هيئة تقويم التعليم والتدريب
Education & Training Evaluation Commission

اعتماد NCAAA T4 2020

Course Specifications

Course Title:	**Biostatistics**
Course Code:	**2022110-2**
Program:	**Bachelor in Zoology**
Department:	**Mathematics and Statistics Department**
College:	**College of Sciences**
Institution:	**Taif University**

Table of Contents

A. Course Identification

1. Credit hours:	2 hr
2. Course type	
a.	University ☐ College ☐ Department ☑ Others ☐
b.	Required ☑ Elective ☐
3. Level/year at which this course is offered:	5th level / 2nd year
4. Pre-requisites for this course (if any):	Calculus 1 (2021204-4)
5. Co-requisites for this course (if any):	None

6. Mode of Instruction (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	**Traditional classroom**	3 hr/Week	100%
2	**Blended**	-	-
3	**E-learning**	-	-
4	**Distance learning**	-	-
5	**Other**	-	-

7. Contact Hours (based on academic semester)

No	Activity	Contact Hours
1	**Lecture**	30
2	**Laboratory/Studio**	-
3	**Tutorial**	-
4	**Others** (specify)	-
	Total	30

B. Course Objectives and Learning Outcomes

1. Course Description

This course is concerned with studying some important topics in statistics such as: Types of variables, sampling techniques, descriptive statistics, normal distribution, point estimation, interval estimation, testing hypothesis, correlation and regression.

2. Course Main Objective

After finishing the course, the students should be able to understand the basic principles of descriptive statistics and apply common statistical methods for inference and interpreting statistical results.

3. Course Learning Outcomes

	CLOs	Aligned PLOs
1	**Knowledge and Understanding**	
1.1	Recognize the basic concepts of statistics and other related biological sciences.	K1

CLOs		Aligned PLOs
2	**Skills:**	
2.1	Apply statistical skills for integration of biological knowledge.	S1
2.2	Investigate biological and scientific problems using statistical techniques.	S2
3	**Values:**	
3.1	Play a major role in joint work planning and evaluation.	V2

C. Course Content

No	List of Topics	Contact Hours
1	Introduction to Bio-Statistics, Variables and their types	3L
2	Data collection: Sources of data used in medical field, Methods of data collection and types of questionnaires	3L
3	Sampling Design: Steps in sample selection & Sampling frame Sampling techniques & Sample size, Tabular presentation of data	3L
4	Graphical presentation of data, Descriptive statistics for numerical data: measures of central tendency (mean, median, mode)	3L
5	Descriptive statistics for nominal data: ratios, proportions, percentages and rates	3L
6	Measures of Dispersion (variability): the range, the variance, the standard deviation, standard error and coefficient of variation	3L
7	Types and characters of distribution curves & Applications on normality of distribution	3L
8	Estimation (Point and Interval), Hypothesis testing	3L
9	Correlation and regression	3L
10	General Revision	3L
Total		30L

D. Teaching and Assessment

1. Alignment of Course Learning Outcomes with Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
1.0	**Knowledge and Understanding:**		
1.1	Recognize the basic concepts of statistics and other related biological sciences.	Lecture Open discussion	Paper-based exams
2.0	**Skills:**		
2.1	Apply statistical skills for integration of biological knowledge.	Lecture Brain storming	Paper-based exams
2.2	Investigate biological and scientific problems using statistical techniques.	Problem solving Open discussion	Paper-based exams
3.0	**Values:**		
3.1	Play a major role in joint work planning and evaluation.	Projects	Projects

2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	Quizzes and Home-works	Continuous	10%
2	Periodic exam 1	5th	20%
3	Periodic exam 2	7th	20%
4	Final exam	12th	50%

***Assessment task** (i.e., written test, oral test, oral presentation, group project, essay, etc.)

E. Student Academic Counseling and Support

Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice:

6 hours per week (as defined in the teaching schedule of the faculty member) for academic advice and consultations

Teaching staff is also available using Blackboard web site and Taif University "Edugate" System.

F. Learning Resources and Facilities

1. Learning Resources

Required Textbooks	W.W. Daniel and C.L. Cross (2019). Biostatistics: A foundation for analysis in the health sciences, 10th edition, Wiley.
Essential References Materials	Banerjee, A. (2016). Essentials of Biostatistics, Medical Journal of Dr. D.Y. Patil University. 9. 10.4103/0975-2870.194237.
Elcctronic Matcrials	Blackboard website; Website of Saudi digital Library
Other Learning Materials	Digital programs and professional software

2. Facilities Required

Item	Resources
Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)	Lecture halls, containing white boards, and electronic monitors.
Technology Resources (AV, data show, Smart Board, software, etc.)	R, Python and SPSS software.
Other Resources (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)	Wi-Fi internet connections

G. Course Quality Evaluation

Evaluation Areas/Issues	Evaluators	Evaluation Methods
Effectiveness of teaching and assessment	Students	Indirect
Quality of learning resources	Peer Reviewer Students	Direct Indirect
Extent of achieving the course learning outcomes	Peer Reviewer Students	Direct Indirect

Evaluation areas (e.g., Effectiveness of teaching and assessment, Extent of achievement of course learning outcomes, Quality of learning resources, etc.)
Evaluators (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify)
Assessment Methods (Direct, Indirect)

H. Specification Approval Data

Council / Committee	**Department of Mathematics and Statistics**
Reference No.	**Committee number 14 - Academic Year 1442-1443H**
Date	**22\5\2022G – 21\10\1443H**

عمادة كلية العلوم
Deanship of Science College
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