

<b>Department</b>	<b>Economics</b>	<b>Class</b>	<b>I – M.A.</b>		<b>Semester</b>	<b>II</b>
<b>Course Title</b>	<b>Statistical Methods</b>	<b>Hours</b>	<b>Credit</b>	<b>CIA</b>	<b>External</b>	<b>Total</b>
<b>Course Code</b>	<b>18P2VMC8</b>	<b>90</b>	<b>4</b>	<b>25</b>	<b>75</b>	<b>100</b>

### **Objectives**

1. To understand the describe and inferential statistics
2. To Know the various statistical tools in Economics
3. To facilitate a research bent of mind in statistical tools
4. To inculcate the practice of applying various statistical tools

### **Learning Outcome**

Obtained knowledge on statistical methods and its applications in economics

### **Unit – I Correlation Analysis**

**(18 hours)**

Significance – Correlation and causation Types – Method of Least Squares - Interpreting the correlation coefficient – Correlation of time series – Partial correlation: Meaning, Partial correlation coefficients, characteristics, uses, significances and partial correlation coefficient estimation (3 variables).

### **Unit – II Regression Analysis**

**(18 hours)**

Meaning – Significance – Uses – Difference between correlation and regression – Regression line of X on Y and Y on X: Algebraic method – Regression equations of X on Y and Y on X: Arithmetic mean method and Assumed mean method – Regression coefficients – Standard Error Estimation – Co-efficient determination.

### **Unit – III Theoretical Distributions**

**(18 hours)**

Theoretical distribution: Meaning and utility - Binomial distribution: Meaning, properties and simple problems – Poisson distribution: Meaning, properties and simple problems – Normal distribution: Meaning, properties, importance of normal curve and simple problems.

### **Unit – IV Testing of Hypothesis – Parametric Test**

**(18 hours)**

Hypothesis testing and estimation – Sampling distribution – Standard error – Procedure of hypothesis testing - Type I and Type II error – One tailed and Two tailed tests – Z-test (Large Sample): Assumptions, test for specified population mean and test for two means – t- test (Small sample): Assumptions, test for specified mean, test for two means, paired comparison test and co-efficient of correlation test – F-test (Small sample): Properties, test for equality of two variances.

## **Unit – V Testing of Hypothesis – Non-Parametric Test**

**(18 hours)**

Definition - Characteristics – Properties – Important applications – Cautions applying chi-square test - Test for goodness of fit, test of independence of attributes and test for a specified population variance.

### **Text Books**

1. S.P.Gupta and M.P.Gupta, “**Business Statistics**”, 2012, Sultan Chand & Sons, New Delhi.
2. R.S.N.Pillai and Bagavathi, “**Statistics – Theory and Practice**”, 2010, S.Chand & Company, New Delhi.
3. D.Kathambarajan, “**Economic and Business Statistics**”, 2011, Himalaya Publishing House, Mumbai.

### **References**

1. S.P.Gupta, “**Statistical Methods**”, 2014, Sultan Chand and Sons, New Delhi.
2. S.C.Gupta and V.K.Kapoor, “**Fundamentals of Applied Statistics**”, 2003, Sultan Chand and Sons, New Delhi.
3. D.N.Elhance, “**Fundamentals of Statistics**”, 1964, Kitab Mahal Wholesale Division, New Delhi.

### **Websites / e-books**

1. Darius Singpurwalla, “**A Handbook of Statistics – An Overview of Statistical Methods**”, <http://bookboon.com/en/a-handbook-of-statistics-ebook>
2. Mohamed A.Shayiup, “**Applied Statistics**”, <http://bookboon.com/en/applied-statistics-ebook>