

Annual Teaching Plan
 Academic year 2021-2022 Semester I Department -Statistics
 Subject - Statistics Title -DESCRIPTIVE STATISTICS –I & ELEMENTARY PROBABILITY THEORY
Section I- Descriptive Statistics I & B.Sc. III practical

Name of teacher – Pawar A.A.

Month- October			Module/Unit	Sub-units planned
Lectures 08	Practicals 16+20	Total 44	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-November				
Lectures 07	Practicals 20+20	Total 47	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-December				
Lectures 08	Practicals 16+15	Total 38	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- January				
Lectures 07	Practicals 16+25	Total 48	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

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Pawar Ajit A.



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Annual Teaching Plan
Academic year 2021-2022 Semester I Department -Statistics
Subject - Statistics

Title -DESCRIPTIVE STATISTICS –I & ELEMENTARY PROBABILITY THEORY

Section II- Elementary Probability Theory-I & B.Sc II Practical

Name of teacher - Pawar V. V.

Month-October			Module/Unit	Sub-units planned
Lectures 11	Practicals 16+16	Total 43	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-November				
Lectures 14	Practicals 20+16	Total 50	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-December				
Lectures	Practicals	Total	Unit-2 Probability	1. Some theorems on probability 2. Definition of probability in terms of odd ratio.
13	16+20	49	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- January				
Lectures 14	Practicals 20+12	Total 46	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

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Annual Teaching Plan
 Academic year 2021-2022 Semester III Department -Statistics
 Subject - Statistics Course -DSC-1004C Title –Probability Distributions I and Statistical Methods I
Section I- Probability Distributions I & B.Sc I Practical

Name of teacher – Lohar M.B.

Month-October			Module/Unit	Sub-units planned
Lectures 09	Practicals 16+16	Total 41	Unit-1 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-November				
Lectures 14	Practicals 12+16	Total 42	Unit -1 Continuous Univariate Distributions	1. Transformations of univariate continuous random variable and continuous bivariate random variables 2. Methods of transformation
			Unit-2 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-December				
Lectures 13	Practicals 20+12	Total 45	Unit-2 Continuous Bivariate Distributions	1. Transformation of continuous bivariate random variables 2. Distribution of bivariate random variables using Jacobin of transformation. 3. Examples and problems.
			Unit-3 Uniform and Exponential Distribution	1. Uniform distribution 2. Exponential distribution
Month- January				
Lectures 12	Practicals 16+20	Total 48	Unit-4 Normal Distribution	1. Normal distribution with parameters μ & σ^2 , Standard normal distribution 2. Properties of Normal distribution 3. Numerical examples

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Annual Teaching Plan
 Academic year 2021-2022 Semester III Department -Statistics
 Subject - Statistics Course -DSC-1004C Title –Probability Distributions I and Statistical Methods I
Section II - Statistical Methods I

Name of teacher – Bhosale A. B.

Month- October			Module/Unit	Sub-units planned
Lectures 12	Practicals 16	Total 28	Unit-1 Index Number	1. Meaning and utility of index numbers. 2. Types of index numbers.
Month-November				
Lectures 10	Practicals 12	Total 22	Unit-1 Index Number	1. Laspeyre's, Paasche's and Fisher's index numbers 2. Tests of index numbers. 3. Cost of living index number
			Unit-2 Demography	1. Introduction and need of vital statistics 2. Mortality rates, Fertility Rates and Reproduction Rates
Month-December				
Lectures 13	Practicals 20	Total 33	Unit-3 Statistical Quality Control	1. Meaning and purpose of S.Q.C. 2. Process control, Product control 3. Shewhart's control chart for Attributes
Month- January				
Lectures 13	Practicals 16	Total 29	Unit-4 Chebychev's Inequality	1. Chebychev's inequality for discrete, continuous distributions.


