

Annual Teaching Plan

Academic year 2018-2019 Semester I Department -Statistics
 Subject - Statistics Title -DESCRIPTIVE STATISTICS –I & ELEMENTARY PROBABILITY THEORY

Section I- Descriptive Statistics I

Name of teacher – Ms. Pattanshetti R. N.

Month: June-July			Module/Unit	Sub-units planned
Lectures 12	Practicals 16	Total 28	Unit-1 Introduction to Statistics & Measures of Central Tendency	1. Meaning of primary and secondary data, 2. Basis concept of population and sampling methods. 3. Concept of central tendency.
Month-August				
Lectures 9	Practicals 20	Total 29	Unit -1 Measures of Central Tendency	1. A.M., G.M., H.M., and its properties 2. Partition values: Quartile, deciles and percentiles. 3. Comparison between averages
			Unit-2 Measures of Dispersion	1. Concept of dispersion, 2. Absolute and relative measure of dispersion.
Month-September				
Lectures 7	Practicals 8	Total 15	Unit-2 Measures of Dispersion	1. Definition of variance and standard deviation with its properties 2. Coefficient of variation
			Unit-3 Moments, Skewness & Kurtosis	1. Moments: Raw and central moments. 2. Relation between raw and central moments. 3. Skewness and kurtosis (concept and types).
Month: October-November				
Lectures 7	Practicals 12	Total 19	Unit-4 Theory of Attributes	1. Concept of attributes and some definitions 2. Concept of Consistency 3. Concept of Independence and Association of two attributes. 4. Definition and interpretation of Yule's coefficient of association (Q) and Coefficient of colligation (Y). 5. Relation between Q and Y. Examples

Pattanshetti

Name and Signature of teacher

MS. PATTANSHETTI R. N.



Pattanshetti

Ms. Pattanshetti R. N.

Head

Department of Statistics
Vivekanand College, Kolhapur.
(Autonomous)

Annual Teaching Plan
 Academic year 2018-2019 Semester I Department -Statistics
 Subject - Statistics Title -DESCRIPTIVE STATISTICS –I & ELEMENTARY PROBABILITY
 THEORY

Section II- Elementary Probability Theory

Name of teacher - Pawar V. V.

Month: June-July			Module/Unit	Sub-units planned
Lectures 20	Practicals 20	Total 40	Unit-1 Sample space and Events	1. Deterministic and non-deterministic experiments 2. Definitions: Sample space, Event, Types of events 3. Algebra of events
Month-August				
Lectures 11	Practicals 16	Total 27	Unit -1 Sample space and Events	1. Definition of Power set. 2. Symbolic representation of given events and Illustrative examples.
			Unit-2 Probability	1. Apriori definition of probability, Probability model 2. Axiomatic definition of probability 3. Illustrative examples
Month-September				
Lectures 12	Practicals 16	Total 28	Unit-2 Probability	1. Some theorems on probability 2. Definition of probability in terms of odd ratio.
			Unit-3 Conditional Probability & Independence of events	1. Definition of conditional probability ,Multiplication theorem of probability 2. Baye's theorem, examples on conditional probability and Baye's theorem. 3. Independence of two events, Pairwise and Mutual Independence for three events. Elementary examples.
Month: October-November				
Lectures 14	Practicals 16	Total 30	Unit-4 Univariate Probability Distributions (finite sample space):	1. Discrete random variable, p.m.f. and c.d.f. 2. Properties of c.d.f. 3. Probability distribution of function of random variable. 4. Median and Mode

Name and Signature of teacher

V. Pawar
 (Ms. Pawar V. V.)



Pattanshetti

Ms. Pattanshetti R. N.

Head

Department of Statistics
Vivekanand College, Kolhapur
(Autonomous)

Annual Teaching Plan

Academic year 2018 -2019 Semester III Department -Statistics

Subject - Statistics Title –Probability Distributions I and Statistical Methods I

Section II - Statistical Methods I

Name of teacher – Pattanshetti R.N.

Month: June-July			Module/Unit	Sub-units planned
Lectures 20	Practicals 20	Total 40	Unit-1 Time Series	<ol style="list-style-type: none"> 1. Meaning ,need and utility 2. components of time series 3. Methods of measurement of trend 4. Measurement of seasonal indices
Month-August				
Lectures 12	Practicals 16	Total 28	Unit-2 Statistical Quality Control	<ol style="list-style-type: none"> 1. Meaning and purpose of S.Q.C., 2. Process control, Product control, 3. Shewhart's control chart for Attributes
			Unit-3 Demography	<ol style="list-style-type: none"> 1. Introduction and need of vital statistics 2. Mortality rates, Fertility Rates and Reproduction Rates
Month-September				
Lectures 13	Practicals 16	Total 29	Unit-4 Index Number	<ol style="list-style-type: none"> 1. Meaning and utility of index numbers. 2. Types of index numbers.
Month: October-November				
Lectures 14	Practicals 16	Total 30	Unit-4 Index Number	<ol style="list-style-type: none"> 1. Laspeyre's, Paasche's and Fisher's index numbers 2. Tests of index numbers. 3. Cost of living index number

Pattanshetti

Name and Signature of teacher

Ms. Pattanshetti R.N



Pattanshetti

Ms. Pattanshetti R. N.

