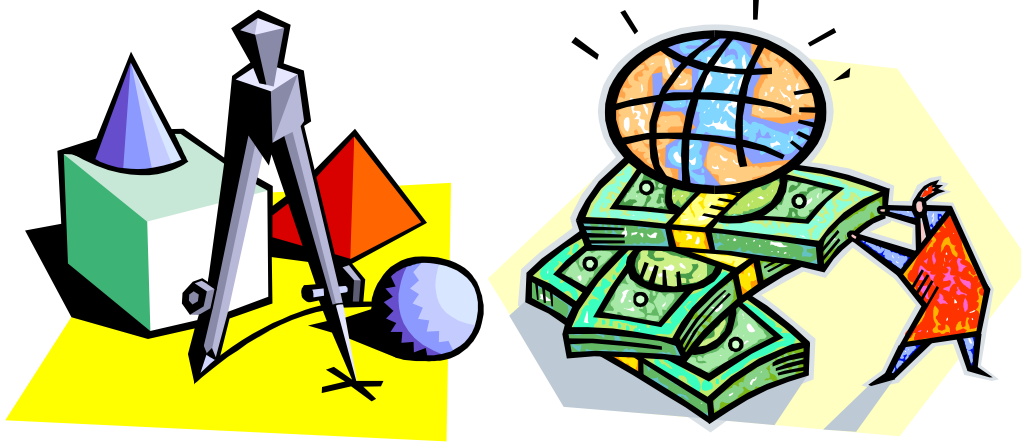




“Hear the ECO in Math”

Learning Community



Discover the relationship between Algebra & Economics

By integrating and reinforcing mathematics skills (Intermediate Algebra, MAT 1033) into Principles of Macroeconomics (ECO 2013, a General Education Requirement), and exposing current algebra students to relevant application of these skills, students in both courses will be encouraged and motivated to apply their skills. When students link mathematics to applications, they become more confident about their math skills.

An example of the math skills which are reinforced in a Principles of Macroeconomics course include:

- Understanding, drawing, and plotting points on a Cartesian/Rectangular Coordinate System (to set up all Economics graphs)
- Interpreting tables and graphs (e.g., demand and supply schedules, production possibilities curve)
- Calculating the slope of a line (e.g., drawing demand and supply curves for various goods and services)
- Calculating percentages (e.g., cost of living increases, inflation, unemployment, income distribution)

Students will have the opportunity to observe how the mathematics skills they learn in the classroom connect to their daily lives. Through this learning community, we will identify and create intellectual habits which support academic disciplines and careers for graduates in the global economy of the 21st century.

MIAMI-DADE COLLEGE, NORTH CAMPUS
MATHEMATICS DEPARTMENT
MAT 1033 - INTERMEDIATE ALGEBRA
Spring 2006-2 (Ref. #386840)
Learning Community - "Hear The ECO in Math"

INSTRUCTOR

Lourdes M. España

PHONE

Office (305) 237- 8144 and **Math Department** (305) 237-1358

OFFICE HOURS

Room 7333

Monday/Wednesday/Friday 7:30 - 9:00 a.m.

Tuesday/Thursday 7:15 – 8:15 a.m. & 11:15 a.m. – 12:30 p.m.

EMAIL

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WEBPAGE

<http://faculty.mdc.edu/lespana/>

DESCRIPTION

Through this course students develop various concepts of Algebra. Students will solve linear, quadratic, rational, and radical equations; graph linear equations and inequalities in one variable; graph linear equations in two variables; solve and graph systems of linear equations and inequalities in two variables; simplify rational expressions; simplify expressions containing rational exponents; simplify complex numbers; solve related applications

PREREQUISITE

MAT 0020 or **MAT 0024** with a grade of "S". or Placement test scores or referral determines admission.

TEXTBOOK

Introductory & Intermediate Algebra with a Review of Basic Mathematics, by Charles P. McKeague; Custom Edition; Harcourt College Publishers.

SUPPLEMENTS

ONLINE TUTORIALS & HOMEWORK

Students must keep the Registration Number given by the instructor & the Pin Number enclosed in their textbook packet. These numbers allow students to gain access to the powerful website www.ilrn.com This site includes videos, practice material, tutoring help, and the actual textbook.

PLATO SOFTWARE

It is a tutorial software that tutors students in all subjects including Intermediate Algebra. **Plato** is available in the computer court-yard (See **lab manager** for assistance).

