



Krantiguru Shyamji Krishna Verma

Kachchh University

Mundra Road, Bhuj - KACHCHH.

STATISTIC

CHOICE BASED CREDIT SYSTEM


SEMESTER SYSTEM-2016-17

B.A. SEMESTER 1 TO 4

REGULAR/EXTERNAL-SYLLABUS

W.E.F. June 2016

CHAIR PERSON


C Dean, Sc. Faculty DEAN
Head
Department of Earth and Env. Sc.
KSKV Kachchh University
Bhuj - Kachchh.

KSKV KACHCHH UNIVERSITY – BHUJ

DEPARTMENT OF STATISTICS

CHOICE BASED CRADIT SYSTEM

SYLLABUS

SEMESTER SYLLABUS-2016-17

NO.	CODE NO.	SEMESTER-1	CREDIT
1.	OEST101	FUNDAMENTAL OF STATISTICS	03
2.	OEST102	APPLIED STATISTICS	03
3.	ACST101	FUNDAMENTAL OF STATISTICS	03
NO.	CODE NO.	SEMESTER-2	CREDIT
1.	OEST203	MATHEMATICAL STATISTICS	03
2.	OEST204	APPLIED STATISTICS-II	03
3.	ACST202	APPLIED STATISTICS	03



KSKV KACHCHH UNIVERSITY – BHUJ

DEPARTMENT OF STATISTICS

CHOICE BASED CRADIT SYSTEM

SYLLABUS

SEMESTER SYLLABUS-2016-17

NO.	CODE NO.	SEMESTER-3	CREDIT
1.	OEST305	MATHEMATICAL ECONOMICS	03
2.	OEST306	MATHEMATICAL STATISTICS	03
3.	ACST303	STATISTICAL METHODS	03
NO.	CODE NO.	SEMESTER-4	CREDIT
1.	OEST407	APPLIED STATISTICS	03
2.	OEST408	OPERATIONS RESEARCH	03
3.	ACST404	STATISTICAL METHODS	03



KSKV KACHCHH UNIVERSITY - BHUJ
CHOICE BASED CREDIT SYSTEM
SEMESTER SYSTEM – 2016-17
F.Y. B.A. SEMESTER – 1



COURSE – OEST101

CREDIT- 03

FUNDAMENTAL OF STATISTICS

MARKS–70+30=100

UNIT 1	<p>Measure of Central Tendency: Meaning of off central tendency, various. Measure of central tendency: A.M., Median, Mode, Their merits and demerits, Simple examples of Mean, Median and Mode. Various Measure of central tendency: Quartiles, deciles, percentiles. Their merits and demerits, Simple examples.</p>
UNIT 2	<p>Measure of Dispersion and Skewness: Definition of dispersion, Measures of dispersion. Simple examples to find various measure of dispersion by different methods(Range,Q.D.,M.D.,SD.) for grouped and ungrouped data. Meaning of Skewness, Test of skewness, Measure of Skewness, Karl pearson’s and Bowleys method to measure the skewness.</p>
UNIT 3	<p>Statistics, Primary and Secondary data, Classification and Tabulation of data: Definition of statistics, Concept of primary and secondary data. Methods of collecting primary data: Direct investigation, indirect investigation, Information through local agencies, mailed Questionnaire, Framing of questionnaire, Source of secondary data. Concept of classification, types and importance of classification, concept of tabulation, types of tabulation. Types of statistical variable. Formation of discrete and continuous series for univariate and bivariate data.</p> <p>Graphs and Diagrams: Representation of statistical data on (1) Histogram (2) Frequency poloygon (3) Frequency curve(Ogive curve). To obtain median, mode, quartiles, decilies, percentiles, from the above graph, simple examples.</p>



પ્રશ્નપત્રનું માળખું

સૂચના- ૧) વિભાગ- અ રેગ્યુલર અને એક્ષ્ટર્નલ બંને વિદ્યાર્થીઓ માટે છે.

REG- 2.15 HR

૨) વિભાગ- બ માત્ર એક્ષ્ટર્નલ વિદ્યાર્થીઓએ લખવાનો છે.

EXT-3.00 HR

Section-A is to be attempted by both the regular and external students

Section -B is to be attempted by the External students only

Time management – (2.15 Hrs. for Regular Students)

and (3.00 Hrs. for External Students)

Marks:70+30=100

વિભાગ-અ				
પ્રશ્ન ક્રમ	યુનિટ ક્રમ	પ્રશ્ન પ્રકાર		ગુણભાર
No.	Unit No.	Type of Question		Wattage
1	1	Q.1(a) Theory	08	20
		Q.1(b) Calculate Any Two (Ask 3)	12	
2	2	Q.2(a) Theory	08	20
		Q.2(b) Calculate Any Two (Ask 3)	12	
3	3	Q.3(a) Theory	08	20
		Q.3(b) Calculate Any Two (Ask 3)	12	
4	1 to 3	Do as Directed Each Question carry maximum	02	10
વિભાગ - બ				
5	1 & 2	Q.5(a) Theory	08	20
		Q.5(b) Calculate Any Two (Ask 3)	12	
6	3	Short Notes Any Two (Ask 3)		10

