

MATH 103, INTERMEDIATE ALGEBRA (prerequisite is Math 201 or equivalent),  
RC, Prof. PAUL T. KRYDER (instructor) [no office at RC, home phone is 637-0051,  
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**WELCOME TO MATH 103.** The objective of this course is for you to learn the fundamental concepts and techniques of intermediate algebra, including (but not necessarily limited to) equations (polynomial and absolute value), inequalities, systems of equations, functions, roots and radicals, exponential and logarithmic functions and equations, conic sections, [if time] sequences and series, and meaningful applications of much of the above.

**S16 SPECIFIC INFORMATION:** The class (51140) meets Tu/Th 6 - 8:15 pm (with 10-minute break) in CC1-200, final exam is 05-19 (Th), 6 - 7:50 pm, My Math Lab Course ID is kryder29371. Review session for the final exam will be on 05-17 (Tu), 6 - 8:15 pm in CC1-200. *When registering for My Math Lab, please be SURE that your name appears EXACTLY the way it does in the RC records—NO nicknames please.*

Learning Outcomes: Upon successful completion of this course, the student shall be able to: (1) solve linear and absolute value equations and inequalities in one variable, and express the solution set of an algebraic inequality in one variable in algebraic, graphical, and interval notation forms, (2) solve  $2 \times 2$  and  $3 \times 3$  systems of linear equations, (3) evaluate and simplify radical expressions, (4) use rational exponents, and simplify expressions involving rational exponents, (5) convert from radical form to exponential form and vice-versa, (6) perform basic operations on radical expressions (add, subtract, multiply, divide), (7) solve radical equations, (8) understand what a complex number is and know how to do basic operations (add, subtract, multiply, divide) with complex numbers, (9) solve quadratic equations by extracting square roots and completing the square, (10) solve quadratic equations by using the quadratic formula, (11) graph parabolas, (12) solve quadratic and rational inequalities, (13) understand what a function is, (14) graph polynomial functions by using knowledge of transformations and their effects on the graph, (15) do the algebra of functions and use function notation, (16) do compositions of functions, (17) find the inverse of a function given in roster form and in equation form, (18) determine whether two given functions, given in equation form, are inverses of each other by using the Property Of Composition Of Inverse Functions, (19) evaluate and graph exponential and logarithmic functions, (20) understand what a logarithm is, (23) convert from exponential to logarithmic form and vice-versa, (24) expand and condense logarithmic expressions by using the properties of logarithms, (25) solve exponential and logarithmic equations, (26) graph circles, ellipses, and hyperbolas from their equations, (27) convert the general form of the equation of a conic to

standard form by completing the square, and identify whether it is a parabola, circle, ellipse, or hyperbola, (28) solve nonlinear systems of equations, (29) expand powers of binomials by using the Pascal's Triangle method, and (30) use many of the above skills to do meaningful applications (e.g. word exercises) requiring algebraic techniques.

**Math 103 Tentative Schedule Of Topics (34 instructional days, 516 Tu/Th Classes)**

Day 1: Opening business, Sec. 8.1 (linear and absolute value equations)

Day 2: Sec. 8.2, 8.3 (linear and absolute value inequalities; graphing linear functions)

Day 3: Sec. 8.4 (review of factoring; quadratic and rational equations)

Day 4: Sec. 8.5 (solving 2 by 2 and 3 by 3 systems of linear equations by algebra)

Day 5: Sec. 8.5 cont'd.

Day 6 (01-28, Th): UNIT 1 EXAM

Day 7: Sec. 9.1, 9.2 (square roots, higher roots, radical notation; rational exponents)

Day 8: Sec. 9.2 cont'd, 9.3 (rational exponents; simplifying, adding, subtracting radical expressions)

Day 9: Sec. 9.3 cont'd, 9.4 (simplifying, multiplying, dividing radical expressions)

Day 10: Sec. 9.4 cont'd, 9.5 (radical expressions and applications)

Day 11: Sec. 9.5 cont'd, 9.6 (complex numbers)

Day 12: Sec. 9.6 cont'd.

