



BUS 119: QUANTITATIVE METHODS

Proposer:**Name:**

Gabriel Giannandrea

Email:

gabrielg@cos.edu

Effective Term:

Fall 2025

Does this course use a CA Common Course Number

No

Credit Status:

Credit - Degree Applicable

Subject:

BUS - Business

Course Number:

119

Discipline:

And/Or	(	Discipline	)
		Business	

Catalog Title

Quantitative Methods

COS Course Description

This is an introductory course for Business Administration majors designed to develop an appreciation of the value of quantitative methods in decision making by formulation and solution of common business problems. Topics include linear models, matrix algebra, linear programming, finance, and an introduction to probability. Approved for Distance Learning format.

Prerequisites

Intermediate Algebra or BUS 020 or equivalent college course with a minimum grade of C or eligibility as determined by COS placement procedures

Validation**Validation Type**

Sequential - Same Discipline

Course

BUS 020

Complete the Prerequisite/Corequisite Objectives and provide sound quantitative research to document the need for the requisite.

Method of Instruction:

Distance Education
Lecture and/or Discussion

Course Units/Hours:**Course Units Minimum:**

3

Lecture Hours Minimum (week)

3

Lab Hours Minimum (week)

0

Activity Hours Minimum (week)

0

Total Contact Hours Minimum (semester)

52.5

Total Outside Hours Minimum (semester)

105

Total Student Learning Minimum Hours (semester)

157.5

Repeatability:

No

Open Entry/Exit:

No

Field Trips:

Not Required

Grade Mode:

Standard Letter

TOP Code:

050100 - * Business and Commerce, General

SAM Code:

D - Possibly Occupational

Course Content

COS Methods of Evaluation:

Essay quizzes or exams
Problem solving assignments or activities
Short answer quizzes or exams
Skill demonstrations
Written essays or extended papers

COS Course Topics:

COS Course Topics	
1	Linear equations and functions
2	Set theory including DeMorgans Laws and Venn diagrams
3	Probability and combinatorics including permutations and combinations; finding the probability of an event given the probabilities of the simple events in a sample space; conditional probability
4	Math of finance including simple and compound interest, future and present value, annuities, sinking funds, and amortization
5	Linear programming
6	Matrices including matrix algebra, Gauss-Jordan elimination and reduced-row echelon form, inverse matrices, and applications
7	Systems of linear equations

- | | |
|---|--|
| 8 | Applications of linear functions to economics such as cost, revenue and profit functions, supply and demand equations, break-even point, and free market equilibrium |
| 9 | Exponential and logarithmic functions and their applications |

COS Course Objectives:

COS Course Objectives	
1	Apply linear and exponential graphs and functions.
2	Solve applied problems in finance including simple and compound interest, future and present value, annuities, sinking funds, and amortization.
3	Find the conditional probability of an event.
4	Determine the probability of a specified event.
5	Apply basic combinatorial principles to enumeration problems.
6	Find unions, intersections and complements of sets and use Venn diagrams to solve problems.
7	Solve linear programming problems in at least three variables.
8	Find the inverse of a square matrix and use the inverse to solve a system of linear equations.
9	Solve a system of linear equations using Gauss-Jordan elimination and interpret the result.
10	Write a system of linear equations to solve applied problems.

Course Outcomes:

Course Outcomes	
1	Given a series of cash flows and a discount rate, students will be able to calculate present and future values.
2	Given an algebraic problem with a variable, students will be able to solve for the variable.
3	Given set of data points, students will be able to display those points on a graph.
4	Given situation with several outcomes and related historical data, students will be able to calculate the probability of each future outcome.
5	Given set of data points, students will be able to calculate the statistical measures of mean, median, and mode.

Assignments:

Assignment Type:	Details
Homework	Students will complete an online assignment through the course management software such as Pearson Mylabs.
Reading	Students will read from the text prior to each class session.
Writing	Students will write an explanation based on the results of their calculations.

Representative Texts, Manuals, and/or OER that is equivalent, Other Support Materials:

Texts used by individual institutions and even individual sections will vary. The list of representative texts must include at least one text with a publication date within five (5) years of the course outline approval date.

COS Textbooks or other support materials

Resource Type:	Details
Books	Mathematics with business applications in the Management, Natural, and Social Sciences 13th ed. (2023)

Equity Review:

No

Transferable to CSU

Yes - Approved

COS General Education

COS GE Area 2: Mathematical Concepts & Quantitative Reasoning
COS GE A2: Oral Communication/Analytic Thinking



Other Degree Attributes

Degree Applicable
Not a Basic Skills Course

Distance Learning Addendum

BUS119.pdf

Additional Attachment

Business LMI 2024.pdf
Advisory Mtg Responses.docx

Banner Title:

Quantitative Methods

Curriculum Committee Approval Date:

02/05/2025

Academic Senate Approval Date:

02/12/2025

District Governing Board Approval Date:

03/10/2025

Course Control Number:

CCC000208309

C-ID:

MATH130