Reference books:

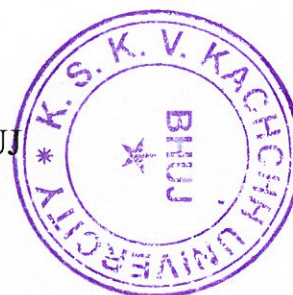
1. D.S.Sancheti & V.K.Kapoor: Statistics : Theory, Method&Application” Sultan chand & Sons, New Delhi.
2. D.N.Elhance: Fundamentals of statistics”
3. Goon, Gupta, Dasgupta: An outline of statistical Theory” Voll and 2, Worddpress, Calcutta.
4. ગણિતીક આંકડાશાસ્ત્ર, યુનિવર્સિટી ગ્રંથ નિમાર્ણ બોર્ડ, લેખક: એચ.ડી.શાહ.

Activities:

1. Project on Graph and diagram
2. Presentation on Measure of central tendency, dispersion and skewness.
3. Assignment on above Four units.
4. Ict on Graph and diagram
5. Group Discussion

Objectives: The course aims to provide an understanding of application of statistic to business and industries while focusing to develop effective business communications skills among the student.

KSKV KACHCHH UNIVERSITY - BHUJ
CHOICE BASED CREDIT SYSTEM
SEMESTER SYSTEM – 2016-17
F.Y. B.A. SEMESTER – 1



COURSE – OEST102

CREDIT- 03

APPLIED STATISTICS

MARKS–70+30=100

UNIT 1	<p>Index Numbers: Definition, Limitations and uses of Index numbers. Construction of wholesale price index number and cost of living index number, Construction of index number by aggregate expenditure method and family budget method using Laspeyres, Paasches and Fishers Formula.</p>
UNIT 2	<p>Time Series: Meaning of Time series, various components of time series: Trend, Seasonal, Cyclic and Random components. Methods of measuring Trend by (a) Graphical method (b) Moving average method, (c) Least squares method. Concept of principle of least squares, curve fitting of linear and quadratic, functions by the principles of least squares and to estimate or to obtain trend for simple numerical data. Seasonal indices and simple examples to obtain seasonal indices.</p>
UNIT 3	<p>Population Census: Methods of population census and its uses. Study of India's population census. Limits of population census. Meaning and scope of demography, use of demography statistics. Demography Methods: Method of collecting demography statistics: Death rates, Crude death rate (C.D.R.) and standardized Death Rate (S.D.R.) Examples to find C.D.R., S.D.R., and to compare the healthness of cities. Meaning of Infant Mortality Rate (I.M.R.), Crude birth rate (C.B.R.), Meaning of fertility rate, General Fertility Rate (G.F.R.), Specific Fertility Rate (S.F.R.) and total fertility rate (T.F.R.), simple examples.</p>



પ્રશ્નપત્રનું માળખું

સૂચના-૧) વિભાગ- અ રેગ્યુલર અને એક્ઝટર્નલ બંને વિદ્યાર્થીઓ માટે છે. REG- 2.15 HR

૨) વિભાગ- બ માત્ર એક્ઝટર્નલ વિદ્યાર્થીઓએ લખવાનો છે. EXT-3.00 HR

Section-A is to be attempted by both the regular and external students

Section -B is to be attempted by the External students only

Time management – (2.15 Hrs. for Regular Students)

and (3.00 Hrs. for External Students)

Marks:70+30=100

વિભાગ-અ				
પ્રશ્ન ક્રમ	યુનિટ ક્રમ	પ્રશ્ન પ્રકાર		ગુણભાર
No.	Unit No.	Type of Question		Wattage
1	1	Q.1(a) Theory	08	20
		Q.1(b) Calculate Any Two (Ask 3)	12	
2	2	Q.2(a) Theory	08	20
		Q.2(b) Calculate Any Two (Ask 3)	12	
3	3	Q.3(a) Theory	08	20
		Q.3(b) Calculate Any Two (Ask 3)	12	
4	1 to 3	Do as Directed Each Question carry maximum	02	10
વિભાગ - બ				
5	1 & 2	Q.5(a) Theory	08	20
		Q.5(b) Calculate Any Two (Ask 3)	12	
6	3	Short Notes Any Two (Ask 3)		10

Reference books:

1. S.C.Gupta & V. Kapoor: Fundamental of applied statistics Sultan chand & sons New delhi.
2. Sancheti & Kapoor: Business Mathematics”Sultan chand & Sons, New Delhi.
3. Kapoor V.K.: Business Mathematics”Sultan chand & Sons, New Delhi.
4. Parimal Mukhopadhyay: Mathematics Statistics”Books & allied(p) Ltd.
5. Fundamental of statistic, D.N.Elhance.

Activities:

1. Seminar on Demography
2. Lecture on scope and benift on statistics.
3. Assignement on above Four units.
4. Study tour
5. Group Discussion on above Four units.

