Syllabus for: Math 120 Intermediate Algebra

Semester & Year:	Fall 2013
Course ID and Section Number:	MATH 120 M33823 (033823)
Number of Credits/Units:	4
Day/Time: **Location:**	T, Th 4:00p.m. – 6:05 p.m. Room 114
Instructor's Name:	Richard Ries
Contact Information:	Office location and hours: Room 105F Monday 2:45p.m. – 4:30p.m. Wednesday 2:45p.m. – 4:30p.m. Thursday 6:05p.m. – 7:05p.m. Friday 2:45p.m. -3:45p.m. Or by appointment Phone: 707-962-2681 Email: richard-ries@redwoods.edu

Course Description (catalog description as described in course outline): course in which functions are investigated graphically, numerically, symbolically and verbally in real-world settings. Linear, quadratic, absolute value, polynomial, rational, radical, exponential, and logarithmic equations and functions are explored. Technology is integrated into all aspects of the course.

Be sure to visit this page often, as there may be updates to the information provided.

http://msenux.redwoods.edu/math/courses/math120.php

Student Learning Outcomes (as described in course outline):

1. Evaluate and interpret general functions symbolically, numerically, and graphically.
2. Produce an accurate graph of each function type introduced in the course, identifying and plotting all salient features.
3. Demonstrate appropriate use of technology in analyzing the behavior of functions pre sented in the course.
4. Use mathematical models to analyze and interpret real-world situations.
5. Use sound mathematical writing and appropriate use of symbolism in presenting solu tions of mathematical exercises and applications.

Special accommodations: College of the Redwoods complies with the Americans with Disabilities Act in making reasonable accommodations for qualified students with disabilities. Please present your written accommodation request at least one week before the first test so that necessary arrangements can be made. No last-minute arrangements or post-test adjustments will be made. If you have a disability or believe you might benefit from disability related services and may need accommodations, please see me or contact Disabled Students Programs and Services. Students may make requests for alternative media by contacting DSPS.

Academic Misconduct: Cheating, plagiarism, collusion, abuse of resource materials, computer misuse, fabrication or falsification, multiple submissions, complicity in academic misconduct, and/ or bearing false witness will not be tolerated. Violations will be dealt with according to the procedures and sanctions proscribed by the College of the Redwoods. Students caught plagiarizing or cheating on exams will receive an "F" in the course.

The student code of conduct is available on the College of the Redwoods website at: http://www.redwoods.edu/District/Board/New/Chapter5/AP%205500%20Conduct%20Code%20final%2002-07-2012.pdf

College of the Redwoods is committed to equal opportunity in employment, admission to the college, and in the conduct of all of its programs and activities.

ATTENDANCE: Mathematics Department Policy Regarding "Faculty Withdrawal" of Students after Census Day: A student who is absent from class for the amount of time equal to two weeks of classes, will be withdrawn from the course, unless there are extenuating circumstances that are communicated to the instructor in a timely manner. This "faculty withdrawal" can occur between Week 4 and Week 10 of the semester.

Textbooks

Students will be given a **free** Intermediate Algebra textbook on the first day of classes in the form of a CD. The book is written by the mathematics department and will be given free of charge to all students in intermediate algebra in the fall semester, 2013. When you load the CD into your computer, double-click the file **start.html** to view a table of contents. The textbook files on the CD are in PDF format. You will need to **download** a free copy of the Adobe Reader to read them.

The Intermediate Algebra textbook is also available online at:

http://msenux.redwoods.edu/IntAlgText/

The online files are identical to the files on the CD and include:

1. A file for each chapter, which includes exercises and short answers.
2. Separate files for each section in each chapter.
3. Separate files for exercises and short answers for each section.
4. Separate files for exercises and complete solutions for each section.
5. A single file that contains all exercises and short answers for each chapter.
6. A single file that contains all exercises and full solutions for each chapter.

This is a third edition of the text, but errors will still exist.

Prerequisite Classes

Elementary Algebra (formerly Math 105 or 106, now Math 380 (or equivalent)) with a grade of "C" or better or appropriate score on the math placement exam.

Instructor Philosophy: The focus of learning is the student's analysis of experiences. Skill is required to combine first hand experiences, dialogue, thoughtful analysis and interpretation to give meaning and application of these experiences to life. Learning as an adult is an expansion of one's knowledge (facts and ideas), thinking (ability to assess) and behaviors (skills). Successful learning requires the cooperative efforts of both teachers and students. I am here to provide resources and facilitate the pursuit of your education. Studies have shown that the most successful students are those who ask questions and participate in discussions. I look forward to working with a class who, as adults, understand that the acquisition of knowledge is a matter of personal responsibility that requires active participation.

