

MATH 1314
College Algebra
Fall 2009, Synonym 41927, Section 005
TTh 5:40pm - 6:55pm
Cypress Creek Campus: Room CYP5 2220
Syllabus Version 1
August 25, 2009

Instructor: Peter Nagel, Ph.D.

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Office Hours: TTh 5:05pm-5:35pm in CYP 2204.2 . Meetings outside of office hours may be arranged via email.

Text *College Algebra through Modeling and Visualization* by Gary Rockswold, 4th ed. ISBN # 0-32154230-4, Text bundled with MyMathLab, ISBN # 0-321-57704-3, Optional Supplements: *Students Solution Manual* (step-by-step solutions to odd-numbered exercises and chapter review exercises) ISBN # 0-321-57702-7 , Videotape Series, Digital Video Tutor, MyMathLab Software (CD for Windows) ISBN # 0-321-57703-5 .

You can access the material from the first two weeks online at <http://www.austincc.edu/mthdept2/text>. You will need the following: password: ~~acemath1314~~ **acc1314**

Videotapes: There is a set of video DVDs keyed to the text by section in the Learning Resource Center of each campus. Students who miss class or who need extra review may find these useful. Also, with the bundled text with MyMathLab is a set of video tutorials.

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.

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.

Instructional Methodology This course is taught in the classroom primarily as a lecture/discussion course.

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 online at:

<http://www.austincc.edu/mthdept2/tfcourses/obj1314.htm>

Grading The grades in this course will be weighted among the following required components:

- Homework : 20%

- Exams : 60%
- Final Exam : 20%

Letter grades will be assigned on the following basis: A = 90% - 100%, B = 80% - 90%, C = 70% - 80%, D = 60% - 70%, F < 60%. If the performance on the exams during the semester warrants, the lowest score may be down-weighted (but not dropped).

Exams There will be 4 exams during the semester and 1 final exam to be held on the final day of class. The exam schedule is as follows:

- Exam 1, Friday September 18th - Monday September 21st. (to be taken in the Testing Center)
- Exam 2, Friday October 16th - Monday October 19th. (to be taken in the Testing Center)
- Exam 3, Friday November 13th - Monday November 16th. (to be taken in the Testing Center)
- Exam 4, Friday December 4th - Monday December 7th. (to be taken in the Testing Center)
- Final Exam, Tuesday December 8th (Part I) and Thursday December 10th (Part II). (to be taken IN CLASS)

Missed Exams Missed Exams can be made up. If the reason for the absence is valid, the exam can be made up within two days of the original date without any loss of credit. For unexcused absences, 25% of the grade will be deducted after the exam is made up.

Homework The list of homework problems is given on the homework sheet. The homework problems for each section will be due on the Tuesday after that section is covered in class (see the course calendar). Up to 10 problems will be graded for each week's worth of homework problems assigned.

Late Homework Homework may be turned in for a grade after the due date, but 10 % will be deducted for each week it is late The deadline for late homework will be the first class day after the exam on which that section appears.

Online Content Optional exercises will be available online via MyMathLab. See the MyMathLab information sheet for more details on using MyMathLab. For each sections worth of online homework completed one point will be added to your homework grade.

Attendance Attendance is required in this course. Students who miss more than 4 classes MAY be withdrawn. Missed exams that are made up will not be counted as missed classes.

Class Participation Class participation (and attendance) may have an influence on the final letter grade. Borderline grades may be raised or lowered based on attendance and participation in class discussions.

Support Services Some mathematics credit courses are supported by optional lab courses. This lab is designed for students currently registered in College Algebra, MATH1314. It offers individualized and group settings to provide additional practice and explanation. The lab course itself is strictly supportive and 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.

ACC main campuses have **Learning Labs** which offer free first-come first-serve tutoring in mathematics courses. The Learning Lab at Cypress Creek is located in Room 2108. Further information such as other locations, contact information and hours of availability of the Learning Labs are posted at:

<http://www.austincc.edu/tutor/>

Withdrawal It is the students responsibility to initiate all withdrawals in this course. The instructor may withdraw students for excessive absences (4), but makes no commitment to do this for the student. After the withdrawal date (November 23rd), neither the student nor the instructor may initiate a withdrawal.

Incomplete Grade Policy Incomplete grades (I) will be given only in very rare circumstances. Generally, to receive a grade of "I", a student must have taken all examinations, be passing, and have a personal tragedy occur after the last date to withdraw which prevents course completion.