Head

Department of Statistics
Vivekanand College, Kolhapur
(Autonomous)



Annual Teaching Plan

Academic year 2018-2019 Semester III Department -Statistics

Subject - Statistics Title –Probability Distributions I and Statistical Methods I

Section I- Probability Distributions I

Name of teacher – Pawar V. V.

Month: June-July			Module/Unit	Sub-units planned
Lectures 19	Practicals 16	Total 35	Unit-1 Discrete Distributions: Poisson, Geometric and Negative Binomial Distribution.	1. Definition of random variable 2. Poisson Distribution 3. Poisson distribution as a limiting case of Binomial distribution, examples.
Month-August				
Lectures 12	Practicals 20	Total 32	Unit-1 Discrete Distributions: Poisson, Geometric and Negative Binomial Distribution.	1. Geometric Distribution 2. Lack of memory property 3. Negative Binomial Distribution 4. Examples.
			Unit-2 Continuous Univariate Distributions	1. Definition of the continuous sample space, 2. Continuous random variable (r.v.), p.d.f, c.d.f. and its properties 3. Expectation of r.v., expectation of function of r.v., mean, median, mode, quartiles, variance, harmonic mean, raw and central moments, skewness and kurtosis.
Month-September				
Lectures 10	Practicals 8	Total 18	Unit-2 Continuous Univariate Distributions	1. Moments generating function 2. Cumulant generating function 3. Examples.
			Unit-3 Continuous Bivariate Distributions	1. Definition of bivariate continuous random variable , p.d.f, c.d.f., 2. Conditional distribution and independence of random variables. 3. Expectation of function of r.v.s, covariance, correlation coefficient, conditional expectation.
Month: October-November				
Lectures 14	Practicals 16	Total 30	Unit-4 Transformations of continuous random variable	1. Transformations of univariate continuous random variable and continuous bivariate random variables 2. Methods of transformation

Name and Signature of teacher

Ms. Pawar V. V.

Ms. Pattanshetti R. N.

Head

Department of Statistics
Vivekanand College, Kolhapur
(Autonomous)



Annual Teaching Plan
 Academic year 2018 -2019 Semester V Department -Statistics
 Subject - Statistics Title – Operations Research

Paper No. XII Operations Research

Name of teacher – Pattanshetti R.N.

Month: June-July			Module/Unit	Sub-units planned
Lectures 20	Practicals 20	Total 40	Unit-1 Linear programming	1. Concept and formulation of problem as LPP 2. Some definitions 3. Solution of L.P.P.: I. Graphical Method, II. Simplex Method III. Big-M method
Month-August				
Lectures 13	Practicals 20	Total 33	Unit-1 Linear programming	1. Duality Theory 2. Examples and problems.
			Unit-2 Transportation and Assignment Problems	1. Transportation problem (T.P.), some definitions 2. Methods of obtaining IBFS of Transportation problem (T. P.) 3. NWCR, Matrix minima and VAM 4. MODI Method for optimal solution
Month-September				
Lectures 10	Practicals 10	Total 20	Unit-2 Transportation and Assignment Problems	1. Assignment Problem (A.P.) 2. A.P. as a particular case of T.P. 3. Hungarian method to solve (A.P.) 4. Sequencing Problem: Some definitions 5. Procedure of processing n jobs on (a) two machines, (b) three machines and (c) m machines.
			Unit-3 Decision Theory	1. Basic concept and some definitions 2. Type of decision making environments. 3. Decision making under uncertainty 4. Decision making under risk
Month: October-November				
Lectures 13	Practicals 20	Total 33	Unit-4 Simulation Techniques	1. Meaning of simulation, 2. Methods of generating random numbers 3. Techniques of generating random numbers for discrete and continuous distributions

Name and Signature of teacher

Ms. Pattanshetti R.N.



Ms. Pattanshetti R. N.

Head
Department of Statistics
Vivekanand College, Kolhapur
(Autonomous)

Annual Teaching Plan
 Academic year 2018 -2019 Semester V Department -Statistics
 Subject - Statistics Title -Design of Experiments
 Paper No. XI Design of Experiments

Name of teacher – Pawar V.V.

