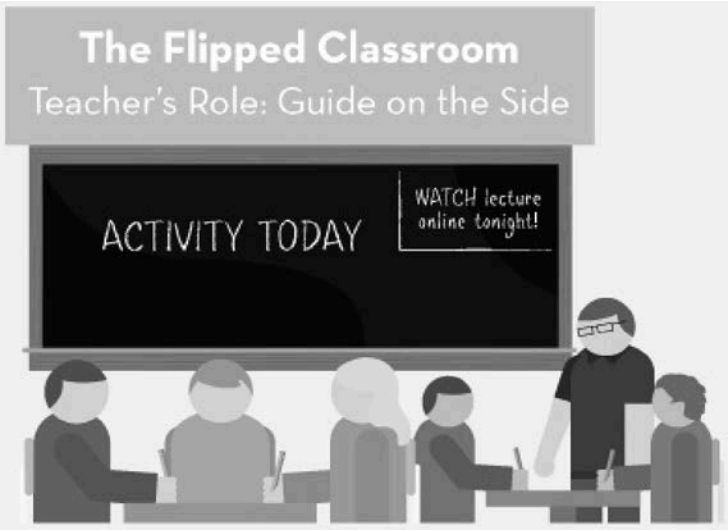
#1: Course Description

Successful completion of this course will prepare students for modeling simple real life quantitative problems with algebraic symbolism in order to analyze and solve the problem. Students will be able to manipulate the symbols to simplify expressions and translate the expressions into concrete English phrases. Students will be able to recognize when quantities have a linear relationship, model the situation with a function, and be able to apply these skills to problems in various fields such as business, geometry, chemistry and personal finance. Successful completion of this course will prepare students for MATH 112.



#2: Instructor Contact Information

Instructor: Michael Hoffman
Website: http://my.smccd.edu
Office Location: Building 18, 18-104
Office Phone: (650) 336-3346
Office Hours: TWTh 4:00-6:00pm
Email: hoffmanm@smccd.edu

#3: Required Materials

- My Math Lab Access Code
- Textbook: Lehmann, Jay. Elementary and Intermediate Algebra. Pearson.
- Calculator: Texas Instruments TI-84

To complete the homework assignments, you will need a code to access MyMathLab at www.coursecompass.com. This code is included with all new textbooks available in the College Bookstore, or can be purchased when you register for this course at www.coursecompass.com for $80.00. This cost does not include a hard copy of the textbook, but it does include access to an online version of the textbook.

CourseID: hoffman83834

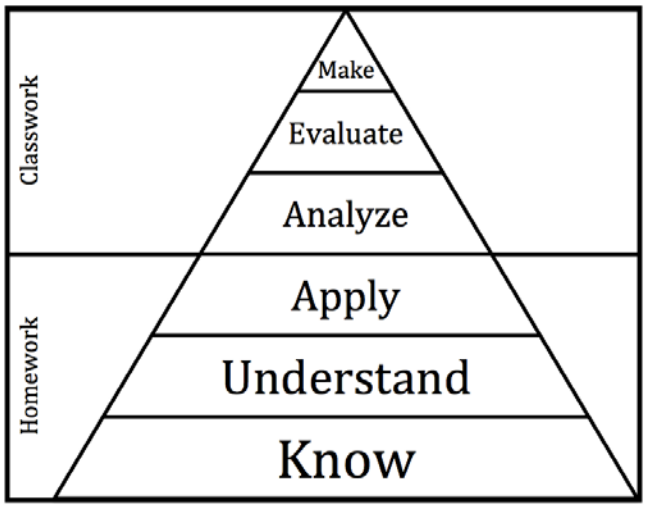
There are different versions of this book available from other vendors with codes that will not allow access to this course. It is important that you purchase the code either directly from Pearson at coursecompass.com or the college Bookstore.

#4: Important Dates

Last Day to Add/Drop (with partial refund): Friday August 31st
Labor Day: Monday September 3rd
Last Day to Drop (without refund, without record): Monday September 10th
Veteran's Day: Monday November 11th
Last Day to Withdraw: Friday November 16th
Final Exam: Wednesday December 12th
Project Presentations: Friday December 17th 11:10-1:40

#5: Classwork 10%

Each class you will be performing group explorations and presentations with classmates for approximately thirty minutes. This will be preceded by a ten-minute Q&A and followed by a ten-minute lecture. Presentations will be graded on the quality of collaboration and communicaiton, with two points for each category for a sum of four points total. For the semester you are required to particpate in seventeen group presentations, one for each week.



