SYLLABUS

Math 137 (Intermediate Algebra)   Instructor: Cheryl Hanselman
Fall 2011 (#30182)   Home Phone: 860-887-5896
Thursdays 6:00-8:45   E-mail address: chanselman@trcc.commnet.edu

COURSE DESCRIPTION

This course continues the development of algebraic skills and concepts. The topics include: linear equations, functions, applications of systems of equations, inequalities, rational expressions and equations, operations on radicals and rational exponents, quadratic equations, exponential and logarithmic functions, and basic right triangle trigonometry. A graphing calculator is required.

PREREQUISITES

Acceptable placement score or MATH 095 or its equivalent

TRANSFERABILITY

This course does not transfer to some colleges. Check with your future college for verification.

TEXTBOOK

 Intermediate Algebra – Functions & Authentic Applications, 4th Ed. by Jay Lehmann

OTHER MATERIALS NEEDED

 Graphing Calculator (TI-83 will be used by the instructor) and graph paper

ATTENDANCE

The student is expected to attend all classes. It is the experience of the instructor that there is a direct correlation between class attendance and a student's final grade.

ASSIGNMENTS

Suggested problems will be given for each chapter. The student is expected to complete the problems assigned. Homework will not be collected and will not be graded. However, it is important to note that students who do well in this class complete homework weekly. Please keep all homework attempted/completed in a notebook or binder. There will be time for homework questions before and after class.

EVALUATION/GRADING

There will be four in-class exams. On each of these tests you will use a graphing calculator. You will be required to show the steps that were shown in class for full credit. Students are expected to take the exams at the scheduled time. If an emergency arises and you miss an exam, you must contact me to make arrangements to take the test prior to the beginning of the next class. Failure to do so will result in a zero for that test.

If you require special test-taking accommodations you must notify me at the beginning of the semester so we can make the necessary arrangements.

Final grades are figured as follows:

A 94-100%	B 80-82%	D+ 67-69%
A- 90-93%	C+ 77-79%	D 63-66%
B+ 87-89%	C 73-76%	D- 60-62%
B 83-86%	C- 70-72%	F Below 60%

*Student attendance, participation, and homework completion will be taken into consideration for adjustments to the final average.

College Withdrawal Policy
Students may withdraw, in writing at the Registrar's Office, for any reason until the 10th week of classes. From the 11th week through the end of the 13th week, a student may withdraw with the instructor's written approval.

Disabilities/ Learning Differences 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 Counseling and Advising Center at 383-5217. 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. Your cooperation is appreciated.

Academic Integrity at Three Rivers
Academic Integrity is essential to a useful education. Failure to act with academic integrity severely limits a person's ability to succeed in the classroom and beyond. Furthermore, academic dishonesty erodes the integrity of every degree awarded by the College. In this class and in this course of your academic career, present only your own best work and act at all times with honor and integrity.

<div align="center">Tentative Course Schedule</div>

9/1   Course preliminaries and brief review (1.1-1.5)
            Functions (1.6)
            Intro to Right Triangle
                    Handout available online at TRCC website. Click Academics. Scroll down and click
                    Math Department. Under the "News" headline, you will find a link to the pdf file.

9/8   ***Bring Your Graphing Calculator***
            More Right Triangle Trigonometry
            Modeling with Linear Functions (2.1-2.3)

9/15   Complete/Review Linear Equations and Linear Functions (1.1-1.6)
            Complete/Review Modeling with Linear Functions (2.1-2.3)
            Complete/Review Right Triangle Trigonometry (Handouts)
            Systems of Linear Equations (3.1-3.3) NOT ON TEST #1

9/22   **TEST #!**   **Chapter 1, Chapter 2(2.1-2.3), and Right Triangle Trigonometry**

9/29   More Systems of Linear Equations (3.1-3.3)
            Exponential Functions (4.1-4.5)

10/6   More Exponential Functions (4.1-4.5)
            Logarithmic Functions (5.2-5.6)

10/13   More Logarithmic Functions (5.2-5.6)
            Review Chapter 3(3.1-3.3), Chapter 4(4.1-4.5), and Chapter 5(5.2-5.6)

10/20   **TEST #2**   **(Chapters 3-5)**

10/27   Polynomial Functions (6.1-6.6)

11/3   Quadratic Functions (7.1-7.3 and 7.5-7.7)

11/10   Review Chapters 6-7
            Rational Functions (8.1-8.3) NOT ON TEST #3

11/17   **TEST #3** **(Chapters 6-7)**

11/24   **NO CLASS - Thanksgiving**

12/1   More Rational Functions (8.1-8.3)
            Radical Functions (9.1, 9.2, 9.5)

12/8   More Radical Functions (9.1, 9.2, 9.5)
            Review Chapters 8 and 9

12/15   **TEST #4** **(Chapters 8-9)**

12/(17-20)   Class Makeup _if needed_ (If a class is cancelled due to weather we may need to
                    reschedule it during this time period as indicated by the college calendar.)

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 x 2 and 3 x 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