KSKV KACHCHH UNIVERSITY - BHUJ
CHOICE BASED CREDIT SYSTEM
SEMESTER SYSTEM – 2016-17
F.Y. B.A. SEMESTER – 1



COURSE – ACST101

CREDIT- 03

FUNDAMENTAL OF STATISTICS

MARKS–70+30=100

UNIT 1	<p>Skewness: Meaning of skewness, Types of skewness, Measure of skewness, Karl pearsons and Bowleys method to measure the skewness.</p>
UNIT 2	<p>Measure of Dispersion: Definition of dispersion, Measures of dispersion. Simple examples to find various measures of dispersion by different methods (Range, Q.D., M.D.,S.D.) for grouped and ungrouped data.</p>
UNIT 3	<p>Statistics, Primary and Secondary data, Classification and Tabulation of data: Definition of statistics, Concept of primary and secondary data. Methods of collecting primary data: Direct investigation, indirect investigation, Information through local agencies, mailed Questionnaire, Framing of questionnaire, Source of secondary data. Concept of classification, types and importance of classification, concept of tabulation, types of tabulation. Types of statistical variable. Formulation of discrete and continuous series for university and bivariate data.</p> <p>Measure of Central Tendency: Meaning of central tendency, various. Measure of central tendency: A.M., Median, Mode, Their merits and demerits, Simple examples of mean, median and mode. Various measure of central tendency: Quartiles, deciles, percentiles. Their merits and demerits, Simple examples.</p>



પ્રશ્નપત્રનું માળખું

સૂચના-૧) વિભાગ-અ રેગ્યુલર અને એક્ષ્ટર્નલ બંને વિદ્યાર્થીઓ માટે છે.

REG-2.15 HR

૨) વિભાગ-બ માત્ર એક્ષ્ટર્નલ વિદ્યાર્થીઓએ લખવાનો છે.

EXT-3.00 HR

Section-A is to be attempted by both the regular and external students

Section -B is to be attempted by the External students only

Time management – (2.15 Hrs. for Regular Students)

and (3.00 Hrs. for External Students)

Marks:70+30=100

વિભાગ-અ				
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No.	Unit No.	Type of Question		Wattage
1	1	Q.1(a) Theory	08	20
		Q.1(b) Calculate Any Two (Ask 3)	12	
2	2	Q.2(a) Theory	08	20
		Q.2(b) Calculate Any Two (Ask 3)	12	
3	3	Q.3(a) Theory	08	20
		Q.3(b) Calculate Any Two (Ask 3)	12	
4	1 to 3	Do as Directed Each Question carry maximum	02	10
વિભાગ - બ				
5	1 & 2	Q.5(a) Theory	08	20
		Q.5(b) Calculate Any Two (Ask 3)	12	
6	3	Short Notes Any Two (Ask 3)		10

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2. D.S.Sancheti & Kapoor: Statistics:Theory, Method & Application”Sultan chand & Sons, New Delhi.
3. D.N.Elhance: Fundamentals of statistics”
4. Goon, Gupta,Dagupta: An outline of statistical Theory”Vol 1 & 2 World press, Culcutta.
5. ગણિતીક, આંકડાશાસ્ત્ર, યુનિવર્સિટી ગ્રંથ નિમાર્ણ બોર્ડ, લેખક: એચ.ડી.શાહ.

Activities:

1. Project on measure of central tendency.
2. Seminar on measure of dispersion and skewness.
3. Assignment on above Four units.
4. Quiz on basic statistics.
5. Group Discussion on above Four units.

KSKV KACHCHH UNIVERSITY - BHUJ
CHOICE BASED CREDIT SYSTEM
SEMESTER SYSTEM – 2016-17
F.Y. B.A. SEMESTER – 2



COURSE – OEST203

CREDIT- 03

MATHEMATICAL STATISTICS

MARKS–70+30=100

UNIT 1	<p>Function, Limit and Permutation and Combinations: Concept of function of a single variable(Linear, Quadratic and exponential function only) Domain, Co-Domain and Range of a Function. Types of a function. Simple example of a function. Concept of Limit, Rules of limit(Without proof) Simple examples of limit. Basic idea of permutations and combinations with simple illustrations. Formula for nPr and nCr(Without proof) with examples.</p>
UNIT 2	<p>Moments: Definition of row and central moments of a discrete r.v. up to order four. The relationship of raw moments with central moment(Without Proof). Numerical examples.</p>
UNIT 3	<p>Probability: Definition of Random Experiment, Sample Space, Events, Mutually exclusive events, Exhaustive events, Dependent events and Independent events, Mathematical and Statistical definition of probability, Theorems of addition and multiplication laws of probability (Without proof) conditioned probability with simple examples.</p> <p>Mathematical Expectation: Concept of a discrete random variable, p.m.f. of a discrete r.v. and its properties, definition of mathematical expectation of a discrete r.v. Mathematical expectations of sum and product of two independent and dependent r.v.(without Proof) and its properties, Simple examples.</p>



પ્રશ્નપત્રનું માળખું

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REG- 2.15 HR

૨) વિભાગ- બ માત્ર એક્ઝર્નલ વિદ્યાર્થીઓએ લખવાનો છે.

