

INTERAMERICAN UNIVERSITY OF PUERTO RICO
METROPOLITAN CAMPUS
FACULTY OF SCIENCES AND TECHNOLOGY
Department of Computer Sciences and Mathematics

SYLLABUS

- I. COURSE TITLE : QUANTITATIVE REASONNING
CODE AND NUMBER : GEMA 1000
CREDITS : Three (3)
ACADEMIC TERM :
PROFESSOR :
z OFFICE HOURS :
PHONE : 787-250-1912 ext 2230
E-mail :

II. COURSE DESCRIPTION

The content of the course is developed through problem solving and the integration of available technology as a work tool. Study of sets of real numbers, measuring systems geometry (length, area, and volume), operations with polynomials, equation solving for linear variables that include ratios, proportions, mathematical financial formulas and literal equations. Basic concepts of statistics: frequency distribution, measures of central tendency and dispersion. Principles of probability and method of counting. Requires additional time in an open lab.

III. GENERAL AND SPECIFIC LEARNING OBJECTIVES

At the end of the course, the student will be able to:

1. Describe the set of real numbers, the subsets that make them up and apply the fundamentals properties of real numbers to the solution of problems.
2. Use the English and Metric systems of measurement, its units and convert between and within these systems.
3. Interpret and analyze the fundamental concepts of Euclidean geometry and real life applications.
4. Carry out the fundamental operations with polynomials (addition, subtraction, multiplication and factorization).
5. Solve practical situations using lineal equations with one variable.
6. Solve elementary practical problems using proportions with one real variable.
7. Apply and analyze elementary concepts and formulas of statistics and probability.
8. Value the use of mathematics in the sciences, commerce, technology and the arts.
9. Use the different technological means available in appropriate and ethical way to solve mathematics problems.

IV. CONTENT

- Lesson 1: Whole Numbers and Integers
- Lesson 2: Order of Operations
- Lesson 3: Introduction to Algebra
- Lesson 4: Applications of Linear Equations
- Lesson 5: Basic Geometry
- Lesson 6: Rational Numbers
- Lesson 7: Review of Operations with Fractions
- Lesson 8: Applications with Fractions
- Lesson 9: Applications with Geometry
- Lesson 10: Review of Decimals
- Lesson 11: Applications with Decimals
- Lesson 12: More Geometry Applications
- Lesson 13: Percents
- Lesson 14: Applications of Percents and Interest
- Lesson 15: Measures of Central Tendency
- Lesson 16: Graph Interpretations
- Lesson 17: Systems of Measurements: Changing units in the same system
- Lesson 18: Systems of Measurements Changing units from one system to another

V. ACTIVITIES

The learning and evaluation activities will be done using the EDUCOSOFT system (<http://www.educosoft.com>) and must be completed within a set period of time established in the Course Calendar. These include: "Tutorials"; "Homework", "Quizzes", two Partial Exams, a Midterm and a Final Exam. The Partial Exams, The Midterm and the Final will be given in class. You may not be exempted from these exams or use other work results to substitute them.

- **Tutorials** - These involve several interactive activities (Learning Activities) that together with the course text provide the instruction of the entire course topics. To access tutorials click on "**Course tools**" and then click on "**Tutorials**". You will see some the important section identified with a red star. To access the course click on "**Resources**" and then click on "E-book". The course text will be accessible after the second week of classes. The time you spend on the tutorials will be registered automatically by the system.

