

**New Mexico State University Grants Campus
Fall 2006**

CCDM 114N: Algebra Skills

4Cr.

Overview: CCDM 114N is designed for students who have had some high school algebra, and who need to brush up on weak algebra skills. Students who have had little or no high school algebra are strongly encouraged to take CCDM 112N and CCDM 113N instead of CCDM 114N. Although CCDM courses do not apply toward a degree, the skills learned are essential for most degree programs. Also, the completion of CCDM 114N with a grade of C or higher satisfies the University's Mathematics Basic Skills requirement necessary in order to enroll in any upper-division course numbered 300 or higher. The prerequisite for CCDM 114N is a grade of C or better in CCDM 103N, or an adequate score the Arithmetic portion of the Computerized Placement Exam.

Expected Outcomes: Students will learn to perform operations on integers and rational numbers, square roots, exponential expressions with integer exponents, and polynomials (including factoring), and to graph linear and quadratic equations. They will also learn to solve linear, rational and quadratic equations (real-number solutions only), systems of linear equations, linear inequalities, formulas and applied problems.

Instructional Activities: The course is individual-paced. More specific information is included in the instructions.

Evaluation: In order to pass the course with a grade of A, B or C, students must earn a score of at least 80% on each of seven tests and a midterm, and a score of at least 60% on a comprehensive final. At the end of the semester, the eight test scores and the final exam score (counted as two tests) will be averaged together to obtain the course score. The final grade in the course will be based on the course score, with the grading scale as follows:

90 - 100	A
80 - 89	B
70 - 79	C
60 - 69	D
Below 60	F

Text: Introductory Algebra, 10th Edition, by Marvin L. Bittinger.

Calculator: An approved calculator may be used on all tests except Test 1. The TI-30X IIB is the recommended calculator for the course.

COURSE FORMAT: This is a course in which you move at your own pace within guidelines. Although no lectures are given, you may check out video-taped lectures from the library or view lectures on DVD in the math lab.

COURSE REQUIREMENTS: In order to earn a grade of A, B or C, you must complete all course requirements on schedule, including the final exam. If you do not complete the course in one semester, but are making satisfactory progress, you receive a grade of RR ("re-register" - no credit). See RR* below. You must pass each unit test in this course with a score of 80% or better before proceeding to the next unit. In order to receive a passing grade on an exam, you must show all your work, turning in scratch paper, if any. You may take each unit test as many times as necessary to pass it. After passing a unit test, you may re-take it for a higher grade if one of the following criteria has been met: (1) you passed it on or before the recommended test date, or (2) you passed it on the first attempt. If you do not achieve mastery on the first attempt, it is up to the instructor to determine when further attempts are allowed. Students testing outside of class will be required to produce a test slip signed by the instructor. Any unit test may be taken at the most once per day. The instructor may limit the number of units over which you may test in any given week. If you are not making minimum progress towards a grade of RR (i.e., not having passed at least three tests) by the deadline to withdraw, you may be dropped from the course by the instructor. If, by the end of the semester, you have not completed at least three unit tests and the midterm or withdrawn from the course, you will receive a grade of F.

ATTENDANCE: "Class attendance" means arriving when class is scheduled to begin, leaving when class is scheduled to end, and working on mathematics while present. You may be asked to sign in at the beginning and end of class.

HOMEWORK: Homework is essential and mandatory. In order to receive credit for completing homework, you must show all your work. If you complete, on average, about two sections a day, five days a week, you should be able to finish the course in one semester. Before taking each unit test, you **must** complete the required exercises as outlined and present them to your instructor for permission to take the unit test. Pencil must be used on all exams. There are no exceptions! Your instructor may assign additional homework at any time.

EVALUATION: In order to receive a grade of C or better in the course, you must pass all unit tests with a score of 80% or better, and you must pass the comprehensive final exam with a score of 60% or better. The final exam counts as two unit tests and may be taken no more than two times. If you take the final exam twice, the first attempt will count as one unit test and the second attempt as one unit test. The only exception will be the case in which the grade on the first attempt is the higher of the two; in that case, only the grade on the first attempt will be counted.

