GITAM INSTITUTE OF MANAGEMENT (GIM)
Gandhi Institute of Technology and Management (GITAM)
(Declared as Deemed to be University u/s 3 of UGC Act. 1956)
Visakhapatnam – 45.

Course Code:MAN 203	**Course Title: STATISTICAL METHODS**	
Semester: III	**Course Type: Core**	**Credits: 3**
Home Programme(s):BBA(BA)	**Batch/Academic Year:2020-23**	
Course Leader: Mr. SrinuSetti		

Course description and learning outcomes

Business Statistics is important, for future managers, to have a firm understanding of the basics of statistics and its application to analyze and create an edge for the business. Student will be able to understand the measurement systems variability, control processes (as in statistical process control or SPC). The student should summarizing data, and to make data-driven decisions

Learning outcomes: at the end of the course student will be able to ….

1. Enable the students to develop basic knowledge in Statistics
2. Provide understanding in some basic statistical techniques which are used for solving business problems.
3. Understand the basic concepts of Probability and Statistics
4. Apply the analytical techniques in business transactions that would help in making effective business decisions

On successful completion of this course, students will be able to:

	Course outcomes	Assessment
1	Understand the measurement systems variability	A1,A2,A3
2	Apply basic statistical techniques to measure relative changes in price, production or any such quantities of economic interest	A1,A2,A3,A4
3	Use statistical techniques to analyse business problems	A1,A2,A3,A4
4	Evaluate business problems	A1,A2,A3,A4
5	Perform Time series analysis and measure different trends in data series and examine relationship between two quantitative variables	A3,A4

Course outline and indicative content

UNIT I: (10 sessions) (CO1,CO2,CO3,CO4,CO5,L1,L2,L3,L4,L5,L6)

Measures of Central Tendency: Introduction, Arithmetic mean, geometric mean, harmonic mean, median, mode. Measures of Dispersion: Introduction, Range, Quartile deviation, Mean deviation, Standard deviation, combined mean and combined standard deviation.

UNIT II: (10 sessions)(CO1,CO2,CO3,CO4,CO5,L1,L2,L3,L4,L5,L6)

Correlation Analysis: Introduction, types of correlation, Methods of Correlation analysis, Scatter diagram method, Karl Pearson's correlation coefficient, Coefficient of determination, Spearman's rank correlation coefficient.

Regression Analysis: Introduction, Types of regression models, Significance of Regression Analysis, Methods of finding Regression Equations, Least Squares and Using Regression Coefficient methods, Prediction using the Regression Equations.

UNIT III:(10 sessions) (CO1,CO2,CO3,CO4,CO5,L1,L2,L3,L4,L5,L6)

Probability – Definitions of various terms, Types of probability, Bayes' Theorem. Random variable and Probability Distribution – Definition, Probability distribution of discrete and continuous random variable, Mean and Variance.

Discrete distribution – Introduction, Binomial distribution, Poisson distribution, Mean and Variance. **Continuous distribution**– Normal distribution, Properties of Normal distribution, Area under Standard Normal Probability Curve and Importance of Normal Distribution.

UNIT IV:(10 sessions)(CO1,CO2,CO3,CO4,CO5,L1,L2,L3,L4,L5,L6)

Index numbers , Introduction, Characteristics and Uses of index numbers, Types of Index Numbers, Laspyre, Paasche's, Fisher's, Marshall-Edgeworth,Dorbish and Bowley, Limitations of index numbers.

UNIT V: (10 sessions)(CO1,CO2,CO3,CO4,CO5,L1,L2,L3,L4,L5,L6)

Time series analysis – Introduction, Components of a time series – Secular trend, Short term, Random or Irregular variations, Measurement of trend – Free hand method, Method of linear Curve fitting by the principle of least squares, Method of Semi - Averages and Moving average.

Note: Proofs of theorems and derivations of problems and distributions are excluded.

Assessment methods

Task		Task type	Task mode	Weightage (%)
A1	Mid exam	Individual		20
A2	Coursera	Individual		10
A3	Class room presentation/Seminars and Case analysis/workshop/training/Assignments/survey/ Project	Individual / Group		10
A4	End-term examination	Individual		60

Mapping Cos – Blooms Levels – Assessment Tools

Knowledge dimension / Cognitive dimension	L1. Remember	L2. Understand	L3. Apply	L4. Analyze	L5. Evaluate	L6. Create
Factual Knowledge		CO1 (A1,A2,A3,A4)				
Conceptual Knowledge			CO2 (A1,A3,A4)			

Procedural Knowledge		CO1 (A1,A3,A4)	CO2 (A1,A3,A4)	CO3 (A1,A3,A4)	CO4 (A1,A3,A4)	
Meta Cognitive Knowledge				CO3 (A1,A3,A4)	CO4 (A1,A3,A4)	CO5 (A1,A3,A4)

Learning and teaching activities

Classroom Teaching, Power Point Presentation, Application in real life situation, Problem Solving, Assignment etc.

Teaching and learning resources

E-Resources, E-Books, Websites, E-Library

TEXT BOOK

Sharma, J. K. (2013), Business statistics, New Delhi: Pearson Education.

REFERENCE BOOKS

1. Gupta, S.C. & Gupta, I. (2012), Business Statistics, Mumbai: Himalaya Publishing House.
2. Levine, D.M., Berenson, M. L. & Stephan, D. (2012), Statistics for managers using Microsoft Excel, New Delhi: Prentice Hall India Pvt.
3. Aczel, A. D. &Sounderpandian, J. (2011), Complete Business Statistics, New Delhi: Tata McGraw Hill.
4. Anderson, D., Sweeney, D., Williams, T., Camm, J., & Cochran, J. (2013), Statistics for Business and Economics, New Delhi: Cengage Learning.
5. Davis, G., &Pecar, B. (2014), Business Statistics using Excel, New Delhi: Oxford University Press.

JOURNALS

1. American Statistician, American Statistical Association, USA.
2. Journal of the American Statistical Association, American Statistical Association, USA
3. Journal of Mathematics and Statistics, Science Publications, USA
4. Annals of the Institute of Statistical Mathematics, Springer Netherlands, Netherlands

CO PO Mapping

This is to map the level of relevance of the Course Outcome (CO) with Programme Outcome (PO). 0= No Relevance; 1= Low Relevance; 2= Medium Relevance; 3= High Relevance

CO PO Mapping							
Internal	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**Sum**
C01	**0**	**0**	**3**	**2**	**3**	**2**	**10**
C02	**3**	**2**	**2**	**3**	**3**	**3**	**16**
CO3	**3**	**2**	**2**	**3**	**3**	**2**	**15**
CO4	**2**	**2**	**2**	**3**	**3**	**2**	**14**
CO5	**3**	**2**	**2**	**3**	**2**	**2**	**14**
Target Level Max.	**11**	**8**	**11**	**14**	**14**	**11**	**69**

BBA(BA)-Programme Outcomes (POs)	
1.	Ability to understand the business problems with their knowledge in different functional areas of management.
2.	Integrate with structured, semi – structured and unstructured data.
3.	Utilize the tools such as Microsoft Excel, SPSS, R, Weka and Tableau to solve business analytics problems.
4.	Ability to apply analytics techniques to analyze and interpret the data.
5.	Incorporate the descriptive, predictive and prescriptive analytics.
6.	Evaluate the necessary skills and understanding to take up advanced topics in the area of analytics and thus enhance their career prospects.