- **Homework** - These involve several interactive exercises for each of the 18 lessons. These exercises are similar to those seen in the tutorials. Homework will **determine 10% of your grade** on this course and you need to reach a minimum average of 70% to take the corresponding quiz. It is very possible to reach a perfect 100% on your homework if before you click on submit you consult with the tutorials, the text, you fellow classmate, etc. After you click on submit you will not be able to change your answers. There is only 1 attempt for each homework.
- **Quizzes** - cover exercises similar to the assignments. There are 18 quizzes which you must take after completing assignments. For each quiz you have two attempts. Quizzes will **determine a 10% of your grade**. A practice quiz is available for each Quiz and you have up to five attempts. The practice quiz can be identified by the letter "P" (practice). The actual quiz will be identified by the letter "T" (test).
- **Partial Exams** – There are two partial exams. The first partial exam covers lessons 1 through 6. The second partial exam cover lessons 10 through 14. "Partial tests" determine **51% of your grade**.
- **Final Exam** – These are departmental examinations to be taken under supervision as established in the calendar. **The final is 25% of your grade** in the course.

VI. Evaluation Criteria and Grade Distribution

A. Partial Exams	55 %
B. Final Exam	25 %
C. Homework	10 %
D. Quizzes	10 %
Total	100%

Final exams must be taken on campus under supervision.

The curve to assign letter grades will be:

90 – 100%	A
80 – 89%	B
70 – 79%	C
60 – 69%	D
0 – 59%	F

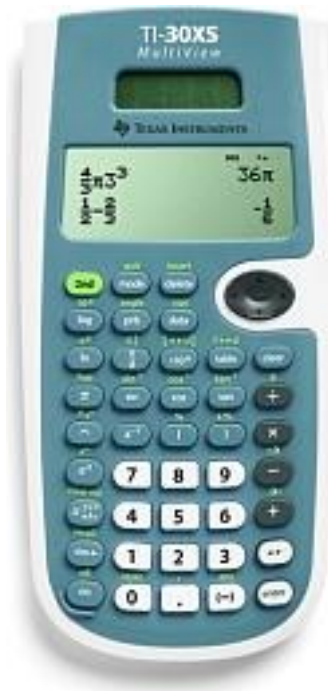
Online Classes are required to take the Final exams on campus at the CIT or at another approved and supervised location.

VII. LEARNING RESOURCES

- A. TEXT: Sharma, M. Sharma L.. Preálgebra, (2011) Casa editora: Educosoft International. A Digital versión is available in EDUCOSOFT.
- B. Learning Resources – Include interactive and video resources available in EDUCOSOFT. To access you must visit <http://www.educosoft.com>. The first time you login you should enter one of two logins:
- A combination of your university ID followed by @intermetro.com. For example m000231890@intermetro.com. This is a fictitious e-mail which you can change later.
 - Your real e-mail. The one that appears on your registration files at Inter Web.

On both cases use “welcome” as your password. Once you access Educosoft you will access to the Tutorial and a digitalized version of the text. You will also have access to an internal communication system that includes e-mail and Discussion Forum. The former will be used to contact your instructor and fellow classmates. The latter will be used to post open questions and discussions related to the topics in the course.

- C. Scientific Calculator. Should be one that can display two lines of processing. It does NOT have to have graphic capabilities. I highly recommend the [TI-30XS Multiview from Texas Instrument](#) (\$20 - \$25) which you can purchase in many of your favorite stores and pharmacies. You can also buy them through Amazon.com. (To see a comparison between the multiview and a previous versión see: YouTube: [Compare TI30XS con TI30X Multiview](#)).



VIII. BIBLIOGRAFÍA (Reference) –

A. BIBLIOGRAFÍA

Marvin L. Bittinger, Marvin L. (2010), Fundamental College Mathematics. Fifth edition. Addison-Wesley

Miller, C., Heeren, V y Hornsby, J. (2011). Mathematical Ideas. 12ma edición. Pearson Publisher.

Smith, K. (2012). The Nature of Mathematics. 12ma Edición. Brooks/Cole Publishing Company.

