student Code of Conduct will receive the appropriate grade determined by the professor, which may include an X to signify academic dishonesty. Grades with an X are not subject to grade forgiveness.

Evaluation of Student Performance:

Performance evaluations will be based on the items listed above and on test performance according to the listing below:

1. Homework - 10%

2. Hour tests - 60%

There will be three hour tests. Dates for these are also indicated on the attached schedule. The daily quiz average counts as an hour test. Each hour test (including the daily quiz average as an hour test) is 15% of the final grade.

3. Final Examination - 30%

There will be a cumulative, comprehensive final examination. No one will be exempted from the final examination.

Grading Scale:

90 - 100	A
86 - 89	B+
80 - 85	B
76 - 79	C+
70 - 75	C
66 - 69	D+
60 - 65	D
Below 60	F

Math Lab:

The Mathematics Tutoring Lab offers **free** help to students. It is Located in Hodge 242.

Necessary Calculator:

You will need a calculator that can do exponentials and logarithms. A graphing calculator - it can be any brand you like – would be very useful. The Texas Instruments TI-83 Plus graphing calculator will be used for class instruction.

Additional Notes:

1. Class attendance will be strictly enforced. More than four absences will automatically result in a grade of F .
2. No make-ups will be given on hour tests without an acceptable written excuse. No makeups are given on any daily quiz.
3. Homework must be submitted on the due date at the beginning of the class period in order to receive credit.
4. If a student is absent, it is the student's responsibility to get the assignment for that day from Blackboard.
5. No cell phones or PDA's are allowed in class. **All cell phones and PDA's must be turned off prior to entering the classroom.**

Tentative Course Outline

Week of	Topics	Relevant Text Sections
Aug. 23	I. Introduction to course II. Graphs of equations A. Rectangular coordinate system – distance formula, midpoint formula B. Graphing of equations - circles	Chapter 2, Section 1
Aug. 28	III. Functions A. Definition of relation and function B. Domain and range C. Recognizing functions from equations and graphs	Chapter 2, Section 2
	D. Properties – function notation; increasing, decreasing, and constant functions IV. Linear functions A. definition, graph, slope, linear equations, average rate of change, applications	Chapter 2, Section 3
Sept. 4	B. Equations of lines – point-slope form, slope-intercept form, vertical and horizontal lines C. Parallel and perpendicular lines	Chapter 2, Section 4
	D. Solving linear equations and inequalities in one variable V. Graphs of basic functions – identity, squaring, cubing functions, square and cube root functions	Chapter 1, Section 1 & 7 Chapter 2, Section 5
Sept. 11	VI. Absolute value function A. Graph B. Solving equations and inequalities involving absolute value of one variable	Chapter 2, Section 5 Chapter 1, Section 8
	VII. Piecewise-defined functions	Chapter 2, Section 5
Sept. 18	VIII. Transformations of graphs A. Stretching and shrinking B. Reflections C. Translations IX. Symmetry A. Even and odd functions	Chapter 2, Section 6
	X. Function operations A. Arithmetic operations on functions B. Difference quotient C. Function composition	Chapter 2, Section 7
Sept. 25	XI. Quadratic functions A. Graphing using transformations	Chapter 3, Section 1
	Test 1 on Sept. 27	

Oct. 2	B. Completing the square C. Finding vertex and zeros D. Applications	Chapter 3, Section 1
	XII. Polynomial functions A. Zeros – Remainder Theorem, Factor Theorem	Chapter 3, Section 3
Oct. 9	B. Graphs – parent graphs, using transformations, end behavior, factored polynomials C. Applications	Chapter 3, Section 4
	<i>October 11 – Fall Break</i>	
Oct. 16	XIII. Rational Functions A. Graphs (parent graphs, asymptotes) B. Applications	Chapter 3, Section 5
	XIV. Variation XV. Inverse Functions (one-to-one functions, finding the inverse of a one-to-one function)	Chapter 3, Section 6 Chapter 4, Section 1
Oct. 23	XVI. Exponential functions A. Definition and properties B. Solving basic exponential equations	Chapter 4, Section 2
	Test 2 on Oct. 25	
Oct. 30	C. Euler’s number and the natural exponential function D. Compound interest and continuous compounding	Chapter 4, Section 2
	XVII. Logarithmic functions A. Definition and properties B. Solving basic logarithmic equations C. Graphs of logarithmic functions	Chapter 4, Section 3
Nov. 6	D. Common and natural logarithms E. Changing bases F. Applications	Chapter 4, Section 4
	G. Solving more advanced exponential and logarithmic equations	Chapter 4, Section 5
Nov. 13	H. Exponential growth and decay	Chapter 4, Section 6
	XVIII. Systems of linear equations A. Solving systems algebraically B. Applications	Chapter 5, Section 1
Nov. 20	C. Using matrices to solve linear systems <i>Nov. 22 – Thanksgiving Holiday</i>	Chapter 5, Section 2
Nov. 27	XIX. Matrices A. Definition and properties B. Adding, multiplying matrices C. Applications	Chapter 5, Section 7
	Test 3 on Nov. 29	

Dec. 4	D. Identity matrix and matrix inverses E. Solving linear systems using inverse matrices	Chapter 5, Section 8
	<i>Dec. 6 is the last class.</i>	
Dec. 7	Last Day of All Classes	
Final Examination Tuesday, December 11, 3:00 p.m. – 6:00 p.m.		

Dates to Remember:

Last day to drop/add – August 27

Last day to withdraw without penalty – November 1