"Dissemination of Education for Knowledge, Science and Culture"
-Shikshanmaharshi Dr. Bapuji Salunkhe

Shri Swami Vivekanand Shikshan Sanstha's

Vivekanand College, Kolhapur (AUTONOMOUS)

Department of Statistics

Content with Cross Cutting Issues U. G. 2018-19 to 2023-24

Sr. No.	Name of the Course	Course Code	Year of Introduction	Professional Ethics	Gender	Human Values	Environment and Sustainability	Sustainable Development Goals	NEP 2020
B. Sc. I Statistics (Newly Introduced in 2018-19)									
1	Descriptive Statistics -I & Elementary Probability Theory	DSC-1004A	2018-19	Descriptive Statistics					
2	Descriptive Statistics II & Discrete Probability Distributions	DSC-1004B	2018-19	1. Correlation 2. Regression 3. Multiple and partial correlation and regression			Time series		
B. Sc. II Statistics (Newly Introduced in 2019-20)									
3	Probability Distributions I & Statistical Methods-I	DSC - 1004 C	2019-20		Demography		1. Continuous Univariate Distributions	1. Index Numbers 2.Statistical Quality Control	

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							2. Continuous Bivariate Distributions		
4	Probability Distributions & Statistical Methods-II	DSC-1004D	2019-20	Reliability theory		1. Introduction to R 2. Testing of hypothesis	Exact sampling distributions		
B. Com. II (Newly Introduced in 2019-20)									
5	Business Statistics I	CC - 1051 C	2019-20	1. Measures of central tendency 2. Measures of dispersion 3. Correlation and regression, Sampling techniques					
6	Business Statistics II	CC - 1051 D	2019-20				1. Probability distributions 2. Time series	1.Index numbers 2.Statistical Quality Control	
B. Sc. III Statistics (Newly Introduced in 2020-21)									
7	Probability Distributions	DSE 1004E1	2020-21	Queuing Theory			1. Univariate Continuous Probability Distributions 2. Bivariate Normal distribution 3. Truncated distributions		

							4. Order statistics 5. Markov chains		
8	Sampling Theory & Operation Research	DSE 1004E2	2020-21	1.Decision Theory 2.Sampling methods		Decision Theory		1.Linear programming 2.Transportation and Assignment Problems	
9	Probability Theory & Statistical Inference - II	DSE 1004F1	2020-21	1.Point estimation 2. Estimation methods 3. Interval estimation					
10	Design of Experiments, Quality Management & Data Mining	DSE 1004F2	2020-21	1.Process control & Product control 2.Data Mining				Process control & Product control	
B. Sc. I Statistics (Newly Introduced in 2021-22)									
11	Descriptive Statistics -I	DSC - 1004 A	2021-22	Descriptive Statistics					
12	Elementary Probability Theory	DSC - 1004 A	2021-22				Univariate Probability Distributions		
13	Descriptive Statistics -II	DSC - 1004 B	2021-22	1.Correlation 2.Regression	Demography		Time series		

14	Discrete Probability Distributions	DSC - 1004 B	2021-22				Standard Discrete Probability Distributions		
B. Sc. II Statistics (Newly Introduced in 2022-23)									
15	Probability Distributions I	DSC - 1004 C1	2022-23				Continuous Univariate & Bivariate Distributions		
16	Statistical Methods	DSC - 1004 C2	2022-23	1.Index Number 2.Multiple linear Regression 3.Multiple and Partial Correlation	Official Statistics				
17	Probability Distributions II	DSC - 1004 D1	2022-23				Exact sampling distributions		
18	Introduction to Reliability Theory & Testing of Hypothesis	DSC - 1004 D2	2022-23	Testing of Hypothesis					
B. Com. II (Newly Introduced in 2022-23)									
19	Business Statistics I	CC - 1051 C	2022-23	1. Measures of central tendency 2. Measures of dispersion					

