هيئة تقويم التعليم والتدريب
Education & Training Evaluation Commission

2023
TP-153

Course Specification

Course Title:	**Bio Statistics**
Course Code:	**213 ENW-2**
Program:	**Environmental Protection Technology**
Department:	--
College:	**APPLIED COLLEGE IN Al-Arda**
Institution:	**Jazan University, Jazan**
Version:	**1st**
Last Revision Date:	2023

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A. General information about the course:

1. Course Identification

1. Credit hours: (2)					
2. Course type					
A.	☐University	☐College	■ Program	☐Track	☐Others
B.	■Required		☐Elective		
3. Level/year at which this course is offered: (Level ٣/ Year ٢)					
4. Course general Description:					
This course is interested in applying statistical methods to describe and analyze data, solving different types of problems and identifies new statistical studies. Applying statistical methods in data description and analysis related to biology. This course covers the basic tools for the collection, analysis, and presentation of data in the biological applications. **This course is designed to provide students with** **□ Introduction to Bio Statistics** **□ Representation of data (Frequency Distribution and Graphs)** **□ Measures of Central Tendency and Measure of Variation** **□ Probability and Counting Rules** **□ Probability distribution (Discrete and Continuous Distribution)** **□ Statistical estimation (Confidence Interval)**					
5. Pre-requirements for this course (if any)**:None**					
6. Co-requisites for this course (if any)**:None**					
7. Course Main Objective(s):					
Upon completion of the course, it is expected that the student will have acquired familiarity with the following concepts: **After finishing the course, the student is expected to be familiar with the following:** **□ Describe and explain the raw statistical data** **□ Describe statistics measurements.** **□ Familiar with inferential statistics and estimations**					

2. Teaching mode (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	30	100%
2	E-learning	---	---
3	Hybrid • Traditional classroom • E-learning		---
4	Distance learning	---	---

3. Contact Hours (based on the academic semester)

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

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	**Distinguish statistical. concepts relevant to descriptive statistics, representation of data, and comparison of variables.**	**PLO 1.1**	**Lectures, Web based work, Classroom discussions**	**Written exam (Problem solve, MCQ, true/false, Proof, Short answer), Quizzes, Assignments**
1.2	**Identify background, features and structure of measures of central tendency, probability distributions, sampling**	**PLO 1.2**	**Lectures, Web based work, Classroom discussions**	**Written exam (Problem solve, MCQ, true/false, Proof, Short answer), Quizzes, Assignments**

Code	Course Learning Outcomes	Code of PLOs aligned with program	Teaching Strategies	Assessment Methods
	distribution and statistical inferences.			
1.3	Explain notations and concepts required for descriptive statistics, measures of central tendency, dispersion, probability distributions, sampling distribution, and parametric estimation.	PLO 1.3	Lectures, Web based work, Classroom discussions	Written exam (Problem solve, MCQ, true/false, Proof, Short answer), Quizzes, Assignments
2.0	Skills			
2.1	Apply theoretical, computational or practical aspect relevant to measures of central tendency and dispersion, probability distributions, sampling distribution, and parametric estimation	PLO 2.1	Lectures, Web based work, Classroom discussions	Written exam (Problem solve, MCQ, true/false, Proof, Short answer), Quizzes, Assignments
2.2	Compute solutions related to measures of central tendency, variance and position, probability, discrete and continuous probability distributions, and confidence interval.	PLO 2.2	Lectures, Web based work, Classroom discussions	Written exam (Problem solve, MCQ, true/false, Proof, Short answer), Quizzes, Assignments
2.3	Apply various statistical rules and	PLO 2.3	Lectures, Web based work,	Written exam

Code	Course Learning Outcomes	Code of PLOs aligned with program	Teaching Strategies	Assessment Methods
	techniques in analyzing data.		Classroom discussions	(Problem solve, MCQ, true/false, Proof, Short answer), Quizzes, Assignments
2.4	Solve statistical and probability problems using critical thinking	PLO 2.4	Lectures, Web based work, Classroom discussions	Written exam (Problem solve, MCQ, true/false, Proof, Short answer), Quizzes, Assignments
3.0	Values, autonomy, and responsibility			
3.1	Cultivate a statistical attitude and nurture the interest.	PLO 3.1	Group work, problem solving web based work	Assignments, Group dissociation
3.2	Realize the importance of responsibilities through different modes of practice, competition and related activities.	PLO 3.2	Group work, problem solving web based work	Assignments, Group dissociation
3.3	Inculcating values and ethics in thought towards the development of study habits essential for independent progress	PLO 3.3	Group work, problem solving web based work	Assignments, Group dissociation

C. Course Content

No	List of Topics	Contact Hours
1.	Descriptive Statistics	4

2.	Graphing representation of data	5
3.	Measure of central tendency and variation	6
4.	Probability Rules	5
5.	Probability Distribution	5
6.	Statistical Estimation	5
	Total	30

D. Students Assessment Activities

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1.	Homework and quiz	Continuous	5%
2.	First exam	6	20%
3.	Second exam	12	20%
4.	Homework and quiz	Continuous	5%
5.	Final exam	16-18	50%

*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	Elementary Statistics a Step by Step Approach; Bluman, A. G., 6th Edition, McGraw- Hill, 2006
Supportive References	• 1.Elementary Statistics Picturing the world, R. Larson and B. Farber, 5th Edition, Pearson, 2012. • 2. Introductory Biostatistics for the Health Sciences; Michael R. Chernick & Robert H. Friis, John Wiley & Sons, 2003.Inc. Publication, New Jersey USA.
Electronic Materials	Web sites dedicated to statistics available on the internet
Other Learning Materials	Black board platform

2. Required Facilities and equipment

Items	Resources
facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)	Classroom, Computer lab.

Items	Resources
Technology equipment (projector, smart board, software)	**Data show; Smart Board, Blackboard platform, Excel, Statistical Software**
Other equipment (depending on the nature of the specialty)	

F. Assessment of Course Quality

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of teaching	Students, Peer and program leader	Indirect (Course Evaluation Survey) - Indirect peer evaluation
Effectiveness of Students' assessment	Students, Program assessment committee	Direct/ Indirect
Quality of learning resources	Students, Faculty members	Direct/ Indirect
The extent to which CLOs have been achieved	Faculty members	Indirect
Other	---	---

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

Assessment Methods (Direct, Indirect)

G. Specification Approval

COUNCIL /COMMITTEE	**BOARD OF MATHEMATICS DEPARTMENT**
REFERENCE NO.	**2306**
DATE	**07/09/1444 A. H.; 29/03/2023 A. D.**