

**Intermediate Algebra, Math 137, CRN 11625**

**Mondays, 6:30 to 9:15 pm, Room D219**

**Instructor: Sue Butler**

**Sbutler@threerivers.edu**

**Text: Elementary and Intermediate Algebra, 5<sup>th</sup> edition, Baratto and Bergman**

**Course Description: This course develops understanding of linear and quadratic functions. The course introduces exponential and rational functions. Topics also include radical functions, and real world applications involving quadratics, exponential functions, and rational functions.**

**Measurements:**

3 exams will count as 60% of your final grade,

4 Problem Sets will count as 20% of your final grade,

The final exam will count as 20% of your final grade.

**Grade Equivalents:**

A 93-100, 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, N less than 60% of work.

**Attendance: It is very important that you attend ALL classes. Your attendance in the classroom, participation in classroom work, and preparation is required and is essential to your success in this course.**

**Support Services: Tutorial services. Meeting with me for extra help.**

**Class Cancellation: Check the college website or call 860-215-9000 for the recorded message on the college phone.**

**Alert System: MyCommNet Alert sends text messages and emails to anyone signed up in the event of a campus emergency or when the college is delayed or closed due to weather.**

**Disabilities: If you have a disability that may affect your progress in this course, please meet with a Disability Service Provider as soon as possible. Accommodations cannot be provided until you provide written authorization from a DSP.**

**Matt Liscum (860) 215-9265 or Chris Scarborough (860) 215-9289**

**Digication: All students are required to maintain a learning portfolio in Digication that uses the (Three Rivers) College Template.**

**Course Objectives and Outcomes.**

137

At the completion of MAT\*137, the student will be able to do the following —

**Linear Functions**

- 1) Provide multiple representations (e.g., words, symbols, graphs, tables) of linear functions by hand and/or using technology
- 2) Determine identifying characteristics of linear functions
- 3) Model and solve real world applications with linear functions (e.g., car depreciation) and systems of linear equations

**Quadratic Functions and/or Expressions**

- 1) Provide multiple representations of quadratic functions or expressions by hand and/or using technology
- 2) Determine identifying characteristics of quadratic functions or expressions (e.g., factors)
- 3) Evaluate, simplify, and perform operations on quadratic functions or expressions
- 4) Solve quadratic equations algebraically (e.g., factoring, completing the square, and quadratic formula with rational solutions) and/or graphically
- 5) Solve real world applications involving quadratic equations and functions

**Exponential Functions and/or Expressions**

- 1) Provide multiple representations (e.g., tables, graphs, symbols) of exponential functions or expressions by hand and/or using technology
- 2) Determine identifying characteristics of exponential functions or expressions
- 3) Evaluate, simplify, and perform operations on exponential functions or expressions
- 4) Identify real world applications involving exponential functions and/or solve graphically

**Rational Functions and/or Expressions**

- 1) Provide multiple representations of simple rational functions or expressions by hand and/or using technology
- 2) Determine identifying characteristics of rational functions or expressions
- 3) Evaluate, simplify, and perform operations on simple rational functions or expressions
- 4) Solve simple rational equations algebraically and/or graphically
- 5) Solve real world applications involving rational functions

**Radical Functions and/or Expressions**

- 1) Provide multiple representations of simple radical functions or expressions by hand and/or using technology, with primary emphasis on square root
- 2) Determine identifying characteristics of radical functions or expressions
- 3) Evaluate, simplify, and perform operations on simple radical functions or expressions
- 4) Solve simple radical equations algebraically and/or graphically
- 5) Solve real world applications involving radical functions
- 6) Identify imaginary numbers

**Mathematical Practices**

- 1) Make sense of problems and persevere in solving them.
- 2) Reason abstractly and quantitatively.
- 3) Construct viable arguments and critique the reasoning of others.
- 4) Model with mathematics.
- 5) Use appropriate tools strategically.
- 6) Attend to precision.
- 7) Look for and make use of structure.
- 8) Look for and express regularity in repeated reasoning

# Math 137 Course Syllabus/Class Discussion

## Intermediate Algebra

### Chapter 6 Factoring

Class Discussion: odd numbered problems

	<u>Page</u>	<u>Problems</u>
6.1 Intro to Factoring	486	23 - 83
6.2 Factoring Special Products	497	1 - 73
6.3 Factoring: reverse FOIL	508	53 - 71
6.4 Factoring: AC Method	517	31 - 101
6.5 Factoring Strategies	524	1 - 81
6.6 Quadratic Equations & Applications	537	1 - 59, 71 - 75, 83 - 91

Chapter 6 Problem Set, due date: \_\_\_\_\_

p. 545 4 - 72, 84 - 100 multiples of 4\*, 109, 111

\* this means 4, 8, 12, 16, 20, etc.

### Chapter 7 Radicals and Exponents

7.1 Roots & Radicals	560	1 - 63
7.2 Simplifying Radicals	573	1 - 41, 47 - 51, 71, 73
7.3 Operations on Radicals	584	67, 68, 73 - 77
7.4 Solving Radical Equations	593	1 - 47
7.5 Rational Exponents	603	1 - 69
7.6 Complex Numbers	611	1 - 61

Chapter 7 Problem Set, due date: \_\_\_\_\_

p. 618 4 - 20, 32 - 48, 56 - 64 multiples of 4,  
74, 78, 82, 86, 88, 90, 96 - 102 even  
106, 108, 114, 116, 118 - 126 even

## Chapter 8 Quadratic Functions

8.1	Solving Quadratic Equations	634	9 – 43
	Applications using Pythagorean Thm		55 – 59, 63
8.2	Quadratic Formula	652	21 – 27
	The Discriminant		55 – 61
	Quadratic Applications		63, 64, 71, 72, 73
8.3	Parabolas	665	1 – 7, 25 – 47
8.4	Max/Min Applications	678	1 – 5

Chapter 8 Problem Set, due date: \_\_\_\_\_

p. 683      2 – 26 even, except 6, 22, 10, 12  
40 – 64 multiples of 4, 70  
34, 88

## Chapter 9 Rational Expressions

9.1	Simplifying Rational Expressions	699	1 – 51, 67 – 77
9.2	Mult/Divide Rational Expressions	710	1 – 35
9.3	Add/Subtract Rational Expressions	721	1 – 35
9.6	Rational Equations and Problem Solving	762	2, 3, 11, 15, 25, 33, 51, 61, 65

## Chapter 10 Exponential Function

10.4	Exponential Functions	819	1 – 8, 9, 21, 25 – 33, 39 – 49
10.7	Logarithms and Exponential Functions	859	1 – 33, 43, 47, 51, 53, 55, 57
10.5			

Chapter 9/10 Problem set, due date: \_\_\_\_\_

p. 770      2 – 22, 26 – 32 even, 74, 78

p. 869      64, 66, 68, 126 – 134 even, 142, 144.

^  
74 – 90 even