جامعة الزيتونة الأردنية

Al-Zaytoonah University of Jordan

Course Syllabus

According to JORDAN National Qualification Framework (JNQF)

Course Name: Applied Statistics

Course Number: 0101443

General Course Information:

Course Title	Applied Statistics
Course Number	0101443
Credit Hours	3 credit hours
Education Type	Traditional learning
Prerequisites/Co-requisites	0101341
Academic Program	BS.c
Program Code	0101
Faculty	Faculty of Information Technology
Department	Mathematics
Level of Course	4
Academic Year /Semester	2023/2024 2st Semester
Awarded Qualification	BS'c
Other Department(s) Involved in Teaching the Course	-
Language of Instruction	English
Date of Production	2021-2022
Date of Revision	October 2023

Course Coordinator:

Coordinator's Name	Dr. Ma'mon Abu Hammad
Office No.	9319
Office Phone Extension Number	
Office Hours	11-12:30 Sunday- Tuesday. 9:30-11 Monday- Wednesday.
E-mail	m.abuhammad@zuj.edu.jo

Other Instructors:

Instructor Name	NA
Office No.	
Office Phone Extension Number	
Office Hours	
Email	

Course Description *(English/Arabic)*:

English	*In this course we study the elements of testing hypotheses, statistical inference about one and two population parameters. Simple and multiple regression, correlation coefficient, the analysis of variance of one and two-factor experiments, the Latin squares, Chi square test for homogeneity, independences, and goodness of fit.*
Arabic	*ندرس في هذا المساق عناصر اختبار الفرضيات والاستدلال الإحصائي حول معلمة واحدة أو معلمتين من المجتمع. الانحدار البسيط والمتعدد، معامل الارتباط، تحليل التباين للتجارب ذات العامل الواحد والعاملين، المربعات اللاتينية، اختبار مربع كاي للتجانس، الاستقلال، وجودة الملاءمة.*

Textbook: *Author(s), Title, Publisher, Edition, Year, Book website.*

Charles H. Brase and CorrineP. Brase,Understandable Statistics, Houghton Mifflin Company, seventh edition, 2003.

References: *Author(s), Title, Publisher, Edition, Year, Book website.*

1. John E. Freund's, Mathematical statistics with applications, Pearson Prentice Hall, seventh edition, (2004).
2. Devore, Jay,L. and Berk, Kenneth,N. ,Modern Mathematical Statistics with Applications. Publisher Thomson Brooks/Cole 2007.
3. Dennis Wackerly, William Mendenhall and Richard Schaeffer, Mathematical Statistics with applications, Publisher Thomson Brooks/Cole, 7th edition, 2008.

Course Educational Objectives (CEOs):

CEO1	Develop a solid understanding of fundamental statistical concepts, including data types, measures of central tendency, and measures of variability.
CEO2	Understand and apply regression analysis to model relationships between variables and make predictions.
CEO3	Develop practical skills in using statistical software tools SPSS.

Intended Learning Outcomes (ILO's):

Intended learning outcomes (ILOs)		Relationship to CEOs	Contribution to PLOs	Bloom Taxonomy Levels*	JNQF Descriptors**
K	Knowledge and Understanding				
1. ILO1-k	Recognize the analysis of variance (ANOVA).	3	PLO4-k	Evaluating	K
S	Intellectual skills				
2. ILO2-s	Analyze statistical problems.	1,2	PLO6-s	Applying	S
3. ILO3-s	Write the statistic report.	1,2	PLO6-s	Understanding	S
4. ILO4-s	Outline two-way analysis of variance.	3	PLO9-s	Analyzing	S
C	Subject specific skills				
5. ILO5-c	Use of programming languages such as SPSS to solve problems.	2,3	PLO12-c	Applying	C
6. ILO6-c	Use of computer in producing assignments.	3	PLO12-c	Analyzing	C

***Bloom Taxonomy Levels:**

Level #	1	2	3	4	5	6
Level Name	Remembering	Understanding	Applying	Analyzing	Evaluating	Creating

**** Descriptor (National Qualification Framework Descriptors): K: Knowledge, S: Skill, C: Competency.**

Program Learning Outcome (PLOs):

