



جامعة دبي  
UNIVERSITY of DUBAI

General Education Department  
Course Syllabus  
Semester: Spring 2010/2010

Course code & No.: GPRM 022

Course Title: Intensive Pre-Mathematics

Prerequisites: NON

Class Hours: Time: sec 02: 07:00 pm-10:00 pm, ST. Room: 212sec 03: 03:30 pm-06:30 pm Days: UW. Room: sec 2 :R212 and sec 03 R622/623

**Brief Course Description:**

This course focuses on the basics of mathematics (algebra) and its applications in real life problems. This course will cover Exponents and Radicals, Algebraic and Rational Algebraic Expressions, Polynomials, Factoring, and Solving Linear Equations and Linear Inequalities, sequence and series. This course focuses on the basics of mathematics (algebra) and its applications in real life problems. In addition to that, this course will cover Polynomial Equations, Equations and Inequalities, linear Equations in Two Variables, Functions, Exponential and Logarithmic with its Graphing, Geometry, Measure of Central Tendency, and Basic Probability concepts.

**General Education Program Outcomes:**

- 1- Communicate effectively, think critically and make wise career decisions.
- 2- Develop a global perspective on ethical, cultural, economic and political issues.

**General Skills:**

- 1- Critical Thinking.
- 2- Quantitative Skills.
- 3- Abstract Thinking and adapt.

**Course Learning Outcomes (CLO):**

- 1- Review of numbers and their properties, exponent and radicals
- 2- Polynomials and their products
- 3- Operations on rational expression
- 4- Graphing of functions
- 5- Solving equations with one and two variables.
- 6- Solving and graphing of inequalities with one variable
- 7- Define angles and their types right angle triangles
- 8- Applications of mathematical and geometric sequences , and probability.

**Course Learning Outcomes (PO):**

- 1-Demonstrate the method of enquiry in the natural sciences
- 2-Differentiate along facts, laws, theories and hypotheses
- 3- Define major concepts, principles and fundamental theories in at least one area of science.

**Bloom's Taxonomy**

(The following percentage has been allocated each level of Bloom's taxonomy while developing the course objectives)

Bloom's level	1. Knowledge (K)	2. Comprehension (C)	3. Application (App)	4. Analysis (An)	5. Synthesis (S)	6. Evaluation (E)
CLO #	(1,3,8)	(1,2)	(4,7,8)	(1,2,3)		(1,7)

### CLO Mapping

This table maps CLO's to: CO, Program Concentration Outcomes (PCO), and Program Outcomes (PO)

CLO	State below CO	State below PO
#1 <b>review</b> of numbers and exponents and radicals	1	1
#2 <b>knowledge</b> of polynomials and their operations	2	2
#3 <b>Solving</b> equations and inequalities	5,6	3
#4 <b>Understanding</b> the fundamental of trigonometry	7	1
#5 <b>Applying</b> mathematical and geometrical sequences and probability	8	2,3
#6 <b>Graphing</b> linear and non linear functions	4	3

### Assessment Scheme

This Table maps CLO to the assessment scheme.

CLO	Class Work (40%)		Mid-term Exam Sec:02:10/04 2010 Sec03:14/04/ 2010	Final Exam Sec 02: 13/06/2010Time 07:30-10:30 pm Sec 03: 04/06/2010Time : 07:30-10:30 pm
	Individual Assignment +class participations	QZ1 and QZ2		
#1	3%		5%	1%
#2	3%		10%	1%
#3	3%		5%	2%
#4	3%		5%	1
#5	3%			5%
#6	3%	10		5%
#7	3%			5%
#8	4%	5		5%
Presentation				
<b>Total</b>	25%	15%	25%	35%

### Teaching Methods :

- 1- **Class Lectures**
- 2- **Assignments class work, take home assignment**
- 3- **Individual Assignment**

### Use of Modern Instructional Technology:

Supportive class lectures and making use of the Internet Web-sites whenever applicable

Weekly Schedule:

Intensive Pre Math GPRM022 Weekly/Daily Teaching Plan

Day/Week	Date	Lecture	Ch	Chapter Objectives	Relation to CLO	Assignment/Reading	Assessment	Relation to Program Objectives
1	20-02-10 23-02-10	Introduction to subject	----					
2	27-02-10. 2-03-10.  21-02-10 24-02-10	Numbers and their operations Absolute value,	1	<ul style="list-style-type: none"> <li>Represent and classify Real Numbers into: Natural Numbers, Integer Numbers, Rational Numbers and Irrational Numbers.</li> <li>Order real numbers and use inequalities.</li> <li>Find the absolute values and find the distance between two real numbers.</li> <li>Evaluate algebraic expressions using the basic rules and properties of algebra.</li> </ul>	1	Take home assignment page 9, 10	Quiz.1/Mid-term	1
3	6-03-10. 9-03-10.  28-02-10 3-3-10	Ratio and percentages Exponents and Radical Properties	1	<ul style="list-style-type: none"> <li>Use properties of Exponents.</li> <li>Use scientific notation to represent real numbers.</li> <li>Use properties of radicals.</li> <li>Use properties of rational exponents.</li> <li>Simplify expressions involving rational expressions.</li> <li>Use rational exponents to simplify expression involving radicals.</li> <li>Add and subtract expressions containing radicals.</li> <li>Rationalize a one-term or two terms denominator or numerator containing roots.</li> </ul>	1	Take home assignment page 21, 22	<ul style="list-style-type: none"> <li>Quiz.1/Mid-term</li> </ul>	1
4	13-03-10 16-03-10  7-3-10 10-3-10	Operations involving polynomials	2	<ul style="list-style-type: none"> <li>Learn to add, subtract, multiply and factor polynomials</li> <li>Remove common factors from polynomials, write polynomials in standard form, factor special polynomial forms, factor trinomials as the product of two binomials and factorize by grouping</li> <li>Use polynomial to model and solve real-life problems.</li> </ul>	3	Take home assignment page 29, 30 Take home assignment page 38, 39	<ul style="list-style-type: none"> <li>Quiz.1/Mid-term</li> </ul>	2
5	20-03-10. 23-03-10	Operations involving rational expressions  The Cartesian Plane	4	<ul style="list-style-type: none"> <li>Simplify rational expressions.</li> <li>Add, subtract, multiply, and divide rational expressions.</li> <li>Simplify complex fractions and rewrite difference quotients.</li> <li>The rectangular coordinate System and Graphs.</li> </ul>	3	Take home assignment page 48,49,64,65 Take home assignment page 70 Q1to Q110	Quiz.1/Mid-term	2,3

6	27-03-10 30-03-10  14-3-10 17-3-10	Solving linear equations and linear inequalities	8	<ul style="list-style-type: none"> <li>Identify different types of equations.</li> <li>Solve linear equations in one variable.</li> <li>Use linear equations to model and solve real-life problems.</li> <li>Represent solutions of linear inequalities in one variable.</li> <li>Solve linear inequalities in one variable.</li> <li>Solve inequalities involving absolute values.</li> </ul>	5	Take home assignment page 87 and page 93, page 151		1
7	03-04-10 06-04-10  21-3-10 24-3-10	Mathematical and geometric sequences, fundamental of statistics		<ul style="list-style-type: none"> <li>Use sequence notation to write the terms of sequences.</li> <li>Use factorial notation.</li> <li>Use summation notation to write sums.</li> <li>Recognize, write, and find the nth terms of arithmetic sequences.</li> <li>Find nth partial sums of arithmetic sequences.</li> </ul>	8	Take home assignment page 821, 831	Mid term	1,5
8	10-04-10 13-04-10  28-3-10 31-3-10 ...	Solution of quadratic equation  <b>Mid-term Exam</b> <b>Sec:02:10/04 2010</b> <b>Sec03:14/04/ 2010</b>	9	<ul style="list-style-type: none"> <li>Solve quadratic equations by factoring.</li> <li>Solve quadratic equations by using the quadratic formula  <math display="block">x = \frac{-b \mp \sqrt{b^2 - 4ac}}{2a}</math> </li> <li>Solve equations that contain radical that contain radical expressions.</li> </ul>	5	Take home assignment page 121	Mid Term	5
9	17-04-10 20-04-10  4-4-10 7-4-10	Solutions of polynomial equations	7	<ul style="list-style-type: none"> <li>Solve polynomials equations of degree three or greater.</li> <li>Solve equations involving radicals.</li> <li>Solve equations involving fractions.</li> <li>Solve equations involving absolute values.</li> </ul>	5	Take home assignment page 141	Mid Term	5
10	24-04-10 27-04-10  11-4-10 14-4-10		8		7			
11	01-05-10 04-05-10  18-4-10 21-4-10	Linear equations in two variables	15	<ul style="list-style-type: none"> <li>Use slope to graph linear equations in two variables.</li> <li>Find slopes of lines.</li> <li>Write linear equations in two variables.</li> <li>Use slope to identify parallel and perpendicular lines.</li> <li>Use slope and linear equations in two variables to model and solve</li> </ul>	5	Take home assignment page 184	QZ2 and Final Exam	5