RR(RE-REGISTER) OPTION*: If you do not complete the course in one semester, but are making satisfactory progress, you receive a grade of RR ("re-register" - no credit). Then you must pay full tuition to re-enroll and complete the course the next semester immediately following. **"Satisfactory progress"** as used to determine a grade of RR means: (1) You

must have passed at least four unit tests and the Midterm with a minimum score of 80%; (2) You must have regular class attendance. Specifically, you must have no more than three unexcused absences. Satisfactory explanation for excused absences must be presented in a timely manner - beforehand, if possible. If, after earning a grade of RR one semester, you re-enroll yet fail to either complete the course or withdraw from it, you will receive a grade of F. When you re-register after earning a grade of RR, you must retake and pass the Midterm by the designated deadline before taking further unit tests. Otherwise, you must start over with Unit One. You must finish the course the second semester, since you may not earn another grade of RR in CCDM 114N.

CCDM 114N Testing Schedule**Fall 2006**

Schedule for students starting at beginning of text:

Unit	TTh
One (Ch. 1)	9/26
Two (Ch. 2)	10/5
Three (Ch. 4)	10/12
Four (Ch. 5)	10/24
Midterm	11/2
Five (Ch. 6)	11/14
Six (Ch. 3)	11/21
Seven (Ch. 8 & 9)	12/5
Final	12/12

Important Dates to Remember:

Fall Break-No Class.....Monday & Tuesday, October 9 &10
Thanksgiving Holiday-No Classes.....Wednesday – Saturday, November 22-25

SYLLABUS ADDENDUM

- The instructor may modify this syllabus to meet the needs of a particular class.
- If you have, or believe you have, a disability and would benefit from any accommodation(s), you may wish to register with the Student Services Office on the first floor of Martinez Hall. All medical information will be treated confidentially. After you have registered, please make sure that your instructor receives a copy of the accommodation memorandum from Student services within the first two weeks of class. It will be the student's responsibility to inform the office of Student Services (in a timely manner) if services/accommodations provided are not meeting your needs. Feel free to call Ms. Irene Charles-Lutz; Campus Student Services Officer at 287-6629 with any questions about the Americans with Disabilities Act (ADA), and/or Section 504 of the Rehabilitation Act of 1973.
- Any student found guilty of academic misconduct shall be subject to disciplinary action. Academic misconduct includes, but is not limited to, the following actions: cheating; helping other students cheat; plagiarism; unauthorized possession of examinations, reserve library materials or laboratory materials; unauthorized changing of grades on an examination, instructor's grade book or grade report; nondisclosure or misrepresentation in filling out applications or other college records. The following disciplinary actions and sanctions may be imposed for any of the above infractions of regulations: Disciplinary Probation, Disciplinary Suspension, Dismissal, and Expulsion. At the very least, academic misconduct may result in a failing grade in this class.
- Students are expected to attend regularly all classes for which they are registered. When the number of absences is excessive and hinders a student's progress, the instructor may recommend expulsion from the class. For a 15-week course, that means more than **three consecutive absences or five cumulative absences**. Based on the recommendation of the instructor, and with the concurrence of the Campus Instructional Officer and the Campus Student Services Officer, a student will be dropped for persistent absences or for persistent failure to complete class assignments. Similarly, a student may be dropped for behavior that interferes with the educational environment of the class. Any student who has been dropped has the right to appeal through the student Academic Grievance Policy (see Student Handbook).

CCDM 114N: Introductory Algebra Homework Exercises

Text: Introductory Algebra, Tenth Edition, by Marvin L. Bittinger.

In order to learn mathematics, it is essential that you practice the skills as you learn them. You **must** complete all required exercises (those enclosed in a rectangle) before attempting a test. It is **strongly recommended** that you complete all the listed exercises in each section, particularly if you are having difficulties with the required exercises in that section. Be sure to check the answers to each odd-numbered exercise after working it. Be sure to show **all** your work! You will not be allowed to use a calculator on test 1. After you have passed the Chapter 1 test, you may use a calculator on all homework and exams.