Goals of This Course: The goal of this course is to help you to become proficient in algebra and prepare you for other future math classes, if your major requires it. Many mistakes that cost students dearly in terms of their grades in more advanced courses are algebraic mistakes. Since mathematics is a subject that builds upon itself, a strong foundation in algebra is essential for the rest of your math education. The best way to master any math topic is to practice by doing problems. The more you practice, the better you will become. Other successful learning strategies include forming study groups and outlining reading materials. If you are having difficulty with any topic, please come see me early to get you back on track as soon as possible. You can either see me during my office hours, or make an appointment by email at Richard-Ries@redwoods.edu. Catching me after class is best. With the right attitude, math can be fun^2!

Attendance: It is imperative and vital to your academic success that you attend all classes. Attendance will be monitored through pop quizzes that will be given during class. Prompt arrival and remaining throughout the entire class is required. Tardiness will be counted as an absence. You are allowed 3 absences before you are dropped from the class, so save your absences for emergencies

Student Responsibilities: You are expected to come to class prepared by having read the assigned chapters and handouts, and completed all prior assignments. Proper adult behavior is expected at all times. The instructor reserves the right to dismiss a student from class permanently for disruptive behavior. Disruptive behavior is any behavior that distracts the instructor or other students. The instructor has an obligation to promote the learning of the students of the class and anyone who is disrupting the learning process will be dropped for lack of academic effort. A lack of academic effort also includes, but

is not limited to the following: missing or failing assignments, excessive absences, arriving late to class, exiting class before its termination, cheating, plagiarism or other disruptive behaviors. Also, please have your cellular phones off while in class and do not bring food or drink to class.

Homework: Homework will be assigned daily and is due the following class session. For each section that is covered, you will be expected to complete every other odd exercise (and sometimes the odd exercises) at the end of each section we lecture on in your book as well as the hand out assignments that will be distributed after the completion of each section. There will be 20 homework assignments worth a total of 5 points each. Points will be awarded based on two criteria: 3 points will be awarded for the student's attempt to complete the assignment and 1 point for each correct answer of 2 problems selected for grading from each assignment. So, 100 points, or 10% of your class grade, will come from homework.

Quizzes and Group work: There will 10 scheduled quizzes in accordance to the dates posted and an additional 10 Pop quizzes or group activities that will be given at random and unannounced. Quizzes will be generated from the previous two homework assignments. The questions that appear on quizzes will be similar in nature to your homework. During group work, you will be asked to work cooperatively with two, or three, of your classmates to solve a problem that I will assign to you. Your group will then present the solution and explain how your group solved the problem to the rest of the class. Grades from quizzes and group work are worth 5 points each for a total of 100 points, or 10% of your class grade.

Tests: There will be 4 midterm tests and a final in this class. See the attached handout for the dates. Please remember that **only under extreme emergency will I give a make up exam**. Documentation must be provided (e.g. police report, proof of hospitalization, etc.). Calculators are not allowed on any of the exams. Cheating is a very serious offence and anyone caught cheating will receive a grade of "F" for the course, and will be reported to the committee of academic honesty. I expect all problems to be worked out completely and legibly. Please also note that the final is cumulative. Each Midterm exam will be graded out of 150 points and will count for 15% of your class grade. The final will be worth 200 points and will count as 20% of your class grade. **Note: in order to pass this class you must successfully complete the final examination.**

Grade Breakdown:			Grade Record				
Homework	10%	100 pts.	____	____	____	____	____
			____	____	____	____	____
			____	____	____	____	____
			____	____	____	____	____(5 each)
Quizzes/Class projects	10%	100 pts.	____	____	____	____	____
			____	____	____	____	____
			____	____	____	____	____
			____	____	____	____	____(5 each)
Midterm 1	15%	150 pts.	____				
Midterm 2	15%	150 pts.	____				
Midterm 3	15%	150 pts.	____				
Midterm 4	15%	150 pts.	____				
Final Exam	20%	200 pts.	____				
Total	100%	1000 pts.				Total _____	

If you need your course grade as soon as possible, please e-mail me at Richard-Ries@redwoods.edu.

Attendance: I reserve the right to drop from the course any student that has more than three unexcused absences. Reference: Title 5, Sections 55024 and 58004. Approved: 05/01/2012

******* I expect you to attend every class meeting on time and ready to learn. ********

GRADE SYSTEM: Your final grade will be determined as follows

I will be using the plus/minus grade system. The break down is as follows:

A 930-1000	B 830-869	C 700-769
A- 900-929	B- 800-829	D 600-699
B+ 870-899	C+ 770-799	F 0-599

Or in terms of percent's, the break down is as follows:

A 93-100%	B 83-86.9%	C 70-76.9%
B- 90-92.9%	B- 80-82.9%	D 60-69.9%
B+ 87-89.9%	C+ 77-79.9%	F 0-59.9%

This information is subject to change depending on class circumstances.

MATH 120 Weekly Schedules
NOTE: This schedule is approximate and may be modified as the semester progresses.

