



Course Title: Epidemiology & Biostatistics

CreditUnits: 03

Course Code: BIOT312

L	T	P/S	SW/FW	TOTAL CREDIT UNITS
3	-	-	-	03

Course Objectives: The main objective of the course is to provide students with an understanding of basic concepts of Epidemiology and Biostatistics as these concepts have enormous applications in public health research.

Pre-requisites: Life Sciences, Fundamentals of Mathematics

Student Learning Outcomes: At the end of the course, the student will be able to comprehend

- Epidemiological basis of diseases and basic knowledge of Biostatistics
- Importance of Epidemiology and Biostatistics to solve public health and clinical problems.
- Epidemiological data in order to identify risk factors of disease.

Course Contents

Theory:

	Weightage (%)
Module I:	25
Introduction to Epidemiology, with suitable example(s) of any disease – description of epidemiology and associated risk factors (genetic and environmental), Strategies for disease prevention, and management.	
Module II:	30
Types of Epidemiological studies and their application, Conventional methods of disease screening and diagnosis – biochemical, molecular markers, genetic screening etc., Biomarkers and their advantages.	

Module III: Introduction to biostatistics, measures of central tendency and measure of dispersion, Correlation and Regression Analysis, Probability theory and Normal distribution concept properties and uses.	15
Module IV: Sampling and sampling distribution, Test of hypothesis, p value, t test and chi square test, Types of study designs (longitudinal, case control, cross-sectional), Measures of morbidity/mortality, rates incidence prevalence, odds ratio. Sensitivity specificity. Fertility rates	30

Pedagogy for Course Delivery:

Lectures: 39

Seminars/ Presentations: 4

Class Test: 2

Total: 45

Lab/ Practical details, if applicable: N.A

Assessment/ Examination Scheme:

Theory L/T (%)	Lab/Practical/Studio (%)	End Term Examination
100	-	100

Theory Assessment (L&T):

Components	Class Test 1	Class Test 2	Quiz	Attendance	End Term Examination
Weightage (%)	10	10	5	5	70

Text Books:

- Statistical Methodology, S.P. Gupta, Publisher: S. Chand & Co, 43rd Edition, (2014). ISBN: 9788180549311

- Text Book Of Biostatistics I, A.K. Sharma, Discovery Publishing House, (2005). ISBN: 9788183560306
- Biostatistic, Dannel, W.W. New York, John Wiley Sons (1987). ISBN: 978-0-470-10582-5