Unit 1: Chapter 1 - Introduction to Real Numbers and Algebraic Expressions

- R.5** 1, $\boxed{2, 3}$, 7, $\boxed{8, 9, 12}$, 20, 27, $\boxed{28, 29, 31}$, 32, $\boxed{34, 35, 37, 39}$, 42, $\boxed{45, 49, 50}$, 51, $\boxed{57, 63, 65}$
- 1.1** $\boxed{2, 3, 4, 5, 6}$, 8, 9, $\boxed{14, 16, 17}$, 19, $\boxed{20, 22}$, 23, 26, 28, 31, 33, 35, 38, 39, $\boxed{41, 42, 44, 51}$,
55, $\boxed{56, 60, 64, 66}$
- 1.2** 3, $\boxed{4, 6, 8, 9, 10}$, 12, $\boxed{13, 15, 21}$, 25, $\boxed{29, 32, 36}$, 37, $\boxed{42}$, 43, $\boxed{50, 51, 54}$, 56, $\boxed{57, 59}$, 61,
 $\boxed{62, 63, 66}$, 68, $\boxed{69, 78, 82, 83}$
- 1.3** $\boxed{1}$, 3, $\boxed{8}$, 9, $\boxed{12}$, 13, $\boxed{18}$, 21, $\boxed{22}$, 23, $\boxed{24}$, 31, $\boxed{32, 36}$, 37, $\boxed{38, 44}$, 45, $\boxed{54, 55, 56}$, 59, $\boxed{60}$, 63,
 $\boxed{64}$, 67, $\boxed{68, 72}$, 73, 77, $\boxed{78, 80, 83, 85, 86}$
- 1.4** $\boxed{1, 3, 6, 9, 11, 16, 17, 18}$, 19, $\boxed{21, 26, 28}$, 31, $\boxed{33}$, 35, $\boxed{36}$, 39, $\boxed{40, 42}$, 47, $\boxed{48, 50, 51}$, 53,
 $\boxed{54}$, 55, $\boxed{56, 58, 66}$, 69, $\boxed{70}$, 81, $\boxed{82, 86}$, 87, 93, $\boxed{94}$, 95, $\boxed{96, 98, 100, 104, 106, 107}$
- 1.5** $\boxed{1}$, 3, $\boxed{6, 8, 11, 12, 20}$, 23, $\boxed{29, 32}$, 37, $\boxed{38, 39}$, 43, $\boxed{44, 51, 59}$, 67, $\boxed{68, 72, 75, 82, 85, 87}$,
 $\boxed{88}$
- 1.6** 1, $\boxed{2, 8}$, 9, $\boxed{14, 17, 18, 20}$, 21, $\boxed{22, 25, 26, 31, 37}$, 38, $\boxed{39}$, 49, $\boxed{50, 53, 54}$, 63, $\boxed{64, 72, 77}$,
 $\boxed{78}$
- 1.7** 2, $\boxed{3, 4}$, 8, $\boxed{9, 10}$, 13, $\boxed{14}$, 22, $\boxed{23, 24, 29}$, 30, $\boxed{33}$, 37, $\boxed{38, 40, 41, 43}$, 46, $\boxed{47, 56, 61}$, 65,
 $\boxed{66, 72}$, 73, $\boxed{74, 76, 78}$, 87, $\boxed{88, 89, 92}$, 93, $\boxed{96}$, 99, $\boxed{100, 106, 107}$, 108, $\boxed{109, 130, 131}$,
 $\boxed{132}$
- 1.8** 1, $\boxed{2, 11}$, 13, $\boxed{14, 18}$, 19, $\boxed{20}$, 23, $\boxed{24}$, 25, 27, $\boxed{28, 30, 34}$, 35, $\boxed{36, 38}$, 39, 41, $\boxed{42}$, 43, $\boxed{44}$,
 $\boxed{48, 51, 52}$, 53, $\boxed{60, 62, 65, 85, 86, 87, 88, 89, 90, 91, 92}$

