MATH 120 — LOS RIOS/CRC
INTERMEDIATE ALGEBRA — FALL 2017
5 UNIT(S) — SECTION # 15043

THIS SYLLABUS WAS UPDATED ON NOVEMBER 27, 2017

Instructor: Ivan Zaigralin ZaigraI@crc.losrios.edu
melikamp@melikamp.com
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 inquiring about. Emails omitting this information may fail to be processed.

Office: LRC 150, MW 11:00 am - 11:50 am, TTh 12:00 pm - 12:50 pm, (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: LRC 106, 5:00 pm - 7:20 pm.

Required Materials: *Modeling, Functions, and Graphs: Algebra for College Students*, 3rd custom edition, by Yoshiwara. Online portion is not required, so you may be able to get the correct edition at a discounted price, if you buy used. The students are responsible for reading every section covered in class. **Students are expected to have the text with them during every class meeting.**

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, short quizzes, and group assignments. Several 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 for any reason, 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 at the instructor's discretion for documented cases of grave illness and/or family emergency.**
https://www.crc.losrios.edu/catalog/geninfo/regulations

Written Assignments: All written assignments, including but not limited to the homework, tests, quizzes, and the final, should be done in **dark pencil or pen**; **black**, **dark gray**, **dark blue**, and **deep purple** are preferred. Fancy colors such as **green**, **red**, or pink can only be used to augment graphs and illustrations.

Homework: Homework serves as practice and will prepare you to do your best on quizzes and tests. About 20% of the lowest homework grades will be dropped. 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.

Homework in this class is not intended as the primary means of feedback. The students are expected to check and judge their own work by using answers, whenever the textbook provides them, and/or by discussing the homework with the instructor during the office hours. Typically, the instructor will only check a very small and somewhat random portion of the homework for accuracy.

Late homework will be accepted for 50% credit if it is less than 1 week late, and for 25% credit otherwise. The only way to submit late homework is by bringing it to the instructor's office during the scheduled office hours.

Unless otherwise stated, all homework should be submitted on paper. The title page should list the homework name, your name, and your class. Solutions to exercises should be presented in the order they are assigned. Textbook sections must start a new sheet of paper.

what the homework should look like

HW 4 ← **homework name** **your name, class** → Simpson, Lisa, Math 100

(7.5) ← **textbook chapter, section**

15. $1+2=3$
17. $(2x^2)' = 4x$

page ends here

---

new sheet starts

(7.6) ← **next textbook section starts a new sheet of paper**

1. $(x+1)^2 = x^2+2x+1$
2. $(-0.5x^{-2}y^{-1})^{-3} = -8x^6y^3$

⋮

Quizzes: Short quizzes will be given during some class sessions, typically without any advance warning. **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 several tests. Together they will be worth 60% of the class grade. **No make-up tests will be given for any reason.** If you miss a test due to a documented case of grave illness and/or family emergency, you will have an option to use your final exam grade to replace that zero, but only at the instructor's discretion.

Final: The 2 hour comprehensive final exam will be given on the date determined by the official final exam schedule:
`https://www.crc.losrios.edu/students/finals/fall17`
and will be worth 20% of the class grade. **You must earn at least** 60% **on the final in order to pass this class. If you earn less than** 60% **on the final, then "F" will be entered as your grade for the 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%

Extra Credit: Get some extra credit during the first 2 weeks of instruction by

(1) responding to an email the instructor has sent via the college email system (make sure your reply shows your name and the class you are taking).
(2) visiting the instructor's office hours.

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`

Computers: 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. While taking quizzes, tests, and the final, only the approved non-networked calculators and/or

computers running approved software will be allowed. If in doubt, the students should consult with the instructor and get their devices pre-approved prior to the test date. **Using tablets or computers for anything but the current assignment in this class may result in a removal from the classroom until the end of the session.**

Forbidden Tech: Spyphone/smartphone use is prohibited while the class is in session. In particular, they can never be used as calculators. Computerized watches can be used for showing current time only. **Using the tech listed above may result in a removal from the classroom until the end of the session.**

Required Tech: scientific calculator which **does not support** fractions, graphing, or equation solving.

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: This section is here for reference only. It may be useful to consult as you are preparing for the final exam. 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