Meeting times: CRN 20420, 10:00 pm-11:15 pm on MW (A-412)

Office hours: 2:30 pm-3:30 pm on MW, and also by appointment if these times are not convenient. During office hours, you are welcome to get help with anything related to the course, or college in general.

Catalog description: College-level topics in algebra including variation, systems of equations and inequalities, nonlinear inequalities, functions and their graphs, quadratic equations and functions, complex numbers, exponential and logarithmic functions, the algebra of functions, lines, an introduction to plane analytic geometry and applications related to these topics.

Course prerequisites: A grade of “C” or better in Math 1300 (Intermediate Algebra); or placement by exam taken at UH-Downtown. If you do not meet these prerequisites, you are subject to being dropped from the course without prior notification at your own expense. Please see me immediately if you do not meet this prerequisite, so you can be enrolled in the appropriate MATH course. We will be using math software at various times during the course, but no previous experience with the software is necessary. You do not need to purchase a graphing calculator, but you should have access to a scientific calculator throughout the course. A scientific calculator is one that includes “ln” and “log” keys. You will be provided a copy of the software we use for free on CD, plus the software will be available at many locations on campus which will be detailed on the class web page. This software is Internet-based, so it can also be accessed off campus using any Windows-based PC with Internet access. You may not use a cell phone calculator. Cell phones should be turned off and put away during class.

Textbook: Unified College Algebra, available in the UHD Copy Center at the back of the bookstore as a course-pack and on the CD provided in class. However, lecture and other in-class activities will be an important source of material and information during this course. Therefore, you cannot expect to miss class or not pay attention in class, and then compensate by studying the textbook later.

Course grade: Your course average is determined by two major tests (50% total), several short quizzes, reading assignments & graded homework (17%), and a comprehensive final exam (33%). Your course grade is determined by the standard college formula based on your course average: “A” (90-100), “B” (80-89), “C” (70-79), “D” (60-69), or “F” (0-59). The following case is an exception: If you score below 50 on the final exam, you will receive an “F” regardless of your course average.

Test dates will be announced far enough in advance to allow sufficient time for preparation, generally at least one week. Test scores are never curved. No extra credit assignments will be given. If you take each test and do not violate the Attendance Policy (see below), at the end of the semester I will replace your lowest test score with the final exam score, if it is higher. I will also drop your 3 lowest quiz, reading grade or homework grades.

Homework is normally assigned each class period and discussed in later class periods, and will be collected for grading on a regular basis.

Class attendance/Make-ups: Good attendance is crucial in college, as I'm sure you've discovered by now. I will take attendance. If you miss more than 6 hours of class (4 class periods), you are in violation of my Attendance Policy. Whenever you miss a class, it is your responsibility to check what material was covered, what assignments were made, if any, and the due dates. Any missed grades will be recorded as zeros.

Make-up tests will not be given in this course. If you miss a test, that grade will be replaced by your final exam grade only if you notify me as soon as possible if you miss a test or know in advance that you will miss a test. If you do not notify me promptly with an appropriate excuse, you will receive a 0 for the test. No make-up quizzes will be given, nor are late homework or reading assignments accepted.

Please remember that as a member of the UHD academic community you are bound to observe the academic honesty code in all your school work. A grade of 0 will be given for any course work where cheating is detected.

Dropping: Please note that the last day to withdraw with a course grade of “W” is Thursday, Mar. 23. If you do not complete the course requirements and do not officially withdraw, you will receive a course grade of “F.” This is university policy over which I have no control. You cannot receive the grade “I”-Incomplete unless you have a documented personal emergency that prevents you from completing the last fraction of the course, such as the third test and/or the final exam. You must have a passing average based on the work you have already completed to receive an “I.”
Where to get help with the course:
- from Linu Mathew our LC SI leader, both inside and outside of class.
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- you have access to the Math Lab in the Academic Support Center (925-N) and also in the computer lab (738-S) where they may get additional help with understanding concepts or improving their skills. The centers are staffed with mathematics faculty and student assistants, and offers tutorial help, calculators, computer access and other types of aides on a walk-in basis. The Math Lab maintains extensive hours which are published each semester. You are encouraged to visit the Math Lab throughout the semester whenever you feel you need extra help, no appointment required. It is also an excellent place to study the textbook and work on homework problems, so that you can receive immediate help as necessary.

Success tips: As your instructor, my most important responsibility is to help you learn; but how much you learn is really up to you and a responsibility you cannot leave to someone else. Most important, take charge of your own learning. Here are some suggestions.

1. Try not to fall behind; in fact, try to stay ahead. 2. Diligently work on homework assignments and any activities carried out during class. 3. There will be times when you will feel lost. Don't be afraid to ask questions in class and out of class - be it in my office or by telephone or email; in the Math Lab; or when talking with your classmates. 4. At first, you may feel the text has too much reading, but give it a chance! Try highlighting important points or writing in the margins to make it more manageable. I will expect you to carefully and thoughtfully read and study the text (often this means more than once) even when it is not explicitly assigned; to work through the examples and self-test activities; and to compare your solutions to the book. Use paper, pencil and a calculator or computer when you study; these are your basic tools. 5. Cooperate with your classmates to complete problems both in and out of class. 6. Get in the habit of writing out problem solutions clearly and legibly using complete sentences - writing helps catch faulty thinking. 7. Study for all quizzes and tests - try preparing study sheets and reviewing with classmates. 8. Participate and pay attention in class. This does not necessarily mean taking lots of notes - it is often better just to listen carefully and follow what is being said.