Unit 2: Chapter 2 - Solving Equations and Inequalities

- 2.1 1, **2, 3**, 7, **8, 9**, 13, **14, 15**, 19, **20, 28, 31**, 35, **36, 37**, 45, **46, 61, 63, 64**
- 2.2 1, **2**, 5, **6**, 7, **8, 15, 16**, 17, **18, 22, 23, 26**, 27, 31, **32**, 35, 39, **40, 41, 45, 48, 50, 52**
- 2.3 1, **2**, 5, **8**, 9, **10, 12**, 17, **18**, 21, **22, 23**, 27, **28**, 33, **34**, 39, **40**, 43, **44**, 45, **46**, 49, **50**,
53, **54, 58**, 59, **60**, 63, **64**, 65, **66**, 69, **70, 71**, 77, **78, 79, 82, 83, 98, 100, 102**
- 2.4 1, **2, 3, 4, 5, 6**, **8, 9**, 11, **12**, 15, **18**, 27, **28**, 31, **32**, 33, **35, 36, 37, 40**, 45, **46, 48, 54**,
56, 60
- 2.5 1, **2**, 3, **4**, 5, **6**, 9, 15, 17, **18, 20**, 21, 23, **26**, 27, **28, 30**, 31, **34, 35**, 39, **40, 41, 42**, 47,
48, 50, 64, 67, 68
- 2.6 1, **2, 4, 6, 8**, **9, 10**, 11, **12, 13, 15, 16, 18**, 19, **22**, 23, **25, 26**, 29, **30**, 31, 32, 33, **39**,
40, 41, 42
- 2.7 1, **2, 6, 8, 9, 10**, 11, **12**, 15, **16, 18**, 23, **24**, 27, 33, **34**, 35, **36, 38**, 39, **42**, 49, **50, 58**,
61, **64, 66, 71, 95, 96, 98**
- 2.8 1, **2, 4**, 5, 7, **8**, 9, 11, **12**, 13, **14**, 15, **16**, 17, **18**, 19, **20**, 21, **22, 24, 28**, 29, **30**, 33, 41,
42, 53, 54, 55, 56, 57, 58, 59, 60

Unit 3: Chapter 4 - Polynomials Operations

- 4.1 1, **2, 8**, 9, **11**, 13, **14, 20, 27**, 32, **36, 41, 42**, 43, **44, 50**, 53, **54, 58, 59**, 63, **64**, 67, **68**,
72, 75, **76, 82, 86**, 87, **88, 94**, 97, **98**, 101, **106, 109**, 111, **112, 115, 116, 117, 118**
- 4.2 1, **2, 3, 6**, 15, **16**, 21, **22**, 25, **26, 28**, 41, **42, 43**, 49, **50**, 53, **54**, 57, **58, 64, 65**, 67,
68, 71, **72**, 75, **76**, 81, **82, 93, 95, 107, 108**
- 4.3 1, **2, 3**, 11, **12**, 13, **14, 19**, 29, **30**, 37, **38, 42**, 47, **48, 49, 52**, 57, **58**, 61, **62, 70**, 71,
72, 75, **76, 78, 82**, 83, **84**, 89, **90**, 95, **96, 98, 102, 110, 111, 112**
- 4.4 1, **2**, 7, **8, 12**, 21, **22, 24**, 33, **34, 36**, 39, **40**, 47, **48, 53, 54, 55, 56, 68, 70, 74**
- 4.5 1, **2, 6, 14**, 15, **16, 17, 22**, 27, **28, 29, 32, 36**, 53, **54**, 55, **58, 78, 82, 85**
- 4.6 1, **2**, 9, **10, 11**, 15, **16**, 21, **22, 25, 35**, 43, **44, 45, 48**, 53, 63, **64, 66**, 67, 73, **74**, 79,
80, 85, **88, 111, 112**