B. REFERENCIAS ELECTRÓNICAS

Álgebra básica: Khan Academy : Recuperado el 6 de noviembre de 2015 en: <http://es.khanacademy.org/math/algebra>

Geometría: Khan Academy: Recuperado el 6 de noviembre de 2015 en: <https://es.khanacademy.org/math/geometry>

Interés simple e interés compuesto: Recuperado el 6 de noviembre de 2015 en: https://www.youtube.com/watch?v=xaBD3oU3_Wk

Probabilidad y Estadísticas: Khan Academy: Recuperado el 6 de noviembre de 2015 en: <https://es.khanacademy.org/math/probability>

Math.com. Recuperado el 6 de noviembre de 2015 en: <http://www.math.com/>

Math is fun: Recuperado el 6 de noviembre de 2015 en: <http://www.mathisfun.com/>

Murrias, Melissa. Repaso de Decimales. Recuperado el 6 de noviembre de 2015 en <http://ponce.inter.edu/cremc/decimales.htm>

S.O.S Mathematics. Recuperado el 6 de noviembre de 2015 en <http://www.sosmath.com/index.html>

Spector, L The Math Skill en Algebra. Recuperado el 6 de noviembre de 2015 en <http://www.themathpage.com/alg/algebra.htm>

The Virtual Math Lab de la Universidad de Texas A&M.. Recuperado el 6 de noviembre de 2016 en: <http://www.wtamu.edu/academic/anns/mps/math/mathlab/>

IX. Electronic Resources -

- Basket Math (2008); Science Academy Software – <http://www.scienceacademy.com/1024768/index.html>
- The Math League - <http://www.mathleague.com/help/algebra/algebra.htm>
- Intermediate Algebra - The Virtual Math Lab de la Universidad de Texas A&M http://www.wtamu.edu/academic/anns/mps/math/mathlab/int_algebra/index.htm
- Math.com (2008) - <http://www.math.com/>
- S.O.S Mathematics (2008) - <http://www.sosmath.com/index.html>.
- Spector, L (2008) – The Math Skill en Algebra. <http://www.themathpage.com/alg/algebra.htm>
- Web Math (2008) - <http://www.webmath.com/>

X. SPECIAL NOTES

- A. Student with Disabilities Rights - Students who require support services or special assistance should request the same at the beginning of the course or as soon as they acquire knowledge that you need, using the corresponding record in the office of the Coordinator of Student Services with Disabilities, located in the University Orientation Program.
- B. Warning on dishonesty, fraud and plagiarism. As provided in Chapter V, Article 1 of the General Rules of Student (2007), plagiarism, dishonesty, fraud, manipulation or falsification of data and any other inappropriate behavior related to academic work are contrary to principles and institutional rules and are subject to disciplinary action (See Chapter V, Article 1, section B.2)
- C. Use of electronic tools – Cellular phones or any electronic tools that can interrupt the teaching-learning process or affect the academic environment for teaching excellence must be turn off. Use of electronic tools that can access, save or sent data during assessment activities are prohibited.

D. Cumplimiento con las disposiciones del Título IX

La Ley de Educación Superior Federal, según enmendada, prohíbe el discrimen por razón de sexo en cualquier actividad académica, educativa, extracurricular, atlética o en

cualquier otro programa o empleo, auspiciado o controlado por una institución de educación superior independientemente de que esta se realice dentro o fuera de los predios de la institución, si la institución recibe fondos federales.

Conforme dispone la reglamentación federal vigente, en nuestra unidad académica se ha designado un(a) Coordinador(a) Auxiliar de Título IX que brindará asistencia y orientación con relación a cualquier alegado incidente constitutivo de discrimen por sexo o género, acoso sexual o agresión sexual. Se puede comunicar con el Coordinador(a) Auxiliar, George Rivera, Director de Seguridad, al teléfono 787-250-1912, extensión 2147, o al correo electrónico grivera@metro.inter.edu .

El Documento Normativo titulado Normas y Procedimientos para Atender Alegadas Violaciones a las Disposiciones del Título IX es el documento que contiene las reglas institucionales para canalizar cualquier querrela que se presente basada en este tipo de alegación. Este documento está disponible en el portal de la Universidad Interamericana de Puerto Rico (www.inter.edu).

Revised: March 2017/ Dr. Milly Varas