

SYLLABUS

MAT137 – INTERMEDIATE ALGEBRA

CRN 10338, SPRING 2008 SEMESTER

Monday and Wednesday, 12:30 p.m. – 1:50 p.m., Room 313, Mohegan Campus

Three Rivers Community College, 7 Mahan Drive, Norwich, Connecticut 06360

INSTRUCTOR INFORMATION

MRS. MARY ANNE STEWART, Adjunct Instructor

OFFICE HOURS: Mon. & Wed. 11:30 a.m. – 12:20 p.m., adjunct cubicle in the “shop wing”

VOICE MAIL: (860) 886-0177, ext. 2114

E-MAIL: mstewart@trcc.commnet.edu

WebCT MAIL: Log on to <http://vista.ctdlc.org>, select this course, use the “Mail” feature

COURSE DESCRIPTION

This course continues the development of algebraic skills and concepts. The topics include linear equations, functions and graphs, applications of systems of equations, inequalities, rational expressions and equations, operations on radicals and rational exponents, quadratic equations, exponential and logarithmic functions.

Prerequisite: Acceptable placement score or MAT095 with a “C#” grade or better. A thorough knowledge of basic algebra is needed for this course.

REQUIRED TEXT

Intermediate Algebra: A Graphing Approach, 3rd ed., Martin-Gay and Greene, ©2005 Pearson Education, Inc., ISBN 0-13-146900-2 (student edition)

SUPPLIES

One (1) three-ring notebook binder (Optional: tabbed dividers or similar to section your notebook)

Pencils and erasers

Paper for note-taking and assignments

One 6” or 12” ruler

Texas Instrument graphing calculator TI-83. Students should attend one of the calculator workshops.

ASSIGNMENTS

Students are expected to work on assignments regularly and to seek assistance if the problems are not understood. All work should be kept in a notebook which may be reviewed by the instructor.

COURSE CONTENT and OUTCOMES

See attached sheet.

COURSE SCHEDULE, ASSIGNMENTS, and DUE DATES

See attached GREEN sheets. Place these at the front of your notebook and refer to them for each class.

DISABILITIES STATEMENT

Students with hidden or visible disabilities who may require special accommodations and support services are encouraged to notify the instructor and Chris Scarborough, (860) 892-5751, who is coordinating services to students with disabilities, during the first two weeks of class.

METHOD OF EVALUATION

The student's grade for the course will be determined by the arithmetic average of four (4) tests. Each test will be graded based on a maximum of 100 points. Each student will be allowed to make-up any one test of the student's choice on the scheduled make-up test day. (See schedule.)

GRADING SYSTEM

These letter grades and corresponding numerical grades will be used for tests and the course grade:

A (94–100), A– (90–93), B+ (87–89), B (83–86), B– (80–82), C+ (77–79), C (73–76), C– (70–72), D+ (67–69), D (63–66), D– (60–62), F (below 60)

ACADEMIC INTEGRITY POLICY

Each student is expected to demonstrate his/her knowledge of the subject matter on each test. Any student(s) caught cheating on a test will receive a numerical grade of zero for that test and will not be allowed to make-up that test.

COLLEGE WITHDRAWAL POLICY

April 29 Last day to withdraw from classes (Withdraw at the Registrar's Office)

CLASS CANCELLATION POLICY

If class is cancelled by the school, pay attention to radio and TV announcements, call the college's main phone number 860-886-0177, or visit the college's home web page www.trcc.commnet.edu.

If class is cancelled by the instructor, a notice will be placed on the classroom door. If time permits, students may be notified by email, phone, or a message on the instructor's voice mail.

ATTENDANCE

Students are expected to attend all classes, to arrive for class on time, and to remain for the duration of the class meeting. It is the student's responsibility to request any missed work, assignments, or materials before the next class. Students who are consistently tardy, leave class early, and/or walk in and out of class are a distraction to the instructor and the other students. This results in a disruption of the class and the learning process. (See "Student Behavior.")

RULES of CONDUCT in CLASS

- **No food or beverages in the classroom.**
- **Electronic/digital devices:** Cell phones, beepers and similar devices are allowed in class if they are turned off or turned to a silent mode. These devices are NOT to be used in class. When there are extenuating circumstances that require a student be available by such a device, the student must speak to the instructor prior to class, so that together they can arrive at an agreement.
- **Student Behavior:** *"The College has the right and responsibility to take appropriate action when a student's conduct directly and significantly interferes with the College's educational mission and the rights of others to pursue their educational objectives in an environment conducive to learning."* - from the TRCC Student Handbook
Such action will, at minimum, be the removal of the student from the remainder of that day's class and any graded work from that day will be graded zero, F, with no possibility to make-up that work.

COURSE CONTENT AND OUTCOMES

CHAPTER 1: Real Numbers, Algebraic Expressions, and Equations

Upon completion, student must be able to:

1. Solve linear equations algebraically,
2. Apply the steps for problem solving, and
3. Solve a formula for a specified variable and use formulas to solve problems.

