

**Syllabus for Spring 2011**  
**Three Rivers Community College**

**Intermediate Algebra Math 137/CRN 10635**  
**MWF 10 to 10:50 a.m., Room D210**

**Adjunct Instructor:** Sue Butler  
**Email:** sueqbutler@yahoo.com  
**Office Hours:** by appointment or MWF before class.

**Required Materials:**

- *Intermediate Algebra: Functions & Authentic Applications, 4<sup>th</sup> edition*, by Jay Lehmann. You can purchase a hardcover book with the MyMathLab access kit or just the electronic access kit.
- Notebook or binder
- Scientific Calculator or any TI-83 Plus, TI-84, (see Appendix B)

**Grading Policy:**

Your grade for the semester will be calculated out of a total of 400 points:

Midterm exam = 100 points  
Final exam = 100 points  
4 graded Problem Sets @ 50 points each = 200 points

**Homework** will be assigned at each regular class session, excluding exam days. Homework will be collected and recorded for effort, not accuracy. Up to 20 homework points will be added to the total number of points earned for the semester, based on the percentage of completed assignments and according to the following guidelines:

1. Clearly label homework assignments with your name, date, and chapter section(s).
2. Copy each original homework problem. (exception: word problems)
3. Show all work. "Answer lists" will not be accepted.
4. Clearly label your answer(s).
5. Compare your answers to the answer keys or solutions manual. Mark your answers as correct (c) or incorrect (x). Check **each problem** *one at a time* as you work through an assignment. This will prevent repeating the same mistakes and alert you to where you may need help and what questions need to be reviewed during class.
6. Optional: Notes for the instructor, such as "Help!" or "I don't understand!" or "This is fun!"

## Grade Equivalents:

A	93 - 100	372 points or higher
A-	90 – 92	358 – 371 points
B+	87 – 89	346 – 357 points
B	83 – 86	330 – 345 points
B-	80 – 82	318 – 329 points
C+	77 –79	306 – 317 points
C	73 – 76	290 – 305 points
C-	70 – 72	278 – 289 points
D+	67 – 69	266 – 277 points
D	63 – 66	250 – 265 points
D-	60 –62	238 – 249 points
F	59 or lower	237 or lower
I	incomplete (see below)	

## Absence:

If you are absent on the day of an exam you will have until the *next regularly scheduled class session* to contact me and make arrangements to take your exam.

## Resources:

- **TASC (Tutoring Center)** is located in room C-117. TASC provides free one-to-one tutoring. Also, TASC’s portion of the school’s website has many links to other online resources; go to the TASC homepage at [http://www.trcc.comment.edu/ed\\_resources/task/index.htm](http://www.trcc.comment.edu/ed_resources/task/index.htm) and follow the link to “online Resources.”
- **Each other:** exchange contact information with classmate(s).

## Classroom Policy:

I respect you and expect respect from you. Being a mature college student entails responsibility. This means you are responsible for yourself, your education, your assignments, your behavior, your attitude, your timeliness, and your contributions to the classroom atmosphere. I expect all students to be prompt, attentive, prepared, supportive of their classmates, and contribute to a positive classroom atmosphere.

**Cell phone Use:** Please turn off the ringer before the start of each class.

## **Course Outline:**

We will cover the following sections of the text:

### **Chapter 1. Linear Equations and Linear Functions**

1.6 Functions

### **Chapter 2. Modeling with Linear Functions**

2.1 Using Lines to Model Data

2.2 Finding Equation of Linear Models

2.3 Function Notation and Making Predictions

**Trigonometry** – (On the TRCC website, click Academics, scroll down and click Math Dept. and under the “News” heading you will find a link to the pdf)