HOMEWORK

Homework will be assigned during each class meeting; this work will be done on "ILRN" on-line system. To receive a point on a HW section you must get a score of 70% or more on that section. The "ILRN" system will let the instructor know if students accomplished the Homework. However, it is to your advantage to do all the homework assignments that are assigned in this syllabus whether they are checked or not as it will reflect on your test. For additional help go the Math Lab, Rm. 2222 and instructional videotapes are available in Media Services (go to the Math Lab for more information). In addition, the Student's Solutions Manual that accompanies your textbook contains the worked solutions to the odd homework problems in the text. Also, the instructor has posted office hours that are available to students who would like help from the instructor outside of the scheduled class time.

MATERIALS

Every day bring to class your **Book, Notebook, Pencil, Pen** and **3" by 5" note cards**.

TESTS

Three exams and a cumulative final exam will be given in this course. Absolutely, **NO MAKE-UP EXAMS** will be given under any circumstances. **If a student misses an exam, a score of zero will be recorded.** However, the single lowest score among the three exams will be replaced by the final exam score. (**NOTE** – when the final exam score "**replaces**" a lower exam score, the result is that the final exam carries double "**weight**"; it counts once in its own behalf, and once again for the score it replaces.

BASE GROUPS

You will be put in long-term heterogeneous **Cooperative Learning Groups**. As a group, your primary responsibilities are to provide support, encouragement, and assistance in completing assignments and hold each other accountable for striving to learn. Other responsibilities are to take attendance, discuss homework problems at the beginning of class, leave handouts in the folder for absent group members, call absent group members, and keep the instructor informed if you have any concerns about any members of the group.

PEER TUTORING

A peer tutor will work with one student who is struggling in class. Peer tutoring is recognized as "**Service Learning**" and each peer tutor will receive a certificate from **Miami-Dade College's Center for Community Involvement**. At the end of the term, any peer tutor who has maintained an exam average of 80 – 90% and has tutored for a minimum of 10 documented hours will receive 5 points extra credit on the final exam or has an exam average > 90% and has tutored for a minimum of 16 documented hours will receive 10 points extra credit on the final exam. **YOU MUST LET ME KNOW IN ADVANCE IF YOU ARE INTERESTED IN BECOMING A PEER TUTOR.**

ATTENDANCE

To earn 5 points towards your total points (**NOT AVERAGE**), everyone in your base group must have 2 or fewer absences. **IF YOU ARE ABSENT IN EITHER CLASS OF THE COMMUNITY YOU WILL BE COUNTED AS ABSENT IN BOTH CLASSES.** **NOTE: The instructor MAY use her discretion and drop any student who has missed TWO OR MORE consecutive days of class on or before the last day to drop the course and receive a "W."** **If you do not want to be dropped, and you have missed three consecutive class meetings, you should contact the instructor.**

GRADES

Any student may exercise his/her option to drop the class with a "W" grade, provided such action is initiated by the student no later than **March 14, 2007**. Also, **the last day to drop with a 100% refund is January 9, 2007.** (**Note:** This withdrawal deadline is established through the Registrar's Office and is subject to change. Students should contact the Registrar in advance for confirmation of the withdrawal deadline.) **Any student who has not withdrawn from the class by that date will receive a letter grade.**

The student's grade will be based on the following:

<u>Items</u>	<u>Points</u>
3 Tests	300
Project	10
"ILRN" on-line Homework	20
Base Group Attendance	5
Group Attendance Problem Points	10
Group Quiz (3 – each worth 15 points, 1 drop)	30
<u>Final Exam</u>	<u>100</u>
TOTAL POINTS POSSIBLE DURING TERM:	475

The following is the grading scale (by %) and the required # of points that are needed in order to receive the indicated grade.

90 – 100	A (at least 425 points earned)
80 – 89	B (between 378 and 424 points earned)
70 – 79	C (between 330 and 377 points earned)
50 – 69	D (between 235 and 329 points earned)
0 – 49	F (less than 235 points earned)

Classroom Etiquette

Any student I catch cheating, will force me to take action according to Miami-Dade Community College's Code of Student Conduct!!!! Also, students are to turn off all cellular phones and set pagers to "vibrate" before entering class. Furthermore, disrespect of any type will not be tolerated. Nothing is to be on your desk during any quizzes, test, etc... **UNLESS** I have given verbal instructions to indicate otherwise! **NO** cell-phones, books, 'scrap' paper, purses, etc. are allowed on your desktop during graded material sessions.