EXT-3.00 HR

Section-A is to be attempted by both the regular and external students

Section -B is to be attempted by the External students only

Time management – (2.15 Hrs. for Regular Students)

and (3.00 Hrs. for External Students)

Marks:70+30=100

વિભાગ-અ			
પ્રશ્ન ક્રમ	યુનિટ ક્રમ	પ્રશ્ન પ્રકાર	ગુણભાર
No.	Unit No.	Type of Question	Wattage
1	1	Q.1(a) Theory Q.1(b) Calculate Any Two (Ask 3)	08 12 20
2	2	Q.2(a) Theory Q.2(b) Calculate Any Two (Ask 3)	08 12 20
3	3	Q.3(a) Theory Q.3(b) Calculate Any Two (Ask 3)	08 12 20
4	1 to 3	Do as Directed Each Question carry maximum	02 10
વિભાગ - બ			
5	1 & 2	Q.5(a) Theory Q.5(b) Calculate Any Two (Ask 3)	08 12 20
6	3	Short Notes Any Two (Ask 3)	10

Reference books:

1. S.C.Gupta & V. Kapoor: Fundamental of applied statistics Sultan chand & sons New delhi.(2007)
2. Sancheti & Kapoor: Business Mathematics”Sultan chand & Sons, New Delhi.
3. Kapoor V.K.: Business Mathematics”Sultan chand & Sons, New Delhi.
4. Parimal Mukhopadhyay: Mathematics Statistics”Books & allied(p) Ltd.
5. આંકડાશાસ્ત્રના મૂળતત્ત્વો. B.Com Sem-3 બી.એસ.શાહ પ્રકાશન

Activities:

1. Project on probability
2. Presentation on Mathematical expection.
3. Assignment on above Four units.
4. Ict on bisag.
5. Group Discussion on above Four units.

KSKV KACHCHH UNIVERSITY - BHUJ
CHOICE BASED CREDIT SYSTEM
SEMESTER SYSTEM – 2016-17
F.Y. B.A. SEMESTER – 2



COURSE – OEST204

CREDIT- 03

APPLIED STATISTICS-II

MARKS–70+30=100

UNIT 1	<p>Probability Distribution – I:</p> <p>Concept of probability mass function and probability density function: Binomial distribution and Poisson distribution. Mean and variance, application, Properties of these distributions (Without Proof) and simple examples based on these distributions.</p> <p>Probability Distribution-II:</p> <p>Normal distribution and Negative Binomial distribution Mean and variance, application, Properties of these distributions (Without proof) and simple examples based on these distributions.</p>
UNIT 2	<p>Analysis of Variance:</p> <p>Definition of ANOVA, Uses of ANOVA, Only One-Way Classification.</p>
UNIT 3	<p>Sampling Methods:</p> <p>Concept of population survey and sample survey, Characteristics of a good sample. The importance of size of a sample. Meaning of sampling (With replacement and without replacement). Method of sampling-Simple random sampling and its simple numerical examples upto 3 strata.</p>



પ્રશ્નપત્રનું માળખું

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REG- 2.15 HR

૨) વિભાગ- બ માત્ર એક્ષ્ટર્નલ વિદ્યાર્થીઓએ લખવાનો છે.

EXT-3.00 HR

Section-A is to be attempted by both the regular and external students

Section -B is to be attempted by the External students only

Time management – (2.15 Hrs. for Regular Students)

and (3.00 Hrs. for External Students)

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પ્રશ્ન ક્રમ	યુનિટ ક્રમ	પ્રશ્ન પ્રકાર		ગુણભાર
No.	Unit No.	Type of Question		Wattage
1	1	Q.1(a) Theory	08	20
		Q.1(b) Calculate Any Two (Ask 3)	12	
2	2	Q.2(a) Theory	08	20
		Q.2(b) Calculate Any Two (Ask 3)	12	
3	3	Q.3(a) Theory	08	20
		Q.3(b) Calculate Any Two (Ask 3)	12	
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વિભાગ - બ				
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5. D.N.Elhance: Fundamentals of statistics”

Activities:

1. Project on Analysis of variance.
2. Seminar on probability distribution.
3. Assignment on above Four units.
4. Quiz on above Four units.
5. Group Discussion on above Four units.

KSKV KACHCHH UNIVERSITY - BHUJ
CHOICE BASED CREDIT SYSTEM
SEMESTER SYSTEM – 2016-17
F.Y. B.A. SEMESTER – 2



COURSE – ACST202

CREDIT- 03

APPLIED STATISTICS

MARKS–70+30=100

UNIT 1	Index Number: Definition, Limitations and uses of Index numbers. Constuction of Index number by aggregate expenditure method and family budget method using Laspevre's, Paasche's and Fisher's formulae.
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પ્રશ્નપત્રનું માળખું

સૂચના- ૧) વિભાગ- અ રેગ્યુલર અને એક્ષ્ટર્નલ બંને વિદ્યાર્થીઓ માટે છે.

