COURSE SYLLABUS

COURSE TITLE:	Calculus	**COURSE CODE:**	MATH120
PREREQUISITES:	MATH110	**SEMESTER:**	FALL 2020
INSTRUCTOR:	Nuno Santos	**CREDITS:**	3
EMAIL:	professornunosantos@gmail.com	**SCHEDULE:**	Friday 15h30-18h30

COURSE DESCRIPTION:

This course introduces students to the concepts of calculus needed on the management, finance and accounting fields of study. Students will learn how to perform advance calculations needed on the economics, finance and accounting.

COURSE OBJECTIVES:

After this course, students be able to understand the concepts and applications of:

- Perform operations Functions, Limits, and the Derivative
- Perform operations involving differentiation

EXPECTED LEARNING OUTCOMES:

Upon completion of this course students should be able to understand the topics and applications of:

- Basic Rules of Differentiation
- The Product and Quotient Rules
- The Chain Rule
- Marginal Functions in Economics
- Higher-Order Derivatives
- Implicit Differentiation and Related Rates
- Differentials
- Applications of the First Derivative
- Applications of the Second Derivative
- Curve Sketching
- Optimization 1
- Optimization 2

MANDATORY TEXTBOOK:

Case studies and power point presentation provided one week in advance

EVALUATIONS:

The final grade will be determined as follows:

- Mid Term – 30%

- Final Exam – 30%
- Homework – 20%
- In Class Work – 20%

Presence in class is mandatory. More than 2 absences will lead to a failing grade.

GRADING CRITERIA:

Grades will be based on the following evaluation criteria:

CATEGORY	ACHIEVEMENT LEVEL 1 : BEGINNING	ACHIEVEMENT LEVEL 2 : DEVELOPING	ACHIEVEMENT LEVEL 3 : ACCOMPLISHED	ACHIEVEMENT LEVEL 4 : EXEMPLARY
CHAPTER 3 Differentiation	Student understands less than 20% of the concepts	Student understands between 20% and 50% of the concepts	Student understands between 50% and 80% of the concepts	Student understands at least 80% of the concepts
CHAPTER 4 Applications of derivative	Student understands less than 20% of the concepts	Student understands between 20% and 40% of the concepts	Student understands between 50% and 80% of the concepts	Student understands at least 80% of the concepts

COURSE SCHEDULE:

Dates	Reading/Homework	Session Content
Session 1 18 Sept	Course work 3.1 Homework 3.1	Chapter 3.1 – Basic rules of Differentiation
Session 2 25 Sept	Course work 3.2 Homework 3.2	Chapter 3.2 - The Product and Quotient Rules
Session 3 2 Oct	Course work 3.3 Homework 3.3	Chapter 3.3 - The Chain Rule
Session 4 9 Oct	Course work 3.4 Homework 3.4	Chapter 3.4 - Marginal Functions in Economics
Session 5 16 Oct	Course work 3.5 Homework 3.5	Chapter 3.5 - Higher-Order Derivatives
Session 6 23 Oct	Course work 3.6 Homework 3.6	Chapter 3.6 - Implicit Differentiation and Related Rates
Session 7 30 Oct	Course work 3.7 Homework 3.7	Chapter 3.7 - Differentials
Session 8 6 Nov	Mid Term Course work 4.1 Homework 4.1	Chapter 4.1 - Applications of the First Derivative
Session 9 13 Nov	Course work 4.2 Homework 4.2	Chapter 4.2 - Applications of the Second Derivative
Session 10 20 Nov	Course work 4.3 Homework 4.3	Chapter 4.3 - Curve Sketching

Session 11 4 Dec	Course work 4.4 Homework 4.4	Chapter 4. Optimization 1
Session 12 11 Dec	Final Exam	Final Exam

The schedule of Final Exams will be confirmed and published by 31 October 2020. The last day of the semester is 18 December 2020. DO NOT PLAN ANY TRAVEL BEFORE THIS DATE AS THERE ARE NO MAKE-UP EXAMS.