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Annual Teaching Plan
 Academic year 2021-2022 Semester V Department -Statistics
 Subject - Statistics Title –Probability Distributions
Paper No. IX Probability Distributions I & B.Sc II Practical

Name of teacher – Makandar A.M

Month- October			Module/Unit		Sub-units planned
Lectures 12	Practicals 60+16	Total 88	Unit-1 Continuous Distributions	Univariate Probability	1. Laplace (Double Exponential) Distribution 2. Lognormal Distribution 3. Cauchy Distribution
Month-November					
Lectures 13	Practicals 60+16	Total 89	Unit -1 Continuous Distributions	Univariate Probability	1. Weibull Distribution 2. Relation of Weibull distribution with gamma and exponential distribution, 3. Examples and problems.
			Unit-2 Univariate and Multivariate Probability Distributions		1. Logistic distribution 2. Pareto distribution 3. Power series distribution and particular cases
Month-December					
Lectures 14	Practicals 60+12	Total 86	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(μ , σ^2)
Month- January					
Lectures 11	Practicals 60+20	Total 91	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

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Academic year 2021-2022
 Subject - Statistics

Annual Teaching Plan
 Semester V Department -Statistics
 Title – Probability Distributions
 Paper No. X: Probability Theory

Name of teacher – Lohar M.B.

Month-October			Module/Unit	Sub-units planned
Lectures 12	Practicals 40	Total 52	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-November				
Lectures 9	Practicals 30	Total 39	Unit-1 Order Statistics	1. Distribution of the sample range and sample median when n is odd. 2. Examples and Problems.
			Unit-2 Convergence and Limit Theorem	1. Convergence: Definition and modes of convergence 2. WLLN i. i. d. random variables
Month-December				
Lectures 13	Practicals 50	Total 63	Unit-2 Convergence and Limit Theorem	1. Central Limit Theorem: Statement and proof 2. Simple examples based on Bernoulli, binomial, Poisson and chi-square distribution.
			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- January				
Lectures 13	Practicals 40	Total 53	Unit-4 Queuing Theory	1. Basic concepts in queuing theory 2. Distribution of arrival, inter arrival time, departure and service time. 3. Types of queuing models.

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Annual Teaching Plan
 Department -Statistics
 Title – Sampling Theory & Operations Research

Academic year 2021-2022 Semester V
 Subject - Statistics

Paper No. XI Sampling Theory

Name of teacher – Bhosale A.B.

Month- October			Module/Unit	Sub-units planned
Lectures 12	Practicals 40	Total 520	Unit-1 Basic Terminology and Simple Random Sampling	1. Basic Terminology 2. Simple random sampling, SRSWR, SRSWOR 3. SRS for attributes 4. Determination of the sample size
Month-November				
Lectures 14	Practicals 30	Total 44	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- December				
Lectures 13	Practicals 40	Total 53	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- January				
Lectures 13	Practicals 45	Total 58	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


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Annual Teaching Plan
 Academic year 2021-2022 Semester V Department -Statistics
 Subject - Statistics Title – Operations Research

Paper No. XII Operations Research

Name of teacher – Pawar V.V.

Month-October			Module/Unit	Sub-units planned
Lectures 11	Practicals 20	Total 31	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-November				
Lectures 14	Practicals 15	Total 29	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-December				
Lectures 13	Practicals 25	Total 38	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- January				
Lectures 12	Practicals 20	Total 32	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