4.7 Omit

4.8 1, 2, 3, 7, 8, 9, 10, 11, 14, 21, 22, 25, 26, 27, 31, 32, 33, 34, 37, 45, 46, 47, 48, 49, 50, 51, 52

Practice Test: Chapter 4, Pages 386 - 387, Problems 1 - 40 all, 44, 45, 46

Unit 4: Chapter 5 - Polynomial Factoring

5.1 1, 2, 3, 4, 10, 13, 14, 15, 19, 20, 23, 24, 29, 33, 35, 36, 37, 38, 39, 40, 43, 47, 48, 49, 63, 64, 65, 66

5.2 1, 2, 3, 5, 9, 10, 13, 14, 15, 17, 18, 19, 21, 22, 23, 25, 26, 31, 32, 43, 46, 49, 50, 56, 59, 60, 72, 76, 80

5.3 Omit

5.4 Omit

5.5 1, 2, 3, 6, 7, 9, 10, 11, 17, 18, 20, 21, 23, 24, 28, 37, 38, 39, 41, 42, 43, 44, 47, 49, 50, 51, 55, 56, 57, 59, 61, 62, 63, 65, 66, 67, 75, 76, 80, 92, 94, 96

5.6 1, 2, 3, 4, 7, 8, 11, 15, 17, 18, 25, 26, 35, 36, 48, 49, 50, 69, 81, 82, 86

5.7 1, 2, 5, 7, 8, 9, 13, 14, 25, 26, 27, 31, 32, 33, 37, 38, 39, 41, 42, 49, 50, 57, 58, 61, 63, 64, 69, 70

5.8 1, 2, 3, 4, 5, 6, 7, 19, 20, 21, 22, 25, 26, 27, 28, 29, 33, 34, 39, 40, 41, 42, 43, 44, 45, 46

Practice Test: Chapter 5, Pages 469 - 470, Problems 1- 29 omit 8, 11, 16, 19, 20, 23

Midterm

In order to prepare for the midterm, it is strongly recommended that you complete the

Cumulative Review: Chapter 1 - 4, Pages 388 - 390, 1 - 64 omit problem 63 also

Summary and Review: Chapter 5, Pages 466 - 468, 1 - 43 with the exception of the

following: 10, 12, 22, 24, 29, 30, 31, 32, 33, 37, 38

Unit 5 Chapter 6: Rational Expressions and Equations

- 6.1 1, 2, 3, 4, 5, 6, 7, 9, 11, 21, 22, 23, 25, 26, 29, 30, 31, 33, 34, 35, 39, 40, 41, 47, 48, 49, 51, 52, 55, 56, 58, 59, 60, 62, 63, 64, 75, 76, 83
- 6.2 1, 2, 3, 5, 9, 10, 13, 14, 17, 18, 19, 21, 25, 26, 31, 32, 34, 39, 40, 42
- 6.3 1, 2, 4, 11, 14, 17, 18, 21, 22, 24, 26, 27, 30, 31, 39, 44, 46, 48
- 6.4 1, 2, 5, 6, 7, 8, 10, 12, 13, 17, 18, 19, 21, 22, 23, 25, 26, 28, 29, 30, 31, 32, 33, 39, 40, 41, 43, 44, 47, 69, 70, 71, 72
- 6.5 1, 2, 3, 5, 6, 9, 10, 12, 13, 14, 16, 17, 21, 22, 27, 28, 31, 39, 53, 54, 58, 60, 62
- 6.6 1, 2, 3, 7, 8, 11, 17, 18, 19, 20, 21, 22, 27, 28, 31, 32, 34, 39, 40, 53, 54, 55, 56, 57, 58, 59, 60
- 6.7 11, 12, 14, 15, 16, 17, 18, 19, 23, 24, 26, 27, 28, 31, 32, 36, 43, 44, 45, 46, 49, 50, 52, 55, 64, 66, 68
- 6.8 Omit
- 6.9 Omit