Day 13 (02-23, Tu): UNIT 2 EXAM

Day 14: Sec. 10.1, 10.2 (solving quadratic equations by factoring, extracting square roots, completing the square; the quadratic formula)

Day 15: Sec. 10.3 (equations quadratic in form)

Day 16: Sec. 10.4 (graphing parabolas)

Day 17: Sec. 10.5 (applications of quadratic equations)

Day 18 (03-10, Tu): UNIT 3 EXAM

Day 19: Sec. 11.1, 11.2, 11.3 (review of functions; linear functions; quadratic functions)

Day 20: 11.3 *cont'd*, 11.4 (graphing quadratic functions by transformations; graphing cubic and square root functions by transformations)

Day 21: Sec. 11.5 (the algebra of functions)

Day 22: Sec. 11.6 (inverse functions)

Day 23 (04-05, Tu): UNIT 4 EXAM

Day 24: Sec. 12.1 (exponential functions)

Day 25: Sec. 12.2 (logarithmic functions)

Day 26: Sec. 12.3 (properties of logarithms)

Day 27: Sec. 12.4 (exponential and logarithmic equations)

Day 28: Sec. 12.5 (applications of exponential and logarithmic equations)

Day 29 (04-26, Tu): UNIT 5 EXAM

Day 30: Sec. 13.2, 13.3 (distance and midpoint formulas, graphing circles; graphing ellipses)

Day 31: Sec. 13.3 *cont'd*, 13.4 (graphing ellipses; graphing hyperbolas)

Day 32: Sec. 13.5 (nonlinear systems of equations, applications)

Day 33: Sec. 13.5 *cont'd*, 14.4 (nonlinear systems of equations, applications; expanding positive integer powers of binomials by the Pascal's Triangle method)

Day 34 (05-12, Th): UNIT 6 EXAM

*[Note: If, and only if, we have extra time at the end of the semester, we may cover part or all of section 10.6 (polynomial and rational inequalities) at that time as part of Unit 6. But it is very unlikely that this will happen.]*

**Students with disabilities should see me privately for all special arrangements.**

**Textbook** (not essential to bring to class): *Elementary and Intermediate Algebra*, 4<sup>th</sup> edition, by Woodbury (this is equivalent to the Custom Edition for Fresno City College). You are NOT required to purchase the bundled version of the textbook as the My Math Lab assignments will be optional and extra credit, but you may do so if desired. My Math Lab access can also be purchased separately online with a credit card or in the bookstore via a MML Access Code Kit. We will cover chapters 8 - 13,

plus section 14.4, generally in order. [Unit 1 = chapter 8, unit 2 = chapter 9, unit 3 = chapter 10 (except 10.6), unit 4 = chapter 11, unit 5 = chapter 12 (except 12.6), unit 6 = chapter 13 + 14.4]. There is an optional solution manual to the textbook.

Other required materials: To all classes, please bring sufficient paper for note-taking, a writing instrument, a scientific or graphing calculator (the TI 30X-IIS is the calculator of choice), graph paper, and a ruler. *(If you use a mechanical pencil, please bring plenty of extra leads.)* **PLEASE BE SELF-SUFFICIENT—IT IS INCREDIBLY ANNOYING AND DISTRACTIVE WHEN STUDENTS COME TO CLASS WITHOUT PROPER MATERIALS, AND THEN HAVE TO "BUM" FOR THEM FROM ME OR FROM OTHER STUDENTS!! BE RESPONSIBLE AND COME TO CLASS PREPARED.**

Exams, quizzes: Exams will be announced at least 1 week in advance. 6 unit exams plus 1 comprehensive final exam planned, with the final exam score recorded twice as 2 identical scores. Each exam score is a "maximum" 100 points. 1 new large blue book required for each exam—purchase in bookstore for a few cents. Quizzes will typically be short and unannounced ahead of time, and will be used to "enhance" exam scores. *(I will no longer accept frayed-edge paper for quizzes, so be sure to bring at least a few sheets of 8.5" by 11" paper with smooth edges to each class to do your quizzes on.)* **NO makeup quizzes EVER given; only persons present in class at the START of a quiz may take that quiz.**

Textbook homework and homework policies are given in the Textbook Homework List; homework points will also be used to "enhance" exam scores. Homework for each unit is due on the day you take the exam for that unit and will NOT be accepted late for ANY reason.

Online Homework: Online homework is optional via My Math Lab. You may do either the online homework or the textbook homework or both; all are bonus points and it IS possible to get more points by doing both than by doing just one or the other. To register for My Math Lab, go to [www.mymathlab.com](http://www.mymathlab.com) and register using the course ID (listed near the top of the 1<sup>st</sup> page of this syllabus) AND using the access code that comes with your textbook (or if you did not purchase the textbook with access code you may buy an access code online with a credit card). The advantage of online homework is that it is interactive and gives you instant feedback.

Early/Late Exams: Exams may NOT be taken early; the first time you miss an exam it must be your drop exam unless the miss is due to (1) a RC conflict, (2) military service, or (3) jury duty/court summons. *(In any of these cases written documentation must be provided to enable you to take a makeup exam on the first missed exam.)* On the 2<sup>nd</sup> missed exam and thereafter you may take a makeup exam

with a reasonable excuse subject to verification at my discretion. PLEASE TRY TO AVOID MISSING EXAMS—MAKEUP EXAMS ARE A NUISANCE AND INCREDIBLY TAXING ON ME !!

