



# Course Specifications

<b>Course Title:</b>	<b>Introduction to Probability and Statistics</b>
<b>Course Code:</b>	<b>stat 101</b>
<b>Program:</b>	<b>The track of scientific colleges</b>
<b>Department:</b>	<b>Department of Basic Sciences</b>
<b>College:</b>	<b>Common First Year.</b>
<b>Institution:</b>	<b>King Saud University</b>

## Table of Contents

<b>A. Course Identification</b> .....	<b>3</b>
6. Mode of Instruction (mark all that apply) .....	3
<b>B. Course Objectives and Learning Outcomes</b> .....	<b>3</b>
1. Course Description .....	3
2. Course Main Objective.....	3
3. Course Learning Outcomes .....	4
<b>C. Course Content</b> .....	<b>4</b>
<b>D. Teaching and Assessment</b> .....	<b>4</b>
1. Alignment of Course Learning Outcomes with Teaching Strategies and Assessment Methods .....	4
2. Assessment Tasks for Students .....	5
<b>E. Student Academic Counseling and Support</b> .....	<b>5</b>
<b>F. Learning Resources and Facilities</b> .....	<b>6</b>
1. Learning Resources .....	6
2. Facilities Required.....	6
<b>G. Course Quality Evaluation</b> .....	<b>6</b>
<b>H. Specification Approval Data</b> .....	<b>6</b>

## A. Course Identification

<b>1. Credit hours:</b>			
<b>2. Course type</b>			
a.	University <input type="checkbox"/>	College <input checked="" type="checkbox"/>	Department <input type="checkbox"/>
b.	Required <input checked="" type="checkbox"/>	Elective <input type="checkbox"/>	Others <input type="checkbox"/>
<b>3. Level/year at which this course is offered:</b> first level /First year			
<b>4. Pre-requisites for this course (if any):</b> There is no			
<b>5. Co-requisites for this course (if any):</b> There is no			

### 6. Mode of Instruction (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	4	50%
2	Blended		
3	E-learning		
4	Correspondence	4	50%
5	Other		

### 7. Actual Learning Hours (based on academic semester)

No	Activity	Learning Hours
<b>Contact Hours</b>		
1	Lecture	30
2	Laboratory/Studio	---
3	Tutorial	---
4	Others (specify)	30
	<b>Total</b>	<b>60</b>
<b>Other Learning Hours*</b>		
1	Study	---
2	Assignments	---
3	Library	40
4	Projects/Research Essays/Theses	---
5	Others (specify)	---
	<b>Total</b>	<b>40</b>

\* 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

<p><b>1. Course Description</b> A course in applied mathematics aimed at giving the student some basic sciences in probability and statistics.</p>
<p><b>2. Course Main Objective</b> Develop a scientific base for the student to address some of the statistical issues that may face him during his teaching career in the first university.</p>

### 3. Course Learning Outcomes

CLOs		Aligned PLOs
1	<b>Knowledge:</b>	
1.1	Probability space for a random experiment, probability of accidents, random variables.	
1.2	Graphical representation of data, numerical properties of data	
1.3	Confidence periods for natural and Bernoulli community milestones, testing hypotheses for natural and Bernoulli community milestones	
1.4	Simple correlation and simple regression analysis.	
2	<b>Skills :</b>	
2.1	Gain some skills in probability calculation	
2.2	Gain some skills in descriptive statistics	
2.3	Gain some skills in inferential statistics	
3	<b>Competence:</b>	
3.1	Ability to process raw and scheduled data.	
3.2	Ability to calculate the probability of accidents related to randomized trials.	
3.3	Ability to calculate the parameters of the community and test hypotheses related to it.	
3.4	Ability to calculate simple correlation coefficient and regression analysis.	

### C. Course Content

No	List of Topics	Contact Hours
1	Descriptive Statistics	20
2	Possibilities	20
3	Inferential Statistics	12
4	Correlation and regression	8
Total		60

### 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	<b>Knowledge</b>		
1.1	Statistics: Recognizing the nature and usefulness of statistics, the frequency distribution of data, data presentations, calculation of some numerical measures of data. Estimation of the average and percentage of a population. Test the statistical hypotheses of the average and percentage of a statistical community.	Student-centered collaborative learning and self-learning	Homework, Midterm Exams and Final exam.

