



Course Specification

— (Bachelor)

Course Title: **Biostatistics**

Course Code: **PHCL 341**

Program: **Pharmaceutical Sciences**

Department: **Pharmacology**

College: **College of Pharmacy**

Institution: **Najran University**

Version: **4**

Last Revision Date: **21/8/2024**

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A. General information about the course:

1. Course Identification

1. Credit hours: (1+1)

2. Course type

A. ☐ University ☐ College ☐ Department ☐ Track ☒ Program
B. ☒ Required ☐ Elective

3. Level/year at which this course is offered: (5th/3rd)

4. Course general Description:

This course is a part of introductory biostatistics and acquaints the students with the basic concepts and methods of Biostatistics. This course introduces basic concepts of descriptive statistics i.e. central tendency and dispersion, linear correlation and regression model, data summarization and presentation. We urge the student to read the examples carefully. Through our chosen courses we prepare the students for develops ability to read the scientific literature to critically evaluate study designs and methods of data analysis.

5. Pre-requirements for this course (if any):

None

6. Co-requisites for this course (if any):

None

7. Course Main Objective(s):

The student is expected to know:

1. Have knowledge about relevant statistical terminology and the role of statistics as scientific method recognize different types and structures of data.
2. Differentiate between different types of variables.
3. Construct frequency distribution table for values and grouped data.
4. Calculate measures of central tendency for values and grouped data.
5. Calculate measures of dispersion for values and grouped data.
6. Evaluate chi-square, correlation and regression coefficients.
7. Understand basic statistical concepts for central tendency, dispersion, chi-square, t-test, linear correlation, and regression.
8. Understand basic concepts for validity and consistency.

2. Teaching mode (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	45	100%
2	E-learning		
3	Hybrid		





No	Mode of Instruction	Contact Hours	Percentage
	<ul style="list-style-type: none"> Traditional classroom E-learning 		
4	Distance learning		

3. Contact Hours (based on the academic semester)

No	Activity	Contact Hours
1.	Lectures	15
2.	Laboratory/Studio	30
3.	Field	
4.	Tutorial	
5.	Others (specify)	
Total		45

B. Course Learning Outcomes (CLOs), Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Code of PLOs aligned with program	Teaching Strategies	Assessment Methods
1.0	Knowledge and understanding			
1.1	Demonstrate the fundamentals and basic concepts of descriptive statistics, linear correlation, regression model, data summarization and presentation.	K1	Lectures	1. Written exam
2.0	Skills			
2.1	Integrate pharmaceutical, administrative and clinical sciences with information obtained from different resources to provide accurate recommendations and creative solutions for complex problems.	S1	Group discussion PBL Lecture	1. Written exam 2. Practical exam
3.0	Values, autonomy, and responsibility			
3.4	Demonstrate leadership, entrepreneurial and managerial skills, in addition to accountability, confidence, reflective reasoning and independent thinking to respond to routine or unanticipated circumstances.	V4	Lecture	Observation card Assignments



C. Course Content (Theory)

No	List of Topics	Contact Hours
1.	Introductory session	1
2.	Fundamental basic Concepts in biostatistics	1
3.	Classification of data, Data summarizing, Statistic types, Variables and scales	1
4.	Data presentation: Tabular Methods (Frequency distribution tables: Relative frequency tables; Percentage frequency tables) & Graphical Methods	1
5.	Measures of central tendency (Mean, Median and Mode)	2
6.	Measures of dispersion: (Range, Variance and Standard deviation)	2
7.	Hypothesis testing	1
8.	Chi-square	2
9.	T-test	2
10.	Simple Correlation: Person's correlation coefficient of linear correlation, Coefficient of contingency + Regression (Regression line)	1
11.	Examinations and assessment	1
Total		15

C. Course Content (Practical)

No	List of Topics	Contact Hours
1.	Introductory session	3
2.	Fundamental basic Concepts in biostatistics	3
3.	Classification of data, Data summarizing, Statistic types, Variables and scales	3
4.	Data presentation: Tabular Methods (Frequency distribution tables: Relative frequency tables; Percentage frequency tables) & Graphical Methods	3
5.	Measures of central tendency (Mean, Median and Mode)	3
6.	Measures of dispersion: (Range, Variance and Standard deviation)	3
7.	Hypothesis testing	3
8.	Chi-square	3
9.	T-test	3
10.	Simple Correlation: Person's correlation coefficient of linear correlation, Coefficient of contingency + Regression (Regression line)	3
Total		30

D. Students Assessment Activities

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1.	Quiz	Continuous	10%
2.	Midterm exam	6-7	20%
3.	Practical quiz	Continuous	5%





No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
4.	Assignments	Continuous	5%
5.	Observation card	Continuous	10%
6.	Final practical	16	10%
7.	Final exam	17-19	40%
8.	Total		100%

*Assessment Activities (i.e., Written test, oral test, oral presentation, group project, essay, etc.).

E. Learning Resources and Facilities

1. References and Learning Resources

Essential References	<ol style="list-style-type: none"> 1. Mould ,F. R. (1998).Introductory Medical Statics. IOP Publishing Ltd. 2. Martin Bland. (2000). An Introduction to Medical Statistics. Oxford University Press. <p>Chap T. Le. (2003). Introductory Biostatics. Wiley – Interscience, A John Wiley & Sons Publication.</p>
Supportive References	<ol style="list-style-type: none"> 1. Sharma, A.K. (2005). Text Book of Biostatistics I. Discovery Publishing House , New Delh-110002. 2. Gerstman, B.B. (2008). Basic Biostatistics. Statistics for Public Health Practice. Jones and Barlett Publishers. <p>Rumsey, D. (2010). Statistics Essential for Dummies. Wiley Publishing Inc.</p>
Electronic Materials	<ul style="list-style-type: none"> - http://www.bettyjung.net/Statsites.htm - http://www.schoolofed.nova.edu/edl/secure/stats/ - http://www.basicstat.com/
Other Learning Materials	

2. Required Facilities and equipment

Items	Resources
facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)	A Lecture containing at least 25 seats
Technology equipment (projector, smart board, software)	<ul style="list-style-type: none"> • Computer lab • Internet access
Other equipment (depending on the nature of the specialty)	



F. Assessment of Course Quality

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of teaching	Head of departments and students	Indirect Questionnaires (indirect)
Effectiveness of Students' assessment	Faculty members and students	Indirect Questionnaires (indirect)
Quality of learning resources	Student peer reviewer	Direct Indirect
The extent to which CLOs have been achieved	Students	Questionnaires (Indirect)
Other		

Assessors (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify))

Assessment Methods (Direct, Indirect)

G. Specification Approval

COUNCIL /COMMITTEE	PHARMACOLOGY DEPARTMENT COUNCIL
REFERENCE NO.	14460217-1071-00001
DATE	21/8/2024