Practice Test: Chapter 6, Pages 554 - 555, Problems 1 - 31 omit 7, 9, 18, 29

Unit 6 Chapter 3: Graphs of Linear Equations

- 3.1 1, 2, 3, 4, 7, 8, 9, 10, 12, 15, 16, 17, 18, 22, 23, 24, 28, 29, 30, 32, 33, 35, 36, 37, 38, 39, 40, 43, 44, 46, 47, 48, 52, 53, 54, 55, 59, 60, 61, 62, 66, 68, 73, 74
- 3.2 1, 3, 4, 5, 6, 12, 13, 14, 15, 16, 18, 25, 26, 30, 38, 39, 40, 41, 42, 43, 44, 46, 51, 53, 54, 57, 58, 63, 65, 66
- 3.3 1, 2, 3, 4, 7, 8, 9, 10, 19, 20, 21, 25, 26, 27, 28, 30, 31, 33, 37, 38, 39, 41, 42, 53, 55, 56
- 3.4 1, 2, 5, 6, 8, 12, 13, 14, 15, 17, 18, 22, 25, 27, 30, 33, 34, 37, 38, 41
- 3.5 1, 2, 5, 6, 8, 9, 13, 14, 17, 18, 21, 22, 23, 24, 25, 26, 30, 34, 38, 40
- 3.6 Omit
- 3.7 1, 2, 4, 5, 6, 7, 10, 13, 14, 15, 17, 18, 22, 24, 26, 27, 29

Practice Test: Chapter 3, Pages 299 - 302, Problems 1 - 36 omit 13, 29, 30, 31, 32

Unit 7 Chapter 8 - Radical Expressions and Equations

Unit 9 Chapter 9 - Quadratic Equations

8.1 1, 2, 3, 4, 8, 11, 12, 13, 14, 16, 18, 19, 21, 22, 23, 24, 26, 27, 28, 31, 32, 33, 34, 35, 37, 38, 42, 45, 46, 47, 48, 51, 52, 53, 56, 61, 62, 69, 70, 71

8.2 1, 2, 3, 4, 5, 6, 13, 14, 15, 17, 18, 21, 22, 23, 27, 28, 35, 36, 37, 38, 39, 40, 43, 44, 49, 50, 55, 56, 57, 59, 60, 62, 67, 68, 71, 72, 77, 78, 79, 80, 81, 82, 92, 94, 96

8.3 1, 2, 3, 4, 7, 8, 11, 12, 15, 16, 17, 18, 25, 26, 27, 33, 34, 35, 38, 49, 50, 57, 58, 69, 70, 83, 84, 92

8.4 Omit

8.5 1, 2, 3, 5, 6, 8, 9, 10, 14, 15, 16, 21, 22, 27, 29, 45, 46, 48, 49, 50, 53, 54, 55, 56, 57, 58, 59, 60

8.6 1, 2, 3, 5, 6, 8, 13, 14, 21, 22, 23, 24, 25, 26, 27, 28, 35, 36

9.1 1, 2, 3, 4, 7, 8, 23, 24, 25, 27, 28, 41, 43, 49, 50, 53, 54, 57, 72, 74, 76

9.2 1, 2, 3, 9, 10, 11, 15, 16, 17, 23, 24, 61, 62, 63, 64, 65, 66, 67, 68

9.3 1, 2, 3, 9, 10, 11, 12, 13, 15, 17, 18, 20, 23, 24, 25, 26, 35, 36, 39, 40, 50, 52, 53

9.4 Omit

9.5 Omit

9.6 Omit

9.7 Omit

Practice Test: Chapter 8, Pages 660 - 661, Problems 1- 35 omit 25, 26, 27, 28, 29, 33

Practice Test: Chapter 9, Pages 727 - 728, Problems 1- 13 omit 4, 10, 11, 12

Final Examination

In order to prepare for the final exam, it is recommended that you work the following exercises in the sample final in the text beginning on page 729: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 49, 50, 51, 52, 53, 54, 56, 62, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 84, 85, 86, 88, 89, 90, 91, 93, 94, 95, 100, 102, 103, 104