

Math 127– Basic Intermediate Algebra I

West Los Angeles College

Section 4491 – Spring 2015

Transfer: ; Units: 5

Class meets Tuesday & Thursday from 4:15–6:45 p.m. in B4 103

Instructor Prof. Nancy Foreman

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Office hour 3:10–4:05 pm Tuesday in MSB 214

Textbook *Intermediate Algebra* (11th ed.), by Lial, Hornsby, and McGinniss. We will cover Chapters 1 through 8.

Prerequisite Successful completion of Beginning Algebra (Math 115), or by placement exam.

Course description This course covers the first half of Math 125 with additional topics. Manipulative skills in algebra are developed and strengthened in the course. The topics include linear equations and inequalities, graphs and functions, systems of equations and inequalities, and polynomials and factoring. A wide variety of statement problems are included in the course. Math 127 together with Math 128 is considered equivalent to Intermediate Algebra (Math 125).

Important dates First class meeting: February 10
Proposed Exam Dates: Feb. 24, March 10, March 26, April 21, April 30, May 14
Last day to drop without a “W”: Feb. 20
Holiday, No Class: March 31 (Cesar Chavez Day), April 4–April 10 (Spring Break)
Last day to drop with a “W”: May 8
Last regular class meeting: Thursday, May 28
Final Examination: Thursday, June 4, 2015 from 4:15- 6:45 p.m.

Evaluation is based on	Chapter Exams, 100 points each	500 pts.
	Homework (10 pts. each)	60 pts.
	In-Class Work	140 pts.
	Comprehensive Final Exam	<u>300 pts.</u>
	Total	1000 pts.

Notes: The class will take a total of 6 chapter exams, the lowest exam score will be dropped. Homework papers will be collected and graded at each exam, see Homework section below for details. “In-Class Work” may include, but is not limited to, quizzes, group work, and worksheets.

Grading scale	900–1000 points:	A
	800–899 pts:	B
	700–799 pts:	C
	600–699 pts:	D
	≤ 599 pts:	F

Calculators A dedicated scientific calculator is a necessary aid for this course. No cell phones, computers, or other communication devices are permitted on exams.

Special circumstances Students with disabilities or those who need accommodation for any reason must communicate with the instructor in a timely manner to ensure their needs are met. Any paperwork needed must be completed in advance. Contact Disabled Students Programs and Services located in SSB 320 (phone 310-287-4450).

Makeups, Late Work, Extra Help Makeup exams are given only in extraordinary conditions and are greatly discouraged. Any makeup exams administered will be given during instructor's office hour only. No makeups are possible on quizzes or in-class work. Late work may be submitted on June 4 (Final Exam Night) for partial credit (up to one-half the original point score). The lowest exam score will be dropped. Plan to attend every class session. If you must miss a class, email foremann@wlac.edu in advance. The schedule in this syllabus will let you know what section(s) of the text will be covered that date. Try to read that night's sections on your own and attempt the homework problems. If you can't figure it out on your own, consult a tutor, look online for an instructional video, or use the instructor's office hour to get help. The textbook publisher maintains a free online homework site at <http://interactmath.com/home.aspx>; select our textbook from the drop down menu to work problems from the review sections for each chapter. Another resource is the instructor's message board <http://foreman-wlac-math.freeforums.net>.

Homework Instructions. For full credit, homework papers must be given in order, neat and legible, necessary and sufficient work shown, with the section number of each book section written in the upper right hand corner of the page on which it is worked. If this is not done the homework will be returned to you ungraded. Submit homework on the corresponding exam day. Homework will be assigned for each section and most class sessions will include some time to review homework questions, usually at the end of class. Expect to study and work problems for at least 10 hours per week, or two hours study time for every classroom hour. See homework and reading assignment list below.

How to pass. Attend class, complete all homework and submit all work on time, stay on top of things and don't fall behind. Practice until you have mastered each new technique. We're not kidding about the 10 hours study time per week (or more, in some cases). Anybody can do this stuff, it just takes time, energy and attention to detail.

Attendance & participation policy Every student is expected to maintain regular attendance, arriving on time and staying for the full class session. If roll call is missed, the student is marked absent for the night. Every student is required to participate in all class activities, which may include worksheets, board work, group work, or other activities. College policy states that an instructor may drop a student who has missed more than five hours of class, or one week total. While students who do not attend class may be dropped, if you decide that you cannot complete the class, it is YOUR responsibility to drop (withdraw) on or before May 8, 2015. Please consult with me if you are considering dropping the class. I would like to try to help you make a plan to succeed.

