



# Course Specifications

<b>Course Title:</b>	Quantitative Methods for Business
<b>Course Code:</b>	BUS 504
<b>Program:</b>	MBA
<b>Department:</b>	Management
<b>College:</b>	College of Business Administration
<b>Institution:</b>	Department of management

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## A. Course Identification

<b>1. Credit hours:</b>			
<b>2. Course type</b>			
a.	University <input type="checkbox"/>	College <input checked="" type="checkbox"/>	Department <input type="checkbox"/> Others <input type="checkbox"/>
b.	Required <input checked="" type="checkbox"/>	Elective <input type="checkbox"/>	
<b>3. Level/year at which this course is offered:</b> Foundation course for some MBA students who lack the required background of quantitative methods.			
<b>4. Pre-requisites for this course (if any):</b> No			
<b>5. Co-requisites for this course (if any):</b> No			

### 6. Mode of Instruction (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	40	89 %
2	Blended		
3	E-learning		
4	Correspondence		
5	Other (problem solving in class using Microsoft excel)	5	11%

### 7. Actual Learning Hours (based on academic semester)

No	Activity	Learning Hours
<b>Contact Hours</b>		
1	Lecture	19.5
2	Laboratory/Studio	
3	Tutorial	
4	Others (problem solving in class using Microsoft excel)	19.5
	<b>Total</b>	39
<b>Other Learning Hours*</b>		
1	Study	20
2	Assignments	10
3	Library	
4	Projects/Research Essays/Theses	
5	Others (specify)	
	<b>Total</b>	

\* The length of time that a learner takes to complete learning activities that lead to achievement of course learning outcomes, such as study time, homework assignments, projects, preparing presentations, library times

## B. Course Objectives and Learning Outcomes

### 1. Course Description

This course teaches the applications of mathematical and statistical tools to formulate and solve business problems, and how to interpret results in order to make the right business decision making process.

### 2. Course Main Objective

- 1) To provide the basic understanding of the value and use of quantitative methods in administrative and operational problem solving and decision-making.
- 2) To develop an understanding of a variety of quantitative techniques applicable to a wide range of business situations.
- 3) To recognize particular techniques and their applications so as to be able to apply these techniques in problem solving for management decision making.

### 3. Course Learning Outcomes

CLOs		Aligned PLOs
<b>1</b>	<b>Knowledge:</b>	
1.1	Describe problem formulation process.	PLO1
1.2	Describe the use of quantitative methods in problem solving	PLO1
1.3	Describe how to employ problem solving techniques	PLO1
1...		
<b>2</b>	<b>Skills :</b>	
2.1	Application of quantitative methods in decision making	PLO1
2.2	Analyze different alternatives and then choosing among alternatives	PLO1
2.3		
2...		
<b>3</b>	<b>Competence:</b>	
3.1	To solve problems in groups	PLO2
3.2	Communicate ideas through oral discussion	PLO2
3.3	Solve, through the use of Microsoft excel, simple and complex numerical problems	PLO1, 3
3...		

## C. Course Content

No	List of Topics	Contact Hours
1	<b>Chapter 1 – Introduction</b> <b>Basic concepts in quantitative methods of business</b> Types of variables Mean, median, mode Geometric mean Quartiles, deciles, percentiles, Skew Standards deviation	6

	Box plot	
3	<b>Chapter 2 - Introduction to Probability</b> 2.1 Experiments and the Sample Space 2.2. Assigning Probabilities to Experimental Outcomes 2.3. Events and Their Probabilities 2.4. Some Basic Relationships of Probability 2.5. Bayes' Theorem	6
5	<b>Chapter 3 - Probability Distributions</b> 3.1. Random Variables 3.2. Discrete Probability Distribution 3.3. Binomial Probability Distribution 3.4. Poisson Probability Distribution 3.5. Continues Random Variables 3.6. Normal Distribution Population 3.7. Exponential Distribution Population	6
	<b>Chapter 4 - Decision Analysis</b> <u>Through any of the following topics:</u> 4.1 Decision through 4.2 Sensitivity analysis 4.3 Utility and game theory 4.4 Markov Process	3
	<b>Chapter 5 - Inventory management</b> Inventory management (chapter 14) - Basic topics such as <ul style="list-style-type: none"> <li>• inventory,</li> <li>• holding cost,</li> <li>• ordering cost,</li> <li>• set up cost,</li> <li>• EOQ, and</li> <li>• EPQ</li> </ul>	3
	<b>Chapter 6- Forecasting</b> Forecasting and Regression analysis (chapter 6) (Manual as well on computer) <ul style="list-style-type: none"> <li>• Forecasting techniques</li> <li>• Forecasting accuracy measuring techniques</li> <li>• Correlation</li> <li>• Regression</li> <li>• Slope</li> <li>• Intercept</li> </ul>	6
	<b>Chapter 7 - Introduction to Linear Programming</b> 7.1. Linear Programming Problem	6