#6: Homework 10%

To help prepare you for these presentations, MyMathLab homework will be due each class morning. Each MyMathLab question has been painstakingly paired with an example in the textbook, the number of which can be found by pressing the "Instructor Tip" button or by consulting the homework schedule. MyMathLab questions completed after class will be worth 75% of their original value. ***You Must Write Out Your Solutions to the Online Problems!*** Paperwork for each MyMathLab question in a particular chapter is due the class after the chapter exam, so that you may review it. The paper homework will be graded on neatness and completion, with two points for each category for a sum of four points total.

#7: Exams 50%

Five chapter exams will be given during the semester. Make-up exams will not be given. Scores for missed exams will be generated from the cumulative final exam. The first missed exam will receive a score equivalent to the score in the final exam. Subsequent missed exams will receive a score equivalent to 80% of the score on the final exam. You will need to complete the "Key Points" assignment for each chapter as part of your exam and turn it in on the day after the exam.

#8: Cumulative Final Exam 20%

The final exam will take place on *Wednesday December 12th*. Any student who misses the final exam will receive a maximum grade of D for the course. You will need to complete the "Tips for Success" assignment as part of your final and turn it in on the day of the final.

#9: Data Modeling Project 10%

Your objective in this project is to use Excel to find a function that can be used to model an authentic situation. Your first task will be to find data that follows a pattern. Almanacs, newspapers, magazines, and scientific journals are good resources. You may want to try an Internet search, or you can conduct an experiment. Choose something that interests you! Your finished result will be a PowerPoint consisting of at least six slides (1) Data Source and why it's significant (2) Variable Definition and Data Table (3) Scattergram with Regression Equation (4) Prediction or Estimate for an Output (5) Prediction or an Estimate for Input (6) Conclusion. If you work in a group, each member must present at least one slide. If you work in a group, each member must present at least one slide. These PowerPoints will be presented on Monday December 17th from 11:10 to 1:40.

Speaking of group projects, this class would not be possible without John Chavez. Jarrod Feiner, Jon Freedman, Rick Hough, David Hasson, Denise Hum, Evan Leach, Vanson Nguyen, and Soodi Zamani.

"Education is not the filling of a pail, but a lighting of a fire."

#10: Tentative Schedule of Topics:

Week	Day	Date	Topics / Deadline	Text
1	Mon	20-Aug	Introductions	Handouts, Video
	Wed	22-Aug	Variables, Constants and Number Lines	1.1
2	Mon	27-Aug	Graphing Data: Scattergrams	1.2
	Wed	29-Aug	Linear Relationships and Modeling	1.3
3	Mon	3-Sep	Labor Day: No Class	
	Wed	5-Sep	Approximate Linear Relationships	1.4
4	Mon	10-Sep	Review Chapter 1, Projects	Handouts
	Wed	12-Sep	**Chapter 1 Exam**	**EXAM**
5	Mon	17-Sep	Creating, Evaluating Algebraic Expressions	2.1
	Wed	19-Sep	Fractions	2.2
6	Mon	24-Sep	Adding Positive and Negative numbers	2.3
	Wed	26-Sep	Change in a quantity: Subtraction	2.4
7	Mon	1-Oct	Ratios, Percents, Multiplication and Division	2.5
	Wed	3-Oct	Exponents and Order of Operations	2.6
8	Mon	8-Oct	Review Chapter 2, Projects	Handouts
	Wed	10-Oct	**Chapter 2 Exam**	**EXAM**
9	Mon	15-Oct	Graphing y = mx + b	3.1
	Wed	17-Oct	Linear Models	3.2
10	Mon	22-Oct	Slope of a line	3.3
	Wed	24-Oct	Graphing y = mx + b with Slope	3.4
11	Mon	29-Oct	Rate of Change	3.5
	Wed	31-Oct	Rearranging Terms in Expressions	4.1
12	Mon	5-Nov	Review Chapter 3, Projects	Handouts
	Wed	7-Nov	**Chapter 3 Exam**	**EXAM**
13	Mon	12-Nov	Veterans Day: No Class	
	Wed	14-Nov	Simplifying Expressions	4.2
14	Mon	19-Nov	Solving Equations	4.3
	Wed	21-Nov	More Solving Equations	4.4
15	Mon	26-Nov	Equations vs. Expressions	4.5
	Wed	28-Nov	Finding Lines through two points	5.4
16	Mon	3-Dec	Review Chapter 4, Projects	Handouts
	Wed	5-Dec	**Chapter 4 Exam**	**EXAM**
17	Mon	10-Dec	Cumulative Review	
	Wed	12-Dec	**FINAL EXAM**	**EXAM**
18	Mon	17-Dec	**Project Presentations**	Last Class

