Course # and Name as it appears in the catalog
GBUS 325 Quantitative Business Analysis

Credit Hours: #3
Scheduled hours per week
Lecture: #3
Hybrid
online
Lab: #
Other: #

Catalog Course Description: Emphasis will be on analyzing financial statements and typical budget and expense reports.

Pre-requisites: na

Co-requisites: na

Course Learning Outcomes:
The learning objectives for this course are summarized below. They are not meant to be exhaustive and can vary.
Upon successful completion of all course requirements, the student will be able to:
Describe the quantitative analysis approach, understand the application of quantitative analysis in a real situation, and describe the use of modeling in quantitative analysis, use computers and spreadsheet models to perform simple quantitative analysis, discuss possible problems in using quantitative analysis, and perform a break-even analysis.

Understand the basic foundations of probability analysis, describe statistically dependent and independent events, describe and provide examples of both discrete and continuous random variables, explain the difference between discrete and continuous probability distributions, calculate expected values and variances and use the normal, binomial, poisson, and exponential distribution tables. Solve problems involving applications of the normal, binomial, poisson and exponential distributions.

Describe the types of decision-making environments, explain the use of different models to make decisions under uncertainty, use probability values to make decisions under risk, develop and use decision trees as a tool for decision making, and understand the importance and use of utility theory in decision making.

Understand the basic assumptions and properties of linear programming (LP), graphically solve any LP problem that has only two variables by both the corner point and isoprofit line methods, understand special issues in LP such as infeasibility, unboundedness, redundancy, and alternative optimal solutions, understand the role of sensitivity analysis and use Excel spreadsheets to solve LP problems.

Understand major application areas, including marketing, production, labor scheduling, fuel blending, transportation, and finance, gain experience in solving LP problems using QM for Windows software.

Convert LP constraints to equalities with slack, surplus, and artificial variables, set up and solve LP problems with simplex tableaus, interpret the meaning of every number in a simplex tableau, recognize special cases such as infeasibility, unboundedness, and degeneracy, use the simplex tables to conduct sensitivity analysis.

Use the multifactor evaluation process in making decisions that involve a number of factors, where importance weights can be assigned.

Understand how the normal curve can be used in performing break-even analysis, compute the expected value of perfect information using the normal curve, perform marginal analysis where products have a constant marginal profit and loss.

Topics to be studied:

In depth study of selected quantitative analytical techniques like Linear Programming including Graphical, Corner point, Simplex, and sensitivity analysis, Basic concepts of probability, Commonly used probability distributions including Binomial, Poisson, Exponential, and Normal. Decision Theory. Broad survey of many other topics including Network models, Game theory, dynamic programming, AHP, Inventory, Forecasting.

Relationship of Course to Program or Discipline Learning Outcomes:

Bachelors of Science in Business Administration	
(BSBA) Program Outcomes	
General Business Specialization (GenBus):	
• **Communicate effectively and professionally both orally and in writing including complex report generation.**	
• **Demonstrate the use of quantitative skills in analysis of complex business decisions with a global perspective.**	**X**
• **Demonstrate and integrate the use functional areas of business including accounting, economics, finance, global business, management, marketing and the legal environment of business.**	**X**
• **Demonstrate the ability to work ethically, effectively, and respectfully with people of diverse backgrounds and with people whom have different roles, social affiliations, and personalities.**	
• **Demonstrate the ability to solve complex business and organizational problems using programmed and non--programmed decision techniques using logical reasoning for evaluating information and data.**	**X**
• **Apply best practices in management of functional areas including Human Resources, development and analysis of organizational design and structure, and leadership techniques to manage a team or department.**	**X**
• **Demonstrate an understanding of complex marketing concepts including developing and deploying research studies for data collection and analysis, creating and deploying both B2C and B2B functions including procurement, supply chain management, and other marketing analysis.**	**X**
• **Be admission-ready for a Master of Business Administration program if desired.**	**X**

Relationship of Course to General Education Learning Outcomes:	
Composition and Rhetoric Students illustrate a fundamental understanding of the best practices of communicating in English and meet the writing standards of their college or program-based communication requirements.	
Science & Technology Students successfully apply systematic methods of analysis to the natural and physical world, understand scientific knowledge as empirical, and refer to data as a basis for conclusions.	X
Mathematics & Quantitative Skills Students effectively use quantitative techniques and the practical application of numerical, symbolic, or spatial concepts.	X

Society, Diversity, & Connections Students demonstrate understanding of and a logical ability to successfully analyze human behavior, societal and political organization, or communication.	
Human Inquiry & the Past Students interpret historical events or philosophical perspectives by identifying patterns, applying analytical reasoning, employing methods of critical inquiry, or expanding problem-solving skills.	X
The Arts & Creativity Students successfully articulate and apply methods and principles of critical and creative inquiry to the production or analysis of works of art.	
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Special requirements of the course:

na

Additional information:

na

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