### **Chapter 3. Systems of Linear Equations**

3.2 Using Substitution and Elimination to Solve Systems

3.3 Using Systems to Model Data

### **Chapter 4 Exponential Functions**

4.1 Properties of Exponents

4.2 Rational Exponents

4.3 Graphing Exponential Functions

4.4 Finding Equation of Exponential Functions

4.5 Using Exponential Functions to Model Data

### **Chapter 5. Logarithmic Functions**

5.2 Logarithmic Functions

5.3 Properties of Logarithms

5.4 Using the Power Property with Exponential Models to Make Predictions

5.5 More Properties of Logarithms

5.6 Natural Logarithms

### **Chapter 6 Polynomial Functions**

6.1 Adding and Subtracting Polynomial Expressions and Functions

6.2 Multiplying Polynomial Expressions and Functions

6.3 Factoring Trinomials of the Form  $x^2 + bx + c$

6.4 Factoring Polynomials

6.5 Factoring Special Binomials

6.6 Using Factoring to Solve Polynomial Equations

## **Chapter 7. Quadratic Functions**

- 7.1 Graphing Quadratic Functions in Vertex Form
- 7.2 Graphing Quadratic Functions in Standard Form
- 7.3 Using the Square Root Property
- 7.5 Using the Quadratic Formula
- 7.6 Solving Systems of Linear Equations in Three Variables
- 7.7 Finding Quadratic Models

## **Chapter 8 Rational Functions**

- 8.1 Finding the Domains of Rational Functions
- 8.2 Multiplying and Dividing Rational Expressions
- 8.3 Adding and Subtracting Rational Expressions
- 8.5 Solving Rational Equations
- 8.6 Modeling with Rational Functions

## **Chapter 9. Radical Functions**

- 9.1 Simplifying Radical Expressions
- 9.2 Adding, Subtracting, Multiplying Radical Expressions
- 9.5 Solving Radical Equations

This course has been set up as a **MyMathLab-based course**.

MyMathLab is a website that is available to you **24/7**, whereas our total class time each week is less **than 3 hours**.

MyMathLab is an incredibly powerful tool to help you master the concepts in this course.

MyMathLab is not required to successfully complete this course; however it is **strongly recommended** that you take advantage of the opportunities available to you only through MyMathLab.

#### Homework and Practice Exams posted on MyMathLab

Homework will roughly match the textbook assignments. Successful completion of MyMathLab homework will earn bonus points towards each exam, up to 20%.

MyMathLab provides instant feedback for each problem as you work through assignments, and opportunities to “help me solve this”, and “ask your instructor”, and options to repeat similar problems until you master each concept.

MyMathLab contains an online version of your textbook, links to video clips, practice exercises, animations, and unlimited tutorial exercises.

It will be your responsibility to use MyMathLab to familiarize yourself with the material covered each week, and to keep up with the course schedule in case of absences, class cancellations due to inclement weather, or instructor absence.

### MyMathLab Registration instructions:

The codes you need to register online with MyMathLab are provided in **new** textbooks in the student registration packet, **OR** for a separate fee using a credit card.

Go to the website: [www.coursecompass.com](http://www.coursecompass.com), and under “Student” click on “register.”

You will be prompted to enter the code that comes with the packet. Please record your choices for your username and password. You will need them each time you log into MyMathLab. Your home computer may need to install “installation wizard”, and “allow pop-ups on this site only”. The zip code for Norwich is 06360.

When you return to the website and have logged in, click on our course name to proceed to the “homework” menu.

**Our Course Code is: butler56222**

Please be sure to log in to the correct course.

**“Incomplete”:** College policy states: “An incomplete (I) is a temporary grade assigned to a student who does not complete the requirements of a course in the time allowed and who received a written time extension from the instructor. The incomplete (I) must be resolved by the end of the 10<sup>th</sup> week of the next academic semester or it automatically converts to an F.”

Any student who wishes to pursue an incomplete must meet with me before the last week of class for approval. If approval is granted I will provide the incomplete agreement to sign and file with the Academic Dean.

**Withdrawal Policy:** A “drop or withdrawal” from the course will be accepted through the 10<sup>th</sup> week of classes in accordance with the designated withdrawal deadlines.