Reinstatement Policy Reinstatement will be determined on a case by case basis.

Statement on Scholastic Dishonesty "Acts prohibited by the college for which discipline may be administered include scholastic dishonesty, including but not limited to, cheating on an exam or quiz, plagiarizing, and unauthorized collaboration with another in preparing outside work. Academic work submitted by students shall be the result of their thought, work, research or self-expression. Academic work is defined as, but not limited to, tests, quizzes, whether taken electronically or on paper; projects, either individual or group; classroom presentations; and homework."

"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/handbook> "

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 under Policies and Procedures or on the web at: <http://www.austincc.edu/handbook> ."

Statement on Students with Disabilities "Each ACC campus offers support services for students with documented physical or psychological disabilities. Students with disabilities must request reasonable accommodations through the Office of Students with Disabilities on the campus where they expect to take the majority of their classes. Students are encouraged to do this three weeks before the start of the semester."

"Students who are requesting accommodation must provide the instructor with a letter of accommodation from the Office of Students with Disabilities (OSD) at the beginning of the semester. Accommodations can only be made after the instructor receives the letter of accommodation from 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."

Testing Center Policy ACC Testing Center policies can be found online at:

<http://www.austincc.edu/testctr>

Cypress Creek Testing Center (Room 1139) hours for Fall 2009 are M-F 8am-8pm, Sa 9am-4pm, and Su Noon-5pm.

Student Services The web address for student services is:

<http://www.austincc.edu/rss/ssover.html>

The ACC student handbook can be found online at:

<http://www.austincc.edu/handbook>

MATH1314 College Algebra Fall 2009 Course Calendar

Week 1 (8/25 & 8/27) : 1.1, 1.2, 1.3

Week 2 (9/1 & 9/3) : 1.4, 1.5

Week 3 (9/8 & 9/10) : 2.1, 2.2, 2.3

Week 4 (9/15 & 9/17) : 2.4, 2.5

9/18 - 9/21 Test 1 (Ch 1, 2.1-2.4)

Week 5 (9/22 & 9/24) : 3.1, 3.2, 3.3

Week 6 (9/29 & 10/1) : 3.4, 3.5

Week 7 (10/6 & 10/8): 4.1, 4.2

Week 8 (10/13 & 10/15): 4.3, 4.4, 4.5

10/16 - 10/19 Test 2 (2.5, Ch 3, 4.1-4.2)

Week 9 (10/20 & 10/22) 4.6, 4.7, 4.8

Week 10 (10/27 & 10/29) : 5.1, 5.2

Week 11 (11/3 & 11/5) : 5.3, 5.4

Week 12 (11/10 & 11/12): 5.5, 5.6

11/13 - 11/16 Test 3 (4.3-5.4)

Week 13 (11/17 & 11/19): 6.1, 6.3

Week 14 (11/24 & 11/26): 6.4, 6.5 (no class 11/26)

Week 15 (12/1 & 12/3) : 6.6 or 6.7

12/4 - 12/7 Test 4 (5.5-6.7)

Week 16 (12/8 & 12/10): Review, Final Exam (Parts I & II)