I will do everything within my power to help you succeed in this course, and whenever you have a suggestion on the course, please let me know. But ultimately, it is your choice of actions that will determine your success in this course and college in general, for that matter.

Statement on reasonable accommodations: UHD adheres to all applicable federal, state, and local laws, regulations, and guidelines with respect to providing reasonable accommodations for students with disabilities. Students with disabilities should register with Disabled Student Services (S-409) and contact me in an a timely manner to arrange for appropriate accommodations.

Excess course attempts: In accordance with state law, effective Fall 2004 the University of Houston-Downtown is charging a fee of $65 per semester credit hour for any course that is repeated for the third time, beginning with the Fall 2002 semester. If a course has been previously attempted twice, the third enrollment will result in the additional charge. An attempt is defined as an enrollment that results in any letter grade (including “F” and “W”).

Textbook content: Our goal is to cover the entire text this term, taking the units in order. I do not provide a daily schedule, but important information is posted on the class web page on an ongoing basis.

Educational objectives: At the end of the course, a student should be able to, at minimum: (i) represent a set in either set-builder notation, interval notation, or number line notation, and determine if a given number is an element of a set represented in any of these forms; (ii) use a computer or calculator to plot a table of input-output pairs; (iii) draw a line that approximately fits a set of data points, and also use the line to predict matching input-output values; (iv) recognize if a functional relationship exists between two quantities, whether the quantities are abstract or taken from an application; (v) recognize when a graph represents a function, and evaluate a function from its graph; (vi) verbally interpret function notation in the context of a problem; (vii) analytically determine if a number is in the domain of a function represented in any form; (viii) recognize when physical circumstances restrict the domain of a function; (ix) express an output quantity in the range of a function using function notation, e.g., “the output that matches the input 0 is \( f(0) \)”; (x) evaluate a function represented by a symbol rule (or more than one symbol rule) with either numerical or symbolic inputs; (xi) determine the root inputs of a function represented by a table or graph, and set up an equation to determine the root inputs for a function represented by a symbol rule; (xii) determine the set of upper inputs and the set of lower inputs for a function represented by a table or graph, and set up an inequality to determine these sets for a function represented by a symbol rule; (xiii) determine from a graph if a function is increasing or decreasing over a given interval; (xiv) determine the \( y \)-intercept of a function represented in any form; (xv) determine the \( x \)-intercept of a function represented by a table or graph, and set up an equation to determine the \( x \)-intercept of a function represented
by a symbol rule; (xvi) use a computer or calculator to convert a function represented by a symbol rule to a table as well as to a "good" graph for such basic functions as simple polynomials (in particular, lines and parabolas), exponential, and logarithmic functions; (xvii) determine an associated function of an equation or inequality; (xviii) estimate the solutions to an equation or inequality from a graph or table of an associated function; (xix) find the slope of a line represented in any form, and verbally interpret the slope as a rate of change between two quantities; (xx) determine if a point lies on the graph of a function represented by a symbol rule; (xxi) convert a linear or quadratic function from graphical or tabular representations to a symbol rule; (xxii) use a computer or calculator to solve a system of linear equations; (xxiii) determine if a number is in the range of a function represented by a table or graph by finding the matching input, and set up an equation to determine this for a function represented by a symbol rule; (xxiv) solve quadratic equations analytically, or solve equations written in factored form with linear and quadratic factors; (xxv) analytically compose functions represented in any form, and decompose a function represented as a symbol rule into two functions; (xxvi) demonstrate the fundamental relationship between inverse functions; (xxvii) in particular, demonstrate the inverse relationship between exponential and logarithmic functions; (xxviii) use the concept of inverse functions to solve certain equations; (xxix) in particular, use the inverse relationship between exponential and logarithmic functions to solve exponential equations; (xxx) classify polynomial (in particular, constant, linear and quadratic), exponential, or logarithmic functions by their symbol rules.

**Final Exam:**  A-412 Monday May 8, 2006 10:00 a.m. - 12:25 p.m.

**Homework problems:**
Will be announced in class and online.

**Frequently asked questions:**
I understand the material when you cover it in class, but then when I start to do the homework I immediately start having trouble. I'm afraid I'll bomb the tests. What can I do about this? This is one of the most familiar complaints math and stat teachers hear from students, and there is no easy answer. First, the fact that you understand the material in class is a very good sign - it means you have started the process of learning. But listening to me explain topics and talk about problems and solutions according to my understanding of the material can only get you so far. You have to build your own understanding of mathematics and statistics through patience and practice, by grappling with tough ideas yourself. I can try to help you with this process, but no one can do it for you. This is what homework is for, to give you a chance a practice on your own, and why it so important. Therefore, don't be overly concerned if the homework is a struggle, just accept it as a necessary part of learning. In my experience, students who come to class and work diligently on their homework are usually sufficiently prepared for tests. There is no reason to think you are any different in this respect.