BIOSTATISTICS AND RESEARCH METHODOLOGY

(Theory BP801T)

(As per PCI Syllabus)

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PREFACE

Research methodology and statistical techniques are combined in the book **"Biostatistics and Research Methodology."** For research scholars and working researchers, this book might serve as a workbook. For students pursuing degrees and postgraduate programs in pharmacy, biology, biotechnology, medicine, and home science, this book covers the course "Biostatistics and Research Methodology." There are five units in this book.

This book is also meant to be used as a textbook for P.G. and U.G. pharmacy students. Important This book's features include: Written in an easy-to-understand style for students who are not mathematicians. With basic examples, the SPSS data analysis process is demonstrated for the majority of widely used statistical tools. great assistance to professors who mentor M.Sc. and Ph.D. students on their projects.

Scope: To understand the applications of Biostatics in Pharmacy. This subject deals with descriptive statistics, Graphics, Correlation, Regression, logistic regression Probability theory, Sampling technique, Parametric tests, Non-Parametric tests, ANOVA, Introduction to Design of Experiments, Phases of Clinical trials and Observational and Experimental studies, SPSS, R and MINITAB statistical software's, analyzing the statistical data using Excel**.**

Objectives: Upon completion of the course the student shall be able to

- Know the operation of M.S. Excel, SPSS, R and MINITAB®, DoE (Design of Experiment)
- Know the various statistical techniques to solve statistical problems Appreciate statistical techniques in solving problems**.**

Abbreviations

Alternative Hypothesis (H1)

Analysis of Variance (ANOVA)

Arithmetic Mean (AM)

Box-Behnken Design (BBD)

Bureau of Labor Statistics (BLS)

Capital Asset Pricing Model (CAPM)

Central Composite Design (CCD)

Clinical Research Unit (CRU)

Coefficient of variation (CV)

Completely randomized design (CRD)

Design of Experiments (DOE)

European Medicines Agency (EMA)

Genetic algorithms (GANs)

Genetic Algorithms (GCRs)

Genetic Algorithms (GMOs)

Gross Domestic Product (GDP)

Independent variables (IVs)

Institutional Review Board (IRB)

Interquartile Range (IQR)

Investigational Medicinal Product (IMP)

Least Significant Difference (LSD)

Least-Squares Regression Line (LSRL)

Linear Programming (LP)

Mean Absolute Deviation (MAD)

Multivariate analysis of variance (MANOVA)

Null Hypothesis (H0)

Ordinary Least Squares (OLS)

Pharmaceuticals and Medical Devices Agency (PMDA)

Pharmacodynamics (PD)

Pharmacokinetics (PK)

Probability Density Function (PDF)

Recursive Feature Elimination (RFE)

Response Surface Methodology (RSM)

Scholastic Assessment Test (SAT)

Standard Error (SE)

Standard Error of Mean (SEM)

Statistical Analysis System (SAS)

Statistical Package for The Social Sciences (SPSS)

Statistical process control (SPC)

Therapeutic Goods Administration (TGA)

US Food and Drug Administration (FDA)

US Food and Drug Administration's (USFDA)

Variance Inflation Factor (VIF)

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