Suggested Homework: *College Algebra through Modeling and Visualization*

Section - Problems

- 1.1: 9, 19, 23, 25, 39, 43, 53, 57, 63, 65, 79, 81, 85, 95
1.2: 21, 25, 43, 49, 55, 61, 63, 65, 69, 71, 73, 77, 85, 87, 91, 93*
1.3: 1, 3, 5, 7, 15, 19, 23, 25, 27, 32, 37, 43, 45, 47, 50*, 61, 67, 75, 77, 79, 81, 83, 87, 89, 91, 93, 95, 97
1.4: 1, 9, 17, 19, 21, 27, 29, 31, 35, 37, 43, 53
1.5: 1, 5, 9, 13, 17, 21, 25, 29, 31, 35, 37, 43*, 47, 55, 61, 73, 77
- 2.1: 1, 3, 5, 9, 11, 15, 19, 25, 33, 37, 38, 39, 40, 41, 49, 53, 63, 67, 69, 73, 77
2.2: 5, 7, 9, 11, 15, 19, 31, 39, 41, 43, 47, 49, 51, 65, 71, 81, 87, 101, 103
2.3: 5, 13, 19, 21, 35, 47, 57, 61, 75, 79, 86, 87, 93, 101, 103, 105, 107
2.4: 1, 3, 5, 7, 9, 11, 13, 17, 23, 27, 37, 43, 47, 59, 63, 83, 87, 89
2.5: 1, 3, 7, 9, 13, 15, 16, 17, 18, 28, 35, 53, 61, 65, 71, 73, 75
- 3.1: 1, 3, 5, 7, 9, 11, 13, 17, 19, 25, 35, 39, 47, 51, 55, 59, 61, 63, 79, 81, 83, 85, 86, 87, 88
3.2: 1, 9, 15, 19, 25, 33, 39, 41, 45, 49, 53, 61, 63, 65, 68, 71, 83, 85, 87, 89, 93, 104, 115
3.3: 1, 3, 5, 7, 9, 11, 23, 27, 29, 31, 33, 35, 37, 39, 41, 43, 45, 47, 57, 61, 62, 63, 66, 75
3.4: 1, 3, 5, 7, 9, 11, 13, 21, 29, 31, 33, 43, 45, 47, 49, 51, 55, 61, 65
3.5: 1, 3, 5, 7, 9, 11, 13, 21, 29, 31, 33, 37, 45, 47, 49, 51, 55, 65, 75, 79, 89, 93, 95
- 4.1: 1, 3, 5, 7, 9, 11, 15, 23, 25, 31, 35, 47, 53, 65, 69, 73, 81, 85, 91, 95*
4.2: 1, 3, 5, 8, 9, 15, 16, 25, 31, 35, 41, 45, 55, 67, 75, 77, 85
4.3: 7, 9, 13, 15, 21, 29, 32, 37, 39, 41, 43, 46, 47, 49, 51
4.4: 1, 3, 7, 11, 13, 17, 21, 31, 35, 39, 43, 47, 55, 57, 59, 61, 71, 79, 87, 95, 110
4.5: 1, 3, 5, 11, 15, 17, 21, 25, 29, 39, 41
4.6: 1, 7, 10, 15, 21, 24, 31, 33-36, 37, 45, 47, 49, 51, 53, 81, 85, 93, 96
4.7: 3, 5, 9, 11, 13, 17, 23, 25, 28, 29, 37, 40, 43, 47, 49, 57, 65, 71, 75, 84, 91, 93, 95, 103, 105, 108
4.8: 1, 5, 9, 13, 17, 18, 23, 27, 31, 33, 35, 45, 46, 53, 57, 63, 65, 67, 77, 83, 85, 87
- 5.1: 1, 3, 5, 7, 9, 12, 17, 23, 33, 35, 37, 39, 41, 53, 57, 61, 65, 72, 73, 77, 85, 97
5.2: 1, 3, 5, 7, 13, 15, 19, 23, 24, 29, 39, 41, 45, 49, 55, 56, 63, 71, 77, 81, 93, 95, 101, 105, 107, 121, 123, 129
5.3: 1, 3, 5, 7, 9, 11, 13, 16, 17, 19, 21, 25, 27, 29, 37, 39, 41, 45, 47, 53, 55, 59, 61, 65, 69, 71, 72, 87, 92
5.4: 1, 3, 5, 7, 11, 17, 19, 21, 23, 31, 33, 35, 37, 45, 49, 53, 57, 61, 69, 73, 75, 79, 83, 83, 99, 101, 103, 105, 107, 117, 119, 121, 123, 125
5.5: 1, 5, 7, 11, 13, 15, 23, 25, 26, 31, 32, 43, 45, 47, 52, 53, 65, 67, 75, 83, 90
5.6: 1, 3, 5, 9, 14, 17, 21, 27, 33, 37, 45, 49, 53, 55, 61, 69*, 72, 73, 75, 79, 83, 86, 93, 95, 101
6.1: 1, 3, 11, 21, 25, 29, 31, 32, 35, 37, 38, 43, 47, 51, 53, 58, 67, 71, 76, 81, 89, 113, 116, 122, 131, 133, 139, 141
6.3: 1, 3, 5, 7, 9, 13, 17, 23, 27, 31, 33, 35, 37, 39
6.4: 1, 3, 5, 7, 9, 10, 11, 17, 19, 21, 23, 25, 27, 33, 39, 51, 57, 60, 73, 75, 83
6.5: 1, 5, 10, 11, 13, 16, 21, 25, 31, 34, 35, 37, 39, 41, 44, 55*, 65, 67
6.7: 1, 3, 9, 11, 14, 18, 25, 28, 30, 33, 35

MATH1314 College Algebra - Objectives

Functions:

- Use and interpret function notation.
- Find the domain of polynomial, rational, radical, exponential, and logarithmic functions.
- Use composition of functions.
- Find inverses of functions algebraically (where possible), graphically, and numerically.
- Interpret the graphs of functions.