				real-life problems.				
12	8-05-10 11-05-10  25-4-10 28-4-10	Functions page 189	16	<ul style="list-style-type: none"> <li>• Determine whether relations between two variables are functions.</li> <li>• Use function notation and evaluate functions.</li> <li>• Find the domains of functions.</li> <li>• Find zeroes of functions.</li> </ul>	4	Take home assignment page 198		4
13	15-05-10 18-05-10  2-5-10 5-5-10	Analyzing graphs and functions page 203	16	<ul style="list-style-type: none"> <li>• Evaluate exponential functions with base a.</li> <li>• Evaluate exponential functions with base e.</li> <li>• Use properties of logarithms to evaluate or rewrite logarithmic expressions.</li> <li>• Use properties of logarithms to expand or condense logarithmic expressions.</li> <li>• Solve for x of exponential and logarithmic simple equations.</li> </ul>	5	Take home assignment page 199	Final exam	5
14	22-05-10 25-05-10  9-5-10 12-5-10	Fundamental of statistics	17 19	<ul style="list-style-type: none"> <li>• Introduce the fundamentals of set theory and set operations.</li> <li>• Obtain and interpret the mean, the median, and the mode(s) of a data set.</li> <li>• Define, compute, and interpret a sample mean, range of data set, sample standard deviation.</li> <li>• Compute probabilities for experiments having equally likely outcomes.</li> <li>• Understand and use probability notation.</li> </ul>	8	Applications using SAT practice	QZ2 and Final exam	5
15	29-05-10 01-06-10  16-5-10 19-5-10	Trigonometry page 448		<ul style="list-style-type: none"> <li>• Identify the classes of polygons and solids and calculate their perimeters, areas, and volumes.</li> <li>• Find and use measures of sides and of interior and exterior angles of triangles and polygons to classify figure and solve problems.</li> <li>• Prove relationships between angles in polygons by using properties of complementary, supplementary, verticals, and exterior angles.</li> <li>• Use properties of parallel lines cut by a transversal and the properties of quadrilaterals.</li> <li>• Use the Pythagorean Theorem to determine distance and find missing lengths of sides of right triangles.</li> </ul>	7	Take home assignment page 457		8
	23-5-10 26-5-10  4-6-10 13-06-10			Final Exam Sec 3 Final ,SAT Exam Sec 02				

## Educational Resources

Educational Resource	Description	Comments
<b>Textbooks Required</b>	Algebra and Trigonometry. Larson and R Hostler, Published By Houghton Mifflin 7 <sup>th</sup> Edition ISBN 0618643214	
<b>Required readings:</b>	Websites on internet, Math Lab UD Library.	
<b>Supporting readings:</b>	SAT 2010 edition Reference mathematics books in libraries.	

### Attendance Policy

1. Students who are late for 10-20 minutes will be marked "Late attendance" in the SIS. Four such late attendances are counted as one full absence for 3-hour class session towards computing Warnings for absence.
2. Students who are late for more than 20 minutes will be allowed to sit for the class but will be marked as absent in the attendance record.
3. Absenteeism percentages are calculated according to the table below:

Duration of Session	No. of Absences		
	10%	20%	25% (Deprived)
1 hour 20 minutes	3 Absences	6 Absences	8 Absences

### Missing Exam Policy

1. Failing to attend Quiz:  
A student who misses a quiz will not be allowed for any make-up quiz.
2. Failing to attend Midterm and Final Exam.
  - Excuses should be reported to the Admission & Registration Department within seven days of the last day of excuse.
  - All medical excuses should be stamped by the Ministry of Health.
  - All midterm make-up exams will be held only once during the 13<sup>th</sup> week of the Fall & Spring Semesters and on the 13<sup>th</sup> day of the winter, Summer & II Semesters.
  - All final make-up examinations (for I grade in the previous semester) will be held 2 Or 3 days before the start of the next semester.
  - 80% of the exam marks (either mid-term or final) will be granted for such make-up exams.
  - If the student does not attend the midterm or final make-up exam on the specified date, he/she will be deprived from any further make-up exams even if he/she provides again an acceptable excuse.

### Class Conduct Policy

1. UD is an accredited university of international standard. You must behave as a University student and not a high school student.
2. Students should understand course learning objectives stated in the course syllabus on day 1 of the course as to what it means, why it is important, how they are assessed etc., so that they know the value of the course they are taking.
3. Instructors encourage students' questions. Please do not feel shy asking questions.
4. Students cannot leave the class during lecture time.
5. **Class disturbance:**
  - i. Mobile phones must be switched off during class. Students using their mobile phones will be considered **misbehavior** for that class.
  - ii. Students found whispering or talking during lectures will be asked to leave the class and will be considered as **misbehavior** for that class.
  - iii. Markings under **misbehavior** (from item i to ii) will be tracked by the SIS and deducts 1% mark for each occurrence. if the number of incidences reaches 3, such students are treated as "F" in the course and will be referred to the Student Affairs for investigation.
6. Students with no book in the class from 2<sup>nd</sup> week are marked in the SIS and loose 1% from the total course grade for each occasion.
7. Students are expected to use a variety of references in their assignments (books, on-line sources, journals...).
8. Students are required to do some further readings prior to coming to class.
9. No handouts of any kind are given. Students must learn from textbook and journal articles.
10. Late submission of assignments will be penalized by 10% a day. No assignments are accepted by the instructor during the final examination period.
11. In case of absence, you are responsible for course covered in the missed class.
12. Keep copies of your assignments for your own record.
13. UD cheating policy and absenteeism policies will be strictly enforced.
14. Students should take more challenging responsibilities in learning.
15. Students should demand feedback on their assignments, quizzes, class work, and exams from their instructors. They should know their performance status well before final examination.
16. When you are not satisfied with the course grade, you can request the registration department for **review of your final exam script only. Earlier course work is not reviewed.**
17. Medical condition is not considered a reason for being absent from the class.
18. **No phones will be allowed during the mid-term and final exams.** Be sure you carry a calculator and/or a watch if you have a need for either one of them.