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
1.2	<b>Probability: Includes calculation of probabilities for incidents related to randomized trials, random variables and their numerical characteristics and identification of some probability distributions.</b>	Student-centered collaborative learning and self-learning	Homework, Midterm Exams and Final exam.
2.0	<b>Skills</b>		
2.1	<b>Schedule data and create graphs of frequency distributions. Test the statistical hypotheses</b>	Manual drawing and use of statistical programs	Homework, Midterm Exams and Final exam.
2.2	<b>Calculate the probability of accidents following some famous probability distributions.</b>	Student-centered collaborative learning and self-learning	Homework, Midterm Exams and Final exam.
2.3	<b>Developing personal relationships with others and the ability to take responsibility.</b>	Listen, talk, and group dialogue.	Discussions
2.4	<b>Students assess each other's skills.</b>	Listen, talk, and group dialogue	Discussions
2.5	<b>Solve simple statistical problems.</b>	Collaborative work within the classroom	Homework and Discussions.
3.0	<b>Competence</b>		
3.1	<b>Students' ability to provide statistical models</b>	Self-learning, collaborative learning and dealing with the Web.	Discussions and two Homework.
3.2	<b>Students' ability to build models of randomized trials.</b>	Self-learning, collaborative learning and dealing with the Web.	Discussions and two Homework.
3.3	<b>The ability of the student to make estimates through simple linear regression.</b>	Self-learning, collaborative learning and dealing with the Web.	Discussions and two Homework.

## 2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	<b>Duties and self-learning</b>	<b>Every five weeks</b>	<b>20%</b>
2	<b>Mid-term test (pans and hematic)</b>	<b>Seventh and twelfth week</b>	<b>30%</b>
3	<b>Final test (essay and objective)</b>	<b>Sixteenth week</b>	<b>50%</b>

\*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 :

- Three office hours for each faculty member included in the weekly schedule.
- Two hours per week for students who fail to complete the course.
- A review hour for any student.

## F. Learning Resources and Facilities

### 1. Learning Resources

Required Textbooks	<b>Introduction to Probability and Statistics, Third Edition 2019</b>
Essential References Materials	<b>1-Nicholas, Jackie. Introduction to Descriptive Statistics. Mathematics Learning Centre, University of Sydney, 1990.</b> <b>2-Samules, M.L., Witmer, J.A and Schaffner, A., Statistics for the Life Sciences. Fourth edition, Pearson, New York, 2012.</b> <b>3-Walpole, R.E., Myers, R.H. and Myers, S.L. and Ye, K., Probability and Statistics for Engineers and Scientists, Ninth Edition, Prentice, New York, 2012.</b>
Electronic Materials	<b>The electronic file of the book on the Blackboard site.</b>
Other Learning Materials	<b>Statistical programs.</b>

### 2. Facilities Required

Item	Resources
<b>Accommodation</b> (Classrooms, laboratories, demonstration rooms/labs, etc.)	- Classrooms equipped with electronic platform, smart board and projector for 30 students. -A computer lab equipped with technology and equipped with computers to accommodate 30 students per student.
<b>Technology Resources</b> (AV, data show, Smart Board, software, etc.)	Computers equipped with statistical programs smart board
<b>Other Resources</b> (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)	<b>There is no</b>

## G. Course Quality Evaluation

Evaluation Areas/Issues	Evaluators	Evaluation Methods
Evaluating the course coordinator for the classroom learning process.	Coordinator	Visits to classrooms during the semester.
Evaluation of trainers	Trainers	Questionnaire
Student self-assessment.	Students	Questionnaire

**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	<b>Prof. Dr. Hamid Al-Oklah</b> <b>Head of Department of Basic Sciences: Dr. Shalan Alkarni</b>	<b>Signature:</b>
Reference No.	4	<b>Signature:</b>
Date	<b>21/9/2020</b>	

