

Detailed Course Content (Syllabus)

Unit 1: Biostatistics (4 credits)

1. Introduction to Biostatistics
2. Sampling – Random and non-random sampling methods – Description, merits and demerits
3. Data summarization – measures of averages and dispersion
4. Data Presentation techniques – Graphical and tabular
5. Normal distribution – properties and applications
6. Standard error, Confidence interval and sampling distribution – definition, computation, interpretation and applications
7. Basic principles of testing of hypothesis
8. Test of significance - t-test, one way ANOVA, Repeated measures ANOVA, Chi square and Non parametric methods
9. Sample size in health science research – Basic principles and computations.
10. Correlation and Regression
11. Software packages-SPSS.
12. Introduction to systematic reviews and meta-analysis
13. Measures of agreement (Kappa Statistics & ICC)
14. Logistic regression
15. Survival analysis

Unit 2. Research Methodology, Epidemiology and experimental design (2 credits)

1. Epidemiological Study design- Descriptive, Analytical and Experimental
2. Basic experimental designs – CRD, RBD, Repeated measures factorial, cross over
3. Epidemiological Measures – Rate, ratio, proportion, Incidence and prevalence , Relative risk, Risk ratio, Odds ratio
4. Reliability and validity of screening and diagnostic tests, ROC analysis
5. Development of research tools
6. Protocol preparation
7. Proposal writing
8. Report writing and publishing
9. Critical review of research report and journal article