

Vishnu Waman Thakur Charitable Trust's
Bhaskar Waman Thakur College of Science,
Yashvant Keshav Patil College of Commerce,
Vidhya Dayanand Patil College of Arts,
(VIVA College)



**Biostatistics
Excelsior :
A Hand -On
Journey
(CC-BEHJ)**

YEAR 2022-23

Vishnu Waman Thakur Charitable Trust's
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Dept. Zoology



Organise



Add on /Course

on

Biostatistics Excelerator : A Hand -on Journey

Course duration - 30hours

Mode of Delivery of curriculum - Offline

Starting from - 06-02-2023



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(NAAC ACCREDITED-'B' Grade, CGPA 2.69)

Syllabus "Biostatistics Excelerator: A Hands-On Journey"

Course Duration: 30 Hours

Session 1: Introduction to Biostatistics (2 hours)

- Overview of Biostatistics and its importance in scientific research
- Basic concepts: data types, variables, and levels of measurement
- Descriptive statistics: mean, median, mode, range, and standard deviation

Session 2: Data Presentation and Visualization (3 hours)

- Techniques for presenting data: tables and graphs
- Introduction to Microsoft Excel for data entry and Manipulation
- Creating basic charts in Excel for effective data visualization

Session 3: Probability and Probability Distributions (2 hours)

- Fundamentals of probability in biostatistics
- Probability distributions: normal distribution, binomial distribution

Session 4: Practical exercises using Excel for probability calculations (2 hours)

Session 5: Statistical Inference (2 hours)

- Sampling methods and sampling distributions
- Confidence intervals and hypothesis testing

Session 6: Correlation and Regression Analysis (3 hours)

- Understanding correlation and regression in biostatistics
- Interpretation of correlation coefficients and regression slopes
- Excel tutorials for correlation and regression analysis

Session 6: Experimental Design (2 hours)

- Principles of experimental design in biostatistics
- Randomized controlled trials and observational studies

Session 7: Analysis of Variance (ANOVA) (4 hours)-

- Introduction to ANOVA and its applications in biology
- One-way and two-way ANOVA
- Excel demonstrations for ANOVA calculations

Session 8: Chi-Square Tests (3 hours) -

- Understanding the chi-square test in biostatistics
- Applications of chi-square tests in biological research



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- Hands-on practice with chi-square tests in Excel

Session 9: Survival Analysis (4 hours)

Basics of survival analysis in biostatistics
Kaplan-Meier estimator and log-rank test
Excel exercises for survival analysis

Session 10: Review and Case Studies (3 hours)

- Recap of key concepts covered in the course
- Application of biostatistical methods in real-world case studies
- Final hands-on project using Excel to analyze a provided dataset

Assessment: - Short quizzes at the end of each session (1 hour)

- Final project submission demonstrating proficiency in using Excel for biostatistical analysis

Participants who successfully complete the course, including quizzes and the final project, will receive a certificate of completion of the course.