Division: Mathematics
Course name: Math 115: Pre-Algebra
Sections: 1470 and 1476 **/ Semester:** Spring 2015

Instructor Name: H. Feiner	**School Website: www.wlac.edu**
Class Hours: MW	**Address: 9000 Overland Ave., Culver City, CA 90230**
8:00 a.m. – 9:15 a.m.	**Location: MSA 006 (may change)**
1:00 a.m. – 2:15 a.m.	**Location: MSA 109 (may change)**
Office Hours: MTuWTh,	**Instructor E-mail: FeinerH@wlac.edu**
2:30-4:15	**Office Location: MSB 219**

Welcome

This semester, you will work to develop your algebraic thinking skills. The goal is for you acquire the basic skills needed to succeed in subsequent technical classes and become more confident. The skills you learn here will help you succeed both in and out of class. However, your education is ultimately YOUR responsibility. YOU determine your level of success. Successful college students are self-motivated. Successful college students understand the importance of studying the material, coming to class prepared and practicing skills learned. YOU CAN DO IT and I'm here to help. Work with me, even when my method is different from what you learned before. Reconcile my presentation with what you think you remember. I try to teach you understanding, not just blind memorization of rules.☺

Course Description:

This is a first course in algebra. It covers the fundamental operations on natural numbers and carries on a logical development through all the real numbers. The course includes the solution of linear and quadratic equations and their graphs, factoring and statement problems.

This course is designed to give students an understanding of and solidification of the basics of algebra. To attain this mastery, students must have a genuine desire to combat arithmetic deficiencies. Students are on the first floor of their technical endeavor. If students think that algebra is irrelevant to their course of study, remember that half the jobs in the future have not yet materialized. We live in a technical society. If you are just out of high school, twenty years from now, when you have more responsibilities and less time, you may regret that you were not serious in mastering algebra basics. This course is not UC/CSU transferable.

Required Texts

The textbook. Is "Algebra" by Aufmann, Barker, and Lockwood. We will use an earlier less expensive edition. (The eighth edition is presently published.) The ISBN for the seventh edition is

9780618803590
My book at http://resources.wlac.edu/userfiles/feinerh/Book_1_2015.PDF (free)
You are expected to do homework from the first day on. Lacking Internet access is no excuse. Computers are available in the HLCR (library, first floor).
Having no book yet is no excuse either. You can do substitute homework online as follows:

Log into http://www.interactmath.com/
Enter
Choose a book > (scroll down) **Bittinger: Elementary Algebra, Concepts and Applications, 9e**
Submit
Chapter Contents opens. Click on chapter 1 and expand (click on the plus sign).
Click on section 1 "Introduction to Algebra…" Select question 1. Choose the proper answer and check it.
Then click on circle 2, etc. Exercise all the questions,
When finished, click on Close.
A summary is shown with green checkmarks and/or red Xs. Print this page so that you have proof of having done homework. Put the summary in your homework notebook.

Recommended Materials

A scientific calculator, to be used sparingly. This is no substitute for having memorized the addition and multiplication of simple integers.
My book at http://resources.wlac.edu/userfiles/feinerh/Book_1_2015.pdf

Required Materials

- One notebook for class notes
- and one for homework.
- A writing instrument and an eraser.

Course Objectives:

1a. Identify the opposite and the absolute value of any rational number
b. Compare rational numbers using inequality notation
c. Perform arithmetic operations with rational numbers
d. Convert among percents, fractions, and decimals
e. Evaluate numerical expressions using order of operations
f. Identify sets and subsets of the real numbers.
g. Identify and use the properties of the real numbers

2a. Evaluate variable expressions
b. Identify like and unlike terms
c. Simplify variable expressions using properties of addition and multiplication and the distributive property
d. Translate a verbal expression into a variable expression, including applications
e. Use formulas to solve problems
f. Solve a literal equation for one of its variables