#11: List of Section Objectives:

SECTION	EXAMPLE	DESCRIPTION	EXERCISES
1.1	1	Using a Variable to Represent a Quantity	5, 9
	3	Comparing Constants and Variables	[23]
	4	Graphing Integers on a Number Line	29
	5	Graphing Real Numbers on a Number Line	35
	8	Graphing Data and the Mean	69, 71
1.2	2	Determining the Meaning of an Ordered Pair	29, [32], 34
	4	Creating a Scattergram with Age Groups	[47]
	7	Reading a Bar Graph	52
	8	Plotting Points	1,11,13,[15],39
1.3	2	Making Estimates and Predictions	[21], 23
	3	Deciding whether to Use a Line to Model Data	19, [33]
	4	Finding Intercepts and Coordinates	[1], [3], [6]
	5	Finding Intercepts of a Linear Model	15
	6	Using a Linear Model to Make Estimates	[27], 28
1.4	1	Using a Line to Model Data	[3]
	2	Making Estimates and a Prediction	11
	4	Finding Intercepts of a Model	1
2.1	5	Finding and Evaluating an Expression	17, 19, 21, 22
	7	Translating from English to Mathematics	25, 28, 29, 31
	8	Translating from Mathematics to English	33
	9	Evaluating an Expression in Two Variables	57
2.2	P.63	Division by Zero	59
	P.63	Dividing a Number by 1	57
	P.63	Dividing a Nonzero Number by Itself	55
	1	Finding the Product of Two Fractions	23
	2	Writing a Number as a Product of Primes	[5]
	4	Simplifying a Fraction	21
	6	Finding the Quotient of Two Fractions	33
	7	Evaluating an Expression	[69]
	8	Adding Fractions with the Same Denominator	35
	9	Adding Fractions with Different Denominators	45
2.3	1	Finding Opposites	3
	2	Finding Absolute Values of Numbers	11
	4	Finding the Sum of Two Numbers with the Same Sign	15
	6	Finding the Sum of Two Numbers with Different Signs	13, 19, [45]
	7	Translating from English to Mathematics	61
	8	Applications of Adding Real Numbers	[71], 73
	9	Finding and Evaluating an Expression	75
2.4	2	Finding Changes in a Quantity	62
	4	Finding Differences in Real Numbers	1
	5	Subtracting a Negative Number	55
	6	Subtracting a Negative Number	23, 29
	7	Translating form English to Mathematics	83
	8	Finding a Change in Elevation	[59]
	10	Finding an Expression Describing Change	65

