University of Saint Joseph
Faculty of Administration and Leadership

Bachelor in Business Administration

LIS204 BA - CALCULUS I
3-Credit Module
FALL SEMESTER

SYLLABUS

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Office hours: Wednesdays and Thursdays, from 10:30 am till 12:30 am

Module Description: The module is the first of a two-part course designed to give students an understanding of basic mathematical skills necessary to analyze and solve problems in Business, Economics and Finance. Calculus I will focus on Arithmetic computation, Compounding and Discounting, Algebraic manipulation, Equations, Systems of Linear Equations, business applications of Linear Programming, Functions and derivatives, maximum and minimum of a function, applications in Economics.

Learning Objectives: the fundamental objective of this module is to give students mastery of algebra and a solid understanding of mathematical methods and analysis of functions. Other objectives include

1. Promoting critical thinking;
2. Understanding logical processes and problem solving approaches;
3. Developing research techniques and methodology;
4. Fostering presentation and writing skills.

Learning materials and resources: Smedley & Wiseman (2001). *Introducing pure mathematics*. Oxford University Press. Hodgson (1991). *Guided investigations into space and numbers*. Milton. Materials will be made available to students through the USJ Hub.

Assessment and final grading: knowledge will be assessed using two quizzes and a closed-book in-class test. There will be exercises and assignments after each major topic. In-class exercises and assignments are the study guide for tests. Grading is as follows:

1. Attendance, class assignments 20%
2. Two quizzes 40%
3. Final test 40%

Attendance, punctuality: failure to take a quiz and/or test without validated reasons will be awarded a zero. Late submission will not be graded.

Course schedule and syllabus: the course comprises 14 sessions, each with one 3-hour class. Notwithstanding the need to introduce unexpected changes, the course schedule is as follows:

Session no.	Topic
Session 1 Sept. 22	Arithmetic training, computation
Session 2 Sept. 29	Present and Future values

Session 3 Oct. 6	Compounding and discounting in Business and Economics
Session 4 Oct. 13	Algebraic manipulation
Session 5 Oct. 20	Functions and Equations
Session 6 Oct. 27	Workshop and quiz number 1
Session 7 Nov. 3	Systems of equations
Session 8 Nov. 10	Inequalities, linear programming
Session 9 Nov. 17	Business optimization practice
Session 10 Nov. 24	Workshop and quiz number 2
Session 11 Dec. 1	Rate of change, derivative, applications
Session 12 Dec. 15	derivative function, maximum and minimum of a function
Session 13 Jan. 5	Test preparation, final test
Session 14 Jan. 12	Final test recovery

At the end of this module a student should be able to achieve the following objectives:

1. Identify and demonstrate knowledge of percentages, ratios, algebraic manipulation;
2. Calculate future and present values, compounding and discounting of series of values.
3. Identify and draw general functions and their change;
4. Examine and discuss algebra problems with different degrees of complexity;
5. Analyze and discuss graphical representation of functions;
6. Analyze, discuss and solve business optimization problems;
7. Extrapolate from theory and apply to a topic in business, finance or economics;
8. Develop both personal and team-building skills as well as leadership qualities.

Evaluation and grades' description:

1. Excellent: 19-20 marks: awarded when a student has shown attainment of all course objectives and learning outcomes, with a high level of intellectual and effective initiative and makes outstanding contributions to pair/teamwork.
2. Very good: 17-18 marks: awarded when all the objectives and learning outcomes have been addressed. Makes a significant contribution to teamwork and ability to reflect on own learning and decision making to a high level.
3. Good: 14-16 marks: awarded when all objectives have been addressed satisfactorily, or where the evidence is strong in some and weaker in others. Student has made an effective contribution to pair/team work and development of some effective skills.
4. Satisfactory Pass: 12-13 marks: awarded when the objectives have been addressed adequately, or there is evidence of strong learning in some and weaker in others. Knows a reasonable amount of content, but does not transfer or apply it easily.
5. Weak Pass: 10-11 marks: awarded when the objectives have been addressed minimally. The student shows sufficient familiarity with the subject matter to enable progress without repeating the course.
6. Below Pass: 9 marks and below when student shows fundamental misunderstandings and lack of effort/involvement in the course. Student has not achieved at least 50 percent of the credit on every course component. Work not submitted.