<table>
<thead>
<tr>
<th>Course Information:</th>
<th>Math 110 — Elements of Algebra</th>
<th>Credit Hours: 4.0 — This means you should set aside 8 to 16 hrs. per-week, outside of class, studying and working on your Algebra.</th>
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</thead>
<tbody>
<tr>
<td>Prerequisite:</td>
<td>Grade of “C” or better in Mathematics 100 or Placement Test or consent of departmental chair-person.</td>
<td>Textbook: Beginning Algebra with Applications, Sixth Edition, by Aufmann, Barker &amp; Lockwood.</td>
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<tr>
<td>Instructor Information:</td>
<td>Prof. Laurea Long</td>
<td>Email: <a href="mailto:llong@ccc.edu">llong@ccc.edu</a></td>
</tr>
<tr>
<td></td>
<td>Office: 702 C</td>
<td>Website: <a href="http://faculty.ccc.edu/llong">http://faculty.ccc.edu/llong</a></td>
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<td>Office Hours: These will be posted, or you may schedule an appointment.</td>
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<td>Required Materials:</td>
<td>Paper: “Clean-Edge” or “Graphing” binder paper for homework.</td>
<td>Pencils !! (Pencils only on homework, quizzes and exams, unless specifically told otherwise.)</td>
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<td></td>
<td>Be organized and write legibly.</td>
<td>Create a Profile, ASAP, On--&gt; ”My Course 2.1” at <a href="http://mycourse.thomsonlearning.com/">http://mycourse.thomsonlearning.com/</a> Section #LP— Class ID: 84699 Section #QS— Class ID: 84700</td>
</tr>
<tr>
<td>Recommended Items:</td>
<td>Email-address.</td>
<td>Online resources, Practice quizzes (see link on back cover of textbook), Solution Manual and Study Study-guide, if available.</td>
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<td></td>
<td>Read ahead &amp; write down questions, have &amp; use a notebook.</td>
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<td>Academic Standards/Dishonesty:</td>
<td>“Students are expected to behave in a manner appropriate to a place of study and learning... Students must maintain Academic Standards established by the District. Failure to meet Academic Standards and changes in Academic Status may affect financial aid eligibility.... Plagiarism and cheating of any kind are serious violations of these standards and will result, minimally, in the grade of “F” by the instructor”</td>
<td>Any student who cheats, attempts to cheat, or is suspected of cheating (as determined by the instructor) during a quiz/exam or any attempt to copy reports/ homework will receive a grade of zero for that assignment and possibly receive an F for the course and be reported to the administration.</td>
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<tr>
<td>Final Course Grades:</td>
<td>Grades will not be posted nor emailed.</td>
<td>You may bring a self-addressed-stamped envelope to the Final, or wait until the grades become available from Admissions and Records, via Soars.</td>
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<tr>
<td>Calculators:</td>
<td>You need to learn not to rely on your calculator for your answers. You need to be able to show how you reached your solutions for credit.</td>
<td>You will not be able to use them on quizzes, exams, the final, nor the placement exams. Therefore calculators will not be used, with the exception of Chapter 4....</td>
</tr>
<tr>
<td>Students with disabilities:</td>
<td>Accommodated testing for all students who have been authorized for academic adjustments/ accommodations for examinations/tests/quizzes is available.</td>
<td>Submit the proper completed authorizations forms within the first two weeks of the course, to your instructor. Arrangements will need to be made with instructor and testing center prior to exams.</td>
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</table>
Grading Information:

This is a breakdown of what can determine your final course grade:

**You are required to take the final exam.** Those who do not will receive an automatic F for the course. A very low final exam grade, may result in a lower grade, at the discretion of the instructor, without regard to other performance.

- Attendance and Homework are mandatory and will be used to decide final grades in borderline cases. Poor attendance may result in a lower grade, at the discretion of the instructor, without regard to other performance. (This usually entails over 8 hours missed.) Each tardy and/or leaving early from class will count as 1/2 day absence.

Be NEAT... If I can't read it, I won't grade it. Show ALL WORK in pencil.

You need to be able to show how you reached your solutions for credit.

Grade Scale*:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>A</td>
<td>90%-100%</td>
</tr>
<tr>
<td>B</td>
<td>80%-89%</td>
</tr>
<tr>
<td>C</td>
<td>70%-79%</td>
</tr>
<tr>
<td>Not Passing</td>
<td>Below 69%</td>
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</tbody>
</table>

*Based on percent of total points, however variations are possible.

Testing:

- **Chapter Tests**: Each will cover 1 or 2 chapter each.
- **Daily Quizzes**: Sometimes two. Do not show up late or leave early, otherwise you could lose quiz points...
- **Final Exams** (~30% of grade):
  1. District wide exam
  2. Comprehensive final, covering in class material.

Book Assignments:

- In order to get credit:
  - Write the problem, show your work and express the final answer along with proper units: in a clear, precise manner and/or a complete sentence, whichever is appropriate.
  - Turn assignment on time and neatly done. (Any questions? Ask first!)
- All book assignments will be due at the beginning of the scheduled class time, unless stated otherwise.
- Daily textbook assignments will be made (usually all odd problems.) Students are responsible for the completion of all assigned problems. Problems will be collected daily.
- Assignments must be in pencil, neatly done and well organized. If they are NOT, then they will be returned un-graded and considered Late.
- Late assignments are not counted for credit.