SECTION EXAMPLE DESCRIPTION EXERCISES

2.5	1	Finding a Unit Ratio	101, 103
	3	Converting Percentages and Decimal Numbers	1, 3, 9
	4	Finding the Percentage of a Quantity	11, 13
	8	Application of Multiplying Real Numbers	[109]
	10	Application of a Ratio of Two Real Numbers	[107]
	11	Simplifying Fractions and Adding Fractions	[73]
2.6	1	Calculating Expressions that Have Exponents	1, 5, 7, 9
	2	Performing Operations	13
	3	Performing Operations	59
	5	Evaluating an Expression	77
	6	Evaluating Expressions	[81], 67
	7	Using a Table to Find an Expression	[87]
3.1	1	Identifying Solutions of An Equation	[1]
	2	Plotting Some Solutions of an Equations	19
	3	Graphing an Equation	21
	4	Graphing an Equation	27
	5	Describing Solutions by Using the Rule of Four	9
3.2	1	Using a Linear Model to Make Predictions	[5]
	2	Using a Linear Model to Make a Prediction	[8]
	3	Finding and Graphing a Linear Model	[19]
	4	Graphing an Equation of the Form y=b	25, 46
	5	Graphing an Equation of the Form x=a	21, 27, 43
3.3	1	Comparing the Steepness of Two Roads	3
	2	Finding the Slope of a Line	5
	3	Finding the Slope of a Line	11
	5	Finding the Slope of a Line	15, 27, 33
	6	Finding the Slope of a Line	39, 41
	8	Finding the Slope of a Horizontal Line	35
	9	Finding the Slope of a Vertical Line	37
3.4	1	Sketching a Line	3
	4	Graphing an Equation	[23]
	5	Graphing a Model's Equation	47
	6	Interpreting the Signs of m and b	51
	7	Finding an Eqn. of a Line from Its Slope and y-Intercept	60, 61
	8	Finding an Equation of a Line from Its Graph	65, [66]
	9	Find the Slopes of Two Parallel Lines	70
	10	Find the Slopes of Two Perpendicular Lines	67
3.5	1	Finding Rates of Change	1, 3
	2	Finding Rates of Change	[5], 11
	3	Comparing the Slope with a Rate of Change	[31]
	4	Finding a Model	[15]
	5	Finding a Model	23,
	6	Analyzing a Model	25, 26
	10	Finding an Equation of a Line	[41]

SECTION	EXAMPLE	DESCRIPTION	EXERCISES
4.1	2	Using the Associative Law	1
	4	Using the Distributive Law	9, 19
	6	Using the Distributive Law	21
	7	Evaluating Expressions	53
	8	Simplifying Expressions	27
	9	Translating from English to Mathematics	61
	10	Simplifying an Expression	39
	11	Simplifying an Expression	41
	12	Sowing That a Statement is False	[65]
4.2	1	Combining Like Terms	1, 3, 8
	2	Simplifying Expressions	17, 37, 35
	3	Translating from English to Mathematics	53, 55
	4	Translating from Mathematics to English	61, [63]
4.3	1	Identifying Solutions of an Equation	1
	2	Solving an Eqn. by Adding a Number to Both Sides	11
	3	Solving an Eqn. by Subtracting a Number from Both Sides	9
	4	Solving an Eqn. by Multiplying Both Sides by a Number	31
	5	Solving an Eqn. by Dividing Both Sides by a Number	23
	6	Solving an Eqn. by Multiplying Both Sides by -1	29
	7	Solving an Eqn. by Multiplying Both Sides by a Number	[37]
	8	Solving an Eqn. in One Variable by Graphing	51, [53]
	10	Solving an Eqn. in One Variable by Using a Table	63
4.4	1	Using the Addition and Multiplication Properties of "="	1
	2	Combing Like Terms to Help Solve an Equation	9
	3	Solving an Eqn. with Variable Terms on Both Sides	13
	4	Using the Distributive Law to Help Solve an Eqn.	17
	5	Solving an Eqn. That Contains Fractions	28
	6	Solving an Eqn. That Contains Fractions	37
	8	Making Predictions	[50]
	9	Translating an English Sentence to an Equation	53, 55, 57, 59
	10	Translating an Equation to an English Sentence	63, 65, 67
	11	Solving an Eqn. in One Variable by Graphing	79, 85
	12	Solving an Eqn. in One Variable by Using a Table	[69]
	14	Solving Three Types of Equations	95, [97], [99]
4.5	1	Simplifying an Expression and Solving an Equation	9, 11
	3	Comparing Expressions and Equations	17, 19
	4	Comparing Expressions and Equations	39, [43]
	5	Translating from English to Mathematics	59, 61, 63, 67
4.6	1	Using the Area Formula of a Rectangle	17
	2	Using the Perimeter Formula of a Rectangle	19
	3	Total-Value Formula	29
	5	Solving a Formula for One of Its Variables	41
	7	Writing a Linear Equation in Slope-Intercept Form	63, 59, [61], 65
	9	Solving a Linear Model for One of Its Variables	72