Graphing functions:

- Recognize the equations and sketch the graphs of the following: Lines, x^2 , x^3 , $x^{1/3}$, $x^{1/2}$, $1/x$, $1/x^2$, $|x|$, semi-circles, circles, factored polynomials of degree 3 or more, $\ln x$, and their linear transformations.
- Find inverses of functions graphically.
- Find and sketch asymptotes of rational, exponential, and logarithmic functions.
- Describe the end behavior of all the above functions.
- Determine when it is appropriate to use a calculator or graphing technology.
- Approximate zeros of a function.

Symbolic Adeptness:

- Solve equations including quadratic, rational, literal, quadratic types, exponential, logarithmic, and equations with radicals.
- Solve polynomial and rational inequalities.
- Solve non-linear systems of equations.
- Use long division and the Fundamental Theorem of Algebra to find zeros of polynomials of degree three or more.
- Simplify fractions with terms having negative exponents.
- Rationalize numerators as well as denominators.
- Simplify complex fractions.
- Use completing the square to find the vertices of parabolas and centers and radii of circles.
- Evaluate exponential and logarithmic expressions with calculators.
- Use the rules for logarithms.
- Solve systems of linear equations using Gauss-Jordan Elimination and Cramer's Rule.

Applications

- Recognize and use applications of linear functions including linear models.
- Recognize and use quadratic applications, including falling object, maximum, and minimum problems.
- Recognize and use rational expression applications such as animal populations in parks.
- Recognize and use exponential and logarithmic applications, including exponential growth and decay, doubling time, and half-life.
- Recognize and use applications of systems of linear equations.

Austin Community College Department of Mathematics**
Alternatives to College Algebra

or

Hints to Help the Beginning Student Distinguish between
 First-Level College-Credit Mathematics Courses

College Mathematics (ACC's MATH 1332) (UT's M302) **

Goal: To broaden the students' repertoire of mathematical problem-solving techniques past algebraic techniques.

This course covers a variety of mathematical topics such as set theory, logic, and probability. Students learn basic college-level techniques in a variety of mathematical areas and learn what types of problems can be solved with each technique. The algebra prerequisite for the course reflects the need for the students to have an understanding of the conceptual aspects of mathematics rather than a need for them to remember the details of how to solve all the types of algebra problems encountered in high school algebra. Students with weaker algebraic manipulative skills should still be able to complete this course successfully.

Elementary Statistics (ACC's MATH 1342) (UT's M316 or UT's STA309) **

Goal: To teach the student to do basic statistical analyses and to enable the student to be an "intelligent user" of standard statistical arguments.

The focus of this course is on using conceptual mathematical skills to solve a particular type of applications problems. Algebraic manipulation is not a major part of this course; however, students will be required to use formulas extensively. (A "pretest" indicating the level of skill expected is available from the mathematics department.) Enough explanation will be given that students who once learned algebra, but have forgotten many of the details, will be able to handle the algebraic aspects of the course easily.

Math for Business & Economics (ACC's MATH 1324) (UT's M303D, Texas State's M 1319) **

Goal: To teach the student some applications of algebra to business and economics problems and to provide a minimal level of algebraic foundation for the first semester of business calculus.

The focus of this course is on the applications problems, with algebra skills from the first two years of high school algebra used as necessary. Students who are not able to demonstrate all the skills from high school Algebra II just before beginning the course will probably find this course very difficult.

College Algebra (ACC's MATH 1314) (UT's M301, Texas State's M 1315) **

Goal: To provide the student with the algebraic foundation for calculus.

The student is expected to be currently confident and skilled in all topics from the first two years of high school algebra or from MATD 0390, Intermediate Algebra, and the new material will build on that foundation with little or no review. Students who are not able to demonstrate all the skills from high school Algebra II just before the beginning of the course will probably find this course very difficult.

UT = University of Texas at Austin

*Additional information about ACC's mathematics curriculum and faculty is available on the Internet at <http://www.austincc.edu/math/>

** It is the student's responsibility to determine if these courses are applicable to a specific degree plan at ACC or at another institution.



