VIVEKANAND COLLEGE, KOLHAPUR
(EMPOWERED AUTONOMOUS)

DEPARTMENT OF STATISTICS

Three/Four- Years UG Programme Department/ Skill Enhancement Course (SEC)

for

B. Com-II Statistics

Semester-III & IV

(Implemented from academic year 2024-25 onwards)

Shri Swami Vivekanand Shikshan Sanstha's

VIVEKANAND COLLEGE, KOLHAPUR
(EMPOWERED AUTONOMOUS)

Department of Statistics
Teaching & Evaluation Scheme
(NEP-Phase-I)

B. Com. II (Semester III and IV)

Semester	Paper No.	Course Code	Course Title	No. of Credits
III	III	SEC02STA31	Business Statistics III	02
IV	IV	SEC02STA41	Business Statistics IV	02

B. Com. Part – II (SEC) Syllabus with effect from June 2024
Semester: III Business Statistics – III (2 credit)

Theory: 30 Hours   **SEC02STA31**   **(Marks-50)**

Course Outcomes - At the end of this course students will be able to:

CO1: Understand the concept of correlation and regression.

CO2: Analyze bivariate data using correlation and Spearman's rank correlation.

CO3: Understand the concept of fitting of regression lines.

CO4: To solve real life problems using concept of correlation and regression.

Unit	Contents	Hours Allotted

1	**Correlation:**
	1.1 Concept and types of correlation.
	1.2 Methods of studying correlation: Scatter diagram, Karl Pearson's correlation coefficient (r), computation of r for ungrouped data,
	1.3 Properties of correlation coefficient (r):
	  (i) $-1 \leq r \leq 1$, interpretation of r = -1, r = 0, r = +1.
	  (ii) Effect of change of origin and scale
	1.4 Spearman's rank correlation coefficient(R), computation of R (with and without tie).
	1.5 Numerical problems.
		15

2	**Regression:** 2.1 Concept of regression. 2.2 Lines of regression, fitting of lines of regression by least square method 2.3 Regression coefficients b_{xy} & b_{yx} 2.4 Properties of regression coefficients 2.5 Numerical problems.	15

Reference Books: -
1) Statistical Methods, by Dr. S. P. Gupta, Sultan Chand and Sons Publication.
2) Introduction to Statistics, by C.B. Gupta.
3) Mathematical Statistics, by H.C. Saxena and J.N. Kapur.
4) Business Statistics, by S.S. Desai.
5) Business Statistics, by G.V. Kumbhojkar.
6) Fundamentals of Statistics, by S.C.Gupta.

Note: Use of non-programmable calculator is allowed

Semester: IV Business Statistics – IV (2 Credit)

Theory: 30 Hours   **SEC02STA41**   **(Marks-50)**

Course Outcomes - At the end of this course students will be able to:

CO1: Understand concept of time series and Index number.

CO2: Measure trend, seasonal indices in time series

CO3: Compute simple and weighted index numbers.

CO4: Implement appropriate methods of construction of Index numbers to solve real life problems.

Unit	Contents	Hours Allotted
1	**Time Series:** 1.1 Definition and uses of time series, components of time series. 1.2 Additive and multiplicative models, 1.3 Methods of determination of trend: method of moving averages, method of progressive averages, method of least squares (only for straight line) 1.4 Method of determination of seasonal variations: Simple average method 1.5 Numerical problems.	15
2	**Index Number:** 2.1 Need and meaning of index number. 2.2 Problems involved in construction of index number. 2.3 Price, quantity and value index number. 2.4 Simple (unweighted) index number 2.5 Weighted index numbers: Laspeyre's, Paasche's and Fisher's index numbers. 2.6 Cost of living index number: Definition, construction by using family budget method and Expenditure method. 2.7 Uses of index numbers 2.8 Numerical problems.	15

Reference Books: -

1) Statistical Methods, by Dr. S. P. Gupta, Sultan Chand and Sons Publication.
2) Introduction to Statistics, by C.B. Gupta.
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Marking scheme
For Course having 2 credits

I- **CA = 40 Marks** (Written Examination)

II- **CIE = 10 Marks** (Assignment 5 Marks, Online test – 5 Marks)

Nature of Question Paper for CA
Written Examination

Total Marks = 40   Time = 2.00 hours

Instruction:

1. Question No. 1 and Q. No. 2 are Compulsory.
2. Attempt any two questions from Q. No. 3 to 5.

Question	Nature of Question		Marks
Question No. 1	a) Choose correct alternative	(06 Marks)	10
	b) State True or False	(04 Marks)	
Question No. 2	Short Notes (Any Two out of three)		10
Question No. 3	Long answer / Problem		10
Question No. 4	Long answer / Problem		10
Question No. 5	Long answer / Problem		10
		Total Marks	40