3a. Determine whether a given number is a solution to an equation
b. Solve general linear equations
c. Solve equations involving rates, ratios, and percents
d. Model and solve application problems using linear equations, including but not limited to:
   i. Uniform motion problems

ii. Business applications

iii. Value and Percent mixture problems

iv. Geometry problems

v. Non-routine applications

4a. Construct a Cartesian coordinate system; identify and graph points

b. Construct and interpret scatter diagrams

c. Determine solutions of linear equations in two variables

d. Graph linear equations in two variables given in standard or in function form

e. Find the slope of a straight line, given two points on the line or an equation of the line

f. Find an average rate of change and interpret slope as a rate of change

g. Graph a line given two points or one point and the slope

h. Find an equation for a line given two points or one point and the slope

i. Identify whether or not a relation is a function

j. Model applications using linear functions

k. Solve problems using linear functions

5a. Solve general linear inequalities in one variable

b. Graph solutions to linear inequalities on a number line

c. Graph linear inequalities in two variables.

d. Model and solve application problems using linear inequalities in two variables

6a. Solve systems of linear equations by graphing

b. Solve systems of linear equations using algebraic methods

c. Model and solve application problems using systems of two equations in two variables (including but not limited to rate-of-wind and water-current problems)

7a. Add and subtract polynomials

b. Multiply monomials and simplify powers of monomials

c. Multiply polynomials, including special products

d. Factor polynomials completely using common factors, grouping, and other techniques

e. Divide polynomials

f. Use scientific notation with positive and negative powers of ten

g. Solve polynomial equations by factoring.

h. Model and solve applications using polynomial equations and functions

8a. Multiply, divide, and simplify rational expressions

b. Find the LCM of two or more polynomials

c. Add and subtract rational expressions

d. Simplify complex rational expressions

e. Solve equations containing fractions

f. Set up and solve proportions in applied contexts including similar polygons

g. Use rational equations and functions to model and solve applications such as uniform motion and work problems

9a. Simplify numerical and variable radical expressions

b. Add, subtract, multiply and divide radical expressions

c. Solve equations containing one or more radical expressions

d. Model and solve problems using radical equations and functions

10a. Solve quadratic equations by factoring, taking square roots, completing the square, and using the quadratic formula

b. Graph a quadratic function
c. Use quadratic equations and functions to model and solve application problems

Student Learning Outcomes (SLO)

Construct, analyze, and interpret graphs of linear equations in two variables in theoretical and applied contexts

Criterion Level : Each question will be answered correctly by at least 40 % of students.

Analyze an application, determine the data and formula(s) required for solving the given application, write an equation(s), solve the equation(s), and write a statement of conclusion that summarizes the results using units of measure.

Criterion Level : Each question on the final exam will be answered correctly by at least 30 % of students. At least 25% of students will achieve a level of at least 80% on the set of constructed-response questions. At least 50% of the students will achieve a level of at least 60% on the set of constructed- response questions .

Solve linear and quadratic equations in one variable, and solve equations containing algebraic fractions or square roots in one variable

Criterion Level : Each question will be answered correctly by at least 40 % of students.

Course Requirements and assignment guidelines

If you don't have internet access at home, to get started on homework because you do not have a book, there are computer labs on campus.

Quizzes
Quizzes will be given regularly to ensure that you are keeping up with the readings, homework, and attending class. Missed quizzes cannot be made up, even if you arrive late to class. Any extra credit points given to the class will not be given to a student who misses three unexcused absences or six instances of tardiness. An excuse needs to be substantiated in writing.

Other assignments, as listed below, will occur in class and serve to reinforce learning:
- Homework. Collect only homework in your notebook for homework. Do every other odd-numbered problem in the sections we cover in class. Bring to class daily. Turn in before a scheduled test. Show the chapter and section number on each odd-numbered page. Show your reasoning/work unless the problem is trivial. Box in your answers. No late homework.
- Exams (no exam will be dropped)
- Final
- Bring your textbook and supplies to class every time.

Late Assignments
No credit.

