

TECNIA INSTITUTE OF ADVANCED STUDIES

GRADE 'A' INSTITUTE

Department of Management Sciences

COURSE PLAN

ACADEMIC SESSION 2024-25 (w.e.f. 1st August, 2024)

As per Scheme of Examination & Syllabus of Masters of Business Administration for First Semester (w.e.f. 2021-22 Academic Session Onwards) Guru Gobind Singh Indraprastha University, New Delhi.

PROGRAMME CODE:	039	PROGRAMME:	Masters of Business Administration	SHIFT:	1st	L	3	T/P	0	CREDITS:	3
COURSE CODE:	MS-103	COURSE NAME:	Quantitative Techniques	SECTION:	A						
		COURSE TYPE:	Core/ Open Elective	FACULTY:	Dr. Sandeep Kumar						

OBJECTIVE: To provide understanding on relevance & need of quantitative methods for making business decisions, to have a sound knowledge of fundamentals of statistics and statistical techniques, be able to read and interpret statistical information, be able to perform statistical analysis for effective decision making in organizations.

COURSE OUTCOME & MAPPING, COURSE ARTICULATION

	Demonstrate an understanding of management concepts, principles and theories, and apply them in the context of organizational work practices.	Apply analytical and critical thinking skills to analyze the dynamic business environment and identify entrepreneurial and business opportunities and risks.	Prepare business strategies, develop concomitant functional and operational strategies and implement them in an integrated manner to efficiently and effectively achieve the functional goals and the business objectives.	Demonstrate an understanding of decision making processes at various levels of the organization with respect to resources mobilization and their efficient deployment and use to achieve the set goals.	Demonstrate the ability to analyze management problems, to identify and collect relevant data and to apply a creative problem-solving approach.	Identify and recommend the information technology-based interventions to achieve organizational goals.	Benchmark organizational and managerial practices against the principles of good governance, ethical conduct, corporate social responsibility and the imperatives of long-term societal welfare.	Demonstrate effective communication and interpersonal skills as well as the ability to work with and lead teams.	Develop a lifelong learning approach manifested in their attitude to learn, unlearn and relearn and in their pursuit of excellence in professional, personal and social life.	
CO - PO MAPPING		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	Identify and differentiate between different statistical techniques and methods	3	1	2	3	3	2	1	1	3
CO2	Explain the merits and limitations of various statistical techniques	3	1	2	2	3	2	1	1	3
CO3	Demonstrate effective computational and spreadsheets skills for business analysis	3	1	2	3	3	2	1	1	3
CO4	Analyse and interpret statistical information from the business data and reports	3	2	2	3	3	2	1	1	3
CO5	Apply quantitative techniques to solve a variety of business problems	3	2	2	3	3	2	1	1	3
Average		3	1.4	2	2.8	3	2	1	1	3