REG- 2.15 HR

૨) વિભાગ- બ માત્ર એક્ષ્ટર્નલ વિદ્યાર્થીઓએ લખવાનો છે.

EXT-3.00 HR

Section-A is to be attempted by both the regular and external students

Section -B is to be attempted by the External students only

Time management – (2.15 Hrs. for Regular Students)

and (3.00 Hrs. for External Students)

Marks:70+30=100

વિભાગ-અ			
પ્રશ્ન ક્રમ	યુનિટ ક્રમ	પ્રશ્ન પ્રકાર	ગુણભાર
No.	Unit No.	Type of Question	Wattage
1	1	Q.1(a) Theory Q.1(b) Calculate Any Two (Ask 3)	08 12 20
2	2	Q.2(a) Theory Q.2(b) Calculate Any Two (Ask 3)	08 12 20
3	3	Q.3(a) Theory Q.3(b) Calculate Any Two (Ask 3)	08 12 20
4	1 to 3	Do as Directed Each Question carry maximum	02 10
વિભાગ - બ			
5	1 & 2	Q.5(a) Theory Q.5(b) Calculate Any Two (Ask 3)	08 12 20
6	3	Short Notes Any Two (Ask 3)	10

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2. D.S.Sancheti & Kapoor: Statistics:Theory, Method & Application”Sultan chand & Sons, New Delhi.
3. D.N.Elhance: Fundamentals of statistics”
4. Goon, Gupta,Dagupta: An outline of statistical Theory”Vol 1 & 2 World press, Culcutta.

Activities:

1. Project on demography.
2. Presentation on Time series.
3. Assignment on above Four units.
4. Ict on bisag
5. Group Discussion on above Four units.

KSKV KACHCHH UNIVERSITY - BHUJ
CHOICE BASED CREDIT SYSTEM
SEMESTER SYSTEM – 2016-17
SY. B.A. SEMESTER – 3



COURSE – OEST305

CREDIT- 03

MATHEMATICAL ECONOMICS

MARKS–70+30=100

UNIT 1	<p>Differentiation:</p> <p>Concept of derivative of a real function, Rules of derivative without proof. Derivative of the function of types: $ax + b$, $ax+bx+c$, $(ax+b)(cx+d)$, $ax+b/cx+d$, e^x, a^x, $\log x$.</p>
UNIT 2	<p>Partial Differentiaion:</p> <p>Definition of partial derivative involving two variable only up to first and second order. Euler’s theorem (Statement only). Simple examples.</p>
UNIT 3	<p>Demand and Supply functions:</p> <p>Use of derivative in finding stationary values(Maxima and Minima) of function of one variable only. Formulation, their properties, Total and marginal revenue, Total and marginal cost, market equilibrium.</p> <p>Elasticity and concept of utility / function:</p> <p>Elasticity of demand and supply with respect to its properties, simple examples of elasticity of demand and supply. And only concept of utility function.</p>



પ્રશ્નપત્રનું માળખું

સૂચના-૧) વિભાગ- અ રેગ્યુલર અને એક્ષ્ટર્નલ બંને વિદ્યાર્થીઓ માટે છે. REG- 2.15 HR

૨) વિભાગ- બ માત્ર એક્ષ્ટર્નલ વિદ્યાર્થીઓએ લખવાનો છે. EXT-3.00 HR

Section-A is to be attempted by both the regular and external students

Section -B is to be attempted by the External students only

Time management – (2.15 Hrs. for Regular Students)

and (3.00 Hrs. for External Students)

Marks:70+30=100

વિભાગ-અ				
પ્રશ્ન ક્રમ	યુનિટ ક્રમ	પ્રશ્ન પ્રકાર		ગુણભાર
No.	Unit No.	Type of Question		Wattage
1	1	Q.1(a) Theory	08	20
		Q.1(b) Calculate Any Two (Ask 3)	12	
2	2	Q.2(a) Theory	08	20
		Q.2(b) Calculate Any Two (Ask 3)	12	
3	3	Q.3(a) Theory	08	20
		Q.3(b) Calculate Any Two (Ask 3)	12	
4	1 to 3	Do as Directed Each Question carry maximum	02	10
વિભાગ - બ				
5	1 & 2	Q.5(a) Theory	08	20
		Q.5(b) Calculate Any Two (Ask 3)	12	
6	3	Short Notes Any Two (Ask 3)		10

Reference books:

5. S.C. Gupta & Kapoor V.K. : Fundamental of Applied Statistics, Sultan Chand & Sons, New Delhi.
6. Sancheti & Kapoor: "Business Mathematics" Sultan Chand & Sons, New Delhi.
7. Kapoor V.K. : "Business Mathematics" Sultan Chand & Sons, New Delhi.
8. Parimal Mukhopadhyay: "Mathematical Statistics" Books & allied (p) Ltd.

Activities:

6. Project on Demand and Supply function.
7. Seminar on Elasticity and concept of utility function.
8. Assignment on above three units.
9. Ict on Graph and diagram
10. Group Discussion and above four units.
- 11.