Welcome Students!

MyMathLab is an interactive website where you can:

- Self-test & work through practice exercises with step-by-step help to improve your math skills.
- Study more efficiently with a personalized study plan and exercises that match your book.
- Get help when YOU need it. MyMathLab includes multimedia learning aids, videos, animations, and live tutorial help.

Before You Begin:

To register for MyMathLab you will need:

- A MyMathLab student access code** (packaged with your new text, standalone at your bookstore, or available for purchase with a major credit card at www.coursecompass.com)
- Your instructors' Course ID number:** _____ **nagel48933** _____
- Your school's zip code:** _____ **78701** _____
- A valid email address**

Student Registration:

- Go to <http://www.coursecompass.com> and click the **Register** button under Students.
- Review the **Before You Start** information to ensure you have everything you need to register; click Next.
- On the Course ID page:
 - Enter the Course ID and click on Find Course
 - Choose your enrollment method
 - If your student access code came packaged with your textbook, select Access Code.
(Select "Buy Now" to purchase online access using your credit card)
 - Enter your student access code as displayed; use the tab key to move from box to box and use all **CAPITAL LETTERS** when entering the access code. Click Next.
- Please read all information in the License Agreement and Privacy Policy. Click on Accept if you agree to the terms.
- On the Access Information screen:
 - **If you have registered for other Pearson online products** and already have a login name and password, **select Yes**. Boxes will appear for you to enter your login information.
 - **If this is the first time you have registered for a Pearson online product, select No**. Boxes will appear for you to enter your desired login name and password. You may want to use your email address as your login name. If you do not use your email address, be prepared with a second login name choice if the one you first selected is already in use. Your login name must be at least 4 characters and cannot be the same as your password.
 - **If you aren't sure whether you have a Pearson account or not, select Not Sure**. Enter your email address and click Search. If you have an account, your login information will be sent to your email address within a few moments. Change your selection to Yes, and enter your login name and password as directed.
- On the Account Information page, enter your first and last name and email address. Re-type your email address to make sure it is correct.
- In the School Location section, select United States from the School Country drop-down menu. Enter your **school zip code**, and then select your school from the drop-down list.
- Select a security question and answer to ensure the privacy of your account. Click Next.
- When your registration process is complete you will see a confirmation screen. Click Log In Now to reach CourseCompass, and click Log In. Enter your login name and password and click Log In.

Logging In:

- Go to www.coursecompass.com and click on Log In. Enter your login name and password and click Log in.
- On the MyCourseCompass page, click on the course name to enter your instructor's course.
- The first time you enter your course from your own computer and anytime you use a new computer click the **Installation Wizard** on the announcements page or navigational button at the bottom left of the screen. The wizard (or Browser Check) will detect and then help you install the plug-ins and players you need to access the math exercises and multimedia content in your MyMathLab course. Follow the screen instructions to complete this process. NOTE: Check with your instructor to ensure all plug-ins are installed in the college computer labs.
- After completing the installation process and closing the wizard you will be on your course home page and ready to begin exploring your MyMathLab course.

Need help?

Contact Product Support at <http://www.mymathlab.com/contactus.htm> for live CHAT, email or phone support.

Student Information for a Mathematics Course

Name: _____

ACC ID Number: _____ email address: _____

Address: _____

City and Zip Code: _____

Home Phone: _____ Work Phone: _____

Name and number of this course: _____

Name and course number of the prerequisite for this course:

Please respond to the four items, and sign below:

1. Check the appropriate part, and give details below or on the back of the page.

a. I have made a C or better in the prerequisite course at ACC. _____

State what year and what grade. _____

b. I have made a C or better in the prerequisite course at another college. _____

State what college, what course, what year, and what grade.

c. I have satisfied the prerequisite for this course in some other manner. _____

Give full details, including what course you took, your grade, and what year.

2. I took an ACC math assessment test. _____

State what year and your score if you remember.

3. I am taking _____ credit hours, and working _____ hours per week.

4. I am registered for the optional lab for this course.

Circle one: Yes No

I understand that my instructor may drop me from the course if I do not have the proper prerequisite course. I also understand that failure to give accurate information about prerequisites is scholastic dishonesty. I affirm that the information I have given here about my fulfillment of the prerequisite is accurate.

Signature: _____ Date: _____