COURSE OUTLINE
Spring 2006-2

This course outline is provided to help you plan ahead. However, this schedule is tentative; it can change at any time. Therefore, it is your responsibility to keep up with announced changes to this outline.

<u>Monday</u>	<u>Wednesday</u>	<u>Friday</u>
	<u>1/03/07</u> Introduction & Syllabus 8.2 The Slope of a Line	<u>1/05/07</u> 8.3 The Equation of a Line/ Parallel & Perpendicular Lines
<u>1/08/07</u> 8.3 The Equation of a Line/ Parallel & Perpendicular Lines	<u>1/10/07</u> 8.3 The Equation of a Line/ Parallel & Perpendicular Lines	<u>1/12/07</u> 8.4 Linear Inequalities In Two Variables
<u>1/15/07</u> HOLIDAY Dr. Martin Luther King Birthday NO CLASSES!!!	<u>1/17/07</u> 8.9 Systems of Linear Inequalities In Two Variables	<u>1/19/07</u> 8.8 Systems of Linear Eqs. In Two Variables
<u>1/22/07</u> 8.7 Direct & Inverse Variation	<u>1/24/07</u> Group Quiz #1	<u>1/26/07</u> Review for Test #1
<u>1/29/07</u> <u>TEST #1</u> (8.2 – 8.4, 8.7 – 8.9)	<u>1/31/07</u> 5.6 Factoring	<u>2/02/07</u> 5.6 Factoring
<u>2/05/07</u> 5.5 Sum & Difference of Two Cubes	<u>2/07/07</u> 5.5 Sum & Difference of Two Cubes	<u>2/09/07</u> 7.2 Solving Eqs. By Factoring
<u>2/12/07</u> 7.4 Solving Formulas	<u>2/14/07</u> 7.5 Applications Involving interest, Area of a rectangle, Angles and the Pythagorean Thm	<u>2/16/07</u> 7.5 Applications Involving interest, Area of a rectangle, Angles and the Pythagorean Thm
<u>2/19/07</u> 7.5 Applications Involving interest, Area of a rectangle, Angles and the Pythagorean Thm	<u>2/21/07</u> 9.2 Division of Polynomials	<u>2/23/07</u> 9.3 Division & Multiplication of Rational Expressions
<u>2/26/07</u> 9.4 Addition & Subtraction of Rational Expressions	<u>2/28/07</u> 9.4 Addition & Subtraction of Rational Expressions	<u>3/02/07</u> Conference Day NO CLASSES!!

<u>3/05/07</u> 9.6 Eqs. Involving Rational Expressions	<u>3/07/07</u> 9.6 Eqs. Involving Rational Expressions	<u>3/09/07</u> 9.5 Complex Fractions
<u>3/12/07</u> Group Quiz #2	<u>3/14/07</u> Review for Test #2	<u>3/16/07</u> TEST #2 (5.5, 5.6, 7.2, 7.4, 7.5, & 9.2 – 9.6)
<u>3/19/07</u> 10.1 Rational Exponents	<u>3/21/07</u> 10.3 Simplified Form for Radicals	<u>3/23/07</u> 10.4 Addition & Subtraction of Radical Expressions
<u>3/26/07</u> 10.5 Multiplication & Division of Radical Expressions	<u>3/28/07</u> 10.6 Eqs. with Radicals	<u>3/30/07</u> 10.6 Eqs. with Radicals
<u>4/02/07</u> 11.1 Complex Numbers	<u>4/04/07</u> 11.2 Completing the Square	<u>4/06/07</u> NO CLASSES!!!! HOLIDAY
<u>4/09/07</u> 11.3 The Quadratic Formula	<u>4/11/07</u> 11.3 The Quadratic Formula	<u>4/13/07</u> Group Quiz #3 & Review for Test #3
<u>4/16/07</u> TEST #3 (10.1, 10.3 – 10.6, & 11.1 – 11.3)	<u>4/18/07</u> Review for Final	<u>4/20/07</u> Review for Final
<u>4/23/07</u>	<u>4/25/07</u> FINAL EXAM !!!	

