

Subject Title:	BIostatISTICS & RESEARCH METHODOLOGY
Subject Code:	1PT1010406
Year:	Final Year
Pre-requisite Subject	- NONE -

Objectives of Course:

At the end of the course the candidate will be able to:

1. Recognize different variables as per their types and should be able to decide on how to treat them differently as per requirement.
2. Differentiate complete enumeration and various forms of sampling (random: simple, stratified, cluster, multi stage; non random: snow ball, quota, purposive, convenient) with understanding of merits and demerits of them.
3. Decide when to apply what test or a measure of central tendency according to the need of the data and objective.
4. Interpret a given output of regression or ANOVA according to the context.

Teaching Scheme (Hours)			Evaluation Scheme (Marks)					
Lecture	Practical	Total	Theory(T)		Practical(P)		Total Marks	
			University Assessment	Continuous Assessment	University Assessment	Continuous Assessment	Theory	Practical
40	-	40	40	10	-	-	50	-

(A) BIostatISTICS

Subject Contents			
Sr. No.	Topic	Total Hours	Weight (%)
1	Introduction to statistical in physiotherapy		
2	Understanding 'Data' and its types		
3	Presentation of various data: tables, graphs and descriptive statistics		
4	Measures of central tendencies(CT): mean, median, mode; merits and demerits; when to apply which measure of CT for the given data		
5	Measures of dispersion: range, mean deviation, standard deviation, coefficient of variance.		
6	Application of normal distribution and its properties		

7	Testing of hypothesis (measuring change):one sample with population, comparing two samples(Z test for proportion, difference of two proportion, independent sample 't' test, paired 't' test, chi square test		
8	Conceptual understanding of correlation, linear and multiple regression, analysis of variance (ANOVA) and analysis of co-variance (ANCOVA)		
9	Complete enumeration and sampling methods: random : simple, stratified, cluster, multi stage; non random: snow ball, quota, purposive, convenient		
10	Simple statistical analysis through excel		

(B) RESEARCH METHODOLOGY

Objectives of Course: -

At the end of the course the candidate will be able to:

1. Understand and differentiate various study design.
2. List the need of methodical and regular literature search in research.
3. Plan a study choosing an appropriate design for a given problem according to given objectives.

Subject Contents			
Sr. No.	Topic	Total Hours	Weight (%)
1	What is research? Why research?		
2	Types of epidemiological studies & measurements of various indications.		
3	Possible errors that may generate due to study design & how to overcome them.		
4	How to read and what to read from journals		
5	Role of research in Physiotherapy		
6	Components of research proposal – introduction and rationale, material & methods, results and discussion		
7	Where to look for good literature and why		
8	The Evidence Based Practice		