RIGHT TRIANGLE TRIGONOMETRY

Upon completion, student must be able to:

1. Find the value of trigonometric functions of acute angles,
2. Solve right triangles and applied problems.

CHAPTER 2: Graphs and Functions

Upon completion, student must be able to:

1. Write the equation of a line using slope-intercept form and point-slope form,
2. Write equations of vertical, horizontal, parallel and perpendicular lines, and
3. Graph a line using its slope and y-intercept.

CHAPTER 3: Equations and Inequalities

Upon completion, student must be able to:

1. Solve linear inequalities using the addition and multiplication properties of inequality,
2. Solve problems that can be modeled by linear inequalities, and
3. Find the intersection and union of two sets and solve compound inequalities.

CHAPTER 4: Systems of Equations

Upon completion, student must be able to:

1. Solve a system of linear equations in two variables by graphing, substitution, and elimination,
2. Solve a system of three linear equations in three variables, and
3. Solve problems: a) that can be modeled by a system of two and three linear equations, and b) with cost and revenue functions.

CHAPTER 5: Exponents, Polynomials, and Polynomial Functions

Upon completion, student must be able to:

1. Use the product and quotient rules for exponents, use the power rules for exponents, and use exponent rules and definitions to simplify exponential expressions,
2. Convert between scientific and standard notation and compute using scientific notation,

3. Identify, define, add, subtract, and multiply polynomials; identify and multiply binomials,
4. Multiply the sum and difference of two terms and evaluate polynomial functions,
5. Identify the GCF, factor out the GCF, and factor polynomials by grouping,
6. Factor trinomials and factor by substitution,
7. Factor by special products, and
8. Solve polynomial equations by factoring and problem solving.

CHAPTER 6: Rational Expressions

Upon completion, student must be able to:

1. Find the domain, and simplify, multiply, and divide rational expressions,
2. Use rational functions in applications,
3. Add and subtract rational expressions with common and unlike denominators,
4. Simplify complex fractions and expressions with negative exponents, and
5. Solve equations containing rational expressions and problem solving.

CHAPTER 7: Rational Exponents, Radicals, and Complex Numbers

Upon completion, student must be able to:

1. Evaluate radicals and radical functions,
2. Understand rational exponents and use rules for exponents to simplify expressions,
3. Simplify and solve radical expressions, and
4. Problem solving.

CHAPTER 8: Quadratic Equations and Functions

Upon completion, student must be able to:

1. Solve quadratic equations by completing the square and by the quadratic formula,
2. Solve equations by using quadratic methods, and
3. Graph quadratic functions of special forms.

CHAPTER 9: Exponential and Logarithmic Functions

Upon completion, student must be able to:

1. Solve and graph exponential functions,
2. Use logarithmic notation, Write and solve logarithmic equations, and identify and graph logarithmic functions,
3. Use properties of logarithms,
4. Identify and evaluate common logarithms and natural logarithms, and
5. Solve exponential and logarithmic equations.

MAT137 SCHEDULE, ASSIGNMENTS, DUE DATES

- Place these GREEN sheets in the front of your notebook and refer to them before and after each class.
- This schedule is subject to change at any time. Pay attention to announcements in class and updated info on WebCT Vista.
- If you have any questions, concerns, or need assistance with this course, contact Mrs. Stewart by E-Mail: mstewart@trcc.commnet.edu; WebCT Mail: logo to <http://vista.ctdlc.org>, or by Voice Mail: 886-0177 ext. 2114 (leave message)
- Free tutoring available at TASC in the Learning Resource Centers (libraries) on both campuses.

DATES	TEXTBOOK SECTIONS and TESTS	ASSIGNMENTS (due next class)
Wed., 1/23	Intro to course 1.1 – Tips for Success in Mathematics 1.2 – Algebraic Expressions, Sets of Numbers 1.3 – Operations on Real Numbers 1.4 – Properties of Real Numbers 1.5 – Solving Linear Equations Algebraically For the next class...	Look through the textbook and course materials Read Sec. 1.1-1.5 #1-20 all #1-89 EOO (Every Other Odd) #1-83 EOO #1-105 EOO #1-77 odd Read Sec. 1.6 and 1.8
Mon., 1/28	1.6 – An Introduction to Problem Solving 1.8 – Formulas and Problem Solving For the next class...	#1-61 odd #1-23 odd, 29-43 odd Read Right Triangle Trig Handout
Wed., 1/30	Right Triangle Trigonometry Handout	Practice Exercises #1-20
Mon., 2/4	Right Triangle Trigonometry Handout For the next class...	Practice Exercises #21-31 Read Sec. 2.1 – 2.4
Wed., 2/6	2.1 – Introduction to Graphing 2.2 – Introduction to Functions 2.3 – Graphing Linear Functions 2.4 – The Slope of a Line For the next class...	#29-35 odd #1-11 odd, 23-43 odd, 61-73 odd #13-19 odd, 35-59 EOO #1-85 EOO Read Sec. 2.5, 3.2, 3.3
Mon., 2/11	2.5 – Equations of Lines 3.2 – Linear Inequalities, Problem Solving 3.3 – Compound Inequalities	#1-57 EOO, 75, 77 #1-15 odd, 23-71 EOO, 75, 79 #1-31 odd, 47
Wed., 2/13	Review for Test on Chs. 1, 2, 3 & RTT	List of Study Problems
Mon., 2/18	TEST #1: Chs. 1, 2, 3 & RTT For the next class...	Read Sec. 4.1 and 4.2
Wed., 2/20	4.1 – Solving Systems of Linear Equations in Two Variables 4.2 – Solving Systems of Linear Equations in Three Variables	#1-57 odd, 81-86 all #1-13 odd

