MATH 120 — LOS RIOS/CRC
INTERMEDIATE ALGEBRA — FALL 2016
5 UNITS — SECTION # 19762

THIS SYLLABUS WAS UPDATED ON SEPTEMBER 21, 2016

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Email is the primary and the most reliable way of contacting the instructor. Either address should work. When emailing, please always specify your real name (the same one as in the roster) and which class you are taking.

Office: LRC 150, M-F 10 am - 11 am, (916) 691-7086. Please let the instructor know if these hours do not work for you, and we can try to set up an appointment (allow 2 business days for reply).

Class Meetings: SCI 215, MW 12 pm - 1:20 pm and F 12 pm - 2:05 pm.

Required Materials: *Intermediate Algebra, 3rd edition*, by Larson, Hostetler, Neptune. Online portion is not required. A slightly older edition should suffice. The students are responsible for reading every section covered in class.

Catalog Description: This course extends the concepts of elementary algebra with problem solving skills and applications emphasized throughout. Topics which are briefly reviewed and subsequently extended include: solving equations (quadratic, radical, rational, and systems of linear equations), graphing linear equations, simplifying expressions (polynomial, rational, radical, and those involving integer exponents), and factoring polynomials. New topics include: solving more complex equations and inequalities (exponential, logarithmic, linear and quadratic inequalities, and systems of non-linear equations), graphing more complex equations (quadratics, circles, and various functions using transformations), functions and their properties, exponential and logarithmic functions and their properties.

Prerequisites: Math 100 or 102 with a grade of "C" or better; or equivalent skills demonstrated through the assessment process.

Methods of Instruction: Class meetings will feature a mix of lecture, discussion, very short quizzes, and group assignments. Several full-period in-class tests will be given.

Attendance: To succeed in this course, it is crucial that you come to class every day, alert and prepared to learn. Roll will be taken at the beginning of each class session. If you arrive after the class has started, please enter the room quietly and get on the roster at the end of the class. If you miss more than a half of a class session, you will be considered absent for that day. **If you miss the first class meeting without notifying me or the division administrator in advance, you will be dropped from the class. If you miss the total of** 6% **of instruction any time during the semester, you may be dropped from the class. These absences need not to be consecutive.** Exceptions will be made for documented cases of grave illness and/or family emergency.
https://www.crc.losrios.edu/catalog/geninfo/regulations

Homework: Homework serves as practice and will prepare you to do your best on quizzes and tests. Late homework will be accepted for 50% credit if it is less than 1 week

late, and for 25% credit otherwise. Homework is crucial for learning the material as well as for succeeding in this class. Doing all homework is probably the most effective way to raise your test grades. You are welcome to work in groups while solving the homework, but you must submit your own work.

Quizzes: Short quizzes will be given at the beginning of some class sessions. **No make-up quizzes will be given for any reason.** 20% or so of the lowest quiz scores will be dropped, and the highest scores together will be worth 10% of the class grade.

Tests: There will be 4 tests. Together they will be worth 60% of the class grade. A single comprehensive makeup test will be given at the end of the semester for documented cases of grave illness and/or family emergency.

Final: The 2 hour comprehensive final exam will be given Monday, December 12 at 12:45 - 2:45 pm and will be worth 20% of the class grade. **You must earn at least** 60% **on the final in order to pass this class. There is no make-up final exam.**

Grading:

Grades versus %	
A	90 — 100%
B	80 — 89%
C	70 — 79%
D	60 — 69%
F	0 — 59%

Grade Breakdown	
Tests	60%
Homework	10%
Quizzes	10%
Final	20%

Getting Help: If you have a question or a concern not addressed in this syllabus, please contact your instructor via email (allow 2 business days for reply). Moreover, the campus provides some resources to help you study:
`https://www.crc.losrios.edu/services`

Tutoring: The CRC Tutoring Center provides academic support services to CRC students. The Center facilitates drop-in tutoring, study skills coaching, study groups, and more.
`https://www.crc.losrios.edu/services/tutoring`

Additional tutors are available at the Math Center, which helps students to develop confidence and proficiency in their math skills. You must enroll in a variable unit course in order to use the Math Center.
`https://www.crc.losrios.edu/services/mathctr`

Cell Phones, Computers: Cell phones are prohibited. The use of computers and tablets during regular class meetings is OK as long as they are used for class work and are completely silent. During quizzes, tests, and the final, only non-networked calculators will be allowed.

Accommodations: Disability Support Programs & Services (DSP&S) provides equal educational opportunity for students with physical, psychological, or learning disabilities. Counseling, support services, and academic accommodations are provided to students who are eligible for the program.

