هيئة تقويم التعليم والتدريب
Education & Training Evaluation Commission

T-104
2022

Course Specification

هيئة تقويم التعليم والتدريب
Education & Training Evaluation Commission

T-104
2022

Course Specification

Course Title:	**Principles of Statistics and Probability**
Course Code:	**121STAT-3**
Program:	**B.Sc. of Mathematics**
Department:	**Mathematics**
College:	**Arts and Sciences**
Institution:	**Najran University**
Version:	**1**
Last Revision Date:	07-05-**2023**

Table of Contents:

A. General information about the course:

Course Identification					
1. Credit hours:	3				
2. Course type					
a.	University ☐	College ☐	Department☒	Track☐	Others☐
b.	Required ☒	Elective☐			
3. Level/year at which this course is offered:	2/1				
4. Course general Description:					
This course introduces the importance of statistics and its uses, presenting and describing statistical data tabularly and graphically with measures of central tendency, dispersion measures, Variation coefficient, skewness measures, kurtosis measures, in addition to regression and linear correlation, with a comprehensive introduction to the basic concepts and laws and their applications in probability theory.					
5. Pre-requirements for this course (if any):	None				
6. Co- requirements for this course (if any):	None				
7. Course Main Objective(s):					
The main objective is knowledge of the basic concepts related to the principles of statistics and probability theory with the transfer of student from the stage of description to the stage of decision-making and problems solving.					

1. Teaching mode (mark all that apply)

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

2. Contact Hours (based on the academic semester)

No	Activity	Contact Hours
1.	Lectures	45
2.	Laboratory/Studio	-
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 CLOs aligned with program	Teaching Strategies	Assessment Methods
1.0	Knowledge and understanding			
1.1	Define the related basic scientific facts, concepts, principles and techniques of the descriptive statistics and principles of probability theory.	K1	• Lecture • Cooperative learning • Problem solving	• Assignments • Quizzes • Midterm • Final Exam
2.0	Skills			
2.1	Apply statistical methods to data analyze and represent it tabularly and graphically.	S1	• Lecture • Cooperative learning • Problem solving	• Assignments • Quizzes • Midterm • Final Exam
2.2	Explains the relationships between statistical measures and the laws for each measure and employing them to solve mathematical problems in the case of tabulated and untabulated data.			
2.3	Calculate the probability value of events by using the basic laws and relationships between events in the principles of probability theory.			
2.4	Use the laws of independence and conditional probability and Bayes' theorem to finding related probabilities.			
3.0	Values, autonomy, and responsibility			
3.1				

C. Course Content

No	List of Topics	Contact Hours
1.	Introduction (Importance of statistics, Definition of statistics, Statistical data, Sources of data, Methods of data collection, Population and sample, Parameter and statistic).	3
2.	Presentation and description of statistical data (Frequency distributions, Relative frequency, Cumulative frequency distributions, Graphic Presentations, Forms of distributions, Introduction of samples).	6
3.	Measures of central tendency (Arithmetic mean, Geometric mean, harmonic mean, Median, Mode, Approximate relation of the mean, median and mode, Deciles, Quartiles and percentiles).	9
4.	Measures of dispersion (Rang, Mid - quartile rang, Mean deviation, Variance, Standard deviation).	9
5.	Measures of variation, Skewness, Kurtosis and Regression (Variation coefficient, Quartile variation coefficient, Measures of skewness (Pearson coefficient, Quartile skewness coefficient, Percentile skewness coefficient, Kurtosis Measure, Correlation and regression).	6
6.	Introduction of probability (Principle of counting, Meaning of probability, Basic definitions, Axioms of probability, Relationship between random events, Basic lows, Conditional probability, Independent events, Bayes rule, Bayes theorem).	12
Total		45

D. Students Assessment Activities

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1.	First Exam	7	20%
2.	Assignments & Quizzes	During classes	10%
3.	Second Exam	13	20%
4.	Final Exam	16	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	- عبدالله الشيحة , عدنان بري,أخر طبعة, مبادئ الإحصاء والاحتمالات, مكتبة الشقري.
Supportive References	- محمد صبحي أبو صالح, عدنان عوض –2008م,مقدمة في الإحصاء (مبادئ وتحليل باستخدام SPSS) , الطبعة الثانية, دار الميسرة للنشر. - محمد صبحي أبو صالح وعدنان عوض(1983)- مقدمة في الإحصاء- نيويورك -وأيلي.
Electronic Materials	• Lectures on the Department of Mathematics YouTube Channel.
Other Learning Materials	None

2. Required Facilities and equipment

Items	Resources
facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)	Classroom with 30 seats.
Technology equipment (projector, smart board, software)	- Blackboard Platform - SPSS Program , or R software - Projector
Other equipment (depending on the nature of the specialty)	**N/A**

F. Assessment of Course Quality

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of teaching	Student	Student Questionnaire (Indirect)
Effectiveness of students assessment	Peer Reviewer	Rubrics (Indirect)
Quality of learning resources		
The extent to which CLOs have been achieved	Faculty	Direct
Other		

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

Assessment Methods (Direct, Indirect)

G. Specification Approval Data

COUNCIL /COMMITTEE	COUNCIL OF MATHEMATICS DEPARTMENT
REFERENCE NO.	14441017-0208-00014
DATE	17-10-1444H