Etiquette & Discipline Please respect your classmates and the instructor, and refrain from disruptive behaviors such as coming late, leaving early, wandering in and out of class, eating or drinking during class, side conversations, instant messaging, websurfing, etc. If you are in doubt, consider if your behavior is distracting or disruptive to others. If so, please stop. Let us maintain a civil atmosphere conducive to learning and thought. All college rules and regulations will be enforced; see the West Los Angeles College Catalog for more information. Student discipline rules are found at <https://www.laccd.edu/Board/Documents/BoardRules/Ch.IX-ArticleXI.pdf>

Academic dishonesty Cheating will not be tolerated. Maintain the highest standards of academic honesty. You may not give or receive help on tests or quizzes, and you may not turn in someone else's work as your own. If academic dishonesty is detected, a score of zero will be assigned, and the student(s) involved may be reported to the administration.

Instructional Methods This course is taught using a variety of instructional methods which may include but are not limited to lecture, class discussion, small group work, in-class worksheets.

Extra Credit: Homework Set 7 may be submitted on Final Exam Night (June 4) for up to 10 points extra credit (no other extra credit).

How to read your algebra textbook Reading is assigned for each covered section of the text. Before each class, skim over the sections that will be covered that day, being sure to look closely at any material that appears in a colored box. Begin to familiarize yourself with the vocabulary and subject matter before class begins. After the material has been covered in class, re-read as necessary for understanding. If possible, work all homework problems before the next class begins. In any case, follow the reading procedure before each class. The homework and reading list below is given as a guide. Assignments may be modified as circumstances dictate. Each night's assignment will be posted on the board along with other important information.

Homework Set 1 Due with Exam 1 on Feb. 24

- Section 1.1: Read pp. 2–10, Work Exercises 1–15 odd, 19–31 odd, 43–59 odd, 65–87 odd, 101, 103, 109
- Section 1.2: Read pp. 14–20, Work Exercises 1–5 odd, 9, 11–41 every other odd, 57–117 every other odd
- Section 1.3: Read pp. 24–28, Work Exercises 1–51 odd, 53–85 odd
- Section 1.4: Read pp. 32–36, Work Exercises 1–13 odd, 23–31 odd, 41–51 odd
- Section 2.1: Read pp. 48–53, Work Exercises 1–9 odd, 11–63 every other odd
- Section 2.2: Read pp. 56–62, Work Exercises 1–11 odd, 15, 27–31 odd, 47, 49
- Section 2.3: Read pp. 67–74, Work Exercises 1–27 odd, 35, 37, 43, 45, 51, 55, 61, 63
- Section 2.4: Read pp. 81–84, Work Exercises 1, 3, 9–13 odd, 21–25 odd, 41, 45, 47
- Section 2.5: Read pp. 91–98, Work Exercises 1–7, 9–37 every other odd, 49–65 every other odd
- Section 2.6: Read pp. 103–108, Work Exercises 7–21 odd, 29–39 odd, 47–57 odd
- Section 2.7: Read pp. 112–117, Work Exercises 1–3, 5–19 odd, 23–33 odd, 37–101 every other odd

Homework Set 2 Due with Exam 2 on March 10

- Section 3.1: Read pp. 136–143, Work Exercises 9–27 odd, 35–67 every other odd
- Section 3.2: Read pp. 148–155, Work Exercises 1–31 odd, 39, 41–45 odd, 49–53 odd, 57, 63, 65, 71–75 odd, 85, 87
- Section 3.3: Read pp. 161–169, Work Exercises 1, 3, 7–15, 19, 225, 37, 41, 45, 51, 67, 71, 87, 89
- Section 3.4: Read pp. 175–179, Work Exercises 1–8 odd, 13, 17, 21, 23, 35
- Section 3.5: Read pp. 181–187, Work Exercises 3, 9, 11, 19, 21, 23, 27–33 odd, 37, 51, 57
- Section 3.6: Read pp. 190–193, Work Exercises 1–5 odd, 9–17 odd, 23, 29, 31, 37, 43, 45, 49, 57, 61

Homework Set 3 Due with Exam 3 on March 26

- Section 4.1: Read pp. 210–219, Work Exercises 1–7, 9, 11, 15, 19–23 odd, 33–37 odd, 41–47 odd, 51–55 odd, 61, 63, 69, 73, 79
- Section 4.2: Read pp. 226–231, Work Exercises 1, 3, 7, 9, 15, 21, 25, 33, 41
- Section 4.3: Read pp. 233–240, Work Exercises 1, 3, 11, 13–19 odd, 23, 29, 33, 41, 47 (Challenge)
- Section 4.4: Read pp. 247–251, Work Exercises 1–17 odd, 19, 23
- Appendix A: Read pp. 715–720, Work Exercises 1–15 odd, 21, 27

