COURSE	**FACULTY OF PHYSIOTHERAPY**
PROGRAM	**BACHELOR OF PHYSIOTHERAPY**
YEAR	**4**
COURSE TITLE	**BIOSTATISTICS AND RESEARCH METHODOLOGY**
COURSE CODE	**17PT0405**
COURSE CREDITS	**2**

Pre-requisite of course: Students should have basic understanding of research and statistics.

Teaching and Examination Scheme

Theory Hours	Tutorial Hours	Practical Hours	ESE	IA	CSE	Viva	Term Work
40	0	0	25	15	10	0	0

Contents : Unit	Topics	Contact Hours
1	**Introduction to statistics in physiotherapy** Introduction to statistics in physiotherapy	1
2	**Understanding 'Data' and its types** Understanding 'Data' and its types	1
3	**Presentation of various data: tables, graphs and descriptive statistics** Presentation of various data: tables, graphs and descriptive statistics	1
4	**Measures of central tendencies (CT): mean, median, mode; merits and demerits; when to apply which measure of CT for the given data.** Measures of central tendencies (CT): mean, median, mode; merits and demerits; when to apply which measure of CT for the given data.	1
5	**Measures of dispersion: range, mean deviation, standard deviation, coefficient of variance** Measures of dispersion: range, mean deviation, standard deviation, coefficient of variance	1
6	**Application of normal distribution and its properties** Application of normal distribution and its properties	1
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.)** 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.)	2
8	**Conceptual understanding of correlation, linear and multiple**	2

	regression, analysis of variance (ANOVA) and analysis of co-variance (ANCOVA) 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** Complete enumeration and sampling methods: random: simple, stratified, cluster, multi stage; non-random: snow ball, quota, purposive, convenient	2
10	**Simple statistical analysis through excel** Simple statistical analysis through excel	3
11	**What is research? Why research?** What is research? Why research?	1
12	**Types of epidemiological studies & measurements of various indications.** Types of epidemiological studies & measurements of various indications.	6
13	**Possible errors that may generate due to study design & how to overcome them** Possible errors that may generate due to study design & how to overcome them	2
14	**How to read and what to read from journals** How to read and what to read from journals	3
15	**Role of research in Physiotherapy** Role of research in Physiotherapy	2
16	**Components of research proposal – introduction and rationale, material & methods, results and discussion** Components of research proposal – introduction and rationale, material & methods, results and discussion	4
17	**Where to look for good literature and why** Where to look for good literature and why	3
18	**The Evidence Based Practice and Hierarchy of evidence** The Evidence Based Practice and Hierarchy of evidence	2
19	**Critical appraisal of paper** Critical appraisal of paper	2
Total Hours		**40**

Textbook :

1 Research Methodology, C.R Kothari, New age international, 2017
2 Methods in Bio-statistics, BK Mahajan, Jaypee Brothers Medical Publishers, 2018

DR. ASHISH DHIRAJLAL KAKKAD (PT)
Digitally signed by (Name of HOD)

DR. ASHISH DHIRAJLAL KAKKAD (PT)
Digitally signed by (Name of Dean/ Principal)

Suggested Theory Distribution:

The suggested theory distribution as per Bloom's taxonomy is as follows. This distribution serves as guidelines for teachers and students to achieve effective teaching-learning process

Distribution of Theory for course delivery and evaluation					
Remember / Knowledge	**Understand**	**Apply**	**Analyze**	**Evaluate**	**Higher order Thinking**
20.00	20.00	30.00	10.00	10.00	10.00