The Cosumnes River College Learning Disabilities Program can provide support services and academic accommodations to students who have documentation of a specific

learning disability from another school or professional. In addition, Diagnostic Assessment may be available for appropriately referred students who come to the DSP&S program for an orientation appointment.

If you have a learning disability, a physical disability, or other special needs, please let the instructor know as soon as possible if you need special accommodations.

Students have the right to request reasonable modifications to college requirements, services, facilities or programs if their documented disability imposes a functional educational limitation or impedes access to such requirements, services, facilities, or programs. A student with a disability who will be requesting modification, accommodation, or access to an auxiliary aid is required and responsible for identifying himself/herself to the instructor and, if desired, to the Disabled Students Programs and Services (DSP&S office). In either event, the student is responsible for providing appropriate documentation of his/her disability. Students who consult or request assistance from the DSP&S office regarding specific modifications, accommodations or use of auxiliary aid will be required to meet timelines and procedural requirements established by the DSP&S office.

`https://www.crc.losrios.edu/services/dsps`

Academic Honesty: Any instance of plagiarism and/or cheating will result in the score of zero for that homework, quiz, or test, and will be reported to the Vice President's office.

`https://www.crc.losrios.edu/catalog/geninfo/integrity`

Meta: The instructor reserves the right to make changes to this syllabus throughout the semester. All changes will be announced in class, and an updated version of the syllabus will be published online. Students are responsible for keeping up with these changes.

Student Learning Outcomes: Upon successful completion of this course, the student will be able to

- Identify and analyze linear behavior, models, and graphs of linear equations and linear inequalities. Utilize the properties of linear equations to solve linear inequalities, and solve absolute value equations and inequalities
  - interpret the slope of a linear equation as a rate of change.
  - generate an algebraic model for data that follows linear behavior and interpret the results of this model.
  - sketch the graph of a linear inequality using its algebraic representation.
- Solve systems of linear equations and systems of linear inequalities as well as their applications graphically and algebraically
  - calculate the solution to 2x2 and 3x3 systems of linear equations by using substitution, elimination, and graphs (for 2x2 systems), as well as determine whether a system is inconsistent, consistent and independent, or dependent.
  - construct systems of linear equations for applications and find their solution.
  - compute the solution to a system of linear inequalities using a graph and describe the meaning of this solution.
- Recognize the behavior of exponential and logarithmic functions and their graphs. Apply the properties of exponential and logarithmic expressions to simplify and solve equations involving such expressions
  - evaluate algebraic expressions involving exponents and logarithms and convert between these two types of expressions.
  - produce the algebraic model of an exponential function using data points and use properties of exponential functions to derive conclusions.
  - employ the properties of exponents and logarithms to solve equations involving exponential and logarithmic expressions.
  - draw the graph of exponential and logarithmic functions using both point plotting and the properties of transformations.
  - consolidate and expand logarithmic expressions using the properties of logarithms.
- Identify, simplify, evaluate, and graph quadratic functions using the properties of quadratic functions and transformations
  - demonstrate the properties of transformations by graphing a quadratic function, identifying the vertex and the intercepts with the axes.
  - choose from among factoring (and using the Zero Factor Property), extraction of roots, completing the square, or the quadratic formula to solve a quadratic equation.
  - apply properties of quadratic functions to create and solve quadratic models and to derive conclusions about the solutions.
- Simplify polynomial expressions, evaluate polynomial functions, and solve equations involving polynomial expressions and their applications
  - investigate polynomial division by performing long division on polynomial expressions.
  - extend factoring techniques to include the sum and difference of cubes.
  - adapt factoring to include expressions that are quadratic in form.
  - graph a circle given its equation in standard form as well as use the distance and midpoint formulas to find the equation of a circle given conditions.
- Simplify and solve rational and radical expressions and equations (including those with higher roots)
  - perform arithmetic on rational and radical expressions and write results in simplified form.
  - simplify complex fractions.
  - manipulate equations involving rational or radical expressions to arrive at a non-extraneous solution.
  - recognize and solve applications that involve rational or radical expressions.
- Use, interpret, and simplify functions, inverse functions, and combination functions
  - understand and use the definition of a function and interpret the difference between a relation and a function
  - describe the domain and range of functions.
  - compose the graph of a function from tabular data, a word problem, or algebraic form.
  - perform composition of functions as well as arithmetic on combinations of functions.
  - find the inverse of a function algebraically and graphically
  - interpret the meaning of the inverse in application problems