Grading

Assignment Category	# of Assign.	Points Per Assignment	Total Points	% of Total Grade
Quizzes	Approximately 25	2	50	Extra credit
Tests	5	100	500	59%
Final	1	300	300	35%
Homework	5	10	50	6%
Grand Total	36	-	900	100%
766 – 900 (90%) = **A**	681 - 765 (80%) = **B**	596 –680 (70%) = **C**	510 - 595 (60%) = **D**	509 and below = **F**

Class Policies

Attendance
Because class discussions are an integral part of this course, attendance is mandatory. Up to 3 absences are allowed. After that, you could be dropped. Students are expected to attend every class meeting, to arrive on time and stay throughout the class period. **Excessive absenteeism, as well as walking in and out of class, will lower your grade through omission of extra credit.** 3 tardies = 1 absence. Students may be dropped from class for excessive tardiness, or for failure to attend class the first day.

Walking In and Out of Class
When you arrive to class, make sure you have used the restroom, had a chance to eat, check your messages, etc. Walking in and out is rude and disruptive. If you need to leave early, or have some other problem, you need to notify me in advance. **Any student who makes a habit of walking in and out of class may be asked to leave.**

Preparedness
You are expected to arrive on time. You will come to each class session prepared. You will have your book, notebooks, pens/pencils, any work that is due, and you will be prepared to discuss all past assignments.

Cell Phones, iPods, etc.
Turn them off and put them away when class begins! Although it may not seem possible, you can survive without talking and texting on your cell phone, or listening to your iPod, for a little over an hour. Talking and texting on cell phones not only distract you, but they are a distraction for me and your peers. Distractions interrupt/disrupt the class and I will not tolerate interruptions. **You will be asked to leave if this occurs.**

Contacting Me
E-mail is the best and quickest way to contact me. **If you have a problem, do not let it snowball. Contact me immediately.** Students are expected to ask questions and obtain help from instructor via email and/or during office hours.

College Policies:

Academic Integrity (Plagiarism)
In accordance with code 9803.28, **academic dishonesty is prohibited and will not be tolerated in this class.** Violations of academic integrity include, but are not limited to, the following actions: cheating on an exam, plagiarism, working together on an assignment, paper or project when the instructor has specifically stated students should not do so, submitting the same term paper to more than one instructor, or allowing another individual to assume one's identity for the purpose of enhancing one's grade. Academic dishonesty of any type, such as cheating or knowingly furnishing false information, by a student provides grounds for disciplinary action by the instructor or college. In written work, no material may be copied from another without proper quotation marks, footnotes, or appropriate documentation.

  o **Plagiarism (cheating during an exam) will result in a zero for the assignment, possible dismissal from the class and disciplinary action from the college.**

Student Conduct
According to code 9803.15, disruption of classes or college activities is prohibited and will not be tolerated. Refer to the catalog and the Standards of Student Conduct in the Schedule of Classes for more information.

Recording Devices
State law in California prohibits the use of any electronic listening or recording device in a classroom without prior consent of the instructor and college administration. Any student who needs to use electronic aids must secure the consent of the instructor. If the instructor agrees to the request, a notice of consent must be forwarded to the Vice President of Academic Affairs for approval (WLAC College Catalog).

Campus Resources

As stated earlier in this syllabus, **if you are having problems, don't let them snowball.** Come and talk with me and check out some of the campus resources available to you.

Office of Disabled Student Programs and Services (DSP&S)
Student Services Building (SSB) 320| (310) 287-4450.
West Los Angeles College recognizes and welcomes its responsibility to provide an equal educational opportunity to all disabled individuals. The Office of Disabled Students Programs and Services (DSP&S) has been established to provide support services for all verified disabled students pursuing a college education. DSP&S students may qualify for: priority registration, registration assistance, special parking permits, sign language interpreters and assistive technology (WLAC College Catalog).

Instructional Support (Tutoring) & Learning Skills Center
Heldman Learning Resources Center (HLRC) | (310) 287-4486
Improve your reading, language, vocabulary, spelling, math fundamentals and chemistry knowledge with convenient, self-paced computer-aided courses in the Learning Skills Center. Increase your

knowledge and learning success: sign up for tutoring in various college subjects (WLAC College Catalog).