Class-work:

- You should read ahead, so you know what to expect during class-time... The more informed you are coming into the classroom; the better the lesson, the questions, student input, and the learning!!!!
- Student input is encouraged throughout all classroom presentations and problem solving, with courtesy and respect given to instructor and other students! Students are invited to ask and answer questions during the lecture as well as to work collaboratively in-class, during appropriate times... Ideally, there is maximum student participation in each class period.

Attendance:

(continued on next page.)
Attendance

- Attendance is a requirement of Harold Washington College. “Students are required to attend class. Non-failure to attend class may result in being a withdrawal from class or failing the course. Faculty may consider excessive absenteeism or tardiness in the evaluation.”

- You must attend class every day in order to be success in this course. It is also important for you to be on time. Attendance will be taken at least once each meeting. It is also important for you to be on time and not leave early. (Therefore schedule personal appointments well outside of class-time with sufficient time for travel.)

- Report all absences by notifying the Instructor and/or Department Secretary by email, voicemail, or in writing, prior to the class.

- In the event that you must miss class, it is your responsibility to find out what you have missed, not the instructor. Keep a list of phone numbers of other class-members that you may call and get the daily assignment. It is your responsibility to officially withdraw from the course. A student with excessive absences may be dropped from the course.

- If due to an emergency your instructor is twenty minutes late and no one has notified you otherwise, students are excused. HOWEVER, remain in class until this time; and send a student to notify the Dept. Make sure to sign in prior to leaving. Then you may leave with no penalty for absence for that class meeting, as long as you did sign-in!

- If due to an emergency you are not present in class and wish this to be an excused absence, you must present documentation the 1st day that you return to class, no exceptions.

Possible Extra Points Available:
- Online quizzes: to be emailed to instructor once completed & graded.
- Extra Written Reports with a Class presentation of results.
- Internet Projects available.

Notes:

(1) “Emergency” cases will be discussed on a case-to-case basis.
(2) No tape recorders, audible beepers, or telephones are permitted in class. You may be asked to leave class if a phone does go off AND you will have points deducted!! So turn your cell phones OFF. Cell-phones may also be confiscated & given to the Vice-President.
(3) No student solution manuals are permitted in class.

Other Online Resources:
- www.math.com
- http://math.college.hmco.com/students
- http://faculty.ccc.edu/colleges/hwashington/math/links.html

Your Textbook Web-site:

(Textbook-- Online Practice Quizzes-- EC!!)
Objectives (Not limited to the list below.) After completing this course, you should be able to:

(Chapter 1)
- Order relations using inequality signs
- Add, subtract, multiply and divide real numbers
- Solve application problems involving real numbers
- Convert between rational numbers, decimals and percentages
- Simplify and rewrite exponential expressions.
- Solve problems using the order of operations.

(Chapter 2)
- Evaluate variable expressions
- Identify the properties of the real numbers
- Simplify variable expressions using the properties of addition & multiplication.
- Simplify variable expressions using the distributive property
- Simplify general variable expressions.
- Translate a verbal expression into a variable expression
- Translate a verbal expression into a variable expression and then simplify the resulting expression, including word application problems

(Chapter 3)
- Determine whether a given number is a solution of an equation
- Solve equations of the form $x + a = b$
- Solve equations of the form $ax = b$
- Solve application problems involving uniform motion
- Solve application problems of percent
- Solve equations of the form $ax + b = c$
- Solve equations of the form $ax + b = cx + d$
- Solve variable equations containing parentheses.
- Solving application problems for general equations.
- Solve inequalities using the Addition Property of Inequalities
- Solve inequalities using the Multiplication Property of Inequalities
- Solve general inequalities.

(Chapter 4)
- Translate a sentence into an equation and solve.
- Translate an application problem into an equation and solve.
- Solve consecutive integer problems.
- Solve coin and stamp problems.
- Solve problems involving perimeter.
- Solve problems involving angles formed by intersecting lines.
- Solve problems involving the angles of a triangle.
- Solve markup and discount problems, including find cost from original price & discount. Or markup.
- Solve mixture problems, such as: diverse investment, value & percent mixture.
- Solve uniform motion problems involving more than one object.

(Chapter 7)
- Add polynomials
- Subtract polynomials
- Multiply monomials
- Simplify powers of monomials
- Multiply a polynomial by a monomial
- Multiply two polynomials
- Multiply two binomials.
- Multiply binomials that have special products.
- Solving application problems involving polynomials.
- Use scientific notation.
- Divide a polynomial by a monomial
- Divide polynomials

(Chapter 8)
- Factor a monomial from a polynomial.
- Factor by grouping
- Factor trinomials of the form $x^2 + bx + c$
- Factor trinomials of the form $ax^2 + bx + c$
- Factor trinomials of the form $ax^2 + bx + c$ using trial factors
- Factor trinomials of the form $ax^2 + bx + c$ by grouping
- Factoring the difference of two squares and perfect-square trinomials.
- Factory completely.
- Solve equations by factoring
- Solving application problems using factoring of polynomials.

