



## Course Specifications

<b>Course Title:</b>	BIOSTATISTICS
<b>Course Code:</b>	STAT 109+145
<b>Program:</b>	Statistics
<b>Department:</b>	Statistics and Operations Research
<b>College:</b>	College of Science
<b>Institution:</b>	King Saud University

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## A. Course Identification

<b>1. Credit hours:</b>
<b>2. Course type</b>
a. University <input type="checkbox"/> College <input type="checkbox"/> Department <input type="checkbox"/> Others <input checked="" type="checkbox"/>
b. Required <input checked="" type="checkbox"/> Elective <input type="checkbox"/>
<b>3. Level/year at which this course is offered: First year</b>
<b>4. Pre-requisites for this course (if any): None</b>
<b>5. Co-requisites for this course (if any): None</b>

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

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	2	100%
2	Blended		
3	E-learning		
4	Distance learning		
5	Other		

### 7. Contact Hours (based on academic semester)

No	Activity	Contact Hours
1	Lecture	30
2	Laboratory/Studio	
3	Tutorial	30
4	Others (specify)	
	<b>Total</b>	60

## B. Course Objectives and Learning Outcomes

<p><b>1. Course Description</b></p> <p>This course covers the basic tools for the collection, analysis, and presentation of data in all areas of public health</p>
<p><b>2. Course Main Objective</b></p> <p>The purpose of the course is to give students an introduction to the discipline, an appreciation of a statistical perspective on information arising from the health arena and basic critical appraisal skills to assess the quality of research evidence.</p>

### 3. Course Learning Outcomes

CLOs		Aligned PLOs
<b>1</b>	<b>Knowledge and Understanding</b>	
1.1	define the principal concepts about biostatistics.	K1
1.2	collect data relating to variable/variables which will be examined and calculate descriptive statistics from these data.	K3
1.3	identify distribution form relating to the variable/variables.	K2
1.4	apply hypothesis testing via some of the statistical distributions.	K4
<b>2</b>	<b>Skills :</b>	
2.1	Analysis of clinical trials	S2
2.2	interpreting and communicating the results of statistical analysis	S3
<b>3</b>	<b>Competence:</b>	
3.1	Apply the theoretical foundations of probability theory and distribution theory	C1
3.2	Interpret statistical analysis results in health-related area	C2
1.1	define the principal concepts about biostatistics.	K1
1.2	collect data relating to variable/variables which will be examined and calculate descriptive statistics from these data.	K3
1.3	identify distribution form relating to the variable/variables.	K2
1.4	apply hypothesis testing via some of the statistical distributions.	K4

### C. Course Content

No	List of Topics	Contact Hours
1	Descriptive statistic	4
2	Basic probability	6
3	Some discrete probability distributions	4
4	Continuous probability distribution	4
5	sampling distribution	6
6	Statistical inference	6
<b>Total</b>		<b>30</b>

### D. Teaching and Assessment

#### 1. Alignment of Course Learning Outcomes with Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
<b>1.0</b>	<b>Knowledge and Understanding</b>		
1.1	- Data summarized by a histogram or a bar chart. - Understanding descriptive statistics.	1.1	- Data summarized by a histogram or a bar chart. - Understanding descriptive statistics.
1.2	- Familiarity with basic probability and probability distributions. - Testing hypothesis: z and t tests; confidence intervals.	1.2	- Familiarity with basic probability and probability distributions.

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
			- Testing hypothesis: z and t tests; confidence intervals.
2.0	<b>Skills</b>	2.0	<b>Skills</b>
2.1	Students were encouraged to do questions by themselves		
2.2	Perform, present, and interpret basic statistical analyses.	2.2	Perform, present, and interpret basic statistical analyses.
3.0	<b>Competence</b>	3.0	<b>Competence</b>
3.1	Conduct descriptive and inferential statistical analyses that are appropriate to different basic study designs used in public health research.	3.1	Conduct descriptive and inferential statistical analyses that are appropriate to different basic study designs used in public health research.
3.2	Describe and apply basic concepts of probability, random variables, and commonly used statistical probability distributions.	Examples, and Solved Problems.	Written Exam
3.3	Distinguish among the different measurement scales or types of variables	Examples, and Solved Problems.	Written Exam

## 2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	First Exam	7	30%
2	Second Exam	12	30%
3	Final Exam	16	40%
5			
6			
7			
8			

\*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 :** For at least two hours a week, faculty and teaching staff are available to provide student consultations and academic advice.

## F. Learning Resources and Facilities

### 1. Learning Resources

<b>Required Textbooks</b>	<i>Biostatistics: Basic Concepts and Methodology for the Health Sciences</i> by Wayne W. Daniel.
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<b>Essential References Materials</b>	Al Chiha. Lecture notes.
<b>Electronic Materials</b>	Al Chiha. Lecture notes.
<b>Other Learning Materials</b>	Solutions to past exams

## 2. Facilities Required

Item	Resources
<b>Accommodation</b> (Classrooms, laboratories, demonstration rooms/labs, etc.)	Classrooms for 40-65 students.
<b>Technology Resources</b> (AV, data show, Smart Board, software, etc.)	
<b>Other Resources</b> (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)	

## G. Course Quality Evaluation

Evaluation Areas/Issues	Evaluators	Evaluation Methods
Effectiveness of teaching	Students	Indirect (Survey)
Quality of learning resources	Students	Indirect (Survey)
Achievement of course learning outcomes	Faculty	Direct: Written exam
Effectiveness of teaching	Students	Indirect (Survey)
Quality of learning resources	Students	Indirect (Survey)

**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

<b>Council / Committee</b>	Course instructor <b>Dr. Lassaad Mchiri</b>
<b>Reference No.</b>	
<b>Date</b>	09-05-2021