	For the next class...	Read Sec. 4.3
Mon., 2/25	4.3 – Systems of Linear Equations and Problem Solving For the next class...	#1-35 odd Read Sec. 5.1 and 5.2
Wed., 2/27	5.1 – Exponents and Scientific Notation 5.2 – More Work w/Exponents, Scientific Notation For the next class...	#1-61 odd, 63-93 EOO #1-55 odd, 57-75 EOO Read Sec. 5.3 – 5.5
Mon., 3/3	5.3 – Polynomials and Polynomial Functions 5.4 – Multiplying Polynomials 5.5 – The GCF and Factoring by Grouping For the next class...	#1-21 odd, 25, 27, 37-69 EOO #1-71 EOO #1-75 EOO Read Sec. 5.6 – 5.8
Wed., 3/5	5.6 – Factoring Trinomials 5.7 – Factoring by Special Products 5.8 – Solving Equations by Factoring, Prob. Solving	#1-13 odd, 21-39 odd, 53-83 EOO, Try #43-49 odd #1-65 EOO #1-87 EOO
Mon., 3/10	Review for Test on Chs. 4 & 5	List of Study Problems
Wed., 3/12	TEST #2: Chs. 4 & 5 For the next class...	Read Sec. 6.1 and 6.2
Mon., 3/17	NO CLASS – Spring Break	
Wed., 3/19	NO CLASS – Spring Break	
Mon., 3/24	6.1 – Rational Functions and Multiplying and Dividing Rational Expressions 6.2 – Adding and Subtracting Rational Expressions For the next class...	#1-75 odd #1-49 odd Read Sec. 6.3 and 6.6
Wed., 3/26	6.3 – Simplifying Complex Fractions 6.6 – Solving Equations Containing Rat'l Expr For the next class...	#1-47 odd #1-45 odd Read Sec. 6.7 and 7.1
Mon., 3/31	6.7 – Rational Equations, Problem Solving 7.1 – Radicals and Radical Functions For the next class...	#1-33 odd #1-75 odd Read Sec. 7.2 and 7.3
Wed., 4/2	7.2 – Rational Exponents 7.3 – Simplifying Radical Expressions For the next class...	#1-85 odd #1-71 odd Read Sec. 7.6 and 7.7
Mon., 4/7	7.6 – Radical Equations and Problem Solving 7.7 – Complex Numbers	#1-18 all, 51-65 odd #1-37 odd, 61-71 odd
Wed., 4/9	Review for Test on Chs. 6 & 7	List of Study Problems
Mon., 4/14	TEST #3: Chs. 6 & 7	

	For the next class...	Read Sec. 8.1 and 8.2
Wed., 4/16	8.1 – Solving Quadratic Equations by Completing the Square 8.2 – Solving Quadratic Equations by the Quadratic Formula For the next class...	#1-37 odd #1-33 odd, 53, 67, 68 Read Sec. 8.3 and 8.5
Mon., 4/21	8.3 – Solving Equations by Using Quadratic Methods 8.5 – Quadratic Functions and Their Graphs For the next class...	#1-17 odd #1-29 odd Read Sec. 8.6
Wed., 4/23	MAKE-UP TESTS TODAY (outside of class time at 11:00 am, 2 p.m., 3:30 p.m.; locations TBD) 8.6 – Further Graphing of Quad. Functions For the next class...	#1-43 odd Read Sec. 9.3 and 9.4
Mon., 4/28	9.3 – Exponential Functions 9.4 – Logarithmic Functions For the next class...	#1-41 odd #1-69 odd Read Sec. 9.5 and 9.6
Wed., 4/30	9.5 – Properties of Logarithms 9.6 – Common Logarithms, Natural Logarithms, and Change of Base For the next class...	#1-17 odd #1-31 odd, 35-49 odd Read Sec. 9.7
Mon., 5/5	9.7 – Exponential and Logarithmic Equations and Applications	#1-39 odd
Wed., 5/7	Review for Test on Chs. 8 & 9	
Mon., 5/12	TEST #4: Chs. 8 & 9 (No Make-up, No Re-take)	
Wed., 5/14	<i>(Make-up class, if necessary.)</i>	