



Re-Accredited 'B++' 2.86 CGPA by NAAC

VEER NARMAD SOUTH GUJARAT UNIVERSITY

University Campus, Udhna-Magdalla Road, SURAT - 395 007, Gujarat, India.

વીર નર્મદ દક્ષિણ ગુજરાત યુનિવર્સિટી

યુનિવર્સિટી કેમ્પસ, ઉદ્ધના-મગદલ્લા રોડ, સુરત - ૩૯૫ ૦૦૭, ગુજરાત, ભારત.

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-: પરિપત્ર :-

વિનયન વિદ્યાશાખા હેઠળની સંલગ્ન તમામ કોલેજોનાં આચાર્યશ્રીઓને જણાવવાનું કે, શૈક્ષણિક વર્ષ ૨૦૨૪-૨૫ થી અમલમાં આવનાર S.Y.B.A.નાં Minor, MDC અને SEC નો Sem-3 અને Sem-4 નો આંકડાશાસ્ત્ર વિષયનો અભ્યાસક્રમ આંકડાશાસ્ત્ર વિષયની અભ્યાસ સમિતિનાં ચેરમેનશ્રીએ અભ્યાસ સમિતિવતી મંજૂર કરી વિનયન વિદ્યાશાખાને કરેલ ભલામણ વિનયન વિદ્યાશાખાનાં કાર્યકારી અધ્યક્ષશ્રીએ વિનયન વિદ્યાશાખાની મંજૂરીની અપેક્ષાએ વિનયન વિદ્યાશાખા વતી મંજૂર કરી એકેડેમિક કાઉન્સિલને કરેલ ભલામણને એકેડેમિક કાઉન્સિલ તા.૦૧/૦૩/૨૦૨૪ની સભાનાં ઠરાવ ક્રમાંક:૧૦૪ અન્વયે માન.કુલપતિશ્રીને આપેલ સત્તા અંતર્ગત માનનીય ઈ.ચા.કુલપતિશ્રી ધ્વારા મંજૂર કરેલ છે. જેની આથી જાણ કરવામાં આવે છે.

(બિડાણ: ઉપર મુજબ)

ક્રમાંક : એસ./પરિપત્ર/Statistics//સિલેબસ/૯૮૩૨/૨૦૨૪
તા. ૦૬-૦૫-૨૦૨૪

Wife
કુલસચિવ વચ્ચે

પ્રતિ,

૧) વિનયન, વિદ્યાશાખા હેઠળની સંલગ્ન તમામ કોલેજોનાં આચાર્યશ્રીઓ,

.....આપશ્રીની કોલેજના સંબંધિત શિક્ષકોને જાણ કરી અમલ કરવા સારૂ.

૨) કાર્યકારી અધ્યક્ષશ્રી, વિનયન વિદ્યાશાખા.

૩) પરીક્ષા નિયામકશ્રી, પરીક્ષા વિભાગ, વીર નર્મદ દ. ગુ. યુનિવર્સિટી, સુરત.

.....તરફ જાણ તેમજ અમલ સારૂ.

**VEER NARMAD SOUTH GUJARAT UNIVERSITY,
SURAT**

S.Y.B.A. (SEMESTER –III)

SYLLABUS OF

BUSINESS STATISTICS(MDC)-Credit-4

As per NEP-2020

To be Implemented from the academic year 2024-25

On completion of the course, the student will be able to:			
<p>CO1 know whether the distribution is normal or not; CO2: tell the direction and extent of a symmetry in a data series; CO3: learn the importance of kurtosis; CO4: evaluate and interpret types of kurtosis; CO5: distinguish difference between skewness and kurtosis. CO6: comprehend the meaning of the term ‘correlation’; CO7: interpret the nature of relationship between two variables; CO8: compute correlation coefficient and interpret its value; CO9: critically examine the degree and direction of the relationships between two or more variables; CO10: understand applications of correlation theory in various fields, viz., agriculture, business, medical science, industry etc.</p>			
Objectives			
<ul style="list-style-type: none"> ❖ Understand limitations of skewness and kurtosis for analysis of data ❖ Interpret the nature of relationship between two variables. ❖ Understand applications of regression analysis in various fields, viz., agriculture, business, industry etc Understand different types of measures of association ❖ Interpret the nature of relationship between two variables. 			
UNIT-1	<p>➤ Skewness:</p> <ul style="list-style-type: none"> ▪ Meaning of skewness, ▪ Symmetric and skew symmetric frequency distribution, ▪ Types and test of skewness, ▪ Methods of determining skewness and the coefficient of skewness (i) Karl Pearson’s 	<u>20%</u>	<u>10</u> <u>Marks</u>

