INSTRUCTION DIVISION

FIRST SEMESTER 2016-2017
Course Handout (Part II)

02/08/2016

In addition to part-I (General Handout for all courses appended to the time table) this portion gives further specific details regarding the course

Course No. **: PHA G510**
Course Title **: APPLICATION OF STATISTICS AND COMPUTERS IN PHARMACY**
Instructor-in-Charge**: Dr. PRITI JAIN**
Instructor : Dr. Ashish Runthala

1. **Course Description:**

Methods of collection and presentation of statistical data; Calculation and Interpretation of various measures like mean, median, mode, standard deviation, Kurtosis, correlation coefficient, probability distributions; sampling and estimation of parameters; tests of hypothesis; data analysis, ANOVA, analysis of research problems. Topics covered will aim to relate to the health field.

Introduction to computers, Algorithms and Flowcharts, UNIX OS and filesystem, Basic commands, pipes, file permissions redirection operators and Basic excel formulae.

2. **Scope and Objective of the course:**

This course is designed to impart training in computational techniques and use of computational tools in the analysis of research problems, experimental design, and statistical analysis of data.

3. **Text Book (T):**

T1: S. Bolton, "Pharmaceutical Statistics: Practical and clinical application", 3rd Edn., Marcel Dekker, New York, 1997.

T2: Wayne, W. Daniel, Biostatistics : A foundation for analysis in the health science, 7th Ed., John Wiley, 1999.

Reference Books (R):

R1: Marcello Pagano and Kumberlee Gourerau, Principles of Biostatistics, 2nd Ed., Duxbury – Thomson Learning, 2000.

4. **Course Plan:** Lectures are sub-divided into two parts: I- Biostatistics and II- Computer application

I- Biostatistics

S.No	Learning Objectives	Topics	Chap Ref T1	Chap. Ref. T2
1-2	Overview of various statistical techniques for data collection and analysis	Introduction to Biostatistics Descriptive Statistics	1, 2	1,2
3-9	Sampling design	Some Basic Probability Concepts Probability Distributions Some Important Sampling Distribution	3,4,5	3,4,6
10-13	Understanding statistical inference	Estimation Hypothesis Testing	6,7	5
14-16	Understanding the basic premises in analysis based on regression and correlation	Simple Linear Regression and Correlation	9	7
17-20	Application of non-parametric testing procedures	The Chi-Square Distribution and the Analysis of Frequencies Nonparametric and Distribution-Free Statistics	12,13	15
21-25	Application of parametric testing procedures	Analysis of Variance	8	8

II- Computer Applications

Lecture No.	Learning Objectives	Topic to be covered	Reference
1-2	Unix Operating System and Unix Filetree hierarchy	Unix OS Overview and File System	Class notes
3	Editing text in a file	vi File editor and its basic commands	Class notes
4-7	UNIX file and folder content retrieval system, and setting their access permissions	Basic Unix commands and File/ Folder access permission setting commands	Class notes
8-9	Linking several commands together and Pipes	Sequential employment of several UNIX commands in a single command for a specific task	Class notes
10	Running a set of commands in a single user-defined syntax	Defining arbitrary unix command to quickly perform some unix functions automatically	Class notes
11-13	Excel basic and statistical function commands	Basic excel commands and formulae	Class notes
14-15	Statistical graphs and usage	Learning the creation, analysis of various statistical graphs, and extracting the best of their analytical or implied information.	Class notes

5. Evaluation Scheme:

Component	Duration	Weightage (%)	Date & Time	Remarks
Mid Term	90 min	25	6/10 4:00 - 5:30 PM	CB
Practice based Laboratory Component/Quizzes/ Assignments	--	40		---
Comprehensive Exam	180 min	35	9/12 AN	CB+OB

6. **Mid-semester evaluation:** Will be announced after the mid term test.

7. **Attendance**: Regularity in attendance will be one of the criteria in deciding the borderline cases at the time of final grading.

8. **Grading Procedure:**
   1. It is not necessary that all the grades would be awarded.
   2. In borderline cases subjective judgment will be exercised for pull-up. Basic guiding factors will be regularity, consistency in performance (above average) or/and steady improvement throughout the semester.

9. **Make-up:** Make-up will be given only for genuine reasons. It is expected that students shall avoid misuse of this feature.

10. **Chamber consultation hours:** To be announced in the class.

11. **Notices:** Notices pertaining to this course will be displayed **only on Pharmacy and Biological Sciences Notice Board.**

Instructor-in-Charge
PHA G 510