"El saber de mis hijos hará mi grandeza"

UNIVERSITY OF SONORA

CENTRAL REGION UNIT
SCHOOL OF ECONOMIC AND ADMINISTRATIVE SCIENCE
DEPARTMENT OF ECONOMY
DEGREE IN BUSINESS AND INTERNATIONAL COMMERCE

Identification Data

Subject: Mathematics II	**Pre-requirement:** Mathematics I
Teaching-learning process: Course-Workshop	**Formative Pillar:** Basic
Hours per Subject: 5 weeks (3 theoretical – 2 practical)	**Post–requirement:**
Nature of subject: Mandatory	**Credit Value:** 8

Introduction

The Mathematics II subject is part of the Basic Pillar courses that make up the source of handling quantitative tools; it is the continuation with respect to handling logical and basic algebraic tools in order to acquire the basic skills and ability needed to be able to represent the concepts in a numerical form.

The subject content implies already having the ability to handle algebraic content acquired from Mathematics I in order to be able to represent the in a functional way the basic concepts of economy and finance, with concrete problems in a matrix manner.

The application of the approach of differential and integral calculus to static analysis is a fundamental part of the Mathematics II course.

General Objective

The student will acquire mathematic tools and a certain ability to manage them, in order to solve problems that are presented in the company; additionally, the student will acquire maturity in some of the concepts used only in the administrative area.

Specific Objectives

The student will understand the formulations of algebraic functions, their management in differential and integral calculus.

Moreover, the student will understand the usefulness of elemental, logarithmic, composed, and inverse functions; also differentials.

And the student will understand the derivation techniques and the algebraic delimitations of maximums and minimums.

Thematic content

I. Functions, limits, and continuity.

1.1 Elemental functions, limits and infinitesimals, and properties of continuous functions.

II. Derivatives techniques

2.1 Geometric interpretation; derivative of elemental functions, logarithmic, composed, and inverse functions; differentials.

III. Maximums and minimums

3.1 First and second order conditions; applications

IV. Differential equations

4.1 Partial and total increments, continuity, partial derivatives, geometric interpretation, differential equations of a different order, gradients.

Learning-Teaching Strategies

Teacher exposition

Group discussion about course contents Analytical summaries of reading texts

Presentation and solution of problems

Preparation of the work where knowledge will be applied to the resolution of a practical problem.

Evaluation and accreditation criteria

Participation in group discussions about problems presented in class and assignments. 20%

Application of 3 partial exams that will cover 40%

Assignments of applied problems to be solved. 20% Project presentation. 20%

Bibliography and other teaching-learning resources

BUDNICK F. Matemáticas Aplicadas para Administración, Economía y Ciencias Sociales. 3ª. Edición, Mc. Graw Hill, 1990.

CHIANG A. Fundamentales de Economía Matemática. Mc Graw Hill, 1997

ARRAYA, JAGDIS/LARDNER, ROBIN. Matemáticas Aplicadas (a la Administración y a la Economía), Prentice Hall.

HAEUSSLER JR, ERNEST F./PAUL, RICHARD S. Matemáticas para Administración y Economía. Iberoamericana.

HOFFMANN, LAURENCE D. Cálculo Aplicado (Para Administración, Economía, contaduría y Cs. Sociales), Mc. Graw Hill.

Teacher profile

Academic Formation:

The professor shall have a Bachelor's Degree in Mathematics or a related degree with a minimum of a Master's Degree from a related field in applied mathematics with emphasis on finance, economy, and administration.

Teaching experience:

To have experience as professor at University level within the area of applied Mathematics with emphasis on Finance, Administration, and Accounting.

To have good labor background in the teaching area.

Teaching-learning and pedagogic formation:

Facility in the performance of the teaching-learning process.

Facility in group and individual communication with students.

Ability to use technology and didactic techniques such as computer, image projection, projectors, overhead slides, slides, videos, etc.