Students need to fill out the special withdrawal form available at the registrar’s office: Withdrawals are processed only through the Registrar’s Office at (860) 892-5756 or the Subbase at (860) 445-5575. Students who do not withdraw, but stop attending will be assigned an "F".

**Disabilities Statement:** If you are a student with a disability and believe you will need accommodations for this class, it is your responsibility to contact the disabilities Counseling Services at 383-3240. To avoid any delay in the receipt of accommodations, you should contact the counselor as soon as possible. Please note that I cannot provide accommodations based upon disability until I have received an accommodation letter from the disabilities counselor.

**Calculator:** The TI-83 or TI-84 is required. You may want to use the TI-89 if you are taking math courses beyond intermediate algebra. Any standard calculator will work also.

## General Tips for Success

Attend all class periods Please be prompt. Excessive tardiness is disruptive. Make sure your work hours do not conflict with the course schedule. Have a back up plan for emergencies: car trouble, illness, child care.

Come to class prepared: bring a notebook, pencil or pen, and textbook to every class.

Do your homework, “practice makes perfect”, especially algebra!

Check your work. Do one problem at a time and check your answer before proceeding to the next problem. If you have made a mistake try to figure out what went wrong. Then correct your mistake. Rework the problem from the beginning. Click on “do a similar exercise” on MyMathLab as many times as needed to master a skill.

Learn from your mistakes. Don’t skip steps. DO NOT try to do it all ‘in your head’. Skipping steps will ultimately waste your time from making simple errors.

Ask questions! My experience tells me that if you have a question, then at least 5 other classmates have the same question. There is no such thing as a stupid question.

Take notes. Jot down notes as you go through the MyMathLab instruction segments, take notes from the board, do your homework assignments *neatly*; use your notebook to work out the online assignments and tutorials.

Use class time wisely. Visiting other websites or conducting personal business during class time is prohibited.

“I hear and I forget,  
I see and I understand,  
I do and I learn.”-Confucius

Translation: You have to **do** the math to **learn** the math!

Best wishes for your success in mathematics!

## **Math 137 Readiness Check:**

**Appendix A**, p. 626 – 634, answers p. 692

Try A4, A5, and A6 on your calculator to test your calculator skills.

In class review: A10, p. 632

A11, p. 633

**Appendix B**, Using a TI-83 or TI-84 Graphing Calculator, p. 635

### **Chapter One homework**

Complete each section ONLY IF it has been covered in class.

Reminder: follow homework guidelines.

1.6 p. 48 (1, 5, 7 – 14, 15, 19, 21, 26, 31, 35, 39, 41)

Ch. 1 Review p. 54 (38, 39 – 43)

Ch. 1 Test p. 55 (21, 22)

### **Chapter Two homework**

2.1 p. 63 (1, 3)

2.2 p. 71 (pick one: 3, 5, or 7), do 17.

2.3 P. 84 ( 1, 7, 11, 15, 21, 25, 29, 33, 40, 43-51 odd, 57, 58, 79, 83 abc)

### **Trigonometry**

Packets available on TRCC website,

Email me for additional materials, and I will send them to you in an attachment.

### **Chapter Three homework**

3.2 p. 123 (3, 9, 17, 23, 37, 41, 45)

3.3 p. 129 (13, 15)

### **Chapter Four homework**

4.1 p. 173 (1 – 91) every third odd

4.2 p. 182 ( 1 – 69) every other odd

4.3 p. 190 (1, 7, 11, 17, 19, 23, 37-51 every other odd

4.4 p. 198 (3, 5-19 every other odd, 27, 29, 41, 43)



### **Chapter Five homework**

- 5.2 p. 234 (1, 3, 9, 11, 17, 19, 29, 35, 43-57 odd, 63-67 odd)  
5.3 p. 241 1 – 63 odd  
5.4 p. 248 1, 3, 5  
5.5 p. 258 1 -29 odd  
5.6 p. 265 1 – 47 every other odd

