MATH 1314 College Algebra

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Welcome to College Algebra MATH 1314. To ensure your success in this course, you will need to read and understand all the information provided here and in the attached pages. Mathematics does not come naturally to most of us, and to learn the topics and techniques presented in this course, you will need to work many problems to practice these skills. You should to be prepared to spend a considerable amount of time and energy on the material. Please feel free to contact me at anytime during the semester if you need help. I will make every effort to be available to you for assistance.

Text: College Algebra through Modeling and Visualization, 4th Edition by Gary Rockswold: *Text bundled with MyMathLab,* **0-32-157704-3 Hard copy ISBN 0-32-166511-2 Loose Leaf**

MyMathLab access: All *new* textbooks purchased at an ACC bookstore include MyMathLab access. It is *not* included with the purchase of a used book, and may not be included with a new book purchased at a different bookstore. Refer to the handout *Information about MyMathLab*.

Optional: *Student's Solution Manual* (step-by-step solutions to odd-numbered exercises and chapter review exercises) ISBN#0-321-57702-7, Videotape Series, Digital Video Tutor

Calculator: Students need either a scientific or business calculator. (Has log or ln key.) If a student cannot purchase one, calculators are available from the LRS. Graphing calculators are not required, but you will use graphing technology in most sections of the book. Graphing calculators are also available in the LRS. Most ACC faculty are familiar with the TI family of graphing calculators. Hence, TI calculators are highly recommended for student use. Other calculator brands can also be used.

Course Description: MATH 1314 COLLEGE ALGEBRA (3-3-0). A course designed for students majoring in business, mathematics, science, engineering, or certain engineering-related technical fields. Content includes the rational, real, and complex number systems; the study of functions including polynomial, rational, exponential, and logarithmic functions and related equations; inequalities; and systems of linear equations and determinants. Prerequisites: MATD 0390 or satisfactory score on the ACC Assessment Test. (MTH 1743)

Course Prerequisite: Intermediate Algebra (MATD 0390) or current knowledge of high school algebra as measured by the Assessment Test. Students who have a great deal of difficulty with the Pretest and/or review and have not had Intermediate Algebra or its equivalent recently should consider withdrawing and taking Intermediate Algebra.

Instructional Methodology: This course is taught online via the internet.

Course Rationale: This course is designed to teach students the functional approach to mathematical relationships that they will need for a business calculus sequence. Other courses, such as MATH 1332, or MATH 1342 are more appropriate to meet a general mathematics requirement. Check with your degree plan as to what math course your college requires.

Common Course Objectives: Common course objectives are attached. They can also be found at: http://www2.austin.cc.tx.us/mthdept2/tfcourses/obj1314.htm

Course Evaluation/Grading Scheme
Grades: Your final grade will be based on the standard ten point scale: A = 90-100, B = 80 – 89, C = 70 – 79, D = 60 – 69, F = below 60.

***Written Homework*:** You will be required to complete all assigned problems listed on the weekly schedule. Due dates for each assignment are also listed. No late homework will be accepted without prior permission from me. The answers to many of the assigned problems can be found in the back of your book. You are encouraged to check your problems and ask questions, but in order to receive full credit for each problem you are required to show all your work. You may submit your homework in person, by campus mail, by US Mail to the address listed above or electronically through Blackboard. Sorry, e-mail and fax are not acceptable methods for homework submission. Your written homework average will account for 10% of your course grade.

MML Homework: You will also have online homework lessons in MyMathLab. Due dates for online homework are the same for the written homework. In order to move on to the next section, you must score 80% or better on the previous MML homework assignment. Due dates for each section of the online homework are the same as for the written homework. See the weekly schedule for due dates. Your online homework average will account for an additional 10% of your course grade.

***MML Quiz Average*:** You will have quizzes in MyMathLab. Each quiz may cover multiple (1-4) sections from your textbook. In order to take a quiz you must have completed the homework for the sections covered on the quiz. You must score 80% or higher to move on to the next section. You will have up to 3 attempts to take each quiz. If you do not score 80% or higher in one of your three attempts, see me immediately. Your MML quiz average will account for 10% of your course grade.