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Annual Teaching Plan

Academic year 2021-2022 Semester I, III & V

Department -Statistics

Subject - Statistics Title -B.Sc. I, II & III **Practical**

Name of teacher – Ms. Patil P.C

Month: October			Module/Unit	Sub-units planned
Class	Practicals	Total		
B.Sc I	16	16	Practical's	Graphical representation of frequency distribution Measures of central tendency I
B.Sc II	16	16	Practical's	Fitting of Discrete Uniform and Binomial distribution. Fitting of Hypergeometric and Poisson distribution. Fitting of Geometric and Negative Binomial distribution.
B.Sc III	60	60	Practical's	Data input/output, diagrammatic and graphical representation of data using R-Software. Computation of probabilities of type I and type II errors and power of a test using R- Software. Simple Random Sampling for Variables. Simple Random Sampling for Attributes. L.P.P. by simplex method I (Slack variable) L.P.P. by simplex method II (Big M method)
Month: November				
Class	Practicals	Total		
B.Sc I	12	12	Practical's	Measures of central tendency II Measures of dispersion I
B.Sc II	16	16	Practical's	Model sampling from Discrete Uniform and Binomial distribution. Model sampling from Hypergeometric and Poisson distribution. Model sampling from Geometric and Negative Binomial distribution Fitting of Continuous Uniform distribution
B.Sc III	55	55	Practical's	Model sampling from log-normal and Weibull distributions using R-Software. Model sampling from logistic distribution using R-Software. Determination of Sample Size in SRS for Variables and Attributes. Stratified Random Sampling – I 5. Stratified Random Sampling – II Ratio Method of Estimation. Transformation problem-I. Transformation problem-II. (Degeneracy)

Month: December				
Class	Practicals	Total		
B.Sc I	20	20	Practical's	Measures of dispersion II Moment, Skewness & Kurtosis I Moment, Skewness & Kurtosis II
B.Sc II	20	20	Practical's	Fitting of Exponential distribution Fitting of Normal distribution. Model sampling from Continuous Uniform and Exponential distribution Model sampling from Normal distribution Application of Exponential & Normal distribution.
B.Sc III	65	65	Practical's	Fitting of Binomial and Poisson distribution using R-Software. Fitting of Normal distribution using R-Software. Analysis of Completely Randomized Design (CRD) using R-Software. Analysis of Randomized Block Design (RBD) using R-Software Regression Method of Estimation. Assignment problem. Sequencing Problem.
Month: January				
Class	Practicals	Total		
B.Sc I	16	16	Practical's	Attribute I Attribute II
B.Sc II	20	20	Practical's	Fitting of binomial, Poisson & Negative Binomial distribution using MS-EXCEL. Fitting of Exponential & Normal distribution using MS-EXCEL. Data input/output and data manipulation using R-Software. Diagrammatic and graphical representation of data using R-Software. Numerical method-I
B.Sc III	60	60	Practical's	Fitting of log-normal distribution using R-Software. Systematic Sampling. Cluster Sampling. Decision Theory. Simulation I (Discrete distribution) Simulation II

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Annual Teaching Plan

Academic year 2021-2022 Semester II Department -Statistics

Subject - Statistics Course -DSC-1004B

Title -DESCRIPTIVE STATISTICS –II & DISCRETE PROBABILITY DISTRIBUTIONS

Section I- Descriptive Statistics II & B.Sc. III practical

Name of teacher – Pawar A. A.

Month-March			Module/Unit	Sub-units planned
Lectures 09	Practicals 16+20	Total 45	Unit-1 Correlation	1. Bivariate Random variable 2. Correlation, Types of correlation. 3. Scatter diagram, its utility. 4. Karl Pearson's coefficient of correlation 5. Spearman's rank correlation coefficient
Month-April				
Lectures 08	Practicals 16+20	Total 44	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-May				
Lectures 08	Practicals 16+20	Total 44	Unit-3 Multiple and Partial Correlation	1. Multiple and partial correlation coefficients and its properties 2. Examples
Month- June				
Lectures 08	Practicals 16+20	Total 44	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

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Annual Teaching Plan

Academic year 2021-2022 Semester II Department -Statistics
 Subject - Statistics Course -DSC-1004B Title -DESCRIPTIVE STATISTICS –II & DISCRETE
 PROBABILITY DISTRIBUTIONS

Section II- Discrete Probability Distributions & B.Sc II Practical

Name of teacher - Pawar V. V.