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COURSE – OEST306

CREDIT- 03

MATHEMATICAL STATISTICS MARKS–70+30=100

UNIT 1	<p>Interpolation and Extrapolation:</p> <p>Meaning and assumptions of Interpolation and Extrapolation , Idea of Operator's Δ and E with examples. Newton's and Lagrange's interpolation formula (without proof) simple examples.</p>
UNIT 2	<p>Airthmetic and Geometric Progression:</p> <p>Meaning of progression and series. The n^{th} term and sum of the first n terms of A.P. and G.P. (Without proof). Arithmetic and Geometric mean between two variables.</p>
UNIT 3	<p>Correlation:</p> <p>Concept of linear correlation between two variables, scatter diagram, Karl Pearson's formula for correlation coefficient, Spearman's rank correlation. Calculation of correlation coefficient from ungrouped data only. Simple example.</p> <p>Regression:</p> <p>Concept of error in regression, principle of least squares, lines of regression, coefficient of determination and its interpretation. Uses of regression in forecasting.</p>



પ્રશ્નપત્રનું માળખું

સૂચના-૧) વિભાગ- અ રેગ્યુલર અને એક્ષ્ટર્નલ બંને વિદ્યાર્થીઓ માટે છે. REG- 2.15 HR

૨) વિભાગ- બ માત્ર એક્ષ્ટર્નલ વિદ્યાર્થીઓએ લખવાનો છે. EXT-3.00 HR

Section-A is to be attempted by both the regular and external students

Section -B is to be attempted by the External students only

Time management – (2.15 Hrs. for Regular Students)

and (3.00 Hrs. for External Students)

Marks:70+30=100

વિભાગ-અ				
પ્રશ્ન ક્રમ	યુનિટ ક્રમ	પ્રશ્ન પ્રકાર		ગુણભાર
No.	Unit No.	Type of Question		Wattage
1	1	Q.1(a) Theory	08	20
		Q.1(b) Calculate Any Two (Ask 3)	12	
2	2	Q.2(a) Theory	08	20
		Q.2(b) Calculate Any Two (Ask 3)	12	
3	3	Q.3(a) Theory	08	20
		Q.3(b) Calculate Any Two (Ask 3)	12	
4	1 to 3	Do as Directed Each Question carry maximum	02	10
વિભાગ - બ				
5	1 & 2	Q.5(a) Theory	08	20
		Q.5(b) Calculate Any Two (Ask 3)	12	
6	3	Short Notes Any Two (Ask 3)		10

Reference books:

1. D.C.Sancheti & V.K.Kapoor: Statistics Theory , Methods & Application Sultan Chand & Sons.
2. S.C.Gupta & V.K.Kapoor: Fundamental of applied statistics Sultan Chand & Sons , New Delhi.
3. Sancheti & Kapoor: “Business Mathematics” Sultan Chand & Sons , New Delhi.
4. Kapoor V.K. : “Business Mathematics” Sultan Chand & Sons , New Delhi.
5. Parimal Mukhopadhyay: Mathematics Statistics” Books & Allied (p) Ltd.

Activities:

1. Project on Interpolation and extrapolation.
2. Presentation on correlation and regression.
3. Assignment on above three units.
4. Quiz on arithmetic and geometric progression.
5. Group Discussion and above four units.

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COURSE – ACST303

CREDIT- 03

STATISTICAL METHODS

MARKS–70+30=100

UNIT 1	<p>PERMUTATION AND COMBINATION:</p> <p>Concept of permutation and combination , Formula for (without proof). Simple example.</p>
UNIT 2	<p>PROBABILITY:</p> <p>Random experiment involving tossing of coins, dice and drawing of cards etc. Definition of sample space, events, equally likely events, mutually exclusive and exhaustive events, Independences of events. Definition of probability (Mathematical, Statistical). Definition of conditional probability. Theorems of addition and multiplication of probabilities (without proof). Simple example.</p>
UNIT 3	<p>PROBABILITY DISTRIBUTION:</p> <p>Defination Characteristics, and uses of binomial, Poisson and Normal Distribution. Its Probability mass function. Simple Examples related to this distribution (e^{-m} should be given)</p>



પ્રશ્નપત્રનું માળખું

સૂચના-૧) વિભાગ- અ રેગ્યુલર અને એક્ષ્ટર્નલ બંને વિદ્યાર્થીઓ માટે છે.

REG- 2.15 HR

૨) વિભાગ- બ માત્ર એક્ષ્ટર્નલ વિદ્યાર્થીઓએ લખવાનો છે.