Cheating on any exam or quiz will NOT be tolerated and will be dealt with according to the RC\_policy on cheating and plagiarism—see the RC catalog for details.

Semester grades: Semester grading scale is as follows:  $F < 60\% \leq D < 68\% \leq C < 80\% \leq B < 91\% \leq A$ . Your total number of points from all exams, except your lowest single exam score, will be calculated and compared to this scale to determine semester grade. *Once the semester is over, NO additional work may be done to raise your grade.*

Incompletes: Given only for the most extreme, serious, and unexpected (and well-documented)\_circumstances (e.g. automobile accident, serious illness, death in the immediate family) and will NOT be used merely to “bail you out” of getting a bad grade. If you do get my approval to take an incomplete, everything you have done up to the point of your leaving the class must count and may NOT be repeated.

Outside help: Available free of charge on a drop-in basis from RC instructors in the STEM Center in FEM 1 and in the Tutorial Center in the library from qualified student tutors. Please contact these centers for their hours and to find when they start up.

Expected: That you attend ALL classes ON TIME, with PROPER MATERIALS, and READY TO LEARN and BE ON-TASK. Also that you DO YOUR HOMEWORK ON TIME, and PROPERLY PREPARE FOR ALL EXAMS. Finally, that you GET OUTSIDE HELP IN A TIMELY MANNER IF YOU NEED IT.

Not allowed in class, ever: Rude or distractive behavior, abuse of others' property, babies or very young children, the use of cell phones or pagers or any kind of earphone device (e.g. MP3 players), or use of ANY kind of tobacco product (RC rule).

Blackboard use: Important announcements, class lecture notes, documents (e.g. practice exams, assignment sheets, content sheets), and student grades (to access grades, first click on “tools & grades”) will be posted for this course on Blackboard (Bb), which is easily accessible for any enrolled RC student with a student ID # and internet access (to log into Bb, go to [www.reedleycollege.edu](http://www.reedleycollege.edu), then click on Blackboard, then proceed, using your Reedley College ID as both your username and password).

*(If you do not have a computer and/or a printer at home, that is no problem— numerous computer labs with internet access and printers exist on campus for your use; for example, in the library. You are NOT required to EVER "print up" anything for this class. All worksheets to be turned in will be handed out in class. Practice exams and in-class reviews are NOT part of the hand-in homework and thus need NOT be printed up.)*

Please check the class Bb site often for new announcements and documents.

**RC S16 Academic Calendar (not specific to this class, but required to be on syllabi)**

October 23 (F) Spring 2016 registration begins for continuing students  
November 11 (W) Veterans Day holiday (no classes held, campus open)  
November 26-27 (Th-F) Thanksgiving Day Holiday (no classes held, campus closed)  
December 14-18 (M-F) Fall 2015 final exams week  
January 4 (M) Campus re-opens after Winter Break  
January 11 (M) Spring 2016 instruction begins  
January 11 - March 11 (M-F) Spring 2016 short-term classes, first nine weeks  
January 18 (M) Martin Luther King, Jr. Day observed (no classes held, campus closed)  
January 22 (F) Last day to request an Enrollment Fee Refund  
January 29 (F) Last day to add a full-term class for Spring 2016  
January 29 (F) Last day to drop a full-term class to avoid a "W" (in person) for Spring 2016  
January 31 (SU) Last day to drop a full-term class to avoid a "W" (on WebAdvisor) for Spring 2016  
February 5 (F) Last day to change a class to/from a Pass/No-Pass grading basis  
February 12 (F) Lincoln Day observed (no classes held, campus closed)  
February 15 (M) Washington Day observed (no classes held, campus closed)  
March 11 (F) Last day to drop a full-term class (in person) (letter grades assigned after this date)  
March 14 - May 20 (M-F) Spring 2016 short-term classes, second nine weeks  
March 21-24 (M-Th) Spring Recess (no classes, campus open)  
March 25 (F) Deadline to file Intent to Graduate via WebAdvisor  
March 25 (F) Spring Holiday observed (no classes, campus closed, classes reconvene March 28)  
May 16-20 (M-F) Spring 2016 final exams week  
May 20 (F) End of spring semester/commencement

**NOTE:** Please pay attention to the above drop deadlines. It is NOT my obligation to remind you of them during the semester. If you wish to drop the course, then doing so is YOUR responsibility, NOT mine. NEVER assume that I will drop you simply for non-attendance, because I generally will NOT.

**Cheating: ALL of the RC policies on cheating and plagiarism can be assumed to be fully in force in this class. Please see the current RC Catalog for a full statement of these policies.**