COURSE SYLLABUS

ULACIT
LATIN AMERICAN UNIVERSITY OF SCIENCE AND TECHNOLOGY
COSTA RICA

Universidad Latinoamericana de Ciencia y Tecnología
Bachelor of Science in Business Administration

Course	**Math for Business and Economics**
Code	18-0029
Credits	3
Requisites	None
Mode	Regular
Type	In class
Period and length	1st Quarter – 15 Weeks
Schedule	Monday 6:30pm to 9:30pm
Room	
Professor	Luis Rivera MBA
Administrative Instructions	The course uses the Internet extensively, as well as the digital database, EBSCO, therefore it is mandatory for the student to have internet access from home.

Purpose of the course

What is the importance of mathematics in the study of economics and business today? Why is it is required for you to be familiar with a wide variety of mathematical concepts?

Throughout this course, you will learn to solve linear and quadratic equations; solve some types of rational and radical equations; graph polynomial, rational, piece-wise, exponential and logarithmic functions; find integer roots of polynomial equations; solve exponential and logarithm equations; understand the inverse relations between exponential and logarithm equations, and compute values of exponential and logarithm expressions using basic properties.

Upon completion of this course, you will be able to cover mathematical topics in college algebra, with an emphasis on functions, as this course is designed to help prepare you to enroll in a first semester course in single variable calculus.

Competences

Units of Competence	Elements of Competence	Context in which the competence is applied
Disciplinary Competence:	The student will be able to:	The student shows the mastering of the competence in learning activities such as:
To comprehend the use of mathematics in business applications.	Apply the mathematical models in concrete settings.	•
General Competence		
To show competence for learning and for looking for personal and professional effectiveness.,	Creative thinking	• Uses his/her creativity in applying solving business administration problems faced in every day managerial situations.
	Communication.	• Communicates verbally, non-verbally and in writing with his/her peers, professor and general public, in a variety of forms and contexts.
	Collaborate.	• Collaborates and interacts with others with effectiveness and respect.
	Reasoning.	• Uses reasoning when synthesizing information, establishing arguments, evaluation alternatives and establishing conclusions, when communicating with peers and professors.
	Uses information technology and communication.	• Uses information technology and communications to do research, to organize, evaluate and communicate information.
	Uses scientific methods and tools.	• Uses scientific methods when doing research and before arriving to conclusions.
	Personal effectiveness	• En su desempeño e interacción con otros en las actividades de aprendizaje del curso, muestra iniciativa, responsabilidad, ética, liderazgo y productividad así como

capacidades de autogestión, y disposiciones hacia el cambio.

Course Topics:

Functions and their graphs

Polynomial and Rational Functions

Exponential and Logarithmic Functions

Trigonometry

Analytic Trigonometry

Additional Topics in Trigonometry

Systems of Equations and Inequalities

Matrices and Determinants

Sequences, Series and Probability

Topics in Analytic Geometry

Teaching Methodology

SOCRATIG DIALOGUE: Most of the sessions will follow an open discussion format under the Socratic dialogue, in which the professor assumes the conducting role of the discussion between him/her and the student, or as a mediator between students.

ONLINE EDUCATION: The student will learn through Reading the material, the interaction with the professor and students in class, and through electronic means.

CASE METHODOLOGY: The student will read and analyze the case, individually or in groups, in order to acquire knowledge about the topic, and to be capable of making decisions on scenarios where not all the information is available.

Evaluation Methodology

The course grading is divided according to the following items:

Activity	%
Participation	30%
In Class Reading Comprehension (6 – 5% each)	30%
Homework (5 – 7% each)	35%
Course evaluation (CEPA)	5%
Total	**100%**

Participation

1. Attendance is mandatory. Failing to attend the class more than 3 times will automatically fail you. You must always let the professor know in advance if you are not going to make it to class; however, excusing yourself will not eliminate the attendance requirement.
    1. Using your mobile or computer while the professor or your fellow students are talking will count is not considered as attendance.
    2. Leaving the class early is not as attendance.
2. Participation means that you must actively engage in all of the class activities. **Just being present in the classroom is not considered participation.**

Rubric (2% per session)

Points per session	Criteria
2	**Attendance:** The student showed up in time and remained in class throughout the class. **Participation:** The student read the material and actively participated, significantly enhancing the learning experience for him/her and classmates. The student actively listened to his/her peers and commented on their opinions.
1.5	**Attendance:** The student showed up in time but did not remain in class throughout the class OR the student showed up late for class. **Participation:** The student actively participated, significantly enhancing the learning experience for him/her and classmates. The student actively listened to his/her peers and commented on their opinions.
1	**Attendance:** The student showed up in time and remained in class throughout the class.

	Participation: The student did not actively participate. Sometimes, the student was distracted by electronic devices or by talking to other classmates.
0.5	**Attendance:** The student showed up in time and remained in class throughout the class. **Participation:** The student did not actively participate. All the time, the student was distracted by electronic devices or by talking to other classmates.
0.25	**Attendance:** The student showed up in time but did not remain in class throughout the class OR the student showed up late for class. **Participation:** The student did not actively participate. All the time, the student was distracted by electronic devices or by talking to other classmates.

In-class Reading Comprehension (6 of 5% each)

Every other week the instructor will apply a reading comprehension quiz in order to make sure that the students are developing the appropriate competence during the course. In order to prepare for each class, she student must read the chapters ahead and do the exercises from the textbook.

Homeworks (5 of 5% each)

The instructor will assign a homework for the student to practice the concepts developed during the weeks. The homeworks must be submitted via Blackboard, unless otherwise specify by the instructor.