EXT-3.00 HR

Section-A is to be attempted by both the regular and external students

Section -B is to be attempted by the External students only

Time management – (2.15 Hrs. for Regular Students)

and (3.00 Hrs. for External Students)

Marks:70+30=100

વિભાગ-અ			
પ્રશ્ન ક્રમ	યુનિટ ક્રમ	પ્રશ્ન પ્રકાર	ગુણભાર
No.	Unit No.	Type of Question	Wattage
1	1	Q.1(a) Theory Q.1(b) Calculate Any Two (Ask 3)	08 12 20
2	2	Q.2(a) Theory Q.2(b) Calculate Any Two (Ask 3)	08 12 20
3	3	Q.3(a) Theory Q.3(b) Calculate Any Two (Ask 3)	08 12 20
4	1 to 3	Do as Directed Each Question carry maximum	02 10
વિભાગ - બ			
5	1 & 2	Q.5(a) Theory Q.5(b) Calculate Any Two (Ask 3)	08 12 20
6	3	Short Notes Any Two (Ask 3)	10

Reference books:

1. Statistical Method by S.P.Gupta
2. Fundamental of applied statistics by Gupta & Kapoor Published by Sultan Chand & Sons, New Delhi.
3. Statistics Theory Method and Application-D.S. Sancheti and V.K.Kapoor, Sultan Chand & Sons, New Delhi.
4. Statistics by Dr. C.B. Gupta
5. આંકડાશાસ્ત્રના મૂળતત્વો- B.Com Sem-3- બી.એમ. શાહ પ્રકાશન, અમદાવાદ

Objective:

The Course aims to provide an understanding of application of statistics to business and industries while focusing to develop effective business communication skills among the students.

Key features:

To make them aware about Statistical Methods application in real life.

Course Duration: 45 Sessions, 3 Sessions a week.

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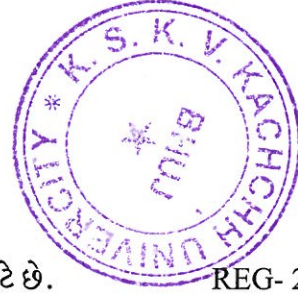
COURSE – OEST407

CREDIT- 03

APPLIED STATISTICS

MARKS–70+30=100

UNIT 1	<p>Statistical Quality Control (S.Q.C.) Meaning and scope of S.Q.C. , Organization of S.Q.C. in an industry unit, Control Charts-3 Sigma limits and control limits, Control Charts for variables \bar{x} and R charts, their uses and interpretation, Use of theory of runs. Control charts for attributes: p, np, c charts</p>
UNIT 2	<p>Testing of Hypothesis: Introduction, some related terms: Parameter and statistics, Sampling distribution of a statistics, standard error of a statistics, statistical hypothesis, null hypothesis, Alternative hypothesis, testing of hypothesis, Test of Significance , Level of significance, Degrees of freedom, critical region, Type – I and Type-II errors and one – tailed and two tailed tests. Test for variables: Test of significance of mean, Test of significance of difference between two means and two standard deviations. Test for attributes: Test of significance of a proportion and test of significance about the difference between two proportions.</p>
UNIT 3	<p>Large Sample test: Test for variables: Test of significance of mean, Test of significance of difference between two means and two standard deviations. Test for attributes: Test of significance of a proportions and test of significance about the difference between two propotion.</p> <p>Small Sample test: Chi-square test, t-test and F-test with simple examples.</p>



પ્રશ્નપત્રનું માળખું

સૂચના-૧) વિભાગ- અ રેગ્યુલર અને એક્ઝર્નલ બંને વિદ્યાર્થીઓ માટે છે.

REG- 2.15 HR

૨) વિભાગ- બ માત્ર એક્ઝર્નલ વિદ્યાર્થીઓએ લખવાનો છે.

EXT-3.00 HR

Section-A is to be attempted by both the regular and external students

Section -B is to be attempted by the External students only

Time management – (2.15 Hrs. for Regular Students)

and (3.00 Hrs. for External Students)

Marks:70+30=100

વિભાગ-અ				
પ્રશ્ન ક્રમ	યુનિટ ક્રમ	પ્રશ્ન પ્રકાર		ગુણભાર
No.	Unit No.	Type of Question		Wattage
1	1	Q.1(a) Theory	08	20
		Q.1(b) Calculate Any Two (Ask 3)	12	
2	2	Q.2(a) Theory	08	20
		Q.2(b) Calculate Any Two (Ask 3)	12	
3	3	Q.3(a) Theory	08	20
		Q.3(b) Calculate Any Two (Ask 3)	12	
4	1 to 3	Do as Directed Each Question carry maximum	02	10
વિભાગ - બ				
5	1 & 2	Q.5(a) Theory	08	20
		Q.5(b) Calculate Any Two (Ask 3)	12	
6	3	Short Notes Any Two (Ask 3)		10

Reference books:

1. S.C.Gupta & V.K.Kapoor: Fundamental of applied statistics Sultan Chand & Sons , New Delhi.
2. D.C.Sancheti & V.K.Kapoor: Statistics Theory , Methods & Application Sultan Chand & Sons.
3. S.C.Gupta & V.K.Kapoor: Fundamental of applied statistics Sultan Chand & Sons , New Delhi.
4. Grant E.L. : Statistical quality control, McGraw Hill.

Activities:

1. Project on Statistical quality control , control charts for variables.
2. Seminar on control charts for attributes.
3. Assignment on above three units.
4. Study tour.
5. Group Discussion and above four units.

