Course Specifications

Course Title:	Principles of Statistics and Probability
Course Code:	121STAT-3
Program:	Bachelor in Mathematics
Department:	Program of Mathematics
College:	College of Arts and Sciences
Institution:	Najran University.

Table of Contents

A. Course Identification

1. Credit hours:	
2. Course type	
a. University ☐ College ☐ Department ☑ Others ☐	
b. Required ☑ Elective ☐	
3. Level/year at which this course is offered: Level 2/ first Year	
4. Pre-requisites for this course (if any): None	
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	100%
2	**Blended**		
3	**E-learning**		
4	**Correspondence**		
5	**Other**		

7. Actual Learning Hours (based on academic semester)

No	Activity	Learning Hours
Contact Hours		
1	**Lecture**	٤٥
2	**Laboratory/Studio**	٠٠
3	**Tutorial**	٠٠
4	**Others** (specify)(Test1 and Test2)	٣
	Total	٤٨
Other Learning Hours*		
1	**Study**	30
2	**Assignments**	10
3	**Library**	٠٠
4	**Projects/Research Essays/Theses**	٠٠
5	**Others**(specify) (Office hours)	15
	Total	١٠٣

*The length of time that a learner takes to complete learning activities that lead to achievement of course learning outcomes, such as study time, homework assignments, projects, preparing presentations, library times

B. Course Objectives and Learning Outcomes:

1. Course Description

This course introduce: Importance of statistics, Presentation and description of statistical data, Measures of central tendency, Measures of dispersion, Variation coefficient, Measures of skewness, Kurtosis Measure, Correlation and regression, Introduction of probability theory.

2. Course Main Objective

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.

3. Course Learning Outcomes:

	CLOs	Aligned PLOs
1	**Knowledge:**	
1.1	Recognize the related basic scientific facts, concepts, principles and techniques in statistics and probability theory	
1.2	Describe how to handle with data, how to calculate measurements, and understand to the meaning of probability and how to calculate it	
1...		
2	**Skills :**	
2.1	Apply statistical tools for simple data analysis.	
2.2	Explain the results of statistical measures.	
2.3	Demonstrate understanding, for all principles, theorems, formulas, computational techniques in statistics and probability theory.	
3	**Competence:**	
3.1	Work effectively with in groups and independently	
3.2	Apply critical thinking, communication skills and mathematical and statistical techniques in solving many problems in other disciplines.	
3...		

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).	6
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).	9
...	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		٤٥

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**		
1.1	Recognize the related basic scientific facts, concepts, principles and techniques in statistics and probability theory	Direct teaching - discussion and dialogue - problem solving.	Exams Home work.
1.2	Describe how to handle with data, how to calculate measurements, and understand to the meaning of probability and how to calculate it.		
...			
2.0	**Skills**		
2.1	Apply statistical tools for simple data analysis.	- Brainstorming.. - To allow students to ask questions and express their opinions and ideas.	Exams Quizzes. Discussion
2.2	Explain the results of statistical measures.		
2.3	Demonstrate understanding, for all principles, theorems, formulas, computational techniques in statistics and probability theory.		
3.0	**Competence**		
3.1	Work effectively with in groups and independently	- Solve exercises through individual work and groups. - Lectures, discussion and dialogue	- Solving exercises and Home work. - Written tests.
3.2	Apply critical thinking, communication skills and mathematical and statistical techniques in solving many problems in other disciplines.		
...			

2. Assessment Tasks for Students:

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	First exam	7	20 degrees
2	Second exam	12	20 degrees
	Home work and Assignments/Quizzes	Every week	10 degrees
3	Final exam	16	50 degrees

***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 :

- Office hours.
- Provide academic guidance services.
- Introduce students to the course plan in terms of objectives, content and evaluation procedures.

F. Learning Resources and Facilities:

1.Learning Resources

Required Textbooks	د.عبد الله الشيحة - د. عدنان بري، أخر طبعة ، مبادئ الإحصاء والاحتمالات، دار النشر مكتبة الشقري.
Essential References Materials	- أ.د محمد صبحي أبو صالح، أ. د عدنان عوض ـ٢٠٠٨م ،مقدمة في الإحصاء (مبادئ وتحليل باستخدام SPSS) ، الطبعة الثانية ، دار الميسرة للنشر. - محمد صبحي أبو صالح وعدنان عوض (١٩٨٣) – مقدمة في الإحصاء – نيويورك –وايلي.
Electronic Materials	• Electronic materials available on the internet. • Lectures on the Department of Mathematics YouTube Channel.
Other Learning Materials	Program SPSS

2. Facilities Required

Item	Resources
Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)	• The number of seats in the classroom is at least 30 seats.
Technology Resources (AV, data show, Smart Board, software, etc.)	• Halls equipped with modern learning techniques and different display devices.
Other Resources (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)	None

G. Course Quality Evaluation:

Evaluation Areas/Issues	Evaluators	Evaluation Methods
Effectiveness of teaching	Students - Leadership Program.	Direct and Indirect
Effectiveness of assessment	Students - Leadership Program - Peer References.	Indirect
Extent of achievement of course learning outcomes	Students - Leadership Program.	Indirect
Quality of learning resources	Students - Leadership Program.	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	
Reference No.	
Date	