Homework Set 4 Due with Exam 4 on April 21

Section 5.1: Read pp. 264–273, Work Exercises 1–113 odd, 133–147 odd, 161, 165

Section 5.2: Read pp. 278–281, Work Exercises 1–85 odd

Section 5.3: Read pp. 284–290, Work Exercises 1–5 odd, 13–31 odd, 35–47 odd, 53

Section 5.4: Read pp. 293–298, Work Exercises 1–39 odd, 43–67 odd, 75, 83, 97, 101, 113–123 odd

Section 5.5: Read pp. 302–306, Work Exercises 1–5, 7, 9, 13–21 odd, 27–31 odd, 35, 45, 51, 57, 61, 71, 73

Appendix B: Read pp. 723–725, Work Exercises 1–15 odd, 25, 29

Homework Set 5 Due with Exam 5 on April 30

Section 6.1: Read pp. 320–324, Work Exercises 1–33 odd, 39–57 odd, 65

Section 6.2: Read pp. 326–331, Work Exercises 1–19 odd, 23, 25, 39–43 odd, 49, 53, 59, 61

Section 6.3: Read pp. 333–337, Work Exercises 1–3, 6, 7–37 odd, 41–45 odd, 49, 51, 59

Section 6.4: Read pp. 339–342, Work Exercises 1–69 every other odd

Section 6.5: Read pp. 343–349, Work Exercises 1–3, 5–31 odd, 39–43 odd, 55–61 odd

Homework Set 6 Due with Exam 6 on May 14

Section 7.1: Read pp. 362–368, Work Exercises 1–37 odd, 45, 49, 51–57 odd, 61–89 every other odd

Section 7.2: Read pp. 371–377, Work Exercises 1–25 odd, 29, 31, 43–83 every other odd

Section 7.3: Read pp. 380–384, Work Exercises 1–23 odd, 35, 37

Section 7.4: Read pp. 386–391, Work Exercises 1–5 odd, 11, 17–33 every other odd, 41, 49, 51, 57

Section 7.5: Read pp. 396–402, Work Exercises 1–4, 5–15 odd, 23, 25, 29, 33, 35, 37, 41, 49, 53–59 odd

Section 7.6: Read pp. 407–412, Work Exercises 1–23 odd, 27–47 odd

Homework Set 7 Submit with Final Exam on June 4 for up to 10 points Extra Credit

Section 8.1: Read pp. 428–432, Work Exercises 1–37 odd, 41, 43, 49–75 odd, 87

Section 8.2: Read pp. 435–431, Work Exercises 1–10, 11–57 odd, 61–73 odd, 83, 85, 91, 95, 105

Section 8.3: Read pp. 443–450, Work Exercises 1–49 odd, 55, 63–75 odd, 107, 109, 113, 115

Section 8.4: Read pp. 453–455, Work Exercises 1–19 odd, 25, 39–45 odd, 55

Section 8.5: Read pp. 458–463, Work Exercises 1–17 odd, 23, 31, 43–59 odd, 69, 83, 85, 91, 93

Section 8.6: Read pp. 468–472, Work Exercises 1–25 odd, 37, 43, 63, 65

Section 8.7: Read pp. 474–479, Work Exercises 1–21 odd, 29–37 odd, 43–51 odd, 55, 57, 63–69 odd, 75, 77, 81

Institutional SLOs—Student Learning Outcomes

A.) Critical Thinking: Analyze problems by differentiating fact from opinions, using evidence, and using sound reasoning to specify multiple solutions and their consequences.

C.) Quantitative Reasoning: Identify, analyze, and solve problems that are quantitative in nature

F.) Technical Competence: Utilize the appropriate technology effectively for informational, academic, personal, and professional needs.

Program SLOs

1.) Apply quantitative thinking processes using basic mathematical operations to solve common academic, workplace, and family problems. (Theme: mathematical operations)

3.) Use mathematical tools essential for analyzing quantitative problems and for producing solutions. (Theme: mathematical tools)

5.) Select appropriate math strategies for solving and handling real life problems involving finance, economics, and family issues. (Theme: mathematical problem-solving)

Course SLOs

1. Solve using appropriate techniques: linear equations; equations involving rational expressions or absolute value; equations involving factorable polynomials; and systems of two or three linear equations
2. Graph and analyze linear, polynomial and rational functions using algebraic techniques; graph solution sets of linear and non-linear inequalities in one and two variables
3. Analyze, model, and solve applications ("story" problems) within the scope of the above

Specific Learning Objectives: Upon successful completion of this course, the student will be able to...

