

**MATH 081. BASIC MATHEMATIC  
CODE: 20194  
SPRING SEMESTER 2013**

**GENERAL INFORMATION**

**Instructor: R. Varela-Ham**

**Textbook: Introductory and Intermediate Algebra for College Students/Blitzer. Fourth Edition.**

**Building/Room: 2700/2722**

**Time: Tuesday & Thursday 3:05 p.m – 5:10 p.m**

**E-mail: ruben.varela@imperial.edu**

**MEASURABLE COURSE OBJECTIVES**

**Upon satisfactory completion of the course, students will be able to:**

- 1) Demonstrate skills in solving first degree equations.**
- 2) Demonstrate the ability to solve many problems in diverse areas, in a step by step manner, when dealing with applications.**
- 3) Develop manipulation skills when operating polynomials.**
- 4) Demonstrate the various type of factoring and be cognizant of the factoring process.**
- 5) Demonstrate an understanding of skills in operations with and simplifications of rational expressions.**
- 6) Demonstrate a visual understanding of the Cartesian Coordinate System and linear graphs.**
- 7) Demonstrate the ability to solve linear systems of equations both algebraically and graphically.**
- 8) Demonstrate the ability to solve linear inequalities algebraically and be able to present the solutions graphically**

**STUDENT LEARNING OUTCOMES**

**Upon course completion, the successful student will have acquired new skills, knowledge, and or attitudes as demonstrated by being able to:**

- 1) Solve linear equations in one variable.**
- 2) Factor polynomial expressions using a variety of methods and solve polynomial equations.**
- 3) Graph linear equations and find values related to linear graphs**
- 4) Solve application problems appropriate to beginning algebra**

## **GRADING SCALE**

90 – 100 = A  
80 – 89 = B  
70 – 79 = C  
60 – 69 = D  
00 – 59 = F

## **GRADE DISTRIBUTION**

Exam one = 15%  
Exam two = 15%  
Exam three = 15%  
Exam four = 15%  
Final exam = 25% (Mandatory)  
Homework = 15%

## **GENERAL GUIDELINES**

- 1) Late work is not accepted.
- 2) School policy: No food or beverages are allowed in the classroom.
- 3) Turn off the cellular phones inside classroom.
- 4) Bring your textbook to class every-session.
- 5) School policy: No children are allowed in the classroom.
- 6) It is your responsibility to drop before the W deadline (April 13, 2013).  
Important dates: Last day to add (Jan 26), Census Date (Jan 28)
- 7) Missed assignments and exams are recorded as zeros.
- 8) You need to complete at least 80% of the total of sessions (30 Sessions)
- 9) After two unexcused absences you will be dropped. I will determine whether you may stay in the class after three. Coming late and leaving early will be counted as  $\frac{1}{2}$  attendance.
- 10) Students who disrupt or interfere with my class may be sent out of the room and told to meet with the Dean of students Affairs and Campus Disciplinary Officer, before returning to continue with coursework. They will follow disciplinary procedures as outlined in the General Catalog.
- 11) Students found to have cheated on any assignment or plagiarized will receive a zero for the assignment and sent to Disciplinary Officer. A second occurrence of cheating or plagiarism may result in dismissal from class and expulsion from IVC as outlined in the General Catalog.
- 12) Any student with a documented disability who may need educational accommodations should notify the instructor or the Disabled Student Programs and Services (DSP&S) office as soon as possible.

## **COURSE CALENDAR**

### **Week # 1 : Chapter 1. Variables, Real Numbers, and Mathematical Models**

- 1. Introduction to algebra: variables and mathematical models.**
- 2. Fractions in Algebra.**
- 3. The real numbers.**
- 4. Basic rules of algebra.**
- 5. Addition of real numbers**

### **Week # 2 ; Chapter 1. Variables, Real Numbers, and Mathematical Models**

- 6. Subtraction of real numbers.**
- 7. Multiplication and division of real numbers.**
- 8. Exponents and order of operations.**
- 9. Group activity**

### **Week # 3: Chapter 2. Linear Equations and Inequalities in One Variable**

- 1. The addition property of equality**
- 2. The multiplication property of equality.**
- 3. Solving linear equations**

### **Week # 4: Chapter 2. Linear equations and Inequalities in One Variable**

- 4. Formulas and percents.**
- 5. An introduction to problem solving.**
- 6. Problem solving in geometry.**
- 7. Solving linear inequalities**

### **Week # 5: Chapter 3. Linear Equations in Two Variables**

- 1 Graphing linear equations in two variables.**
- 2 Graphing linear equations using intercepts**
- 3 Slope.**
- 4 The slope- intercept form of the equation of the line.**
- 5 The point-slope form of the equation of the line**

### **Week # 6: Chapter 4. Systems of Linear Equations**

- 1. Solving systems of linear equations by graphing.**
- 2. Solving systems of linear equations by the substitution method.**
- 3. Solving systems of linear equations by the addition method.**
- 4. Problem solving using systems of equations**

### **Week # 7: Chapter 5. Exponents and Polynomials.**

- 1. Adding and subtracting polynomials.**
- 2. Multiplying polynomials**
- 3. Special products**
- 4. Polynomials in several variables**

**Week # 8: Chapter 5. Exponents and polynomials**

5. Dividing polynomials
6. Long division of polynomials; Synthetic division
7. Negative exponents and scientific notation

**Week # 9: Chapter 6. Factoring Polynomials.**

1. The greatest common factor and factoring by grouping
2. Factoring trinomials whose leading coefficient is 1
3. Factoring trinomials whose leading coefficient is not 1

**Week # 10: Chapter 6. Factoring Polynomials.**

4. Factoring special forms
5. A general factoring strategy
6. Solving quadratic equations by factoring.

**Week # 11 : Chapter 7. Rational Expressions.**

1. Rational expressions and their simplification
2. Multiplying and dividing rational expressions.
3. Adding and subtracting rational expressions with the same denominator.
4. Adding and subtracting rational expressions with different denominators.

**Week # 12: Chapter 7. Rational Expressions.**

5. Complex rational expressions.
6. Solving rational equations.
7. Applications using rational equations and proportions

**Week # 13 : Chapter 8. Basics of Functions**

Introduction to functions

**Week # 14; Chapter 9. Inequalities and Problem Solving.**

1. Reviewing linear inequalities and using inequalities in business applications.
2. Compound inequalities.
3. Equations and inequalities involving absolute value.
4. Linear inequalities in two variables

**Week # 15 : Chapter 10. Radicals, Radical Functions and Rational Exponents.**

1. Radical expressions and functions
2. Rational exponents
3. Multiplying and simplifying radical expressions.

**Week # 16: Final Exam (May 8, 2013)**

Holidays:    January 21 (Martin Luther King Day)  
                  February 18 (President's Day)  
                  April 1 – 6. Spring Recess