MAT 1033
Miami-Dade Community College
North Campus

Homework

The following is the minimum homework assignment that you should complete for test preparation. Also, always check the answers to the odd problems given in the back of the Book. Finally, it is your responsibility to keep up with any changes announced in class regarding the following assignments.

Section	Assignment
5.6	# 1 – 73 odd
5.5	# 1 – 35 odd
7.2	# 17, 23, 25, 27, 31, 33, 35, 36, 37, 41, 43, 49, 51, 59, 67 – 75
7.4	# 19 – 49 odd
7.5	# 25 – 35 odd, 36, 37, 38, 41 – 45 All, 47, 53, 57
9.2	# 1 – 41 odd
9.3	# 9, 11, 17, 27, 29, 31, 33, 35, 39, 42, 47, 51
9.4	# 9, 15, 21, 23, 29, 31, 35, 39, 43 – 57 odd
9.6	# 9 – 41 odd, 49 – 53 odd
9.5	# 5 – 19 odd, 21, 27 – 37 odd, 41 – 49 odd
8.1	# 3, 5 – 17 odd, 21, 23, 27, 35, 39, 41 – 44
8.2	# 1- 6, 7 – 25 odd, 33 – 41 odd, 44 (NOTE- figure is above problem), 45, 60
8.3	# 1, 3, 5, 7 – 18 (Also Graph), 43, 44
8.4	# 3 – 6, 8, 11, 13, 15, 16, 21 – 37 odd, 41, 43
8.8	# 9 – 33 odd, 41 – 47 odd, 48
8.9	# 1 – 25 odd
8.7	# 1 – 8, 11, 12, 21, 23, 26, 27, 35
10.1	# 1 – 15 odd, 16 – 22 All, 27 – 79 odd, 76, 78, & 82
10.3	# 1 – 37 odd, 30, 41, 47 – 73 odd, 70, 83 (Might be EXTRA CREDIT on Test #3)
10.4	# 1 – 33 odd, 43, 45
10.5	# 5 – 35 odd, 39 – 59 odd, 63, 65, 67
10.6	# 1 – 31 odd, 20 (Answer: 6, 1 doesn't check), 30 (Answer: 8, 0 doesn't check), 41, 43, & 47
11.1	# 1 – 9 All
11.2	# 1 – 29 odd, 35 – 44 All, 45
11.3	# 3 – 13 odd, 17 – 23 odd, 27, 37, 38, & 39

Course Objectives/Outcomes

The objective of this course is to prepare students for the successful study of College Algebra. At the end of the course, the student will be able to:

1. Factor a variety of polynomial expressions including those that contain common factors, may be factored by grouping, are quadratic trinomials or are trinomials that are quadratic in form, or that represent the difference of squares or the difference or sum of cubes.
2. Solve a variety of equations including linear equations that have "no solution" (contradictions) or have "all real numbers" as solutions (identities).
3. Divide one polynomial by another, including the case where the divisor is a monomial.
4. Add and subtract rational expressions.
5. Simplify complex fractions.
6. Solve equations involving rational expressions, including those that have extraneous roots.
7. Solve problems involving direct or inverse variation.
8. Identify the domain and range of a function given the function represented as a set of ordered pairs or as a graph.
9. Graph linear equations in $y = mx + b$ or $ax + by = c$ form, including cases in which $a=0$ (horizontal lines) and in which $b = 0$ (vertical lines).
10. Determine the slope of a line given two points that lie on the line, or given an equation of the line.
11. Determine whether two lines are parallel, perpendicular, or neither by comparing the slopes of the lines.
12. Find/Write the equation of a line: a) given 2 points, and b) given the slope & a point.
13. Find/Write the equation of a line that is parallel to a given line through a given point.
14. Find/Write the equation of a line that is perpendicular to a given line through a given point.
15. Solve a system of two linear equations in two variables, including applications.
16. Graph linear inequalities in two variables and systems containing two inequalities in two variables.
17. Use interval notation to express intervals of real numbers.
18. Solve equations involving absolute value.
19. Simplify expressions containing rational exponents.
20. Simplify radical expressions and rationalize denominators.
21. Solve equations involving one or two radicals, including those that have extraneous roots.
22. Add, subtract, multiply, and divide complex numbers.
23. Solve quadratic equations using a variety of methods including the square root property, completing the square, and using the quadratic formula.
24. Solve various types of applications/word problems that use one or two variables.
25. Solve for variables that are used in various types of formulas.