Month: June-July			Module/Unit	Sub-units planned
Lectures 18	Practicals 20	Total 68	Unit-1 Simple Design of Experiment I	1. Basic terms in design of experiments, 2. Principles of design of experiments 3. Completely Randomized Design (CRD)
Month-August			Module/Unit	Sub-units planned
Lectures 12	Practicals 20	Total 32	Unit-2 Simple Design of Experiment II	1. Randomized Block Design (RBD) 2. Latin Square Design (LSD) 3. Missing plot technique for RBD and LSD 4. Identification of real life situations where CRD, RBD and LSD are used.
Month-September			Module/Unit	Sub-units planned
Lectures 11	Practicals 25	Total 36	Unit-3 Efficiency of design and ANOCOVA	1. Efficiency of design 2. Analysis of Covariance (ANOCOVA) with one concomitant variable: Purpose of ANOCOVA 3. Practical situations 4. Estimation of parameters 5. Preparation of analysis of covariance table.
Month: October-November			Module/Unit	Sub-units planned
Lectures 14	Practicals 20	Total 34	Unit-4 Factorial Experiment	1. Concept of factorial experiments 2. Definitions of main effects and interaction effects 3. ANOVA for 2^2 and 2^3 factorial experiments arranged in RBD. 4. Total confounding and Partial Confounding 5. Construction of layout in total confounding and partial confounding in 2^3 factorial experiment.

Name and Signature of teacher

V. V. Pawar
 Ms. Pawar V. V.



Pattanshetti
 Ms. Pattanshetti R. N.

Head

Department of Statistics
Vivekanand College, Kolhapur
(Autonomous)

Annual Teaching Plan
 Academic year 2018 -2019 Semester V Department -Statistics
 Subject - Statistics Title -Probability Distributions
Paper No. IX Probability Distributions I
Practical B. Sc. II and III

Name of teacher – Barale M.S.

Month: June-July			Module/Unit	Sub-units planned
Lectures 20	Practicals 45	Total 65	Unit-1 Univariate Continuous Probability Distributions	1. Laplace (Double Exponential) Distribution 2. Lognormal Distribution 3. Cauchy Distribution
Month-August				
Lectures 11	Practicals 40	Total 51	Unit -1 Univariate Continuous Probability Distributions	1. Weibull Distribution 2. Relation of Weibull distribution with gamma and exponential distribution, examples and problems.
			Unit-2 Univariate and Multivariate Probability Distributions	1. Logistic distribution 2. Pareto distribution 3. Power series distribution and its particular cases
Month-September				
Lectures 12	Practicals 40	Total 52	Unit-2 Univariate and Multivariate Probability Distributions	1. Multinomial distribution 2. Trinomial distribution as particular case of multinomial distribution.
			Unit-3 Truncated Distributions	1. Truncated distribution as conditional distribution, truncation to the right, left and on both sides. 2. Truncated binomial distribution 3. Truncated Poisson distribution $P(m)$ 4. Truncated normal distribution $N(\mu, \sigma^2)$ 5. Truncated exponential distribution
Month: October-November				
Lectures 14	Practicals 45	Total 59	Unit-4 Bivariate Normal Distribution	1. p. d. f. of a bivariate normal distribution, 2. Marginal and conditional distributions, 3. Conditional expectation and conditional variance

Name and Signature of teacher

Ms. Pattanshetti R. N.



Ms. Pattanshetti R. N.

Head

Department of Statistics
Vivekanand College, Kolhapur
(Autonomous)

Academic year 2018 -2019
Subject - Statistics

Annual Teaching Plan
Semester V Department -Statistics
Title -Statistical Inference I
Paper No. X Statistical Inference I
Practical B. Sc. II and III

Name of teacher – Lohar M. B.