Library Services
Heldman Learning Resources Center (HLRC) | (310) 287-4269 & (310) 287-4486
The WLAC Library provides instruction on how to use the online catalog, periodical and research databases. In addition to a large collection of books, periodicals and videos the WLAC Library has course textbooks which students may use while in the Library. Web access is available in LIRL as well as meeting rooms. The upper floors provide a beautiful view ideal for study (WLAC College Catalog).
For more information refer to attached link:
http://www.wlac.edu/academics/pdf/WLAC_12-14Catalog_Policies.pdf

Math 115 Class Schedule – Spring 2015	8:00 a.m. – 9:15 a.m.
NOTE: This syllabus and class schedule is subject to change if circumstances warrant it (e.g. student performance, etc.). **Expect revisions and divergences.**	

Tentative schedule:

In the class textbook:	In my textbook
M 2-09: 1.1: Intro to Integers 1.2: Operations with Integers 1.3: Rational Numbers	2: The Commutative, Associative, and Distributive Laws/Properties 3 Additional Properties of Real Numbers 4 Arithmetic of Signed Numbers 5 Fraction Notation and Percent 6 Positive and Negative Real Numbers, the Number Line
T 2-10: 1.4: Exponents and the Order of Operations 1.5: Concepts from Geometry	**7 Order of Operations**
W 2-11: 2.1-Evaluating Variable Expressions 2.2: Simplifying Variable Expressions	**8 Evaluating Expressions**
Th 2-12: 2.3: Translating Verbal Expressions into Variable Expressions	
M 2-16: Closed	
T 2-17: 3.1: Introduction to Equations:	**9 Solving Linear Equations by Addition/Subtraction p**
W 2-18: b Test 1	
Th 2-19: 3.2: Applications of Equations of the Form ax = b	**10 Solving Linear Equations by Multiplication/Division**
M 2-23: 3.3: General Equations 3.4: Inequalities	11 Solving Linear Equations. Integer Problems 12 Solving Linear Equations. Coin and Stamp Problems
T 2-24: 4.1: Translating Sentences into Equations	18 Translating Oral Expressions/ into Math
W 2-25: 4.2: Geometry Problems	13 Solving Linear Equations. Integer Geometry
Th 2-26: 4.3: Markup and Discount Problems	14 Solving Linear Equations. Commerce Problems 20 Applications with Percent
M 3-02:	15 Solving Linear Equations. Investment Problems

4.4: Investment Problems	
T 3-03: 4.5: Mixture Problems	16 Solving Linear Equations. Mixture Problems
W 3-04: 4.6: Uniform Motion Problems	17 Solving Linear Equations. Peed (Rate)-Distance-Time Problems
Th 3-05: 4.7: Inequalities	21 Solving Linear Inequalities and Applications
M 3-09: 4.8: Review	
T 3-10: 5.1: The Rectangular Coordinate System	**22 The Rectangular Coordinate System**
W 3-11: <center>Test 2</center>	
Th 3-12: 5.2: Graphs of Straight Lines	23 Graphing Linear Equations and Interceots
M 3-16: 5.3, Slopes of Straight Lines 5.4: Equations of Straight Lines	24 Rates/Slopes 25 Equations of a Line
T 3-17: 5.5: Functions	27 Introduction to Functions
W 3-18: 5.6: Graphing Linear Inequalities	56 Linear Inequalities in Two Variables 26 Graphing Linear Inequalities in Two variables
Th 3-19: 6.2: Solving Systems of Linear Equations by the Substitution Method (omit 6.1)	52 Solving Systems of Equations by Graphing 53 Solving Systems of Equations by Substitution
M 3-23: 6.3: Solving Systems of Linear Equations by the Addition Method	54 Solving Systems of Equations by Elimination
T 3-24: 6.4: Application Problems in Two Variables	55 Systems of Application Problems Using Systems of Equations.
W 3-25: Review	
Th 3-26: 7.1: Addition and Subtraction of Polynomials	29 Polynomials 30 Addition and Subtraction of Polynomials 33 Polynomials in several Variables
M 3-30: 7.2: Multiplication of Monomials 7.3: Multiplication of Polynomials	31 Multiplication of Polynomials 32 Special Products
T 3-31: closed	
W 4-01: 7.4: Integer Exponents and Scientific Notation	28 Laws/Properties of Exponents **35 Negative Exponents** **36 Scientific Notation**
Th 4-02: 7.5: Division of Polynomials	**34 Division of Polynomials**
M 4-06: closed T 4-07: closed	W 4-08: closed Th 4-09: closed
M 4-13 : 8.1: Common Factors	**37 Factoring the Greatest Common Factor (GCF)**
T 4-14: 8.3(before 8.2) Factoring Polynomials of the Form $ax^2 + bx + c$	
W 4-15: 8.2: Factoring Polynomials of the Form $x^2 + bx + c$	**39 Factoring Trinomials**
Th 4-16: 8.4: Special Factoring	38 Factoring binomials 40 Factoring Perfect Square Trinomials.

