هيئة تقويم التعليم والتدريب
Education & Training Evaluation Commission

Course Specifications

Course Title:	**Introduction to Statistics**
Course Code:	**4800142-3**
Program:	➢ **First General Administrative Track.** ➢ **Business Management Students.**
Department:	**Natural Sciences Department.**
College:	**Common First Year Deanship**
Institution:	**Umm Al-Qura University**

Table of Contents

A. Course Identification

1. Credit hours:	3 credit hours - "2 nd Term (Semester) = 2 cr. hrs."
2. Course type	
a.	University ☐ College ☐ Department ■ Others ☐
b.	Required ■ Elective ☐
3. Level/year at which this course is offered:	**the first year common**
4. Pre-requisites for this course (if any)**:**	Types of statistics.
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*16=48	80%
2	**Blended**	2	5%
3	**E-learning**		
4	**Distance learning**		
5	**Other**	4	15%

7. Contact Hours (based on academic semester)

No	Activity	Contact Hours
1	**Lecture**	3*16=48
2	**Laboratory/Studio**	
3	**Tutorial**	16
4	**Others** (specify)	4*16=64
	Total	128

B. Course Objectives and Learning Outcomes

1. Course Description

- a process of quarterly review of the content of the course, through the cards assessment of the decision by the teachers of the course.
- Make some proposals for the amendment, in a manner that is suitable for the developers in the light of the quality standards.
- Use modern teaching methods that limit the use of traditional methods.
- Continues updating for content of lectures as a result of recent achievements and researches in the field.
- Encourage students to deal with the fundamentals of statistics as a conceptual and procedural construct in acquiring more statistics concepts
- Trying to increase the direct theoretical teaching load of the course and putting more time for explaining correlations and student-directed learning sessions and seminars.
- Planning for elective self-studies in the course to encourage students to engage in depth study of areas of

interest.

- More efforts will be exerted to develop and improve the course to enable the student to clearly Understanding the statistics basis.

2. Course Main Objective

- Construct the frequency distribution table and calculate the relative frequency and percentage Distributions of quantitative data.
- Organize and graph the quantitative data.
- Distinguish between the three measures of Tendency: Mean, Median and Mode of ungrouped data.
- Distinguish between the three measures of Dispersion: range, variance and standard deviation for ungrouped data.
- Find mean, variance and standard deviation for grouped data.
- Determine the position of a single value in relation to other values in a sample or a population data set.
- Determination of marginal and conditional probabilities.
- Identifying mutually exclusive, independent and dependent events, as well as complementary events.
- Learn basic of probability. In particular, to recognize the following concepts:

Experiments, outcomes and sample space, Calculating Probability, Marginal and Conditional Probability, Mutually Exclusive Events, Independent and Dependent Events, complementary Events, Intersection of events and Multiplication Rule, Union of Events and Addition Rule, Random Variable, Probability Distribution of Discrete Random Variable, Binomial Distribution, Continuous Probability Distribution, Normal Distribution, Standard Normal Distribution.

3. Course Learning Outcomes

	CLOs	Aligned-PLOs
1	**Knowledge and Understanding**	
1.1	Description of the knowledge to be acquired.	Solve some example during the lecture.
1.2	Know the relationship between population and the sample.	Ask the student to clear the misunderstanding of some Math principles.
1.3	Identify quantitative and qualitative data types.	Discussions with the students, and ask quality question.
1.4	Subject taught using the TEAL (Technology Enabled Active Learning) studio format which utilizes small group interaction and current technology to help students develop intuition about, models of problems.	Quizzes, Mid Term Exam, Final Exam
1.5	The data are organized and represented quantitatively and quantitatively.	
1.6	Know the cumulative frequency distribution and represent its data.	
1.7	Calculation of the mean of the ungrouped and grouped data.	
1.8	Knowledge of the mean and the standard deviation using the random variable continuous and discrete.	
1.9	Subject taught using the TEAL (Technology Enabled Active Learning) studio format which utilizes small group interaction and current technology to help students develop intuition about, models of problems.	

