اعتماد
NCAAA

T4
2020

Course Specifications

Course Title:	Statistical Methods
Course Code:	STAT302
Program:	Mathematics
Department:	Mathematics
College:	Sciences & Arts
Institution:	Shaqra University

Table of Contents

A. Course Identification

1. **Credit hours:** 3 hours

2. Course type

a.   University ☐   College ☐   Department ☑   Others ☐

b.   Required ☑   Elective ☐

3. Level/year at which this course is offered: 5th

4. Pre-requisites for this course (if any)**:**

Probability Theory (1)

5. Co-requisites for this course (if any)**:**

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6. Mode of Instruction (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	**Traditional classroom**	-	-
2	**Blended**	-	-
3	**E-learning**	-	-
4	**Distance learning**	56	100
5	**Other**	-	-

7. Contact Hours (based on academic semester)

No	Activity	Contact Hours
1	**Lecture**	28
2	**Laboratory/Studio**	-
3	**Tutorial class**	28
4	**Others** (specify)	-
	Total	56

B. Course Objectives and Learning Outcomes

1. Course Description

This course explores key inferential methods and their applications. After completing this course, students can analyze data using parametric and nonparametric inferential methods, including, but not limited to, estimation, hypothesis testing, correlation, and goodness-of-fit methods.

2. Course Main Objective

Students can analyze data using parametric inferential methods, including estimation, hypothesis testing, correlation.

3. Course Learning Outcomes

CLOs		Aligned PLOs
1	**Knowledge and Understanding**	
1.1	This course explores key inferential methods and their applications.	
1.2	Students can explain fundamental terminology of parametric inferential statistics.	
1.3	Students can discuss important parametric inferential methods	

CLOs		Aligned PLOs
2	**Skills:**	
2.1	Students can analyze data using parametric inferential methods, including estimation, hypothesis testing, correlation.	
3	**Values:**	
3.1	Students can analytically formulate solutions for inferential-based data analyses problems	
3.2	Students can effectively work in teams.	

C. Course Content

No	List of Topics	Contact Hours
1	Testing the difference between two means: large samples	4
2	Confidence interval for difference between two means: large samples	4
3	Testing the difference between two variances	4
4	Testing the difference between two means: small independent samples	4
5	Confidence interval for the difference of two means: small independent samples	8
6	Testing the difference between two means: small dependent samples	4
7	Confidence interval for the mean difference (small dependent samples)	4
8	Testing the difference between two proportions	4
9	Confidence interval for the difference between two proportions	4
10	Regression and correlation	8
11	One-way analysis of variance	4
12	Two-ways analysis of variance	4
Total		**56**

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	Students can analytically formulate solutions for inferential-based data analyses problems	Regular lectures, home assignments, quizzes and tests.	Three Quizzes, home works, one mid-semester exam, a final exam
2.0	**Skills**		
2.1	Students can effectively work in teams	Though the best ways are class room discussions, but they are extremely encouraged to visit the instructor's office if they need further explanations	Through exams, short quizzes, home works
3.0	**Values**		
3.1	Students can analyze data using key parametric and methods		

2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	Assignment # 1	3	4
2	Assignment # 2	8	3
3	Assignment # 3	12	3
4	Quiz #1	4	10
5	Quiz #2	7	10
6	Quiz #3	10	10
7	Exam. #1	5	20
8	Final Exam.	15	40

*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:
There will be three online office hours: one hour on Sunday, one hour on Tuesday and one hour on Wednesday. Students are free to communicate and ask questions during these hours.

F. Learning Resources and Facilities

1.Learning Resources

Required Textbooks	Bluman, A. (2018). Elementary Statistics: a Step by Step Approach. McGraw-Hill Education, 10th Edition.
Essential References Materials	Walpole, R.E., Myers, R. H., Myers, S. L., Ye, K. E. (2017). Probability & Statistics for Engineers & Scientists. Pearson, 9th Edition.
Electronic Materials	-
Other Learning Materials	-

2. Facilities Required

Item	Resources
Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)	N/A
Technology Resources (AV, data show, Smart Board, software, etc.)	N/A
Other Resources (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)	N/A

G. Course Quality Evaluation

Evaluation Areas/Issues	Evaluators	Evaluation Methods
At the end of the term before getting the final result, each student has to complete an evaluation for course.	each term, the head of the department meets with the department's member to review course effectiveness and plan for improvements	Faculty member of a sample of student work, periodic exchange and remarking of a sample of assignments with a faculty member in another institution)
We usually ask students to freely evaluate our teaching and give their opinions about the course.	each term, the head of the department meets with the department's member to review course effectiveness and plan for improvements	When writing the portfolio of the course, samples of exams and assignments for best, average and weak students are provided.

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	January 1, 2021