M 4-20: 8.5: Factoring Polynomials Completely	41 General Strategy for Factoring
T 4-21: 8.6: Solving Equations	42 Solving Quadratic Equations by Factoring 43 Solving Application Problems by Factoring
W 4-22: 9.1: Multiplication and Division of Rational Expressions	44 Rational Expressions 45 Multiplication and Division of Rational Expressions
Th 4-23: 9.2: Expressing Fractions in Terms of the LCD	47 Least Common Denominator of Rational Expressions
M 4-27: 9.3: Addition and Subtraction of Rational Expressions	46 Addition and Subtraction of Rational Expressions with Like Denominators 48 Addition/Subtraction of Rational Expressions (Unlike Denominators)
T 4-28: 9.4: Complex Fractions	49 Complex Rational Expressions
W 4-29: 9.5: Equations Containing Fractions	50 Solving Equations with Rational Expressions page 465 51 Solving Equations with Proportions
Th 4-30: 9.6: Variation	57 Direct and Inverse Variation
M 5-04: 9.7: Literal Equations	19 Solving Formulas
T 5-05: 9.8: Application Problems	
W 5-06: ## Test 4	
Th 5-07: 10.1: Introduction to Radical Expressions	58 Introduction to (Square, cubic,) Roots and Radical Expressions 63 Radical Expressions with Several Terms 66 Higher Roots and Radical Expressions
M 5-11: 10.2: Addition and Subtraction of Radical Expressions	59 Simplification of Radical Expressions 62 Adding and Subtracting Radicals
T 5-12: 10.3: Multiplication and Division of Radical Expressions	60 Multiplication/Division of Radical Expressions 61 Rationalizing the Denominator
W 5-13: 10.4: Solving Equations Containing Radical Expressions	64 Solving Radical Equations 65 Application Problems Using Right Triangles and/or Radicals
Th 5-14: 11.1: Solving Quadratic Equations by Factoring or by Taking Square Roots	67 Solving Quadratic Equations Using the Square Root Property
M 5-18 : 11.2: Solving Quadratic Equations by Completing the Square	68 Solving Equations by Completing the Square
T 5-19: 11.3: Solving Quadratic Equations by Using the Quadratic Formula	69 The Quadratic Formula
W 5-20: 11.4: Complex Numbers	72 Introduction to the Arithmetic of Complex Numbers
Th 5-21: 11.5: Graphing Quadratic Equations in Two Variables	73 Graphs of Quadratic Equations
M 5-25 : closed	
T 5-26: closed	
W 5-27:	70 Solving Application Problems Involving Quadratic

11.6: Application Problems	Equations T1 Solving Formulas Involving Quadratics page 631
Th 5-28: Review	
M 6-01: Test 5	**W 6-03 (section 1470) and 6-04 (section 1476) Final.** **Bring a Scantron to the final**
M 6-08: end	