CLOs		Aligned PLOs
2	**Skills :**	
2.1	How to use laws and principles of statistics to understand the subject.	Improvement in the overall performance of the student in consequent examinations during the course.
2.2	How to distinguish different rules in particular in probability.	Interaction of the course and its effect on other courses offered for the students, which can be measured by their feedback.
2.3	Ability to explain the idea with the student own words.	Midterm Exam, Exams.
2.4	Represent the problems mathematically.	Continuous assessment (short quizzes).
2.5	Develop Effective Learning skills.	Homework.
2.6	Develop Problem solving skills.	
2.7	Develop Self-assessment and development.	
2.8	Develop Reading and searching.	
2.9	How to simplify problems and analyze it.	
3	**Values:**	
3.1	Work independently.	Those skills are reflected on the student behavior inside and outside the class. It can be assessed by the feedback from the lecturer regard the student's interaction and behavior.
3.2	The students learn independently and take up responsibility.	Quizzes.
3.3	Following the learner manners and ethics including; commitment, respect and communication with confidence.	Discussion
3.4		Homework.
3.5		Presenting the required research on time and the degree of the quality will show the sense of responsibility.

C. Course Content

No	List of Topics	Contact Hours
1	Lesson 1: Introduction and basic definitions. Lesson 2: Summation notation.	3
2	Lesson 3: Frequency & Relative Frequency Dist. Lesson 4: Graphical representation of qualitative data (Bar graphs- pie charts).	3
3	Lesson 5: Organizing and graphing qualitative data & Histograms. Lesson 6: Cumulative Frequency Distribution.	3
4	Lesson 7: Steam and Leaf display & Dot plots. Lesson 8: Measure of central Tendency.	3
5	Lesson 9: Measures of Dispersion for ungrouped data. Lesson 10: Mean variance and standard deviation for grouped data.	3
6	Lesson 11: Measures of Position.	3
7	Lesson 12: Simple Linear Regressions.	3
8	Lesson 13: Experiments, outcomes and sample space. Revision	3
9	Midterm Exam.	

10	Lesson 14: Calculating Probability, Marginal and Conditional Probability. Lesson 15: Mutually Exclusive Events, Independent and Dependent Events, Complementary Events.	3
11	Lesson 16: Intersections of events and Multiplication Rule Lesson 17: Union of Events and Addition Rule.	3
12	Lesson 18: Random Variable, Probability Distribution of Discrete Random Variable. Lesson 19: Mean, Standard deviation of discrete Random Variable.	3
13	Lesson 20: Factorials, Combinations and Permutations. Lesson 21: Binomial Distributions.	3
14	Lesson 22: Continuous Probability Distribution, Normal Distribution. Lesson 23: Standard Normal Distribution.	3
15	Review2.	3
16	Review3.	3
Final Exam		

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	Description of the knowledge to be acquired.	Provide clear and informative lecture notes with learning objectives that focus on important points.	Solve some example during the lecture.
1.2	Know the relationship between population and the sample.	Give clear, informative, and stimulating 50-minute lectures with PowerPoint or other visual electronic aids to enhance the learning experience for students.	Ask the student to clear the misunderstanding of some Math principles.
1.3	Identify quantitative and qualitative data types.	Answer questions either in or outside class or via e-mail or telephone and Social Media.	Discussions with the students, and ask quality question.
1.4	Subject taught using the TEAL (Technology Enabled Active Learning) studio format which utilizes small group interaction and current technology to help students develop intuition about, models of problems.	Compose thoughtful and fair exam questions that assess student learning and application of the course content.	Quizzes
1.5	The data are organized and represented quantitatively and quantitatively.	Directing the case sessions and facilitators to provide an effective learning experience in small group, team-oriented sessions.	Mid Term Exam.
1.6	Know the cumulative frequency distribution and represent its data.	Providing answers and explanations to student inquiries regarding any aspect of the course.	Final Exam
1.7	Calculation of the mean of the ungrouped and grouped data.	Providing advice and assistance to students for improving their learning	Discussions with the students

