

**T6. COURSE SPECIFICATIONS
(CS)**

Course Specifications

Institution: Umm Al-Qura University	Date: 2019
College/Department: Deanship of the first year common, Natural Sciences Department.	

A. Course Identification and General Information

1. Course title and code: Introduction to Statistics, 4800142-3			
2. Credit hours: 3 credit hours - “2 nd Term (Semester) = 2 cr. hrs.”			
3. Program(s) in which the course is offered. (If general elective available in many programs indicate this rather than list programs)			
<ul style="list-style-type: none"> ➤ First General Administrative Track. ➤ Business Management Students. 			
4. Name of faculty member responsible for the course: Members of staff.			
5. Level/year at which this course is offered: the first year common			
6. Pre-requisites for this course (if any): Types of statistics.			
7. Co-requisites for this course (if any): None.			
8. Location if not on main campus: Main Campus.			
9. Mode of Instruction (mark all that apply):			
a. traditional classroom	<input type="text" value="1"/>	What percentage?	<input type="text" value="80%"/>
b. blended (traditional and online)	<input type="text" value="1"/>	What percentage?	<input type="text" value="5%"/>
c. e-learning	<input type="text"/>	What percentage?	<input type="text"/>
d. correspondence	<input type="text"/>	What percentage?	<input type="text"/>
f. other	<input type="text" value="1"/>	What percentage?	<input type="text" value="15%"/>
Comments:			
<ul style="list-style-type: none"> ➤ Exchange of experiences among faculty members who contribute in teaching the same course about the course's vocabulary, requirements and references. ➤ To benefit from the experiences of other universities inside and outside the Kingdom in teaching this course in terms of its objectives and vocabulary. 			

B Objectives

1. What is the main purpose for this course?

- 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

2. Briefly describe any plans for developing and improving the course that are being implemented. (e.g. increased use of IT or web based reference material, changes in content as a result of new research in the field)

- 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.

C. Course Description (Note: General description in the form used in Bulletin or handbook)

Course Description:

1. Topics to be Covered

No. of Weeks	Contact hours	List of Topics
1	3	Lesson 1: Introduction and basic definitions.
		Lesson 2: Summation notation.
2	3	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.
4	3	Lesson 7: Steam and Leaf display & Dot plots.
		Lesson 8: Measure of central Tendency.
5	3	Lesson 9: Measures of Dispersion for ungrouped data.
		Lesson 10: Mean variance and standard deviation for grouped data.
6	3	Lesson 11: Measures of Position.
7	3	Lesson 12: Simple Linear Regressions.
8	3	Lesson 13: Experiments, outcomes and sample space.
		Revision
9		Midterm Exam.
10	3	Lesson 14: Calculating Probability, Marginal and Conditional Probability.
		Lesson 15: Mutually Exclusive Events, Independent and Dependent Events, Complementary Events.
11	3	Lesson 16: Intersections of events and Multiplication Rule
		Lesson 17: Union of Events and Addition Rule.
12	3	Lesson 18: Random Variable, Probability Distribution of Discrete Random Variable.
		Lesson 19: Mean, Standard deviation of discrete Random Variable.
13	3	Lesson 20: Factorials, Combinations and Permutations.
		Lesson 21: Binomial Distributions.
14	3	Lesson 22: Continuous Probability Distribution, Normal Distribution.
		Lesson 23: Standard Normal Distribution.
15	3	Review2.
16		Final Exam

2. Course components (total contact hours and credits per semester):							
		Lecture	Tutorial	Laboratory/ Studio	Practical	Other: Office hours	Total
Contact Hours	Planned	3*16= 48	16			6*15= 80	128
	Actual	3*16= 48	16			6*15= 80	128
Credit	Planned						
	Actual						

3. Additional private study/learning hours expected for students per week.	30 hour
<p>➤ To carry out the duties and to review and prepare the subjects of the course.</p>	

4. Course Learning Outcomes in NQF Domains of Learning and Alignment with Assessment Methods and Teaching Strategy.
<p>➤ A brief summary of the knowledge or skill the course is intended to develop;</p> <p>➤ A description of the teaching strategies to be used in the course to develop that knowledge or skill;</p> <p>➤ The methods of student assessment to be used in the course to evaluate learning outcomes in the domain concerned.</p>

On the table below are the five NQF Learning Domains, numbered in the left column.

First, insert the suitable and measurable course learning outcomes required in the appropriate learning domains (see suggestions below the table). **Second**, insert supporting teaching strategies that fit and align with the assessment methods and intended learning outcomes. **Third**, insert appropriate assessment methods that accurately measure and evaluate the learning outcome. Each course learning outcomes, assessment method, and teaching strategy ought to reasonably fit and flow together as an integrated learning and teaching process. (Courses are not required to include learning outcomes from each domain.)