***Tests*:** You will have a total of five tests for this course, including the final exam. Each test will be taken in the testing center. For details on testing center hours and policies see http://www.austincc.edu/testctr. The final exam will be a cumulative exam and may be used to replace your lowest test grade provided you score higher on the final. Therefore, no retests will be given. If for some reason you miss a test, you may request a make-up test (which may be granted at the discretion of your instructor) or receive a zero and have the final exam count for the missed test. Make-up tests will be limited to one per semester and must be requested within 24 hours of the deadline of the missed test. **There will be no make-up test for the final exam.** All tests will be averaged equally, and the average will account for 70% of your course grade.

Attendance Policy: Since we do not meet for class, attendance will be monitored by your progress in the software program. If you fall more than two weeks behind or have not done any work online in two weeks, you may be dropped from the course. However, I make no commitment to do so.

Withdrawal Policy: It is the responsibility of each student to ensure that his or her name is removed from the roll should he or she decide to withdraw from the class. The instructor does, however, reserve the right to drop a student should he or she feel it is necessary. If a student decides to withdraw, he or she should also verify that the withdrawal is submitted before the Final Withdrawal Date. The student is also strongly encouraged to retain their copy of the withdrawal form for their records.

Students who enroll for the third or subsequent time in a course taken since Fall, 2002, may be charged a higher tuition rate, for that course.
State law permits students to withdraw from no more than six courses during their entire undergraduate career at Texas public colleges or universities. With certain exceptions, all course withdrawals automatically count towards this limit. Details regarding this policy can be found in the ACC college catalog.

***Reinstatement Policy*:** Students who withdrew or were withdrawn generally will not be reinstated unless they have completed all course work, projects, and tests necessary to place them at the same level of course completion as the rest of the class.

Incomplete Grade Policy: An instructor may award a grade of "I" (Incomplete) if a student was unable to complete all of the objectives for the passing grade in a course. An incomplete grade cannot be carried beyond the established date in the following semester. The completion date is determined by the instructor but may not be later than the final deadline for withdrawal in the subsequent semester.

Course-Specific Support Services

Sections of MATH 0153(1-0-2) are sometimes offered**.** This lab class is designed for students currently registered in COLLEGE Algebra, MATH 1314. It offers individualized and group setting to provide additional practice and explanation. This course is not for college-level credit. Repeatable up to two credit hours. Students should check the course schedule for possible offerings of the lab class.

- ***Learning Lab:*** ACC main campuses have Learning Labs that offer free tutoring (first-come first-serve) in mathematics courses. The locations, contact information, and hours of availability of the Learning Labs are available from http://www2.austincc.edu/tutor . Software and videotapes to support this particular text are available in the Learning Labs. Students who need regular tutoring are encouraged to use the Learning Labs before they get very far behind.
- ***Software:*** See description of MyMathLab under "Required Materials" in this handout.
- ***Pearson tutoring:*** Pearson has a tutoring center that is available by phone for students using any of their texts. Information about the service can be found at www.aw-bc.com/tutorcenter/. Hours of operation are Sun-Thur: 4 PM - 11 PM Central time.
  Students toll-free: 1.800.877.3016
  Instructor info: 1.800.666.8801
  Fax: 1.877.262.9774
  Email Questions: mtutor@pearson.com
- ***Videos on DVD:*** These are available for viewing in the LRS and are recommended for students who miss class.

Statement on Student Discipline: Classroom behavior should support and enhance learning. Behavior that disrupts the learning process will be dealt with appropriately, which may include having the student leave class for the rest of that day. In serious cases, disruptive behavior may lead to a student being withdrawn from the class. ACC's policy on student discipline can be found in the Student Handbook page 32 or on the web at: **http://www.austincc.edu/marketng/handbook/student_handbook_02-03.pdf**.

