1. DESCRIPTION

This course is a continuation of Calculus and its Applications.

It extends the concept of the Derivative and applies it to business and economics problems.

2. JUSTIFICATION

Calculus II is a subject that will permit students have their first contact with business-like real situations, so that they be prepared to face specific problems making full use of mathematical models and graphs to optimize functions such as revenue and profits.

3. OBJECTIVES

3.1 General

- To review the most basic tools to solve any possible business situations by using graphs or different models applied to the real business world.

3.2 Specific

- The student makes use mathematical variables applied to economics to find accurate and easy solutions.
- The student through the use of derivatives and Integrals describes procedures and solve practical problems to optimize.
- The student identifies the economical terminology and its link to mathematical models.
- The student develops graphical solutions to those mathematical models of our interest.
4. COMPETENCIES

- To use exponential and logarithmic functions and their derivatives to explain the behavior of economical business like situations.
- To use functions of several variables to check the partial effect of changes in one of them.
- To calculate Integrals and apply them to review key economical topics such as consumers and producers’ surplus.

5. COURSE CONTENT OUTLINE
6. METHODOLOGY
As with all mathematics courses, calculus is an application based course. Based on this premise, you will be completing the problem sets delineated above. Example problems will be worked out at the start of each class period. The remainder of the class period will be spent completing the corresponding problem sets. All problem sets will be checked for completion. The solutions to problem sets will then be posted to the METIS system. You will be expected to utilize the posted solutions to check your own level of understanding and to seek additional help, clarifications, etc. as if needed during our class time.

In addition to the completion of problem sets, mastery of concepts / skills will be demonstrated via weekly quizzes. In the event that you are absent from class on the day of a quiz, a make-up quiz may be taken at the time specified at the start of the bimester. Only 1 make-up quiz will be allowed for the entire bimester.
7. EVALUATION

7.1 ASSESSMENT CRITERIA
- Class participation.
- Calculation of derivatives and Integrals and their applications.

7.2 PERFORMANCE MARKERS
- Uses basic algebra knowledge in an appropriate way.
- Uses derivatives and integrals’ laws in a correct way.

7.3 ASSESSMENT
Final course grades will be based upon the following:

1. Problem Sets: 35%
2. Quiz Problems: 60%
3. Participation in class: 5%
4. Midterm & Final Exam: 100%

8. BIBLIOGRAPHY

8.1 REQUIRED
Brief Calculus and Applications: 10th edition; Larry Goldstein & David Lay

8.2 COMPLEMENTARY
Author: Jagdish Arya / Robin W. Lardner
Editorial: Prentice Hall Inc,
Edition: Second

Textbook: Elements of the Differential and Integral Calculus
Author: Granville, Smith and Longley
Editorial: UTEHA
Edition: Second

8.3 HANDOUTS:
Additional Handouts TBA

8.4 WEBLIOGRAPHY:
- EBSCO DATABASE
9. FACULTY INFORMATION

NAME: Ec. Juan Carlos Zerna

ACADEMIC CREDENTIALS-
Graduate Degree
Economist (Finance specialization)

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10.- FACULTY SIGNATURE AND OR DEAN/DIRECTOR’S APPROVAL
(SIGNATURE)

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