RAFFLES UNIVERSITY

RAFFLES UNIVERSITY, NEEMRANA, ALWAR

Course Plan

Program- B. Pharm

Semester-**VIII**

Course-Biostatistics and Research

Course Code- BP-801 (T)

Session - 2023-24

S. No.	Day	Subject	L	T	P	Total
1.	D Day					
2.	D+1	**Introduction: Statistics**	1	0	0	1
3.	D+2	Biostatistics,	1	0	0	1
4.	D+3	Frequency distribution	1	0	0	1
5.	D+4	Measures of central tendency: Mean	1	0	0	1
6.	D+5	Tutorial (Problem solving session/ class test)	0	1	0	1
7.	D+6	**Median, Mode- Pharmaceutical examples**	1	0	0	1
8.	D+7	Measures of dispersion: Dispersion, Range	1	0	0	1
9.	D+8	standard deviation, Pharmaceuticalproblems	1	0	0	1
10.	D+9	Correlation: Definition, Karl Pearson's coefficient of correlation	1	0	0	1
11.	D+10	Multiple correlation- Pharmaceuticals examples.	1	0	0	1
TOTAL			**9**	**1**	**0**	**10**

12.	D+11	Regression: Curve fitting by the method of least squares, fitting the lines y= a + bx and x = a + by,	1	0	0	1
13.	D+12	Multiple regression, standard error of regression– Pharmaceutical examples	1	0	0	1
14.	D+13	Probability: Definition of probability, Binomial distribution	1	0	0	1
15.	D+14	Normal distribution, Poisson's distribution, Properties– problems.	1	0	0	1
16.	D+15	Sample, Population, large sample, small sample,	1	0	0	1
17.	D+16	Null hypothesis, alternative hypothesis, sampling, essence of sampling,	1	0	0	1
18.	D+17	types of sampling, Error-I type, Error-II type, Standard error of mean (SEM) - Pharmaceutical examples	1	0	0	1
19.	D+18	Parametric test: t-test (Sample, Pooled or Unpaired and Paired),	1	0	0	1
20.	D+19	ANOVA, (One way and Two way), Least Significance difference.	1	0	0	1
21.	D+20	**Tutorial (Problem solving session/ class test)**	0	1	0	1
TOTAL			**9**	**1**	**0**	**10**
22.	D+21	Non-Parametric tests: Wilcoxon Rank Sum Test	1	0	0	1
23.	D+22	Mann-Whitney U test, Kruskal-Wallis test	1	0	0	1
24.	D+23	Friedman Test.	1	0	0	1
25.	D+24	Introduction to Research: Need for research, Need for design of Experiments,	1	0	0	1
26.	D+25	Design Technique, Plagiarism. Graphs: Histogram,	1	0	0	1
27.	D+26	Pie Chart, Cubic Graph, response surface plot, Counter Plot graph	1	0	0	1
28.	D+27	Designing the methodology: Sample size determination and Power of a study	1	0	0	1
29.	D+28	presentation of data, Protocol, Cohorts studies	1	0	0	1
30.	D+29	observational studies, Experimental studies	1	0	0	1
31.	D+30	Designing clinical trial, various phases	1	0	0	1
		TOTAL	**10**	**0**	**0**	**10**
32.	D+31	Blocking and confounding system for Two-level	1	0	0	1

		Factorials				
33.	D+32	Regression modeling: Hypothesis testing in Simple	1	0	0	1
34.	D+33	Multiple regression models	1	0	0	1
35.	D+34	Introduction to Practical components of Industrial and Clinical Trials Problems: Statistical Analysis Using Excel,	0	1	0	1
36.	D+35	Patenting and Regulatory requirements of natural products: a) Definition of the terms: Patent,	0	1	0	1
37.	D+36	SPSS, MINITAB®	1	0	0	1
38.	D+37	Design of experiment,	1	0	0	1
39.	D+38	R- Online Statistical Software's to Industrial and Clinical trial approach.	1	0	0	1
40.	D+39	R- Online Statistical Software's to Industrial and Clinical trial approach.	1	0	0	1
41.	D+40	Tutorial (Problem solving session/ class test)	0	1	0	1
TOTAL			**8**	**2**	**0**	**10**
42.	D+41	Design and Analysis of experiments	1	0	0	1
43.	D+42	Factorial Design: Definition, 2^2	1	0	0	1
44.	D+43	2^3 design. Advantages of factorial design	1	0	0	1
45.	D+44	Response Surface methodology: Central composite design	1	0	0	1
46.	D+45	Historical design, Optimization Techniques.	1	0	0	1
47.	D+46	Historical design, Optimization Techniques.	1	0	0	1
48.	D+57	Tutorial (Problem solving session/ class test)	0	1	0	1
TOTAL			**6**	**1**	**0**	**07**