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COURSE – OEST408

CREDIT- 03

OPERATIONS RESEARCH

MARKS–70+30=100

UNIT 1	Decision Theory: Ingredients of decision problems: Act, states of nature of events, pay off Matrix, Different methods of Decision making, MAXi-min principle, Maxi-max principle, Lalplace principle, Horwich principle and expected monetary value. (EMV)
UNIT 2	Linear Programming: Meaning of linear programming, Assumptions and limitations of linear programming, use of linear programming. Constrains, Solution, feasible solution, Optimal feasible solutions , Simple examples . Mathematical form of Linear programming Problem. Graphical Method of solving Linear Programming Problem.
UNIT 3	Transportation problem: Meaning of Transportation Problem, North-West Corner rule and Matrix Minima Methods and Vogle’s Approximation method. Assignment problem: Definition of balanced assignment problem, Hungarain method of solving a balanced assignment problem.



પ્રશ્નપત્રનું માળખું

સૂચના-૧) વિભાગ- અ રેગ્યુલર અને એક્ષ્ટર્નલ બંને વિદ્યાર્થીઓ માટે છે.

REG- 2.15 HR

૨) વિભાગ- બ માત્ર એક્ષ્ટર્નલ વિદ્યાર્થીઓએ લખવાનો છે.

EXT-3.00 HR

Section-A is to be attempted by both the regular and external students

Section -B is to be attempted by the External students only

Time management – (2.15 Hrs. for Regular Students)

and (3.00 Hrs. for External Students)

Marks:70+30=100

વિભાગ-અ				
પ્રશ્ન ક્રમ	યુનિટ ક્રમ	પ્રશ્ન પ્રકાર		ગુણભાર
No.	Unit No.	Type of Question		Wattage
1	1	Q.1(a) Theory	08	20
		Q.1(b) Calculate Any Two (Ask 3)	12	
2	2	Q.2(a) Theory	08	20
		Q.2(b) Calculate Any Two (Ask 3)	12	
3	3	Q.3(a) Theory	08	20
		Q.3(b) Calculate Any Two (Ask 3)	12	
4	1 to 3	Do as Directed Each Question carry maximum	02	10
વિભાગ - બ				
5	1 & 2	Q.5(a) Theory	08	20
		Q.5(b) Calculate Any Two (Ask 3)	12	
6	3	Short Notes Any Two (Ask 3)		10

Reference books:

1. J.K. Sharma: O.R. Theory and application” Macmillan India Ltd.
2. H.A. Taha: O.R. Theory “ Macmillan India Ltd.
3. D.C.Sancheti & V.K.Kapoor: Statistics Theory , Methods & Application Sultan Chand & Sons.

Activities:

1. Project on Linear Programming
2. Presentation on O.R.
3. Assignment on above three units.
4. Lecture on How to use statistics in Research
5. Group Discussion and above four units.

KSKV KACHCHH UNIVERSITY - BHUJ
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COURSE – ACST404

CREDIT- 03

STATISTICAL METHODS

MARKS–70+30=100

UNIT 1	Statistical Quality Control
UNIT 2	Linear Programming Problem(LPP) -Meaning , formulation of a linear programming problems, graphical method of solving LPP
UNIT 3	Operation Research: Meaning and scope of OR and uses of OR (i) Transportation problem: Meaning and solving examples using North-West Corner, Row Minima, Column Minima and Matrix Minima Methods in Least cost. (ii) Replacement problem: Replacement models for items that deteriorate with time, elementary model with simple illustrations.



પ્રશ્નપત્રનું માળખું

સૂચના-૧) વિભાગ- અ રેગ્યુલર અને એક્ઝર્નલ બંને વિદ્યાર્થીઓ માટે છે.

REG- 2.15 HR

૨) વિભાગ- બ માત્ર એક્ઝર્નલ વિદ્યાર્થીઓએ લખવાનો છે.

EXT-3.00 HR

Section-A is to be attempted by both the regular and external students

Section -B is to be attempted by the External students only

Time management – (2.15 Hrs. for Regular Students)

and (3.00 Hrs. for External Students)

Marks:70+30=100

વિભાગ-અ				
પ્રશ્ન ક્રમ	યુનિટ ક્રમ	પ્રશ્ન પ્રકાર		ગુણભાર
No.	Unit No.	Type of Question		Wattage
1	1	Q.1(a) Theory Q.1(b) Calculate Any Two (Ask 3)	08 12	20
2	2	Q.2(a) Theory Q.2(b) Calculate Any Two (Ask 3)	08 12	20
3	3	Q.3(a) Theory Q.3(b) Calculate Any Two (Ask 3)	08 12	20
4	1 to 3	Do as Directed Each Question carry maximum	02	10
વિભાગ - બ				
5	1 & 2	Q.5(a) Theory Q.5(b) Calculate Any Two (Ask 3)	08 12	20
6	3	Short Notes Any Two (Ask 3)		10

Reference books:

1. Introduction to operation research by Kanti Swaroop and Man Mohan.
2. Operation Research by P K Gupta & Man Mohan Sultan Chand & Sons, New Delhi.
3. Operation Research by J.K. Sharma.
4. An introduction to operation research – C.R. Kothari
5. Statistical Methods by S.P.Gupta