Week	Topics
1 8/27 8/29	Section 1.1 Number Systems Goal: To understand the various sets of numbers that will be used throughout the class Section 1.2 Solving Equations Goal: to recall various methods of isolating a particular variable in an equation Section 1.3 Logic Goal: To develop the logical language and connectives that are needed to talk about and analyze mathematical expressions Section 1.4 Compound Inequalities Goal: To develop methods and tools for salving compound inequalities
2 9/3 9/5	Section 2.1 Introduction to Functions Goal: To gain an understanding of the mathematical notion of function Section 2.2 The Graph of a Function Goal: To gain a visual understanding of a function and its relation to the equation expression of a function Section 2.3 Interpreting the Graph of a Function Goal: To understand the basic behaviors of a function based on its graph Section 2.4 Solving Equations and Inequalities by Graphing Goal: To determine the solutions to equations and inequalities by examining associated graphs
3 9/10 9/12	Section 2.5 Vertical Geometric Transformation Goal: To understand how addition of a constant Section 2.6 Horizontal Geometric Transformations

		Goal: To understand the effect that perturbing the variable in a function has on its graph Section 3.1 Linear models Goal: To develop linear functions that describe real world situations Review for Exam 1
9/17 9/19	4	Exam 1 Section 3.2 Slope Goal: To be able to determine and interpret the slope of a line Section 3.3 Equations of Lines Goal: to be able to understand the properties of line from its equation and derive the equation of a line that has given properties Section 3.4 Point-Slope Form of a Line Goal: To understand the pattern that we refer to as the Point-Slope Form of a line and its connection to the Slope-Intercept Form
9/24 9/26	5	Section 3.5 The line of Best Fit Goal: To determine the line that best fits a given set of data
10/1 10/3	6	Section 5.1 The Parabola Goal: To become familiar with the basic properties of parabolas Section 5.2 Vertex Form Goal: To be able to interpret parabolas one put in their vertex form
10/8 10/10	7	Review for Exam 2 Chapter Exam 2 Section 5.3 Zeros of the Quadratic

		Goal: To determine the zeros of quadratic functions Section 5.4 The Quadratic Formula Goal: to be able to use the quadratic formula to solve quadratic equations
10/15 10/17	8	Section 5.5 Motion Goal: To understand simple projectile motion using quadratic equations Section 5.6 Optimization Goal: To develop methods of determining maximum and minimum values of a function Section 6.1 Polynomial Functions Goal: To understand the general behavior and patterns of polynomial functions
10/21 10/23	9	Section 6.2 Zeros of Polynomials Goal: To develop methods of determining the zeros of polynomials Section 6.3 Extrema and Models Goal: to use models to maximize and minimize real life situations Section 7.1 Introducing Rational Functions Goal: To be able to recognize rational functions. Review for Exam 3 Exam 3

Week		Topics
10/28 10/30	10	Section 7.2 Reducing Rational Functions Goal: To be able to write rational functions as simply as possible Section 7.3 Graphing Rational Functions Goal: To be able to sketch the curve of rational functions

		Section 7.4 Products and Quotients of Rational Functions Goal: To be able to multiply and divide rational functions Section 7.5 Sums and differences of Rational Functions Goal: To be able to add and subtract rational functions
11/5 11/7	11	Section 7.6 Complex Fractions Goal: to simplify fractions of fractions Section 7.7 Solving Rational Equations Goal: To be able to solve equations containing rational expressions Section 7.8 Applications of Rational Functions Goal: To use our knowledge of rational functions to solve real world problems Section 8.1 Exponents and Roots Goal: To understand the algebra of expressions containing exponents and roots
11/12 11/14	12	Review for Exam 4 Exam 4 Section 8.2 Exponential Functions Goal: To understand the properties of exponential functions
11/19 11/21	13	Section 8.3 Applications of Exponential Functions Goal: To use what we know about exponential functions to solve real world problems Section 8.4 Inverse Functions Goal: To be able to find the inverse of a given function and determine if two functions are inverses of one another Sections 8.5 Logarithmic Functions Goal: To understand the general behavior of logarithmic functions

11/26 11/28 (Thanks Giving No School)	14	Section 8.6 Properties of Logarithms; Solving Exponential Equations Goal: to understand the arithmetic of logarithms and be able to solve logarithmic and exponential equations Section 8.7 Exponential Growth and Decay Goal: To use exponential functions to model growth and decay systems Section 8.8 Additional Topics Goal: To further investigate the use of exponential and logarithmic functions and expressions Section 9.1 The Square Root Function Goal: To understand the general behavior of the square root function
12/3 12/5	15	Section 9.2 Multiplication properties of Radicals Goal: To understand the arithmetic of radicals Section 9.3 Division Properties of Radicals Goal: To understand the arithmetic of radicals Section 9.4 Radical Expressions Goal: To simplify radical expressions Section 9.5 Radical Equations Goal: To solve equations having radical expressions in them Section 9.6 The Pythagorean Theorem Goal: to understand and apply the Pythagorean Theorem
12/10	16	Final Exam

Homework assignments: TBA