Lok Jagruti Kendra University
University with a Difference

Masters of Business Administration (MBA) – Semester - 1

Course Teaching Plan

Course Title: Quantitative Techniques for Managers (QTM)
Course Code: 340030102
Course Credit: 4

1. Course Introduction

Right decision is the key to achieving competitive advantage for organizations. In today's tech-driven global and economic environment, there is vast amount of data available. A key challenge facing managers is the interpretation of the huge amount of data generated in business. Managers should possess the skills required to extract information from data and apply them to decision making situations. An objective decision making involves appropriate collection, presentation and analysis of data. This course develops the insights and skills required to draw inferences and conclusion about many types of data.

2. Course Objectives:

- The objective of the course is to make the students familiar with statistical techniques and their applications in managerial decision making.
- Identify some of the widely used operations research techniques and their use for managerial decision making.
- Apply theoretical background and methodological skills to solve organizational decision problems.

3. Course Learning Outcome:

CLO1: Develop critical thinking skills to synthesise analysis using descriptive techniques

CLO 2: Demonstrate ability to apply basic probability and Bayesian analysis concepts

CLO 3: Understand the concept and application of regression analysis

CLO 4: Demonstrate the knowledge of decision analysis and its utilities

CLO 5: Analyse the data and apply appropriate forecasting technique

CLO 6: Understand decision making using mathematical models developed by simulating a business or management system

4. CLO –PO Mapping Matrix

	PO1	PO2	PO3	PO4	PO5
CLO1: Develop critical thinking skills to synthesise analysis using descriptive techniques	3	3	1	1	3
CLO 2: Demonstrate ability to apply basic probability and Bayesian analysis concepts	3	3	1	1	3
CLO 3: Understand the concept and application of regression analysis	3	3	1	1	3
CLO 4: Demonstrate the knowledge of decision analysis and its utilities	3	3	1	1	3
CLO 5: Analyse the data and apply appropriate forecasting technique	3	3	1	1	3
CLO 6: Understand decision making using mathematical models developed by simulating a business or management system	3	3	1	1	3

Correlation levels: 3= ‘High’, 2=‘Medium’, 1=‘Low’ and ‘-‘ = No correlation

5. Course Contents and Session Plan:

Session No	Syllabus Content
	UNIT I: Introduction to Quantitative analysis & Descriptive statistics
1-2	Introduction to Data and Statistics
3-5	Descriptive Statistics- Tabular and Graphical
6-8	Descriptive Statistics- Numeric measures
9-10	Group Exercise
	UNIT II: Probability

11-14	Probability Concepts: Counting rules, basic probability concepts, conditional probability, Bayes Theorem
15	Group Assignment
	UNIT 3: Correlation and Regression Analysis
17-20	Correlation, Simple Linear Regression & Residual Analysis
21-22	Group Exercise
	UNIT 4: Decision Analysis
23-26	Decision analysis- Problem Formulation, Decision making with probabilities
27-28	Decision analysis with Sample Information
29-30	Group Exercise
	UNIT 5: Forecasting & Simulation
31	Components of Time series, Qualitative Approaches of forecasting
32-33	Smoothing methods and Trend Projection
34-35	Trend and Seasonal Components
36-37	Group Exercise
38	Introduction to simulation, Monte Carlo simulation method
39-40	Simulation of Inventory Analysis and maintenance policy

6. Assessment Scheme:

Specific assessment method	% Weightage	Theory	Practical
Exam	50%	√	
Group Exercise	20%	√	√
Case Analysis	10%	√	√
Quiz	10%	√	
Class Participation	10%	√	

- ***Please tick the appropriate cell in CLO matrix***
- ***Use continuous assessment methods of your choice***

7. Educational Resources

Educational Resources	Description
i. Text Book	Quantitative Analysis for Management by Barry Render, Ralph M. Stair, Michael E. Hanna, Trevor S. Hale, Pearson Publication, 12th Edition
ii. Reference Book	Quantitative Analysis for Management by Barry Render, Ralph M. Stair, Michael E. Hanna, Trevor S. Hale, Pearson Publication, 12th Edition
iii. Journals/ Magazine/periodicals	**1. International Journal of Scientific & Engineering Research** Saxena, R. (2017), "Application of Operation Research in the Pharmaceutical Industry", International Journal of Scientific & Engineering Research, 8 (10), 419-434 **2. Journal of Critical Reviews** Jain, A., Saxena, H., Bhardwaj, R., Rao, G., & Nanda, S. (2020), "Application of Linear Programming for Profit Maximization Of APharma Company", Journal of Critical Reviews, 7 (12), 1118-1123 **3. Society for simulation in healthcare** Foronda, C., Farnandez-Burgod, M., Nadeau, C., Kelley, C., & Henry, M. (2020), "Virtual Simulation in Nursing Education: A Systematic Review Spanning 1996 to 2018", 15(1), 46-54
iv. Video lecture (NPTEL, MOOC, you tube lecture)	MOOC on Operations Research offered by UDEMY: https://www.udemy.com/course/operations-research-intro
v. Course related important Web link for small Indian case studies	1.https://www.slideshare.net/FelicityMcLeister/all-case-studies 2.https://www.springer.com/gp/book/9781493910069