Lecture No.	Unit No.	Topic	Sessional Outcome	Experiential Learning	Participative Learning	Problem Solving Methodologies	ICT Tools & E-Resources Utilization	Mapping with CO	Class Material (PPT Faculty+ Students)	Additional Material (Links/ Journals/ Articles/ NEWS)	Mode of Assessment	Bloom's Taxonomy
1	I	Descriptive Statistics	Statistics Introduction				PPT	CO1	PPT	E- Books, Notes	MCQ	Level1,2
2	I	Measures of central tendency,	Measures of central tendency - Mean			Numerical Problem	PPT	CO1	PPT	E- Books, Notes	MCQ	Level1,3
3	I	Concept of dispersion,	Measures of central tendency - Median			Numerical Problem	PPT	CO1	PPT		MCQ	Level1,2
4	I	Measures of dispersion: absolute and relative measures,	Measures of central tendency - Mode		Presentation Class Interaction		PPT	CO1	PPT		Assignment	Level1,3
5	I	Skewness-meaning and measures, kurtosis-meaning and measures	Measure of Dispersion- Mean Deviation			Numerical Problem	PPT	CO1	PPT		MCQ	Level 4,5
6	I	Bivariate analysis: concept of correlation, measures of correlation	Measure of Dispersion- Standard Deviation			Numerical Problem Lecture, Stimulate Discussion	PPT	CO1	PPT		MCQ	Level 2,3
7	I	Regression meaning, regression lines	Measure of Dispersion - Skewness			Numerical Problem Lecture, Stimulate Discussion	PPT	CO1	PPT	E- Books, Notes	MCQ	Level 2,3
8	I	OLS regression: assumptions, computation of regression coefficients	Measure of Dispersion - Kurtosis		Presentation Class Interaction	Numerical Problem Lecture, Stimulate Discussion	PPT	CO1	PPT		MCQ	Level 2,4
9	I	OLS regression: assumptions, computation of regression coefficients	Concept of dispersion , measures of dispersion			Numerical Problem Lecture, Stimulate Discussion	PPT	CO1	PPT		MCQ	Level1,2
10	I	Standardized and unstandardized regression coefficients	Skewness and Kurtosis		Interactive Session	Numerical Problem Lecture, Stimulate Discussion	PPT	CO1	PPT		MCQ	Level1,3
11	I	Decision making based on Regression Analysis.	Bivariate analysis	Live Experimental Application			PPT	CO1	PPT		MCQ	Level1,2
12	I	Decision making based on Regression Analysis.	Correlation and measures of correlation	Live Experimental Application			PPT	CO1,CO2,CO3	PPT		Assignment	Level 4,5,6
13	II	Probability Analysis	Regression	Live Experimental Application			PPT	CO1	PPT		Assignment	Level 2,3
14	II	Concept and meaning of probability	OLS regression coefficients		Quiz	Lecture Simulate Discussion	PPT			Caselets	MCQ	Level 2,3
15	II	Theorems of probability: addition	Regression and correlation Analysis		Presentation Class Interaction	Lecture Simulate Discussion	PPT	CO1,CO2,CO3		Caselets	MCQ	Level 2,3
16	II	Multiplications, Bayes'theorem	Decision making based on regression analysis	Live Experimental Application			PPT	CO1,CO2,CO3	PPT		MCQ	Level 2,4
17	II	Multiplications, Bayes'theorem	Probability Analysis Introduction	Live Experimental Application			PPT	CO1,CO2,CO3			MCQ	Level1,2
18	II	Probability distribution: Discrete and continuous distribution-binomial	Basic numericals of probability		Presentation Class Interaction	Lecture Simulate Discussion	PPT	CO1		E- Books, Notes	MCQ	Level1,3
19	II	Poisson and Normal Distribution	Theorems of probability		Presentation Class Interaction	Lecture Simulate Discussion	PPT	CO1		E- Books, Notes	MCQ	Level1,2
20	II	Poisson and Normal Distribution	Numericals based on addition and multiplication theorems	Caselets			PPT	CO1		E- Books, Notes	MCQ	Level 4,5
21	II	Application of Probability in decision making	Bayes theorem	Live Experimental Application			PPT	CO1		E- Books, Notes	MCQ	Level 2,3
22	II	Application of Probability in decision making	Probability distribution Continuous and Discrete		Presentation Class Interaction	Lecture Simulate Discussion	PPT	CO1		Youtube	MCQ	Level1,2
23	III	Linear Programming	Binomial Distribution , Poisson Distribution , Normal Distribution		Quiz	Lecture Simulate Discussion	PPT	CO1		Youtube	Assignment	Level1,3
24	III	Meaning, Assumptions	Application of probability in decision making			Lecture Simulate Discussion	PPT	CO1		Youtube	MCQ	Level1,2