	<p>coefficient of skewness, (ii) Bowley's coefficient of skewness (iii) skewness based on the moments.</p> <p>➤ Kurtosis:</p> <ul style="list-style-type: none"> ▪ Types of Kurtosis curves, ▪ Measures of Kurtosis, ▪ Numerical Problems. 		
UNIT-2	Linear Correlation Analysis:	<u>30%</u>	<u>15</u> <u>Marks</u>
	<p>➤ Meaning, Definition and Types of correlation,</p> <p>➤ Methods of studying correlation:</p> <p>(i) Scatter diagram method (with merits and limitations).</p> <p>(ii) Karl Pearson's product moment method (with merits and limitations), and</p> <p>(iii) Spearman's Rank Correlation method (with derivation, merits and limitations).</p> <p>➤ Interpretation correlation coefficient,</p> <p>➤ Properties,</p> <p>➤ Problems of above topics.</p>		
UNIT-3	Linear Regression Analysis:	<u>30%</u>	<u>15</u> <u>Marks</u>
	<p>➤ Meaning, Definition,</p> <p>➤ Fitting regression lines by principle of least squares,</p> <p>➤ Regression coefficients and their properties,</p> <p>➤ Angle between two lines of regression and its interpretation,</p> <p>➤ Coefficient Determination,</p> <p>➤ Utility of study of regression,</p>		

	➤ Problems of above topics.		
UNIT-4	Measures of Association of Attributes (for two attributes):	<u>20%</u>	<u>10 Marks</u>
	➤ Idea of notations and terminology for classification of attributes, ➤ Contingency table, ➤ Types of association, ➤ Consistency of data, ➤ Methods of measures of association: (i) Proportion method, (ii) Method of Probability, (iii) Yule's Coefficient of association (with its characteristics), (iv) Coefficient of contingency, ➤ Problems of above topics.		

Reference Books

1.	Gupta S.P	Statistical Methods - 34 th Edition, S. Chand & Sons., New Delhi.
2.	Goon A.M., Gupta M. K. and Dasgupta B	Fundamentals of Statistics, Vol. I & II, 8 th Edition. The world press, Kolkata
3.	Goon A.M. , Gupta M.K. and Dasgupta B.(2000)	Fundamental of Statistics, Vol-I & II, 8 th Edn.. The world Press, Kolkata.
4.	Neil Weiss	Introductory Statistics - 10 th Edition, Pearson.
5.	S.C.Gupta & V.K. Kapoor.	Fundamental of Mathematical Statistics : S. Chand & Co. New Delhi.
6	Roxy Peck, Chris Olsen, Jay L. Devore	Introduction to Statistics and Data Analysis – 5 th Edition, Cengage Learning
7.	Starnes and Tabor	The Practice of Statistics – 6 th Edition, W.H. Freeman and Company.
8.	Prof H.D. Shah.	ગાણિતિક આંકડાશાસ્ત્ર, યુનિવર્સિટી ગ્રંથ નિર્માણ બોર્ડ – અમદાવાદ, ગુજરાત.
9.	M.C.Jayswal(1974)	અર્થ વિષયક આંકડાશાસ્ત્ર, યુનિવર્સિટી ગ્રંથ નિર્માણ બોર્ડ – અમદાવાદ, ગુજરાત.

**VEER NARMAD SOUTH GUJARAT UNIVERSITY,
SURAT**

S.Y.B.A.(Statistics)

SEMESTER –III

(Skill Enhancement Course)

Official Statistics

(Credit-2)

As per NEP-2020

To be Implemented from the academic year 2024-25

On completion of the course, the student will be able to:			
CO1	Students get idea of development of our country through Indian official statistics.		
CO2	Students acquainted the knowledge of growth of our nation.		
CO3	Students acquainted the knowledge of comparing growth of our countries. with other countries.		
CO4	Students acquainted the knowledge of various methods for calculation of population census		
CO5	Decide which method is appropriate		
OBJECTIVES			
The main objective of this course is to acquaint students learn how to visualize growth of country in various sector like agriculture, industry, communication and in economic sector data; Compare the result of various methods of complete enumeration population survey methods Decide which method is appropriate for area.			
UNIT-1	<ul style="list-style-type: none">• Indian official statistics• Central statistical organization (CSO)• National Sample survey organization	50%	25 Marks
UNIT-2	<ul style="list-style-type: none">• Population studies• Methods of collection of population.• Different calculation of india and its studies	50%	25 Marks