				3. Correlation 4. Regression, Sampling techniques					
20	Business Statistics II	CC - 1051 D	2022-23	Index Number				Statistical Quality Control	
B. Sc. I Statistics (NEP 2020 Newly Introduced in 2023-24)									
21	Descriptive Statistics I	DSC03STA11	2023-24	Descriptive Statistics					
22	Elementary Probability Theory	DSC03STA12	2023-24	Probability			Probability		
23	Descriptive Statistics I	MIN03STA11	2023-24	Descriptive Statistics					
24	Elementary Probability Theory	MIN03STA12	2023-24	Probability			1. Probability Univariate probability distributions		
25	Data Visualization & Sample Survey	OEC03STA11	2023-24	1.Sample Survey 2.Data Visualization & Presentation of Data					
26	Exploratory Data Analysis	OEC03STA12	2023-24	Descriptive Statistics					
B. Com. I Statistics (NEP 2020 Newly Introduced in 2023-24)									
27	Business Statistics I	SEC02STA11		1. Measures of central tendency					

				2. Measures of dispersion					
28	Business Statistics II	SEC02STA21					Probability and Discrete Probability Distributions	Statistical Quality Control (S.Q.C.)	
B. Sc. III Statistics (Newly Introduced in 2023-24)									
29	Probability Distributions	DSE 1004E1	2023-24				1.Univariate and Multivariate Probability Distributions		
30	Statistical Inference - I	DSE 1004E2	2023-24	1. Point Estimation 2. Methods of Estimation					
31	Sampling Theory	DSE 1004E3	2023-24	1. SRS and Stratified Sampling 2. Systematic Sampling 3. Cluster Sampling					
32	Operations Research	DSE 1004E4	2023-24	Decision Theory		Simulation Techniques		1.Linear programming Problem 2.Transportation, Assignment and Sequencing Problems	
33	Probability Theory	DSE 1004F1	2023-24	Queuing Theory	Finite Markov Chains				

34	Statistical Inference -II	DSE 1004F2	2023-24	Interval Estimation					
35	Design of Experiments	DSE 1004F3	2023-24	Simple Designs of Experiments, ANOCOVA and Factorial Experiments and confounding					
36	Quality Management	DSE 1004F4	2023-24					1.Process Control 2.Product Control	

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Content with Cross Cutting Issues P. G. 2022-23 to 2023-24

Sr. No.	Name of the Course	Course Code	Year of Introduction	Professional Ethics	Gender	Human Values	Environment and Sustainability	Sustainable Development Goals	NEP 2020
M. Sc. I Statistics (Newly Introduced in 2022-23)									
1	Real Analysis	CC-2300A	2022-23					1. Set of real numbers 2. Sequence of real numbers Real valued function	
2	Linear Algebra	CC-2301A	2022-23	1.Vector space 2.Subspace				Characteristic roots and vectors of a matrix	
3	Distribution Theory	CC-2302A	2022-23	1.Transformations of univariate random variables			1.Mixtures of probability distributions 2.Decomposition of mixture CDF into discrete and continuous CDF		
4	Estimation Theory	CC-2303A	2022-23	1.Problem of point estimation					

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				2.Bayes estimation					
5	Statistical Computing	CC-2304A	2022-23	Resampling techniques					
6	Probability Theory	CC-2306B	2022-23			1. Classes of sets 2. Weak and Strong laws of large numbers			
7	Theory of Testing of Hypotheses	CC-2307B	2022-23	1. Problem of testing of Hypothesis 2. Problem of confidence intervals					
8	Linear Models and Regression analysis	CC-2308B	2022-23	1. General linear model 2. Multiple regression model					
9	Design and analysis of Experiment	CC-2309B	2022-23	1. Experimental designs 2. Applications of DOE					
10	Sampling Theory & Official Statistics	CC-2310B	2022-23	1.Random samplings 2.Double sampling					
M. Sc. II Statistics (Newly Introduced in 2023-24)									
11	Asymptotic Inference	CC-2312A	2023-24	Consistency of an estimator					

