WILMINGTON UNIVERSITY
COLLEGE OF BUSINESS
BASIC COURSE INFORMATION

COURSE TITLE: Quantitative Business Analysis
COURSE NUMBER: MBA 6300

I. RATIONALE:

Quantitative analysis techniques help managers make better decisions. By incorporating quantitative factors into a mathematical model and developing mathematical procedures to generate a solution or recommendation to the model, managers can gain insight and understand a managerial problem before attempting to make a decision.

The focus of this course is managerial problem solving through the application of concepts from the fields of management science and operations research. Students are to demonstrate competencies in the following: linear programming, simulation, PERT/CPM modeling, inventory models, and regression analysis. Students will utilize and demonstrate proficiency in the use of Microsoft Excel to derive solutions to multiple problems. Students will interpret and evaluate the results of quantitative analyses towards more effective managerial decision-making.

II. MAJOR INSTRUCTIONAL GOALS:

Goal A: Students will utilize and become proficient with a variety of quantitative analysis and decision techniques to solve managerial problems.

Learning Outcomes: The student will

A-1 Know when and how to use appropriate forecasting models.
A-2 Make appropriate decisions under uncertainty and use probabilities to make decisions under risk.
A-3 Develop simple and multiple linear regression equations from sample data and use them for prediction purposes.
A-4 Formulate and solve linear programming problems.
A-5 Use PERT/CPM method to determine earliest start and finish time, latest start time and finish time, slack time, critical path, and project completion time.

Goal B: Students will demonstrate proficiency with basic descriptive and inferential statistical techniques.

Learning Outcomes: The student will

B-1 Understand the basic foundations of probability analysis.
B-2 Apply conditional probability to solve business problems.
B-3 Calculate expected values and variances and use the normal table to find a probability and a z-score.
B-4 Use Bayesian analysis to revise probabilities and provide relevant information.

**Goal C:** Students will demonstrate proficiency in the use of spreadsheet software (Microsoft Excel) in deriving quantitative solutions to applied business analysis problems.

**Learning Outcomes:** The student will

- C-1 Use Excel to compute variance and Excel’s functions to find probabilities for Binomial and normal distributions.
- C-2 Use Excel to create forecasting models and use them to forecast.
- C-3 Formulate linear programming problems in Excel.
- C-4 Use Excel’s Solver function to solve linear programming problems.
- C-5 Run and analyze the data generated from simple and multiple linear regression models.

**Goal D:** Students will exercise critical thinking strategies including problem solving, analysis, and evaluation of managerial problems.

**Learning Outcomes:** The student will

- D-1 Recognize and identify possible alternatives to solve a business problem.
- D-2 Recognize why analytical thinking is important for business decision-making.

**Goal E:** Students will develop an understanding of how to interpret the results of quantitative analysis of a business problem.

**Learning Outcomes:** The student will

- E-1 Provide appropriate recommendations to business problems based on the results of quantitative analysis.
- E-2 Identify key issues indicated from the results of quantitative analysis.
- E-3 Examine possible changes of the input parameters from Excel’s sensitivity analysis report in linear programming.
- E-4 Interpret the meanings of the coefficient of determination, the coefficients of independent variables, and all ANOVA values generated in a linear regression model.