Month: June-July			Module/Unit	Sub-units planned
Lectures 19	Practicals 40	Total 59	Unit-1 Point Estimation	<ol style="list-style-type: none"> 1. Concept and definition of Point estimation 2. Definition of an estimator (statistic) & its S.E., 3. Properties of estimator 4. Unbiased estimators and results regarding unbiased estimators
Month-August				
Lectures 11	Practicals 40	Total 51	Unit-1 Point Estimation	<ol style="list-style-type: none"> 1. Relative efficiency 2. Minimum Variance Unbiased Estimator and Uniformly Minimum Variance Unbiased Estimator 3. Consistency
			Unit-2 Likelihood and Sufficiency	<ol style="list-style-type: none"> 1. Definition of likelihood function 2. Sufficiency 3. Pitman Koopman form and sufficient statistic
Month-September				
Lectures 12	Practicals 45	Total 57	Unit-2 Likelihood and Sufficiency	<ol style="list-style-type: none"> 1. Fisher information function 2. Concept of minimal sufficient statistic 3. Illustrative examples.
			Unit-3 Cramer's Rao Inequality	<ol style="list-style-type: none"> 1. Cramer Rao inequality. 2. Minimum Variance Bound Unbiased Estimator (MVBUE) of $\phi(\theta)$. 3. Some results related to MVBUE
Month: October-November				
Lectures 14	Practicals 50	Total 64	Unit-4 Method of Estimation	<ol style="list-style-type: none"> 1. Method of maximum likelihood 2. Invariance property of MLE, relation between MLE and sufficient statistic. 3. Method of moments 4. Method of minimum chi-square

Pattanshetti
Name and Signature of teacher



Pattanshetti
Ms. Pattanshetti R. N.
Head
Department of Statistics
Vivekanand College, Kolhapur
(Autonomous)

Annual Teaching Plan

Academic year 2018 -2019 Odd Semester Department -Statistics
 Subject - Statistics Title -DESCRIPTIVE STATISTICS –II & DISCRETE PROBABILITY DISTRIBUTIONS

Practicals B. Sc. I, II and III

Name of teacher – Nerlekar.S. S

Month: June-July			Module/Unit	Sub-units planned
Lectures	Practicals 81	Total 81	Practical I	<ol style="list-style-type: none"> Graphical representation of frequency distribution. Measures of Central Tendency (Ungrouped and Grouped data)
			Practical II	<ol style="list-style-type: none"> Fitting of Discrete Uniform distribution. Fitting of Binomial distribution.
			Practical – VI	<ol style="list-style-type: none"> Analysis of CRD and RBD. Analysis of Latin Square Design (LSD)
Month: August				
Lectures	Practicals 81	Total 81	Practical I	<ol style="list-style-type: none"> Measures of Dispersion (Ungrouped and Grouped data) Moments, Skewness and Kurtosis (Ungrouped and Grouped data)
			Practical II	<ol style="list-style-type: none"> Fitting of Hypergeometric distribution. Fitting of Poisson distribution.
			Practical – VI	<ol style="list-style-type: none"> Missing Plot Technique for RBD and LSD with one missing observation. Efficiency of i) RBD over CRD and ii) LSD over CRD and RBD.
Month: September				
Lectures	Practicals 54	Total 54	Practical I	<ol style="list-style-type: none"> Univariate Probability Distribution Probability - I
			Practical II	<ol style="list-style-type: none"> Fitting of Geometric distribution. Fitting of Negative Binomial distribution.
			Practical – VI	<ol style="list-style-type: none"> Analysis of Covariance in CRD. Analysis of Covariance in RBD.
				<ol style="list-style-type: none"> Assignment problem. Sequencing Problem.

Month: October- November				
Lectures	Practicals 116	Total 116	Practical I	<ol style="list-style-type: none"> 1. Probability – II 2. Attributes 3. Correlation Coefficient & Spearman's Rank Correlation (Ungrouped data)
			Practical II	<ol style="list-style-type: none"> 1. Model sampling from Discrete Uniform distribution. 2. Model sampling from Binomial distribution. 3. Model sampling from Hypergeometric distribution.
			Practical – VI	<ol style="list-style-type: none"> 1. Analysis of 22 and 23 Factorial Experiment. 2. Total Confounding.
				<ol style="list-style-type: none"> 1. Decision Theory. 2. Simulation I (Discrete distribution) 3. Simulation II (Continuous distribution)

Pattanshetti
Name and Signature of teacher



Pattanshetti
Ms. Pattanshetti R. N.
Head
Department of Statistics
Vivekanand College, Kolhapur
(Autonomous)

Annual Teaching Plan
 Academic year 2018 -2019 Semester III Department -Statistics
 Subject - Statistics Course - CC - 1051 C Title – Business Statistics I
Section I- Business Statistics I

Name of teacher – Lohar M.B.

Month: June-July			Module/Unit	Sub-units planned
Lectures 26	Practicals	Total 26	Unit-1 Introduction to Statistics & Sampling Techniques	1. Meaning and scope of statistics 2. Graphical representation, types of data. 3. Sampling Techniques
Month-August				
Lectures 16	Practicals	Total 16	Unit-2 Measures of Central Tendency	1. Concept of central tendency, Mean median and mode, 2. Partition values 3. Empirical relation 4. Examples
Month-September				
Lectures 12	Practicals	Total 12	Unit-3 Measures of Dispersion	1. Concept of dispersion and its types 2. Coefficient of variation 3. Examples.
			Unit-4 Analysis of Bivariate Data	1. Correlation: Definition, Types of correlation 2. Methods of studying correlation 3. Illustrative examples.
Month: October-November				
Lectures 16	Practicals	Total 16	Unit-4 Analysis of Bivariate Data	1. Concept of regression 2. Lines of regression 3. Regression coefficients and its Properties 4. Illustrative Examples.