12	Multivariate Analysis	CC-2313A	2023-24	Exploratory multivariate data analysis				1. Discrimination and classification 2. Canonical correlation analysis 3. Principal component analysis Factor analysis	
13	Stochastic Processes	CC-2314A	2023-24	1. Poisson process 2. Birth and death processes 3. Queuing models		Markov chain			
14	Data Mining	CC-2315A	2023-24	1. ANN and SVM, Unsupervised learning, Data understanding and data cleaning 2. Model evaluation and selection				classification techniques	
15	Time Series Analysis	CC-2316A	2023-24				Exploratory time series analysis		

16	Generalized Linear Models	CC-2318B	2023-24	1. Logistic regression 2. Poisson regression, Generalized linear models 3. Generalized linear mixed models (GLMM)				1. Logistic regression 2. Poisson regression 3. Generalized linear models 4. Generalized linear mixed models (GLMM)	
17	Survival Analysis	CC-2319B	2023-24	1. Various types of censoring 2. Summarizing competing risks data					
18	Biostatistics	CC-2320B	2023-24	Clinical trials			1. Design of clinical trials 2. Design of bio-equivalence trials, 3. Epidemiological studies		
19	Optimization Techniques	CC-2321B	2023-24					1. Linear programming problem (LPP) 2. Integer Linear Programming Problem (ILPP) 3. Dynamic Programming	

20	Statistical Quality Control	CC-2322B	2023-24	1. Process capability Analysis 2. Shewhart Control charts 3. Acceptance sampling plans				1. Process capability Analysis 2. Shewhart Control charts 3. Quality Improvement Tools 4. Normal probability plot	
M. Sc. I Statistics (NEP 2020 Newly Introduced in 2023-24)									
21	Distribution Theory	DSC18STA11	2023-24	1. Transformations of univariate random variables 2. Multivariate normal distribution			1.Mixtures of probability distributions 2.Decomposition of mixture CDF into discrete and continuous CDFs		
22	Estimation Theory	DSC18STA12	2023-24	1. Problem of point estimation 2. Bayes estimation, 3. Consistency of an estimator					
23	Statistical Computing	DSC18STA13	2023-24	1. MSEXCEL 2. R-software				1.MSEXCEL 2.R-software	
24	Research Methodology	RMD18STA11	2023-24	1. Sampling techniques 2. Resampling methods				1.Meaning of research 2.Objectives of research 3.Motivation in research	

25	Mathematical Statistics	DSE17STA11	2023-24					1. Set of real numbers 2. Sequence of real numbers 3. Real valued function	
26	Real Analysis	DSE17STA12	2023-24					1.Set of real numbers 2. Sequence of real numbers	
27	Linear Algebra	DSE17STA13	2023-24	1.Vector space 2.Subspace					
28	C Programming	DSE18STA11	2023-24	1.Algorithms 2.Flow charts					
29	Statistical Analysis Using SPSS	DSE18STA12	2023-24	Statistical analysis using SPSS				Statistical analysis using SPSS	
30	Linear model and Regression Analysis	DSC18STA21	2023-24	1. Logistic and Poisson regression 2. General linear model 3. Multiple regression model				1. Logistic and Poisson regression 2. General linear model 3. Multiple regression model	
31	Theory of Testing of Hypothesis	DSC18STA22	2023-24	1. Problem of testing of Hypothesis 2. Problem of confidence intervals					

32	Multivariate Analysis	DSC18STA23	2023-24	Cluster analysis				1.Discrimination and classification, 2. Canonical correlation analysis 3. Principal component analysis 4.Factor analysis	
33	Probability Theory	DSE17STA21	2023-24					Classes of sets	
34	Reliability theory	DSE17STA22	2023-24	1. Reliability concepts and measures 2. Life time distributions					
35	DBMS	DSE18STA21	2023-24	1. Database design and ER Model 2. Transaction management		Introduction to Databases and Data Models		SQL	
36	Statistical Analysis Using Minitab	DSE18STA22	2023-24	Statistical analysis using MINITAB				Statistical analysis using MINITAB	

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