Reference Books

1.	Gupta S.P.(2006)	Statistical Methods 34 th Edition S. Chand & Sons., New Delhi.
2.	P.G.Hoel	Elements of statistics.
3.	Goon A.M. , Gupta M.K. and Dasgupta B.(2000)	Fundamental of Statistics, Vol-I & II, 8 th Edn.. The world Press, Kolkata.
4.	D.N.Elhance, VeenaElhance.	Fundamental of Statistics.
5.	S.P.Gupta& V.K. Kapoor.	Fundamental of Mathematical Statistics : S. Chand & Co. New Delhi.
6.	D.C.Sancheti, V.K. Kapoor.	Statistics.
7.	Mood, Graybill and Boes (2007)	Introduction to the theory of Statistics, 3 rd Edn,(Reprint), Tata Mcgraw hill Pub. Co. Ltd.
8.	Prof H.D. Shah.	ગાણિતિક આંકડાશાસ્ત્ર, યુનિવર્સિટી ગ્રંથ નિર્માણ બોર્ડ – અમદાવાદ, ગુજરાત.

**VEER NARMAD SOUTH GUJARAT UNIVERSITY,
SURAT**

S.Y.B.A. (SEMESTER –IV)

SYLLABUS OF

STATISTICS-III(Minor)-Credit-4

As per NEP-2020

To be Implemented from the academic year 2024-25

	On completion of the course, the student will be able to:
CO1	Define discrete variables and study their distributions.
CO2	Know the applications of discrete probability distribution in different situations
CO3	Understand some standard discrete and continuous probability distributions such as Bernoulli, Binomial, Poisson and Normal distribution.
CO4	Know The law of supply and demand combines two fundamental economic principles describing how changes in the price of a resource, commodity, or product effect on market conditions.
CO5	Understand the concept of economical functions.
CO6	Learn the procedure of maximization and minimization of economical functions.

OBJECTIVES

- The main objective of this course is to acquaint students to study properties and uses of discrete and continuous probability distributions.
- The discrete and continuous probability distributions are used in almost all fields like agriculture, business, management, economics, finance, insurance, education, biotechnology and medical science, etc.
- Supply and demand shows how producers and consumers interact with each other.
- To study market equilibrium situation and elasticity of demand and supply.

UNIT-1	<p>Bernoulli distribution</p> <ul style="list-style-type: none"> • Definition of p.m.f for Bernoulli Distribution • Properties • Uses • Examples <p>Binomial Distribution:</p> <ul style="list-style-type: none"> • Definition of p.m.f of Binomial Distribution • Properties • Uses • Examples of based on binomial distribution. <p>Poisson distribution.</p> <ul style="list-style-type: none"> • Definition of p.m.f. of Poisson distribution. • Relation with binomial distribution. • Properties • Uses. • Examples of based on Poisson distribution. 	<u>30%</u>	<u>15</u> <u>Marks</u>
UNIT-2	<p>Normal distribution.</p> <ul style="list-style-type: none"> • Definition of p.d.f. of Normal distribution. • Definition of p.d.f. of standardised Normal distribution. • Properties • Examples of based on table of standardised Normal distribution. 	20%	<u>10</u> <u>Marks</u>
UNIT-3	<ul style="list-style-type: none"> ➤ Demand <ul style="list-style-type: none"> • Meaning of demand ➤ Demand function <ul style="list-style-type: none"> • Assumptions of demand function. • Graphical representation of demand curve. • Price elasticity of demand • Interpretation of elasticity of demand • Examples 	20%	<u>10</u> <u>Marks</u>
UNIT-4	<ul style="list-style-type: none"> ➤ Supply <ul style="list-style-type: none"> • Meaning of supply • Assumptions of supply function. • Market equilibrium • Graphical representation of supply curve. • Price elasticity of supply • Interpretation of elasticity of supply. 	30%	<u>15</u> <u>Marks</u>

	<p>➤ Revenue, cost and profit function.</p> <ul style="list-style-type: none"> • Procedure of maximization of revenue and profit function. • Procedure of minimization of cost function. • Examples. 		
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Reference Books