MBOE12
 Name and Signature of teacher

Ms. Lohar M.B



V. Pawar
 Ms. Pawar V.V.
 Head

Department of Statistics
Vivekanand College, Kolhapur
(Autonomous)

Annual Teaching Plan
Academic year 2018 -2019 Semester III Department -Statistics
Subject - Statistics Course - CC - 1051 C Title – Business Statistics I
Section I- Business Statistics I

Name of teacher – Bhosale A. B.

Month: June-July			Module/Unit	Sub-units planned
Lectures 26	Practicals	Total 26	Unit-1 Introduction to Statistics & Sampling Techniques	1. Meaning and scope of statistics 2. Graphical representation, types of data. 3. Sampling Techniques
Month-August				
Lectures 16	Practicals	Total 16	Unit-2 Measures of Central Tendency	1. Concept of central tendency, Mean median and mode, 2. Partition values 3. Empirical relation 4. Examples
Month-September				
Lectures 14	Practicals	Total 14	Unit-3 Measures of Dispersion	1. Concept of dispersion and its types 2. Coefficient of variation 3. Examples.
			Unit-4 Analysis of Bivariate Data	1. Correlation: Definition, Types of correlation 2. Methods of studying correlation 3. Illustrative examples.
Month: October-November				
Lectures 18	Practicals	Total 18	Unit-4 Analysis of Bivariate Data	1. Concept of regression 2. Lines of regression 3. Regression coefficients and its Properties 4. Illustrative Examples.

A. B. Bhosale
Name and Signature of teacher

(Bhosale A. B.)



P. V. Pawar
Ms. P. V. Pawar

Department of Statistics
Vivekanand College, Kolhapur
(Autonomous)

Annual Teaching Plan

Academic year 2018-2019 Semester IV Department -Statistics

Subject - Statistics

Title – Business Statistics – II

Section II Business Statistics – II

Name of teacher – Lohar M.B.

Month: December			Module/Unit	Sub-units planned
Lectures 16	Practicals	Total 16	Unit-1 Probability and probability distributions	1.Basic concepts in probability 2.Binomial distribution: Properties and examples
Month: January				
Lectures 18	Practicals	Total 18	Unit-1 Probability and probability distributions	1. Poisson distribution: Properties and examples
Month: February				
Lectures 16	Practicals	Total 16	Unit-1 Probability and probability distributions Unit-2 Time Series	1.Normal distribution: Properties and examples 2.Definition, uses and components of time series 3.Methods of determination of trend 4.Numerical examples
Month: March				
Lectures 14	Practicals	Total 14	Unit-3 Index Number	1. Meaning and construction of index numbers 2.Types of index numbers 3. Simple and weighted index number. 4. Laspeyre's, Paasche's and Fisher's index numbers. 5.Numerical examples
Month: April-May				
Lectures 14	Practicals	Total 14	Unit-4 Statistical Quality Control	1.Introduction to SQC, Process control, Product control 2.Control charts for variables 3.Control charts for Attributes 4.Examples

Name and Signature of teacher

M B 0812
Ms. Lohar M.B

V Pawar
Ms. Pawar V. V.

Annual Teaching Plan
 Academic year 2018 -2019 Semester II and IV Department -Statistics
 Subject - Statistics Title -DESCRIPTIVE STATISTICS –II & DISCRETE PROBABILITY
 DISTRIBUTIONS

**Section I- Descriptive Statistics II
 Practicals B. Sc. I, and II**

Name of teacher – Nerlekar.S. S

Month: December			Module/Unit	Sub-units planned
Lectures 13	Practicals 72	Total 85	Unit-1 Correlation	1. Bivariate Random variable 2. Correlation, Types of correlation. 3. Scatter diagram, its utility.
Month: January				
Lectures 12	Practicals 84	Total 96	Unit-1 Correlation	1. Karl Pearson's coefficient of correlation 2. Spearman's rank correlation coefficient
Month: February				
Lectures 12	Practicals 76	Total 88	Unit -2 Regression	1. Concept of regression 2. Equations of regression lines 3. Regression coefficients and its properties.
			Unit-3 Multiple Linear Regression & Multiple and Partial Correlation	1. Concept of multiple linear regressions. 2. Fitting of regression plane
Month: March				
Lectures 12	Practicals 64	Total 76	Unit-3 Multiple and Partial Correlation	1. Multiple and partial correlation coefficients and its properties 2. Examples
Month: April-May				
Lectures 10	Practicals 84	Total 94	Unit-4 Time Series	1. Meaning ,need and utility 2. components of time series 3. Methods of measurement of trend 4. Measurement of seasonal indices

Name and Signature of teacher

MS. Nerlekar S.S



Ms. Pawar V. V.