Month-March			Module/Unit	Sub-units planned
Lectures 13	Practicals 16+20	Total 49	Unit-1 Some Standard Discrete Probability Distributions- I	1. One point and two point distributions 2. Bernoulli Distribution 3. Discrete Uniform Distribution
Month-April				
Lectures 12	Practicals 16+16	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-May				
Lectures 12	Practicals 16+16	Total 44	Unit-3 Discrete Distributions: Poisson, Geometric and Negative Binomial Distribution	1. Geometric Distribution: 2. Negative Binomial Distribution
Month- June				
Lectures 13	Practicals 16+20	Total 49	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.

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Annual Teaching Plan

Academic year 2021-2022 Semester IV Department -Statistics

Subject - Statistics Course -DSC-1004D Title –Probability Distributions II and Statistical Methods II

Section I- Probability Distributions II & B.Sc. I Practical

Name of teacher – Lohar M.B.

Month- March			Module/Unit	Sub-units planned
Lectures 13	Practicals 20+16	Total 49	Unit-1 Gamma and Beta Distributions	1. Gamma distribution 2. Beta distribution of 1 st kind
Month-April				
Lectures 12	Practicals 12+16	Total 40	Unit-1 Gamma and Beta Distributions	1. Beta distribution of 1 st kind
			Unit-2 Exact Sampling Distributions	1. Chi-Square distribution 2. Student's t- distribution
Month- May				
Lectures 12	Practicals 16+16	Total 44	Unit-2 Exact Sampling Distributions	1. Snedecor's F distribution. 2. Inter relation between t, F and χ^2
			Unit-3 Introduction to R	1. Creating, listing and deleting the objects 2. Arithmetic and simple functions 3. Import and export data. 4. Exploratory data analysis
Month- June				
Lectures 13	Practicals 20+16	Total 49	Unit-4 Numerical Methods	1. Solutions to nonlinear equation 2. Numerical integration 3. Bootstrap methods 4. Examples

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Annual Teaching Plan

Academic year 2021-2022 Semester IV Department -Statistics

Subject - Statistics Course -DSC-1004D Title -Probability Distributions II and Statistical Methods II

Section II - Statistical Methods II

Name of teacher – Bhosale A. B.

Month- March			Module/Unit	Sub-units planned
Lectures 13	Practicals 20	Total 33	Unit-1 Reliability Theory I	1. Binary Systems 2. Reliability of binary System
Month-April				
Lectures 11	Practicals 12	Total 23	Unit-2 Reliability Theory II	1. Ageing Properties 2. Relationship between survival function and hazard function, density function and hazard rate 3. Hazard rate of a series system
Month-May				
Lectures 12	Practicals 16	Total 28	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- June				
Lectures 13	Practicals 20	Total 33	Unit-4 Testing of Hypothesis II	1. Exact/Small sample tests (based on t, chi-square and F distribution)

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Annual Teaching Plan
 Academic year 2021-2022 Semester VI Department -Statistics
 Subject - Statistics Title – Probability Theory & Statistical Inference - II
Paper No. XIII Statistical Inference - I

Name of teacher – Lohar M.B.

Month-March			Module/Unit	Sub-units planned
Lectures 12	Practicals 40	Total 52	Unit-1 Point Estimation	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-April				
Lectures 12	Practicals 40	Total 52	Unit-1 Point Estimation	1. Relative efficiency 2. Minimum Variance Unbiased Estimator and Uniformly Minimum Variance Unbiased Estimator 3. Consistency
			Unit-2 Likelihood and Sufficiency	1. Definition of likelihood function 2. Sufficiency 3. Pitman Koopman form and sufficient statistic
Month-May				
Lectures 12	Practicals 40	Total 52	Unit-2 Likelihood and Sufficiency	1. Fisher information function 2. Concept of minimal sufficient statistic 3. Illustrative examples.
			Unit-3 Cramer's Rao Inequality	1. Cramer Rao inequality. 2. Minimum Variance Bound Unbiased Estimator (MVBUE) of $\phi(\theta)$. 3. Some results related to MVBUE
Month- June				
Lectures 14	Practicals 50	Total 64	Unit-4 Method of Estimation	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

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Annual Teaching Plan

Academic year 2021-2022 Semester VI Department -Statistics
 Subject - Statistics Title – Design of Experiment Quality, Management and Data Mining
Paper No. XV Design of Experiment

Name of teacher – Pawar V. V.