Discussion Forums (2 of 5% each)

We live mathemathics every day, during the forums, the instructor will ask you to apply a class concept to a current situation and comment on it. More details regarding this assignment during the course.

CEPA (5%): Students should fill the online course evaluation, which is a reflection of the teaching-learning process they are going through. This evaluation will be available on Blackboard during weeks 12 and 13 and is worth 5% of the grade.

ACADEMIC HONESTY

ULACIT endorses high ideals and rigorous standards of academic life. For the effects of this course, it is expected that participants avoid dishonest behavior such as fraud or plagiarism. Fraud includes making up data, falsifying bibliography, using projects elaborated by third parties, obtaining unauthorized help in classified tasks or for other persons to do your work. Plagiarism includes literally copying phrases, sentences, paragraphs and fragments of printed materials, Internet, and other sources, without giving credit to the original author; as well as paraphrasing without citing the source. **Plagiarism will make you immediately fail the course.**

ATTENTION TO DIVERSITY

The curricular approach at ULACIT focuses on the development of competencies through the completion of projects, allowing students to fulfill the academic requirements based on their own learning styles, abilities, and individual interests. The primary responsibility of learning is placed on the student; the instructor is responsible for setting course expectations from start, offering the required support to satisfy them, and awarding a level of flexibility that allows each student to choose how he or she will fulfill the course goals and work at his own pace in the completion of the projects assigned. Furthermore, the instructor will provide the required learning materials, along with continuous feedback using the rubrics designed for each project. The feedback is of a qualitative as well as quantitative nature. The use of technological tools and collaborative work allows the professor to tailor the educational process to the abilities of each student. If you have any additional special educational needs, please contact Shirley Garita, Director of the Center of Student Counseling and Psychology, writing an e-mail to the following address: diversidad@ulacit.ac.cr.

Instructor

Luis Rivera; lriverav645@ulacit.ed.cr ; lriverav@gmail.com

Educational Resources

The course has the following education technology to continuously support the teaching-learning process:

a) On-line education platform Blackboard, which includes tools for synchronic and asynchronic communication between the professor and the students, as well as areas to make available to students grades, files, web pages and evaluations.

b) Printed resources in the Alberto Cañas Escalante Library.

c) Virtual EBSCO Library, from which it is possible to access scientific papers in full text for research papers.

d) Fixed visuals like whiteboard and markers.

e) A multimedia center where overhead projectors, slide projectors, recorded media like audio and video tapes, videodisc, cameras, CDs and DVDs are available.

Computer laboratories with Internet access and software for doing projects.

Bibliography:

Mandatory:

Larson, R., (2010). Precalculus (8th edition).

Class Schedule

Week	Content	Teaching Strategy	Learning Activities
1	Functions and their graphs	Course Introduction	
2	Functions and their graphs	Individual reading of chapter. Individual practice. Prepare to apply concepts in class practice.	Read Chapter 1: Functions and their graphs. Chapter exercises
3	Polynomial and Rational Functions	Individual reading of chapter. Individual practice. Prepare to apply concepts in class practice.	Read Chapter 1: Functions and their graphs. Chapter exercises Homework 1
4	Polynomial and Rational Functions	Individual reading of chapter. Individual practice. Prepare to apply concepts in class practice.	Read Chapter 2: Polynomial and Rational Functions Chapter exercises **Reading Comprehension 1**
5	Exponential and Logarithmic Functions	Individual reading of chapter. Individual practice. Prepare to apply concepts in class practice.	Read Chapter 3: Exponential and Logarithmic Functions Chapter exercises

			Homework 2
6	Exponential and Logarithmic Functions	Individual reading of chapter. Individual practice. Prepare to apply concepts in class practice.	Read Chapter 3: Exponential and Logarithmic Functions Chapter exercises **Reading Comprehension 2**
7	Trigonometry	Individual reading of chapter. Individual practice. Prepare to apply concepts in class practice.	Read Chapter 4: Trigonometry Chapter exercises Homework 3
8	Trigonometry	Individual reading of chapter. Individual practice. Prepare to apply concepts in class practice.	Read Chapter 4: Trigonometry Chapter exercises **Reading Comprehension 3**
9	Analytic Trigonometry	Individual reading of chapter. Individual practice. Prepare to apply concepts in class practice.	Read Chapter 5 and 6: Analytic Trigonometry Chapter exercises Homework 4
10	Matrices and Determinants	Individual reading of chapter. Individual practice. Prepare to apply concepts in class practice.	Read Chapter 7: Matrices and Determinants Chapter exercises **Reading Comprehension 4**
11	Sequences, Series and Probability	Individual reading of chapter. Individual practice. Prepare to apply concepts in class practice.	Read Chapter 8: Sequences, Series and Probability Homework 5 Chapter exercises
12	Sequences, Series and Probability	Individual reading of chapter. Individual practice. Prepare to apply concepts in class practice.	Read Chapter 8: Sequences, Series and Probability Chapter exercises **Reading Comprehension 5**
13	Topics in Analytic Geometry	Individual reading of chapter. Individual practice. Prepare to apply concepts in class practice.	Read Chapter 9: Topics in Analytic Geometry Chapter exercises
14	**EASTER WEEK**		**NO CLASS**
15	Topics in Analytic Geometry	Individual reading of chapter. Individual practice. Prepare to apply concepts in class practice.	Read Chapter 10: Topics in Analytic Geometry Chapter exercises **Reading Comprehension 6**