(Chapter 9)
- Simplify rational expressions
- Multiply rational expressions
- Divide rational expressions
- Find the least common multiple of two or more polynomials
- Express two fractions in terms of the LCM of their denominators
- Add and subtract rational expressions with the same denominator
- Add and subtract rational expressions with different denominators
- Simplify complex fractions
- Solve equations containing fractions
- Solve proportions
- Solving application problems of proportions
- Solve problems involving similar triangles
- Solve a literal equation for one of the variables
- Solve application problems involving work & uniform motion using rational expressions.

Note from the instructor:

Student input is encouraged throughout all classroom presentations, i.e., students are invited to ask and answer questions during the lecture as well as to work collaboratively on in-class or out-of-class group projects. Ideally, there is maximum student participation in each class period. Get into a study group with fellow students early in the semester, whether you think you will need it or not.

If you find yourself getting frustrated or worried, come talk to me, or a counselor right away!!! Students who take advantage of office hours usually wind up doing well in the course, but I can’t help you unless you come discuss your concerns with me! At some point in the future you may find that you need an instructor recommendation for a scholarship, college application letter, etc., and instructor contact during the semester gives me a chance to get to know you as a person.
Textbook Contents:

Note: Each chapter concludes with a Chapter Summary, Chapter Review Exercises, and a Chapter Test. Chapters 2-11 include Cumulative Review Exercises.

1. **Chapter 1: Real Numbers**
   1.1. Introduction to Integers
   1.2. Operations with Integers
   1.3. Rational Numbers
   1.4. Exponents and the Order of Operations Agreement
      - Focus on Problem Solving: Inductive Reasoning
      - Projects and Group Activities: Calculators; Using Patterns in Mathematics; www.fedstats.gov; Moving Averages

2. **Chapter 2: Variable Expressions**
   2.1. Evaluating Variable Expressions
   2.2. Simplifying Variable Expressions
   2.3. Translating Verbal Expressions into Variable Expressions
      - Focus on Problem Solving: From Concrete to Abstract
      - Projects and Group Activities: Investigation into Operations with Even and Odd Integers; Applications of Patterns in Mathematics

3. **Chapter 3: Solving Equations and Inequalities**
   3.1. Introduction to Equations
   3.2. General Equations
   3.3. Inequalities
      - Focus on Problem Solving: Analyzing Data
      - Projects and Group Activities: Health and Nutrition; The Consumer Price Index

4. **Chapter 4: Solving Equations and Inequalities: Applications**
   4.1. Translating Sentences into Equations
   4.2. Integer, Coin, and Stamp Problems
   4.3. Geometry Problems
   4.4. Markup and Discount Problems
   4.5. Investment Problems
   4.6. Mixture Problems
   4.7. Uniform Motion Problems
   4.8. Inequalities *(if we have time)*
      - Focus on Problem Solving: Trial-and-Error Approach to Problem Solving; Diagramming Problems
      - Projects and Group Activities: Nielsen Ratings; Changes in Percent Concentration

5. **Chapter 5: Linear Equations and Inequalities**
   (covered in Math 112)

6. **Chapter 6: Systems of Linear Equations**
   (covered in Math 112)

7. **Chapter 7: Polynomials**
   7.1. Addition and Subtraction of Polynomials
   7.2. Multiplication of Monomials
   7.3. Multiplication of Polynomials
   7.4. Integer Exponents and Scientific Notation
   7.5. Division of Polynomials
      - Focus on Problem Solving: Dimensional Analysis
      - Projects and Group Activities: Pascal’s Triangle; Population and Land Allocation; Properties of Polynomials

8. **Chapter 8: Factoring**
   8.1. Common Factors
   8.2. Factoring Polynomials of the Form \( x^2 + bx + c \)
   8.3. Factoring Polynomials of the Form \( ax^2 + bx + c \)
   8.4. Special Factoring
   8.5. Solving Equations
      - Focus on Problem Solving: Making a Table; The Trial-and-Error Method
      - Projects and Group Activities: Prime and Composite Numbers; Search the World Wide Web; Problems Involving Falling Objects

9. **Chapter 9: Rational Expressions**
   9.1. Multiplication and Division of Rational Expressions
   9.2. Expressing Fractions in Terms of the Least Common Multiple of Their Denominators
   9.3. Addition and Subtraction of Rational Expressions
   9.4. Complex Fractions
   9.5. Equations Containing Fractions
   9.6. Literal Equations
   9.7. Application Problems
      - Focus on Problem Solving: Negations and If...then...Sentences; Calculators
      - Projects and Group Activities: Intensity of Illumination; Scale Model of the Solar System

10. **Chapter 10: Radical Expressions**
    (covered in Math 112)

11. **Chapter 11: Quadratic Equations**
    (covered in Math 112)

Practice: Final Exam (Textbook Practice)
Appendix: Table of Properties p 601