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| 1.) Simplify a wide variety of numerical expressions using the properties of the real and complex numbers and the order of operations. |
| 2.) Know and accurately use a wide variety of formulas pertaining to many application problems. |
| 3.) Solve a wide variety of first degree equations and inequalities. |
| 4.) Find solution set of inequalities involving absolute values. |
| 5.) Know and use the distance and mid-point formulas. |
| 6.) Graph linear equations in two variables—lines. |
| 7.) Find the slope and x-and y-intercepts of lines. |
| 8.) Determine when two lines are parallel, perpendicular or neither. |
| 9.) Write an equation for a line given certain essential information about the line. |
| 10.) Graph the solution set for linear inequalities in two variables. |
| 11.) Distinguish between a function and a relation—understand the concepts of domain and range. |
| 12.) Determine the domain and range of a variety of basic functions and sketch their graphs. |
| 13.) Use translations and reflections to graph a wide variety of more complicated functions. |
| 14.) Solve systems of equations by the graphing, substitution, and addition/elimination methods. |
| 15.) Use Gaussian Elimination to solve 2x2 and 3x3 systems. |
| 16.) Recognize inconsistent and dependent systems. |
| 17.) State the infinite solutions for a dependent system by using parameterization. |
| 18.) Use matrix methods, coupled with back substitution, to solve systems of linear equations. |
| 19.) Find determinants. |
| 20.) Solve a wide variety of application problems using systems of linear equations. |
| 21.) Graph the solution set for a system of linear inequalities. |
| 22.) Perform the standard operations on polynomials. |
| 23.) Factor a wide variety of polynomials. |
| 24.) Use factoring to solve higher degree polynomial equations. |
| 25.) Perform the standard operations on rational expressions. |
| 26.) Use synthetic division when appropriate. |
| 27.) Simplify rational expression by extensive use of factoring. |
| 28.) Solve a wide variety of equations involving rational expressions. |
| 29.) Use proportions and variation to solve a wide variety of application problems. |
| 30.) Exploit the connection between radicals and rational exponents to simplify algebraic expressions. |
| 31.) Perform the standard operations on radical expressions. |
| 32.) Perform all the standard operations with complex numbers. |

Proposed Class Schedule (Subject to change)

Tuesday	Thursday
Feb. 10 Introduction to class, Chapter 1 Real number system (review)	Feb. 12 Sec. 2.1, 2.2 Linear Equations
Feb. 17 Section 2.3, 2.4 Applications of linear equations	Feb. 19 Sec. 2.5, 2.6, 2.7 Linear inequalities, absolute value
Feb. 24 Exam 1 (covers Ch. 1 and 2), Sec. 3.1 Rectangular coordinate system	Feb. 26 Sec. 3.2, 3.3 Slope, equations in two variables
March 3 Sec. 3.4, 3.5 Inequalities, functions	March 5 Sec. 3.6 Functions Review
March 10 Exam 2 (covers Ch. 3) Sec. 4.1 Systems of linear equations	March 12 Sec. 4.2 Systems in three variables
March 17 Sec. 4.3 Applications	March 18 Sec. 4.4 Matrix methods
March 24 Appendix A Determinants, review	March 26 Exam 3 (covers Ch. 4 & App. A) Sec. 5.1 Exponents
March 31 <i>Cesar Chavez Day- NO CLASS</i>	April 2 Sec. 5.2, 5.3 Polynomials and functions
April 7 <i>Spring Break- NO CLASS</i>	April 9 <i>Spring Break- NO CLASS</i>
April 14 Sec. 5.4, 5.5 Operations on polynomials	April 6 Appendix B Synthetic Division, Review
April 21 Exam 4 (covers Ch. 5 & App. B) Sec. 6.1 GCF, factoring	April 23 Sec. 6.2, 6.3 Factoring techniques
April 28 Sec. 6.4, 6.5 Solving equations by factoring	April 30 Exam 5 (covers Ch. 6) Sec. 7.1 Operations on rational expressions
May 5 Sec. 7.2, 7.3 Adding and subtracting rational expressions, complex fractions	May 7 Sec. 7.4, 7.5 Rational equations and graphs, applications
May 12 Sec. 7.5, 7.6 Applications of rational expressions, variation	May 14 Exam 6 (covers Ch. 7) Sec. 8.1 Radical expressions
May 19 Sec. 8.2, 8.3 Rational exponents, simplifying radicals	May 21 Sec. 8.4 Operations on radical expressions
May 26 Sec. 8.5, 8.6 Equations with radicals	May 28 Sec. 8.7 Complex numbers, review
June 2 <i>Optional Extra Review for Final Exam</i> (not a regular class day)	June 4 FINAL EXAMINATION