Code #	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
1.0	Knowledge		
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 qualitatively.	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 strategies and performance in the course.	Discussions with the students
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.	<p>Also;</p> <p>Written Homework</p> <p>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.</p> <p>In-class Group and Personal Assignments</p> <p>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.</p>	

		<p>Group Work</p> <p>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.</p> <p>Tests</p> <p>There is tests will be given. There will be Midterm and Final exams in the course. The final will be a comprehensive exam and will cover all of the subject material, also Quizzes and Problem sets.</p>	
2.0	Cognitive 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	Interpersonal Skills & Responsibility		
3.1	Work independently.	Learn how to search on the internet and use the library.	Those skills are reflected on the student behaviour inside and outside the class. It can be assessed by the feedback from the lecturer regard the student's interaction and behaviour.
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 by: <ul style="list-style-type: none"> ➤ Giving bonus marks for attendance ➤ Assigning marks for attendance. ➤ Give students tasks of duties. 	
4.0	Communication, Information Technology, Numerical		
4.1	Computation and designing presentations.	Know the basic statistical principles.	Their interaction with the lectures and discussions.

4.2	Problem solving.	Use the web for research.	The reports of different asked tasks.
4.3	Data analysis and interpretation.	Discuss with the students	Research.
4.4	Enhance the ability to use the search engines.	Exams to measure the statistical skill.	Comments on some resulting numbers.
4.5		Clear the weakness points that should be eliminated.	Results of computations and analysis.
4.6		Encourage the student to ask for help if needed.	Homework, Problem solutions assignment and exam should focus on the understanding.
4.7		Encourage the student to ask good questions to help solve the problem.	
4.8		Display the lecture note and homework assignment at the web.	
5.0	Psychomotor		
5.1	Contributions in the improvement of statistics education level.	Provide the role and the fundamental of Calculus for students.	It is not included in the overall assessment of the students.
5.2		Develop basic skills and techniques for the study of Math.	

5. Schedule of Assessment Tasks for Students During the Semester			
	Assessment task (i.e., essay, test, quizzes, group project, examination, speech, oral presentation, etc.)	Week Due	Proportion of Total Assessment
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%
Total Assessment		100%	

D. Student Academic Counseling and Support

1. Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice. (include amount of time teaching staff are expected to be available each week)

- 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.

E Learning Resources

1. List Required Textbooks
<ul style="list-style-type: none"> ➤ Introductory Statistics (Seventh Addition) by Prem S. Mann. ➤ Statistics for dummies, 2nd Edition by Deborah Rumsey, Wiley Publishing, Inc.
2. List Essential References Materials (Journals, Reports, etc.)
<ul style="list-style-type: none"> ➤ https://www.khanacademy.org/math/statistics-probability/designing-studies/types-studies-experimental-observational/v/types-of-statistical-studies?modal=1.
3. List Electronic Materials, Web Sites, Facebook, Twitter, etc.
<ul style="list-style-type: none"> ➤ 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.
4. Other learning material such as computer-based programs/CD, professional standards or regulations and software.
<ul style="list-style-type: none"> ➤ http://en.wikipedia.org/wiki/calculus.

F. Facilities Required

Indicate requirements for the course including size of classrooms and laboratories (i.e. number of seats in classrooms and laboratories, extent of computer access, etc.)
1. Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)
<ul style="list-style-type: none"> ➤ Audio-visual equipment for teaching (projector, microphones, speakers, board.
2. Technology resources (AV, data show, Smart Board, software, etc.)
None
3. Other resources (specify, e.g. if specific laboratory equipment is required, list requirements or attach list)
None

G Course Evaluation and Improvement Processes

1. Strategies for Obtaining Student Feedback on Effectiveness of Teaching ➤ Evaluation questionnaires of the staff at the end of the semester.
2. Other Strategies for Evaluation of Teaching by the Instructor or by the Department ➤ discussion. ➤ Brainstorming. ➤ Oriented Discovery.
3. Processes for Improvement of Teaching ➤ Reviewing and implementing appropriate changes in the course based on the student feedback and evaluations.
4. Processes for Verifying Standards of Student Achievement (e.g. check marking by an independent member teaching staff of a sample of student work, periodic exchange and remarking of tests or a sample of assignments with staff at another institution) None
5. Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement. ➤ Regular meeting with the staff to review the course effectiveness.

Name of Course Instructor: _____

Signature: _____ Date Specification Completed: _____

Program Coordinator: _____

Signature: _____ Date Received: _____