Head

Department of Statistics
Vivekanand College, Kolhapur
(Autonomous)

Annual Teaching Plan

Academic year 2018 -2019 Semester II Department -Statistics

Subject - Statistics Title -DESCRIPTIVE STATISTICS –II & DISCRETE PROBABILITY DISTRIBUTIONS

Section II- Discrete Probability Distributions

Name of teacher - Pawar V. V.

Month: December-January			Module/Unit	Sub-units planned
Lectures 21	Practicals 48	Total 69	Unit-1 Some Standard Discrete Probability Distributions- I	1. One point and two point distributions 2. Bernoulli Distribution 3. Discrete Uniform Distribution
Month: February				
Lectures 12	Practicals 32	Total 44	Unit -2 Some Standard Discrete Probability Distributions- II	1. Binomial Distribution 2. Hyper geometric Distribution. 3. Binomial approximation to Hypergeometric distribution
			Unit-3 Discrete Distributions: Poisson, Geometric and Negative Binomial Distribution	1. Poisson Distribution 2. Poisson distribution as a limiting case of Binomial distribution, 3. Examples.
Month: March				
Lectures 12	Practicals 40	Total 52	Unit-3 Discrete Distributions: Poisson, Geometric and Negative Binomial Distribution	1. Geometric Distribution: 2. Negative Binomial Distribution
Month: April-May				
Lectures 10	Practicals 24	Total 34	Unit-4 Bivariate Discrete Probability Distributions	1. Definition of bivariate discrete random variable ,p.m.f., and c.d.f., 2. Properties of c.d.f. 3. Mathematical Expectation: Definition and it. 4. Conditional mean and variance, covariance and correlation coefficient.

Name and Signature of teacher

(Ms. Pawar V.V.)



Ms. Pawar V. V.

Department of Statistics
Vivekanand College, Kolhapur
(Autonomous)

Annual Teaching Plan
 Academic year 2018 -2019 Semester IV Department -Statistics
 Subject - Statistics Title –Probability Distributions II and Statistical Methods II
Section I- Probability Distributions II

Name of teacher – Pawar V. V.

Month: December			Module/Unit	Sub-units planned
Lectures 12	Practicals 16	Total 28	Unit-1 Uniform and Exponential Distribution	1. Uniform distribution
Month: January				
13	16	29	Unit-1 Uniform and Exponential Distribution	1. Exponential distribution
Month: February				
Lectures 12	Practicals 16	Total 28	Unit-2 Gamma and Beta Distributions	1. Gamma distribution 2. Beta distribution of 1 st kind
			Unit-2 Gamma and Beta Distributions	1. Beta distribution of second kind
Month: March				
Lectures 12	Practicals 20	Total 32	Unit-3 Normal distribution	1. Normal distribution with parameters μ & σ^2 , Standard normal distribution 2. Properties of Normal distribution 3. Numerical examples
			Unit-4 Exact Sampling Distributions	1. Chi-Square distribution 2. Student's t- distribution
Month: April-May				
Lectures 10	Practicals 12	Total 32	Unit-4 Exact Sampling Distributions	1. Snedecor's F distribution. 2. Inter relation between t, F and χ^2

Name and Signature of teacher
 (Ms. Pawar V. V.)




Ms. Pawar V. V.
 Head
 Department of Statistics
 Vivekanand College, Kolhapur
 (Autonomous)


Annual Teaching Plan
 Academic year 2018 -2019 Semester IV Department -Statistics
 Subject - Statistics Title --Probability Distributions II and Statistical Methods II
Section II - Statistical Methods II

Name of teacher – Bhosale A. B.

Month: December			Module/Unit	Sub-units planned
Lectures 13	Practicals 32	Total 45	Unit-1 Chebychev's Inequality	1. Chebychev's inequality for discrete and continuous distributions. 2. Examples
Month: January				
13	40	53	Unit-2 Reliability Theory	1. Binary Systems 2. Examples
Month: February				
Lectures 11	Practicals 32	Total 43	Unit-2 Reliability Theory	3. Reliability of binary System 4. Ageing Properties
Month: March				
Lectures 12	Practicals 28	Total 40	Unit-3 Testing of Hypothesis I	1. Definitions: Population, sample, hypothesis and types of hypothesis, One and two tailed test 2. Type I and type II errors, level of significance, p-value, Critical region, power of test. 3. Large Sample Tests.
Month: April-May				
Lectures 12	Practicals 28	Total 40	Unit-4 Testing of Hypothesis II	1. Exact/Small sample tests (based on t, chi-square and F distribution)


 Name and Signature of teacher
 (Bhosale A. B.)