1.	Gupta S.P.(2006)	Statistical Methods 34 th Edition S. Chand & Sons., New Delhi.
2.	P.G.Hoel	Elements of statistics.
3.	Goon A.M. , Gupta M.K. and Dasgupta B.(2000)	Fundamental of Statistics, Vol-I & II, 8 th Edn.. The world Press, Kolkata.
4.	D.N.Elhance, Veena Elhance.	Fundamental of Statistics.
5.	S.P.Gupta & V.K. Kapoor.	Fundamental of Mathematical Statistics : S. Chand & Co. New Delhi.
6.	D.C.Sancheti, V.K. Kapoor.	Statistics.
7.	Mood, Graybill and Boes (2007)	Introduction to the theory of Statistics, 3 rd Edn,(Reprint), Tata Mcgraw hill Pub. Co. Ltd.
8.	Pavate D.C. Bhagwat	The Element Calculus.
9.	Karmel P.H.(1963)	Applied Statistics for Economics, 2 nd ed.
10.	Prof H.D. Shah.	ગાણિતિક આંકડાશાસ્ત્ર, યુનિવર્સિટી ગ્રંથ નિર્માણ બોર્ડ – અમદાવાદ, ગુજરાત.
11.	M.C.Jayswal(1974)	અર્થ વિષયક આંકડાશાસ્ત્ર, યુનિવર્સિટી ગ્રંથ નિર્માણ બોર્ડ – અમદાવાદ, ગુજરાત.
12.	Hogg and Craige	Introduction to mathematical statistics.
13.	Stuart G. and Ord. J. K. (1991)	Advanced theory of statistics.

**VEER NARMAD SOUTH GUJARAT UNIVERSITY,
SURAT**

**S.Y.B.A.SEMESTER –IV
SYLLABUS OF STATISTICS
(Skill Enhancement Course)**

TIME SERIES ANALYSIS.

Credit-2

As per NEP-2020

To be Implemented from the academic year 2024-25

	On completion of the course, the student will be able to learn		
	<p>CO1: Introduction to times series data, application of time series to various fields, Components of a times series, measurement of trend by various methods.</p> <p>CO2: understand Seasonal Component: Estimation of seasonal component.</p>		
OBJECTIVES			
<p>Students can acquainted use of time series analysis in statistics, signal processing, pattern recognition, econometrics, mathematical finance, weather forecasting, earthquake prediction, electroencephalography, control engineering, astronomy, communications engineering, and in applied science and engineering.</p>			
UNIT-1	<p>Time Series: Introduction to times series data.</p> <p>Components of a times series.</p> <ul style="list-style-type: none"> ➤ Measurement of Trend: <ul style="list-style-type: none"> ▪ Graphical method. ▪ Method of semi averages. ▪ method of moving averages. ▪ method of curve fitting: <ul style="list-style-type: none"> ▪ Fitting of straight line by method of least Squares. ▪ Fitting second degree parabolic Trend ▪ Fitting Exponential curve. ▪ Growth curve and their fitting 	70%	35 Marks

UNIT-2	<p>➤ Seasonal Component:</p> <ul style="list-style-type: none"> ▪ Estimation of seasonal component by Method of simple averages ▪ Ratio to Trend, ▪ Method of moving average 	30%	15 Marks
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Reference Books

1.	Gupta S.P.(2006)	Statistical Methods 34 th Edition S. Chand & Sons., New Delhi.
2.	P.G.Hoel	Elements of statistics.
3.	Goon A.M. , Gupta M.K. and Dasgupta B.(2000)	Fundamental of Statistics, Vol-I & II, 8 th Edn.. The world Press, Kolkata.
4.	D.N.Elhance, VeenaElhance.	Fundamental of Statistics.
5.	S.P.Gupta& V.K. Kapoor.	Fundamental of Mathematical Statistics : S. Chand & Co. New Delhi.
6.	D.C.Sancheti, V.K. Kapoor.	Statistics.
7.	Mood, Graybill and Boes (2007)	Introduction to the theory of Statistics, 3 rd Edn,(Reprint), Tata Mcgraw hill Pub. Co. Ltd.
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9.	Dr. R.T.Ratani	પ્રાયોજીત આંકડાશાસ્ત્ર, યુનિવર્સિટી ગ્રંથ નિર્માણ બોર્ડ – અમદાવાદ, ગુજરાત.