***Statement on Scholastic Dishonesty*:** A student attending ACC assumes responsibility for conduct compatible with the mission of the college as an educational institution. Students have the responsibility to submit coursework that is the result of their own thought, research, or self-expression. Students must follow all instructions given by faculty or designated college representatives when taking examinations, placement assessments, tests, quizzes, and evaluations. Actions constituting scholastic dishonesty include, but are not limited to, plagiarism, cheating, fabrication, collusion, and falsifying documents. Penalties for scholastic dishonesty will depend upon the nature of the violation and may range from lowering a grade on one assignment to an "F" in the course and/or expulsion from the college. See the Student Standards of Conduct and Disciplinary Process and other policies at http://www.austincc.edu/current/needtoknow

***Statement on Scholastic Dishonesty Penalty*:** Students who violate the rules concerning scholastic dishonesty will be assessed an academic penalty which the instructor determines is in keeping with the seriousness of the offense. This academic penalty may range from a grade penalty on the particular assignment to an overall grade penalty in the course, including possibly an F in the course. ACC's policy can be found in the Student Handbook page 33 or on the web at:
http://www.austincc.edu/marketng/handbook/student_handbook_02-03.pdf.

Student Rights and Responsibilities: Students at the college have the rights accorded by the U.S. Constitution to freedom of speech, peaceful assembly, petition, and association. These rights carry with them the responsibility to accord the same rights to others in the college community and not to interfere with or disrupt the educational process. Opportunity for students to examine and question pertinent data and assumptions of a given discipline, guided by the evidence of scholarly research, is appropriate in a learning environment. This concept is accompanied by an equally demanding concept of responsibility on the part of the student. As willing partners in learning, students must comply with college rules and procedures.

***Statement on Students with Disabilities*:** Each ACC campus offers support services for students with documented disabilities. Students with disabilities who need classroom, academic or other accommodations must request them through the Office for Students with Disabilities (OSD). Students are encouraged to request accommodations when they register for courses or at least three weeks before the start of the semester, otherwise the provision of accommodations may be delayed.
Students who have received approval for accommodations from OSD for this course must provide the instructor with the 'Notice of Approved Accommodations' from OSD before accommodations will be provided.
Arrangements for academic accommodations can only be made after the instructor receives the 'Notice of Approved Accommodations' from the student.

Students with approved accommodations are encouraged to submit the 'Notice of Approved Accommodations' to the instructor at the beginning of the semester because a reasonable amount of time may be needed to prepare and arrange for the accommodations.

Additional information about the Office for Students with Disabilities is available at
http://www.austincc.edu/support/osd/

***Statement on Academic Freedom*:** Institutions of higher education are conducted for the common good. The common good depends upon a search for truth and upon free expression. In this course the professor and students shall strive to protect free inquiry and the open exchange of facts, ideas, and opinions. Students are free to take exception to views offered in this course and to reserve judgment about debatable issues. Grades will not be affected by personal views. With this freedom comes the responsibility of civility and a respect for a diversity of ideas and opinions. This means that students must take turns speaking, listen to others speak without interruption, and refrain from name-calling or other personal attacks.

Safety Statement: Austin Community College is committed to providing a safe and healthy environment for study and work. You are expected to learn and comply with ACC environmental, health and safety procedures and agree to follow ACC safety policies. Additional information on these can be found at http://www.austincc.edu/ehs. Because some health and safety circumstances are beyond our control, we ask that you become familiar with the Emergency Procedures poster and Campus Safety Plan map in each classroom. Additional information about emergency procedures and how to sign up for ACC Emergency Alerts to be notified in the event of a serious emergency can be found at http://www.austincc.edu/emergency/.

Please note, you are expected to conduct yourself professionally with respect and courtesy to all. Anyone who thoughtlessly or intentionally jeopardizes the health or safety of another individual will be dismissed from the day's activity, may be withdrawn from the class, and/or barred from attending future activities.