 Ms. Pawar V. V.
Head
Department of Statistics
Vivekanand College, Kolhapur
(Autonomous)


Annual Teaching Plan

Academic year 2018 -2019 Semester VI Department -Statistics
 Subject - Statistics Title –Probability Theory


Paper No. XIII Probability Theory

Name of teacher – Bhosale A.B.

Month: December			Module/Unit	Sub-units planned
Lectures 12	Practicals 20	Total 32	Unit-1 Order Statistics	1. Order statistics: definition, derivation of distribution function and density function of the i th order statistic. 2. Derivation of joint p. d. f. of i -th and j -th order statistics
Month: January				
Lectures 12	Practicals 50	Total 62	Unit-1 Order Statistics	1. Distribution of the sample range and sample median when n is odd. 2. Examples and Problems.
Month-February				
Lectures 11	Practicals 40	Total 51	Unit-2 Convergence and Limit Theorem	1. Convergence: Definition and modes of convergence 2. WLLN i. i. d. random variables 3. Central Limit Theorem: Statement and proof 4. Simple examples based on Bernoulli, binomial, Poisson and chi-square distribution.
Month- March				
Lectures 12	Practicals 35	Total 47	Unit-3 Finite Markov Chains	1. Definition, examples and classification of stochastic process 2. Markov chain: Definition and examples of Markov chain, 3. Classification of states, simple problems. 4. Stationary probability distribution, applications. 5. Continuous Markov chain: Pure birth process, Poisson process, birth and death process.
Month: April-May				
Lectures 12	Practicals 35	Total 47	Unit-4 Queing Theory	1. Basic concepts in queuing theory 2. Distribution of arrival, inter arrival time, departure and service time. 3. Types of queuing models.


 Name and Signature of teacher
 (Bhosale A.B.)




 Ms. P. V. Head
Department of Statistics
Vivekanand College, Kolhapur
(Autonomous)

Annual Teaching Plan
 Academic year 2018 -2019 Semester II, IV and VI Department -Statistics
 Subject - Statistics

Title –Statistical Inference II
Paper No. XIV Statistical Inference II
Practicals B. Sc. I, II and III

Name of teacher – Lohar M. B.

Month: December			Module/Unit	Sub-units planned
Lectures 12	Practicals 67	Total 79	Unit-1 Interval Estimation	1. Notion of interval estimation and some definitions 2. Pivotal quantity and its use in obtaining confidence intervals and bounds.
Month: January				
Lectures 13	Practicals 77	Total 90	Unit-1 Interval Estimation	1. Interval estimation for the different cases of normal distribution
Month: February				
Lectures 11	Practicals 67	Total 78	Unit-2 Parametric Test	1. Statistical hypothesis, problems of testing of hypothesis. 2. Most Powerful (MP) test. 3. Neyman - Pearson (NP) lemma 4. Likelihood Ratio Test
Month: March				
Lectures 12	Practicals 64	Total 76	Unit-3 Sequential Test	1. General theory of sequential analysis and its comparison with fixed sample procedure. 2. Wald's SPRT of strength (α, β) 3. Illustrations for standard distributions 4. Graphical and tabular procedure for carrying SPRT
Month: April-May				
Lectures 13	Practicals 61	Total 74	Unit-4 Non – Parametric Test	1. Notion of non-parametric statistical inference (test) and its comparison with parametric statistical inference. 2. Concept of distribution free statistic. 3. Some non-parametric tests: Run test, Sign test, Wilcoxon's signed rank test, Mann-Whitney U –test, Median test, and Kolmogorov Smirnov test

MBOE12

Name and Signature of teacher

Ms. M.B. Lohar



V.P. V.
 Ms. Pawar V. V.

Head

Department of Statistics
Vivekanand College, Kolhapur
 (Autonomous)

Annual Teaching Plan
 Academic year 2018 -2019 Semester VI Department -Statistics
 Subject - Statistics Title –Sampling Theory

Paper No. XV Sampling Theory

Name of teacher – Pawar V. V.

