AMITY UNIVERSITY

UTTAR PRADESH

L	T	P/S	SW/FW	TOTAL CREDIT UNITS
4	-	-	-	4

COURSE TITLE:QUANTITATIVE APPLICATIONS IN MANAGEMENT

Course Code:
Credit Units:4

Course Objectives:

The objective of the course is to

1. Provide a conceptual understanding to the field of statistics andits applications in area of experimental as well as observational research in management.
2. Enhance knowledge and skills for using computer software to derive solution to the decision- problems.

Pre-requisites:

Knowledge of statistics of UG levelis desirable.

Student Learning Outcomes

On completion of this course, the student should be able to

1. Identify the source of a quantifiable problem, recognize the issues involved and develop an appropriate action plan.
2. Develop quantifiable problem into aappropriate mathematical model so as understand and solve the problem.
3. Extrapolate from data the important trends in order to forecast as accurately as possible.
4. Calculate and interpret numerous statistical values and appreciate their value to the decision-maker.
5. Demonstrate an ability to apply statistical process control.
6. Carry out a sample survey, analyze the results and present the findings.

Course Contents:

	Weightage (%)
Module I: Basic Statistical Measures	**20**
1. Role of Statistics in Research, Designing a plan for data collection, 2. Exploring and Modeling the Data, Data Structures, 3. Uni- variate, bivariate and multivariate data, 4. Scales of Measurement, Qualitative and Quantitative data, 5. Time series and cross sectional data, Computer and Statistical analysis. **Grouping and displaying data:** **1.** Frequency distributions; Dot plot, histogram, ogive, **2.** Stem-and-Leaf Display. **3.** Cross tabulation, Scatter Diagrams, Trend line. **Summary Statistics:** **1.** Measures of Central Tendency and Dispersion. **2.** Z-Scores, **3.** Dealing with Outliers, **4.** Five-Number Summery,	
Module II: Probability and Probability Distributions	**20**
1. Concept of probability theory, 2. Determining probability of an event, 3. Types of events and Algebra of events; 4. Baye's theorem; 5. Expected value and variance of random event, 6. Probability distributions: Binomial , Poisson, Normal distributions, 7. Normal approximation of Binomial distribution.	
Module III : Statistical Inference - I	**20**
1. Sampling and Sampling Distribution, 2. Estimation: Point Estimates, Interval estimation for Mean and Proportion (σ known and σ unknown case), 3. Determining the sample size in estimation. 4. Testing Hypotheses: Developing Null and Alternative Hypothesis,	

5. Type I and Type II errors, 6. One Sample Tests for Mean and Proportion, **7.** Two Sample Tests for Mean and Proportion and Inferences about population variances.	
Module IV: Statistical Inference - II	**20**
1. Tests of Goodness of Fit and Independence, 2. Analysis of Variance and Experimental designs: 3. Testing for the equality of *k* Population Means, Multiple Comparison Procedures. 4. Completely Randomized Design ; 5. Randomized Block Design and Factorial Experiments.	
Module V: Regression and Time Series	**20**
1. Simple Linear Regression Model, Least squares Method, Coefficient of Determination, 2. Interpreting computer output of solution, 3. Residual analysis. 4. Multiple Regression, 5. Multiple Coefficient of Determination, 6. Testing for Significance using Estimated Regression Equation, 7. Logistic Regression. 8. Components of Time Series, Smoothing Methods, Trend-Seasonal Analysis, Modeling Cyclic Behavior using Box-Jenkins ARIMA Processes.	

Pedagogy for Course Delivery: Lectures, Case studies, and Discussions

The course will be a combination of conceptual explanation supplemented by management cases and presentations.

Assessment/ Examination Scheme:

Theory L/T (%)	Lab/Practical/Studio (%)	End Term Examination
100		70

Theory Assessment (L&T):

Continuous Assessment/Internal Assessment						End Term Examination
Components (Drop down)	**CT1**	**HA1**	**Case Study**	**ME**	**A**	
Weightage (%)	5	5	5	10	5	70

Text and References:

- Sharma, J.K. (2014), Business Statistics, Pearson Education India.
- Keller, Gerald (2007), Statistics for Management and Economics, Cengage Learning
- Levin Richard I. & Rubin David S.(1998), Statistics for Management, Pearson Education India
- Anderson D.R; Sweeny D.J, Williams T.A (2002), Statistics for Business and Economics, Cengage learning.
- Kazinier L. J, & Pohl N.F. (2004), Basic Statistics for Business and Economics, McGraw Hill.
- Stephen .K.C. (2002), Applied Business Statistics: Text, Problems and Cases. New York: Harper and Row.