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Use of ACC email: All College e-mail communication to students will be sent solely to the student's ACCmail account, with the expectation that such communications will be read in a timely fashion. ACC will send important information and will notify you of any college related emergencies using this account. Students should only expect to receive email communication from their instructor using this account. Likewise, students should use their ACCmail account when communicating with instructors and staff. Instructions for activating an ACCmail account can be found at http://www.austincc.edu/accmail/index.php.

***Testing Center Policy**:* Under certain circumstances, an instructor may have students take an examination in a testing center. Students using the Academic Testing Center must govern themselves according to the Student Guide for Use of ACC Testing Centers and should read the entire guide before going to take the exam. To request an exam, one must have:

- **ACC Photo ID**
- Course Abbreviation (e.g., ENGL)
- Course Number (e.g.,1301)
- Course Synonym (e.g., 10123)
- Course Section (e.g., 005)
- Instructor's Name

Do NOT bring cell phones to the Testing Center. Having your cell phone in the testing room, **regardless of whether it is on or off**, will revoke your testing privileges for the remainder of the semester. ACC Testing Center policies can be found at http://www.austincc.edu/testctr/

Student And Instructional Services: ACC strives to provide exemplary support to its students and offers a broad variety of opportunities and services. Information on these services and support systems is available at: http://www.austincc.edu/s4/

Links to many student services and other information can be found at: http://www.austincc.edu/current/

ACC Learning Labs provide free tutoring services to all ACC students currently enrolled in the course to be tutored. The tutor schedule for each Learning Lab may be found at: http://www.autincc.edu/tutor/students/tutoring.php

For help setting up your ACCeID, ACC Gmail, or ACC Blackboard, see a Learning Lab Technician at any ACC Learning Lab.

MATH 1314 College Algebra -- Objectives

Functions:

- Use and interpret functional notation.
- Find the domain of polynomial, rational, radical, exponential, and logarithmic functions.
- Find a symbolic representation of the sum, difference, product, quotient, and composition of two functions.
- Evaluate the sum, difference, product, quotient, and composition of two functions at a given value of the respective domain for functions represented symbolically, graphically, and numerically.
- Find the inverse of a function represented symbolically, graphically, or numerically.
- Interpret the graphs of functions.

Graphing functions:

- Sketch the graphs of the following functions: Lines, x^2, x^3, $x^{1/2}$, $1/x$, $1/x^2$, $|x|$, factored polynomials of degree 3 or more, a^x, $\log_a x$, and rigid transformations of these functions.
- Describe the end behavior of polynomial functions.
- Approximate the zeros of a function from its graph.
- Solve an inequality involving a function from its graph.
- Graph a piece-wise defined function.

Symbolic Adeptness:

- Solve polynomial, rational, exponential, and logarithmic equations symbolically.
- Solve equations involving radicals symbolically.
- Solve equations with rational exponents symbolically.
- Solve equations with negative exponents symbolically.
- Solve polynomial and rational inequalities symbolically.
- Use the Fundamental Theorem of Algebra and the Conjugate Zeros Theorem to find zeros of polynomials of degree three or greater.
- Find the vertex of a parabola and the center and radius of a circle by completing the square.
- Find the vertex of a parabola written in standard form by using the formula $h = -b/2a$.
- Convert an exponential equation to logarithmic form, and a logarithmic equation to exponential form.
- Evaluate exponential and logarithmic functions using the change of base formula and a calculator.
- Use the properties of logarithms to expand a logarithmic expression, and to write an expanded logarithmic expression as a single logarithm.
- Solve a system of linear equations using Gaussian elimination.
- Solve a system of linear equations using matrix inversion or Cramer's Rule.

Applications

- Recognize and use applications of linear functions.
- Recognize and use applications of quadratic functions, including falling object problems and extremum problems.
- Recognize and use applications of exponential and logarithmic functions, including exponential growth and decay, doubling time, and half-life problems.
- Recognize and use applications of systems of linear equations.