Month: December			Module/Unit	Sub-units planned
Lectures 13	Practicals 25	Total 38	Unit-1 Basic Terminology and Simple Random Sampling	1. Basic Terminology 2. Simple random sampling, SRSWR, SRSWOR
Month: January				
Lectures 13	Practicals 15	Total 28	Unit-1 Basic Terminology and Simple Random Sampling	1. SRS for attributes 2. Determination of the sample size
Month: February				
Lectures 12	Practicals 20	Total 32	Unit-2 Stratified Sampling	1. Stratified random sampling 2. Determination of the sample size under proportional and Neyman allocation 3. Comparison amongst SRSWOR, stratification with proportional allocation and stratification with optimum allocation.
Month: March				
Lectures 12	Practicals 25	Total 37	Unit-3 Other Sampling Methods	1. Systematic Sampling: Real life situations, technique of drawing a sample 2. Comparison of SRS, stratified and systematic sampling when population is in linear trend 3. Circular Systematic Sampling. 4. Cluster Sampling, Two Stage and Multi Stage Sampling, 5. Systematic sampling as a particular case of cluster sampling. 6. Comparison of cluster sampling and SRSWOR.
Month: April-May				
Lectures 10	Practicals 10	Total 20	Unit-4 Sampling Methods using Auxiliary variables	1. Ratio Method: Concept of auxiliary variable and its use in estimation 2. Situations where Ratio method is appropriate. 3. Relative efficiency of ratio estimators with that of SRSWOR 4. Regression Method: Situations where is appropriate. 5. Relative efficiency of regression estimators over SRSWOR

Name and Signature of teacher
 (Ms. Pawar V. V.)



Ms. Pawar V. V.

**Department of Statistics
 Vivekanand College, Kolhapur
 (Autonomous)**

Annual Teaching Plan
 Academic year 2018 -2019 Semester VI Department -Statistics
 Subject - Statistics Title -Quality Management and Data Mining
Paper No. XVI Quality Management and Data Mining
Practicals B. Sc. II and III

Name of teacher – Barale M. S.

Month: December			Module/Unit	Sub-units planned
Lectures 12	Practicals 56	Total 68	Unit-1 Quality Tools	1. Meaning and dimensions of quality 2. Seven magnificent tools of quality
Month: January				
Lectures 13	Practicals 69	Total 82	Unit-1 Quality Tools Unit-2 Process Control	1. Deming’s PDCA cycle and its applications. 2. CUSUM chart, tabular form
Month: February				
Lectures 11	Practicals 60	Total 71	Unit-2 Process Control	1. 2. Moving average and exponentially weighted moving average charts. 3. Six-sigma methodology, 4. DMAIC cycle and case studies
Month: March				
Lectures 11	Practicals 63	Total 74	Unit-3 Product Control	1. Sampling Inspection plans for attribute inspection: Concept of AQL, LTPD, Consumer’s risk, and producer’s risk, AOQ, AOQL, OC, ASN and ATI. 2. Single and double sampling plans
Month: April-May				
Lectures 13	Practicals 56	Total 69	Unit-4 Data Mining	1. Data preparation for knowledge discovery 2. CRISP and SEEMA methods 3. Supervised and unsupervised learning techniques

Ms Barale
 Name and Signature of teacher

Mr. Barale M.S



V. Pawar
 Ms. Pawar V. V.

Head
Department of Statistics
Vivekanand College, Kolhapur
(Autonomous)

Annual Teaching Plan
 Academic year 2018-2019 Semester IV Department -Statistics
 Subject - Statistics Title – Business Statistics – II
Section II Business Statistics – II

Name of teacher – Bhosale A. B.

Month: December			Module/Unit	Sub-units planned
Lectures 28	Practicals	Total 28	Unit-1 Probability and probability distributions	1.Basic concepts in probability 2.Binomial distribution: Properties and examples
Month: January				
Lectures 38	Practicals	Total 38	Unit-1 Probability and probability distributions	1. Poisson distribution: Properties and examples
Month: February				
Lectures 30	Practicals	Total 30	Unit-1 Probability and probability distributions Unit-2 Time Series	1.Normal distribution: Properties and examples 2.Definition, uses and components of time series 3.Methods of determination of trend 4.Numerical examples
Month: March				
Lectures 28	Practicals	Total 28	Unit-3 Index Number	1. Meaning and construction of index numbers 2.Types of index numbers 3. Simple and weighted index number. 4. Laspeyre's, Paasche's and Fisher's index numbers. 5.Numerical examples
Month: April-May				
Lectures 34	Practicals	Total 34	Unit-4 Statistical Quality Control	1.Introduction to SQC, Process control, Product control 2.Control charts for variables 3.Control charts for Attributes 4.Examples

Name and Signature of teacher

(Bhosale A. B.)



Ms. Pawar V. V.
Head
Department of Statistics