	(PLOs)	JNQF Descriptors**		
		K	S	C
1.	Knowledge of the main concepts in pure mathematics.	√		
2.	Knowledge of the main concepts in applied mathematics.	√		
3.	Explain concepts, principles and theories in the fields of probability and statistics.	√		
4.	Possession of technological culture related to the fields of mathematics and its applications.	√		
5.	Making use of mathematical logic in practical life.		√	
6.	Engaging scientific methodology as a way of thinking and as a tool in facing problems.		√	
7.	Applying mathematical software packages in problem solving.		√	
8.	Being capable of data analysis.		√	
9.	Capability of teaching according to modern educational techniques.		√	
10.	Develop creative and innovative methods of teaching mathematics.		√	
11.	Showing the ability to work under ethical and professional standards within teams.			√
12.	Gaining critical thinking and scientific research skills.			√

**** Descriptors according to the national qualifications framework (K: knowledge, S: skill, C: Competency)**

Weekly Schedule *(please choose the type of teaching)*

- ☒ **Face to Face (F2F)**
- ☐ **Hybrid** *(One – To - One)*
- ☐ **Online**

Schedule of Simultaneous and their Topics:

Week	First Lecture (F2F)	Second Lecture (F2F)	ILOs	PLOs	JNQF Descriptors*
1	Elements of testing hypotheses	statistical inference about one population parameters. SPSS	ILO1-k	PLO4-k	K
2	statistical inference about two population parameters.	statistical inference about two population parameters. SPSS .	ILO1-k	PLO4-k	K
3	Chi square test for homogeneity	Chi square test for homogeneity, SPSS.	ILO1-k	PLO4-k	K
4	Chi square test for	Chi square test	ILO1-k	PLO4-k	K

	independences.	for independences. SPSS.			
5	Chi square test for goodness of fit.	Chi square test for goodness of fit. SPSS	ILO2-s	PLO6-s	**S**
6	The analysis of variance of one factor experiments.	The analysis of variance of one factor experiments. SPSS	ILO3-s	PLO9-s	**S**
7	The analysis of variance of two-factor experiments.	The analysis of variance of two-factor experiments. SPSS	ILO2-s	PLO9-s	**S**
Midterm Exam (30%)					
9	Simple and multiple regression	Simple and multiple regression	ILO1-k	PLO4-k	K
10	Simple and multiple regression SPSS	Simple and multiple regression SPSS	ILO1-k	PLO1-k	k
11	Test the intercept of linear regression.	Test the intercept of linear regression. SPSS	ILO2-s	PLO6-s	**S**
12	Test the slope of linear regression.	Test the slope of linear regressio n. SPSS	ILO4-s	PLO9-s	**S**
13	testing hypotheses, Neman-Pearson lemma	testing hypotheses, Neman-Pearson lemma	ILO1-k	PLO1-k	k
14	correlation coefficient	correlation coefficient SPSS	ILO1-k	PLO1-k	k
15	Test the correlation coefficient of population.	Test the correlation coefficient of population. PSS.	ILO4-c ILO5-c	PLO12-c	C
16	**Final Exam (40%)**				

* **K: Knowledge, S: Skills, C: Competency**

Teaching Methods and Assignments:

Development of ILOs is promoted through the following teaching and learning methods:

- Lecture.
- SPSS PROGRAMMING.

Course Policies:

A- Attendance policies:
The maximum allowed absences is 15% of the lectures.
B- Absences from exams and handing in assignments on time:
Midterm exam can be retaken based on approval of excuse by the instructor's discretion.
Not handing assignment on time will incur penalties.
C- Academic Health and safety procedures
D- Honesty policy regarding cheating, plagiarism, and misbehaviour:
Cheating, plagiarism, misbehaviour will result in zero grade and further disciplinary actions may be taken.
E- Grading policy:

- All homework is to be posted online through the e-learning system.
- Exams will be marked within 72 hours and the marked exam papers will be handed to the students.
- Online Activities (Course Videos, Practice labs, Discussion Forums, Quizzes) 3**0%**
- Midterm **30 %**
- Final Exam **40 %**

F- Available university services that support achievement in the course: **E-Learning Platform, Labs, Library.**

Required Equipment:

- Classroom
- E-learning plan
- Lap

Assessment Tools Implemented in the Course:

- Final Exam
- Midterm Exam
- Quizzes
- Homework

Responsible Persons and their Signatures:

Course Coordinator		**Completed Date**	/ /
		Signature	

Received by (Department Head)		**Received Date**	/ /
		Signature	