Month- March			Module/Unit	Sub-units planned
Lectures 13	Practicals 35	Total 48	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-April				
Lectures 12	Practicals 15	Total 27	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- May				
Lectures 12	Practicals 40	Total 52	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- June				
Lectures 13	Practicals 35	Total 48	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.

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Annual Teaching Plan

Academic year 2021-2022

Semester VI

Department -Statistics

Subject - Statistics

Title – Design of Experiment Quality, Management and Data Mining

Paper No. XVI Quality Management and Data Mining

Name of teacher – Bhosale A. B.

Month-March			Module/Unit	Sub-units planned
Lectures 13	Practicals 55	Total 68	Unit-1 Quality Tools	<ol style="list-style-type: none"> 1. Meaning and dimensions of quality 2. Seven magnificent tools of quality 3. Deming's PDCA cycle and its applications.
Month-April				
Lectures 12	Practicals 30	Total 42	Unit-2 Process Control	<ol style="list-style-type: none"> 1. CUSUM chart, tabular form, 2. Moving average and exponentially weighted moving average charts. 3. Six-sigma methodology, 4. DMAIC cycle and case studies
Month-May				
Lectures 12	Practicals 60	Total 72	Unit-3 Product Control	<ol style="list-style-type: none"> 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- June				
Lectures 13	Practicals 65	Total 78	Unit-4 Data Mining	<ol style="list-style-type: none"> 1. Data preparation for knowledge discovery 2. CRISP and SEEMA methods 3. Supervised and unsupervised learning techniques

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Annual Teaching Plan
 Academic year 2021-2022 Semester IV Department -Statistics
 Subject - Statistics Title – Business Statistics – II
Section II Business Statistics – II & B.Sc. II Practical's

Name of teacher – Pawar A. A.

Month-March			Module/Unit	Sub-units planned
Lectures 37	Practicals 20	Total 57	Unit-1 Probability and probability distributions	1.Basic concepts in probability 2.Binomial distribution: Properties and examples 3.Poisson distribution: Properties and examples
Month-April				
Lectures 30	Practicals 16	Total 46	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-May				
Lectures 32	Practicals 16	Total 48	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- June				
Lectures 37	Practicals 20	Total 57	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

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Annual Teaching Plan
 Academic year 2021-2022 Semester III Department -Statistics
 Subject - Statistics Course - CC - 1051 C Title – Business Statistics I

Section I- Business Statistics I

Name of teacher – Dr. Kumbhar R. R.

Month-July			Module/Unit	Sub-units planned
Lectures	Practicals	Total	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	Practicals	Total	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	Practicals	Total	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				
Lectures	Practicals	Total	Unit-4 Analysis of Bivariate Data	1. Concept of regression 2. Lines of regression 3. Regression coefficients and its Properties 4. Illustrative Examples.

R.R.
 Name & Signature of the Teacher
 (Dr. R. R. Kumbhar)



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

Department of Statistics
Vivekanand College, Kolhapur
(Autonomous)

Annual Teaching Plan

Academic year 2021-2022 Semester IV Department -Statistics

Subject - Statistics

Title - Business Statistics - II

Section II Business Statistics - II

Name of teacher - Dr. Kumbhar R. R.

Month-December			Module/Unit	Sub-units planned
Lectures	Practicals	Total	Unit-1 Probability and probability distributions	1.Basic concepts in probability 2.Binomial distribution: Properties and examples 3.Poisson distribution: Properties and examples
Month-January				
Lectures	Practicals	Total	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-February				
Lectures	Practicals	Total	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- March				
Lectures	Practicals	Total	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 & Signature of the Teacher

Dr. R. R. Kumbhar



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