25	III	Formulation of Linear Programming Model	Meaning, Assumptions, Formulation of Linear Programming Model	Presentation Class Interaction	Lecture Simulate Discussion	PPT	CO1, CO2	PPT		Assignment	Level 4,5
26	III	Solution of Linear Programming Problem: Graphical and Simplex	LPP Solution : Graphical Method	Presentation Class Interaction	Lecture Simulate Discussion	PPT	CO1,CO2,CO3	PPT		Assignment	Level 2,3
27	III	Special types of linear programming problems	LPP Simplex Method	Quiz	Lecture Simulate Discussion	PPT	CO1,CO2,CO3	PPT		Assignment	Level1,2
28	III	Assignment modeling	Assignment Model		Lecture Simulate Discussion	PPT	CO1	PPT		MCQ	Level1,3
29	III	Solution of assignment problem with Hungarian assignment model	Assignment Hungarian Model for Solving LPP		Lecture Simulate Discussion	PPT	CO1,CO2,CO3	PPT		Assignment	Level1,2
30	III	Travelling salesman model, Transportation model, applications	Travelling Sales man Modelling Theory		Lecture Simulate Discussion	PPT	CO1			Assignment	Level 4,5
31	III	Computation of initial feasible solution and testing its optimality	Travelling Sales man Modelling Problem		Lecture Simulate Discussion	PPT	CO1,CO2,CO3			Assignment	Level 2,3
32	III	Concept of trans-shipment	Transportation Model infeasible solution		Lecture Simulate Discussion	PPT	CO1,CO2,CO3		Youtube	Assignment	Level1,2
33	IV	Decision Theory	Testing of Optimality	Quiz	Lecture Simulate Discussion	PPT	CO1,CO2,CO3		Youtube	Assignment	Level1,3
34	IV	States of decision making	Concept of Transshipment	Case study	Lecture Simulate Discussion	PPT	CO1			MCQ	Level1,2
35	IV	Decision tree analysis	Decision Theory		Lecture Simulate Discussion	PPT	CO1		Caselets	MCQ	Level 4,5
36	IV	Game theory: meaning concept	States of Decision Making		Lecture Simulate Discussion	PPT	CO1		E- Books, Notes	MCQ	Level 2,3
37	IV	Types of games	Decision Tree Analysis		Lecture Simulate Discussion	PPT	CO1		E- Books, Notes	MCQ	Level 2,3
38	IV	Principles of dominance	Game Theory concept		Lecture Simulate Discussion	PPT	CO1	PPT		MCQ	Level1,2
39	IV	Solution of games with algebraic	Types of Game		Lecture Simulate Discussion	PPT	CO1	PPT		MCQ	Level1,3
40	IV	Solution of games with algebraic	Principles of Dominance		Lecture Simulate Discussion	PPT	CO1	PPT		MCQ	Level1,2
41	IV	Graphical and simplex method	Solution of Game Algebraic Method		Lecture Simulate Discussion	PPT	CO1,CO2,CO3	PPT		Assignment	Level 4,5
42	IV	Graphical and simplex method	Solution of Game Graphical		Numerical Problem	PPT	CO1,CO2,CO3	PPT		Assignment	Level 2,3
43	IV	Revision	Solution of Game Simplex Method		Numerical Problem	PPT	CO1,CO2,CO3	PPT		Assignment	Level 2,3
44	IV	Revision	Revision & Doubt Clear Session	Quiz		PPT					Level6
45	IV	Previous Years Question Paper Discussion	Discussion of Previous Question Papers	Recap MCQ_Quiz		PPT					Level 6

Note: 1 Credit (Theory)= 15 Hrs. in a Semester ; 1 Credit (Practical)= 30 Hrs. in a Semester.

Suggested Readings : (Latest Editions)

1. Sharpe, N.R., De Veaux, R.D., and Velleman, P.F. Business Statistics, Pearson
2. Black, K. Business Statistics: For Contemporary Decision Making. India, Wiley Publication.
3. Vohra, N.D. Quantitative Techniques in Management. McGraw Hill Education.
4. Sharma, J. Operations Research: Theory and Application. India, Macmillan Publication.
5. Francis, Joseph J. Business Statistics, Cengage Publication
6. Azzel, Amir D., Sounderpandian, J., & Saravanan, P. Complete Business Statistics, India, McGraw Hill Education.

Name of Faculty:

Dr. Sandeep Kumar

Journals:

1. Journal of Quantitative Analysis in Sports
2. Quantitative Finance
3. Journal of Business & Economic Statistics
4. Mathematics of Operations Research
5. Journal of Computational and Graphical Statistics

Head of Department Pooja Sharma

Date: 
MBA-TIAS