### **Chapter Six homework**

- 6.1 p. 282 7, 11, 17, 19, 23, 29, 41 – 55 odd, 59-65 odd, 67, 73  
6.2 p. 293 3, 7, 9, 13, 17, 23, 27, 33, 37, 39, 41, 47, 49, 51, 55, 59  
6.3 p. 303 1, 7, 15, 21, 27, 33, 39, 45, 51, 57  
6.4 p. 310 1, 5, 9, 11, 13, 19, 25, 31, 39, 45, 49  
6.5 p. 316 1, 5, 9, 13, 17, 19, 21, 27, 31, 35, 43, 47, 51, 57, 61, 65, 69, 73, 77, 81  
6.6 p. 326 1, 7, 13, 19, 25, 31, 39, 45, 49, 51, 63, 65, 67

### **Chapter Seven homework**

- 7.1 p. 343 1, 5, 9, 15, 17, 21, 23, 29  
7.2 p. 355 11, 17, 21, 47  
7.3 p. 368 1 – 17 odd, 21, 25, 29, 33, 39, 57-67 odd  
7.5 p. 385 5, 11, 27, 29, 35, 43, 51, 55, 63, 65, 67, 77  
7.6 p. 394 1, 3, 11, 17, 21, 25

to be continued.... ☺

## MAT137 Course Outcomes

1. Factor an algebraic expression using a combination of greatest common factor, difference of two squares, sum or difference of two cubes, and/or trinomial factoring .
2. Use factoring procedures to solve equations and problems.
3. Solve compound linear inequalities of the form  $C < ax + b < d$ . Express answer algebraically, graphically, and using interval notation.
4. Isolate a particular variable in a literal equation.
5. Use quadratic formula to find exact values of a quadratic equation with irrational or imaginary solutions. Approximate the irrational solutions.
6. Solve basic exponential and logarithmic equations.
7. Evaluate basic logarithmic expressions, and convert between logarithmic and exponential form.
8. Solve an exponential equation that requires the use of logarithms.
  
9. Graph a quadratic function by finding the vertex, x- and y-intercepts.
10. Relate the discriminant in the quadratic formula to the graph of a parabola.
11. Graph a basic exponential or logarithmic function.
12. Know the graphical relationship between exponential and logarithmic functions.
13. Express the slope as a rate of change using appropriate units.
14. Write the equation of a linear function given data. Use functional notation in the answer.
15. Write the equation of an exponential function given data. Use functional notation in the answer.
16. Solve a  $2 \times 2$  and  $3 \times 3$  system of equations.
17. State the domain of linear, quadratic, exponential and logarithmic functions.
  
18. Evaluate functions using numerical and algebraic values.
19. Identify domain (inputs) and range (outputs) graphically for basic functions.
20. Interpret functional notation in a variety of application problems.
21. Determine if a relation is a function by looking at a graph, table, or equation.
22. Solve a rational equation and check for extraneous solutions.
23. Solve a radical equation that produces a second-degree equation. Check for extraneous solutions.
24. Know and apply the rules of integer and fractional exponents
  
25. Add, subtract, multiply, divide rational expressions. Reduce the answers.
26. Simplify a complex fraction.
27. Know the meaning of rational exponents and their relationship to radical form.
28. Simplify radical expressions with emphasis on cube roots and lower.
29. Rewrite radical expressions by rationalizing numerator or denominator.
30. Add, subtract, multiply, and divide radical expressions.
31. Solve application problems involving the Pythagorean Theorem.
32. Given a quadratic model, find and interpret the maximum or minimum values, and the intercepts.
33. Solve an application problem involving quadratic equations.
34. Solve an application problem that involves rational expressions.
35. Solve an application problem involving a given exponential or logarithmic model.
36. Solve applications involving linear systems.
  
37. Find the six trigonometric values of an acute angle
38. Solve triangles using right triangle trig, distinguish between the angle of depression and elevation.
39. Solve applied problems using right triangle trigonometry