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
		strategies and performance in the course.	
1.8	Knowledge of the mean and the standard deviation using the random variable continuous and discrete.	Reviewing and implementing appropriate changes in the course based on student feedback and evaluations.	
1.9	Subject taught using the TEAL (Technology Enabled Active Learning) studio format which utilizes small group interaction and current technology to help students develop intuition about, models of problems.	Also; **Written Homework** There will be one homework handed in on paper each week. To receive full credit for your hardcopy homework handed in, you must prepare and submit lucid and clearly reasoned written solutions. These problems will be graded and returned. **In-class Group and Personal Assignments** In almost all classes, individuals and groups will submit answers to questions done in class, material covered in the lecture in that class, and so on. You must be present in class to receive credit for assignments submitted either by you or by your group. **Group Work** You will be assigned to a group of three for collaborative work. Your group assignment will be announced near the beginning of the term. If you are not satisfied with the way your group is working, first try to discuss it with your group members. If you cannot arrive at a satisfactory solution, then discuss the problems with your instructor. **Tests** There is tests will be given. There will be Midterm and Final exams in the course. The final will be a	

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
		comprehensive exam and will cover all of the subject material, also Quizzes and Problem sets.	
2.0	**Skills**		
2.1	How to use laws and principles of statistics to understand the subject.	Preparing and arrange main outlines for teaching. .	Improvement in the overall performance of the student in consequent examinations during the course.
2.2	How to distinguish different rules in particular in probability.	Homework assignments	Interaction of the course and its effect on other courses offered for the students, which can be measured by their feedback.
2.3	Ability to explain the idea with the student own words.	Ask the student to do small research.	Midterm Exam, Exams.
2.4	Represent the problems mathematically.	Encourage the student to look for the information in different references.	Continuous assessment (short quizzes).
2.5	Develop Effective Learning skills.	Reading the problems carefully.	Homework.
2.6	Develop Problem solving skills.		
2.7	Develop Self-assessment and development.		
2.8	Develop Reading and searching.		
2.9	How to simplify problems and analyze it.		
3.0	**Values**		
3.1	Work independently.	Learn how to search on the internet and use the library.	Those skills are reflected on the student behavior inside and outside the class. It can be assessed by the feedback from the lecturer regard the student's interaction and behavior.
3.2	The students learn independently and take up responsibility.	Learn how to cover missed lectures	Quizzes.
3.3	Following the learner manners and ethics including; commitment, respect and communication with confidence.	Learn how to collect materials of the course.	Discussion
3.4		Learn how to solve difficulties in learning: solving problems – enhance educational skills.	Homework.
3.5		Develop the interest in statistics.	Presenting the required research on time and the degree of the quality will show the sense of responsibility.
3.6		Encourage the student to attend lectures regularly	

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
		by: ➢ Giving bonus marks for attendance ➢ Assigning marks for attendance. ➢ Give students tasks of duties.	

2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	Problem sets (Quizzes +Homework).	Around the semester.	10%
2	Midterm Exam	8	30%
3	Test the work of the year	13	15%
4	Final Exam	16	45%

***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 :

➢ The student has the right to contact the lecturer or coordinators by their e-mails or during their office hours for academic advices or consultations.

F. Learning Resources and Facilities

1.Learning Resources

Required Textbooks	Introductory Statistics (Seventh Addition) by Prem S. Mann. Statistics for dummies, 2nd Edition by Deborah Rumsey, Wiley Publishing, Inc.
Essential References Materials	https://www.khanacademy.org/math/statistics-probability/designing-studies/types-studies-experimental-observational/v/types-of-statistical-studies?modal=1.
Electronic Materials	➢ https://www.alfreed-ph.com/2019/02/Introduction-to-Statistics-pptx.html. ➢ https://www.alfreed-ph.com/2018/03/pdf_13.html. ➢ https://www.khanacademy.org/math/statistics-probability
Other Learning Materials	➢ http://en.wikipedia.org/wiki/ Statistics .

2. Facilities Required

Item	Resources
Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)	Audio-visual equipment for teaching (projector, microphones, speakers, board.
Technology Resources (AV, data show, Smart Board, software, etc.)	None
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
Reviewing and implementing appropriate changes in the course based on the student feedback and evaluations.	Students	Discussion.
Regular meeting with the staff to review the course effectiveness	Faculty	Brainstorming.
	Evaluation questionnaires of the staff at the end of the semester.	Oriented Discovery.

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	Vice Dean of Common First Year for Academic Affairs, Dr Ahmad Fawzi Arbaeen
Reference No.	_
Date	27/3/2022