



Course Specifications

Course Title:	Elementary Probability and Statistics
Course Code:	2010 Stat
Program:	Bachelor of Science in Mathematics
Department:	Mathematics
College:	Faculty of science and humanity studies
Institution:	Prince Sattam Bin Abdul Aziz University, Saudi Arabia

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A. Course Identification

1. Credit hours: 4 Hours	
2. Course type	
a. University <input type="checkbox"/>	College <input checked="" type="checkbox"/> Department <input type="checkbox"/> Others <input type="checkbox"/>
b. Required <input checked="" type="checkbox"/>	Elective <input type="checkbox"/>
3. Level/year at which this course is offered: Level 4	
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	4 hours a 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	48
2	Laboratory/Studio	-
3	Tutorial	00
4	Others (specify) - 5 office hours a week	60
	Total	108

B. Course Objectives and Learning Outcomes

1. Course Description

Descriptive statistics: Statistical data classification-Measures of central tendency - Measures of dispersion. Basic probability concepts: Conditional probability, Bayes law- Random variable and probability distribution- Binomial distribution- Poisson distribution - Normal distribution and its applications- Sampling distribution of the mean- Central limit theorem- Estimation of the population mean and proportion, Testing hypotheses about population mean and proportion.

2. Course Main Objectives

The course aims to provide all elementary concepts of probability and statistics which will help them undertake some advanced courses at higher levels of the program.

3. Course Learning Outcomes

CLOs		Aligned PLOs
1	Knowledge and Understanding	
1.1	Acquire in depth knowledge in elementary descriptive statistics (Collection and compilation of data), basic probability concepts, random variables etc.	K1
1.2	Able to recollect the appropriate method to solve problems of statistics and probability	K4

CLOs		Aligned PLOs
2	Skills :	
2.1	Evaluate various measures of central tendency of collected data.	S1
2.2	Apply theorems on probability and statistics to evaluate probability distribution.	S2

C. Course Content

No	List of Topics	Contact Hours
1	Classification of data – Measures of central tendency	6
2	Measures of dispersion	4
3	Elementary probability concepts	4
4	Conditional probability	4
5	Bayes' theorem and applications	4
6	Random variable and probability distribution	4
7	Binomial Distribution	4
8	Normal distribution and simple applications	4
9	Sampling distribution	3
10	Central limit theorem	3
11	Estimation of population and proportion	3
12	Testing hypothesis	6
Total		48

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	Acquire in depth knowledge in elementary descriptive statistics (Collection and compilation of data), basic probability concepts, random variables etc.	1. Class room Lectures 2. Interactive sessions 3. Exclusive Office Hours for clearing doubts in small groups	1. Two internal Exams 2. At least two Quiz 3. End semester exam
1.2	Able to recollect the appropriate method to solve problems of statistics and probability		
2.0	Skills		
2.1	Evaluate various measures of central tendency of collected data.	1. Application oriented exercises during tutorial session. 2. Homework to improve the analytical skills	1. Home work 2. Assignments 3. Quiz
2.2	Apply theorems on probability and statistics to evaluate probability distribution.		

2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	Mid Term Exam I	6	20%
2	Quiz	4 & 10	5%
3	Mid Term Exam II	13	20%
4	Continuous Assessment – Homework, Assignment, Attendance etc.	--	5%
5	End Semester Exam (Practical 10%, Theory 40%)	15	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:

1. Exclusive Office Hours – 5 Hours per week
2. Academic Advising for Students – 1 Hour per week

F. Learning Resources and Facilities

1. Learning Resources

Required Textbooks	Introduction in Statistics and probability with Application by Excel, by Abdullah Sheha and Adnan Bery, Al-Shakery Library Year : 1429 H
Essential References Materials	Journals, Reports, etc
Electronic Materials	Web Sites, Social Media, Blackboard, etc.
Other Learning Materials	Computer-based programs/CD, professional standards or regulations and software, Lecture Notes Prepared by the Department of Mathematics

2. Facilities Required

Item	Resources
Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)	Classrooms with smart boards with suitable number of student in each room.
Technology Resources (AV, data show, Smart Board, software, etc.)	Smart board, Internet connection for blackboard
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, Graduates	Course Evaluation and Program Evaluation Survey (Indirect)
Head of department reports.	Program Leaders	Peer Review (Direct)

Evaluation Areas/Issues	Evaluators	Evaluation Methods
Achievement of CLOs	Faculty and Quality Personnel	Direct (Tests and Quiz) and Review of Course Report
Quality of Learning Resources	Students	Course Evaluation (Indirect)
Annual course reports. Departmental review of course ILO"s.	Graduates	Program Evaluation(Indirect)
Facilities	Students / Graduates	Course and Program Evaluation (Indirect)
	Faculty	Faculty Survey (Indirect), Course Reports (Direct)

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	