	7.2. Problem Formulation 7.3.A Simple Maximization Problem 7.4. Graphical Solution Procedure 7.5. Extreme Points and the Optimal Solution	
	<b>Chapter 13 - Project Management (PERT)</b> 13.1 Project Scheduling with known activities times	3
	exams and assignments	6
<b>Total</b>		45

## D. Teaching and Assessment

### 1. Alignment of Course Learning Outcomes with Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
<b>1.0</b>	<b>Knowledge</b>		
1.1	<u>Describe</u> problem formulation process.	Lectures, problem assignments, in-class solving,	Exams, Quizzes, Assignments
1.2	<u>Describe</u> the use of quantitative methods in problem solving	Lectures, problem assignments, in-class solving,	Exams, Quizzes, Assignments
...	<u>Describe</u> how to employ problem solving techniques	Lectures, problem assignments, in-class solving,	Exams, Quizzes, Assignments
<b>2.0</b>	<b>Skills</b>		
2.1	<u>Application</u> of quantitative methods in decision making	Lectures, problem assignments, in-class solving,	Exams, Quizzes, Assignments
2.2	<u>Analyze</u> different alternatives and then <u>choosing</u> among alternatives	Lectures, problem assignments, in-class solving,	Exams, Quizzes, Assignments
...			
<b>3.0</b>	<b>Competence</b>		
3.1	To <u>solve</u> problems in groups		Group solving, problem solving
3.2	<u>Communicate</u> ideas through oral discussion	Class discussions and assignments and submission of written reports.	Group solving and presenting solutions and methods to the whole class.

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
...	Solve, through the use of Microsoft excel, simple and complex numerical problems	In-class practice using Microsoft excel	Microsoft excel based assignments and quizzes

## 2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	Major exam 1	5	Around 20%
2	Major exam 2	10	Around 20%
3	Quizzes and assignments (Many of these assignments will be based on Microsoft excel)	Throughout the semester	Around 20%
4	Final exam	End of semester	40%
5			
6			
7			
8			

\*Assessment task (i.e., written test, oral test, oral presentation, group project, essay, etc.)

## E. Student Academic Counseling and Support

**Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice :**

Office hours are dedicated for students and also well communicated to students through announcements on LMS  
LMS for announcements  
Email communication

## F. Learning Resources and Facilities

### 1. Learning Resources

<b>Required Textbooks</b>	Anderson, Sweeney, Williams, Camm, and Martin, <i>Quantitative Methods for Business</i> , 12 <sup>th</sup> edition, South Western Cengage Publishing Co.
<b>Essential References Materials</b>	
<b>Electronic Materials</b>	
<b>Other Learning Materials</b>	The latest online forums discussing different quantitative methods will be announced on LMS.

### 2. Facilities Required

Item	Resources
<b>Accommodation</b>	Suitable lecture room to accommodate the size of the

Item	Resources
(Classrooms, laboratories, demonstration rooms/labs, etc.)	students, LCD projector, strong bandwidth for internet connection
<b>Technology Resources</b> (AV, data show, Smart Board, software, etc.)	Computer, smart board, data show, access to Moodle and internet, and smart board
<b>Other Resources</b> (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)	

## G. Course Quality Evaluation

Evaluation Areas/Issues	Evaluators	Evaluation Methods
Teaching effectiveness, quality of teaching, facilities and other suggestions	Students	Course evaluation
Effectiveness of teaching and assessment	Chairperson / director / peers	Class observation
Assessment of student learning through periodic feedback during semester	Instructor	Formative assessment and periodic feedback from students

**Evaluation areas** (e.g., Effectiveness of teaching and assessment, Extent of achievement of course learning outcomes, Quality of learning resources, etc.)

**Evaluators** (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify))

**Assessment Methods** (Direct, Indirect)

## H. Specification Approval Data

<b>Council / Committee</b>	
<b>Reference No.</b>	
<b>Date</b>	