



Jordan University of Science and Technology
Faculty of Agriculture
Animal Production Department

AP701 Experimental Design & Statistical Analysis - JNQF Level: 9

First Semester 2024-2025

Course Catalog

3 Credit Hours. The goal of this course is to present a variety of experimental designs, its advantages, disadvantages, and the uses of each type of design, to outline the procedure for constructing the design, and to consider the analysis and interpretation of data from each type. This course provides statistical and biometrical procedures for designing, conducting, analyzing, and interpreting field experiments addressing the most important research topics in agriculture.

Teaching Method: On Campus

Text Book

Title	Agriculture experimentation design and analysis
Author(s)	Little T.M. and F.J. Hills
Edition	1st Edition
Short Name	Ref#1
Other Information	

Course References

Short name	Book name	Author(s)	Edition	Other Information
Ref#2	Experimental design and analysis	Lentner M. and T. Bishop	2nd Edition	
Ref#3	Principles and procedures of statistics	Steel R.G. and J. H. Torrie	3rd Edition	
Ref#4	Agricultural field experiments ?design and analysis?.	Peterson R.G	4th Edition	

Instructor

Name	Dr. Mohammad Diya' Obeidat
Office Location	M1L3

Office Hours	
Email	mdobeidat@just.edu.jo

Class Schedule & Room
Section 1: Lecture Time: Mon, Wed : 11:30 - 13:00 Room: U

Tentative List of Topics Covered		
Weeks	Topic	References
Week 1	Introduction, Definition, importance of Expt. Design, types of experiments, steps in experimentation?.	From Ref#1
Week 2	Some basic concepts. (Normal distribution, statistical notation, t-distribution, confidence Limits, f-distribution?.)	From Ref#1 , From Ref#2 , From Ref#3 , From Ref#4
Week 3	Analysis of variance and t-test, the completely randomize design (CRD).	From Ref#4
Week 4	Means separation (LSD, DMRT, trend comparison, class comparison, orthogonal contrast?.).	From Ref#4
Week 5	The randomized complete block design (RCBD).	From Ref#1
Week 6	The completely randomize design with sub sampling.	From Ref#2
Week 7	Latin squire design	From Ref#2
Week 8	Factorial experiments in CR Design.	From Ref#1 , From Ref#4
Week 9	Factorial experiments in RCB Design.	From Ref#4
Week 10	Split-plot Design, Split-split-plot Design.	From Ref#1 , From Ref#2 , From Ref#4
Week 11	Repeated measurements design.	From Ref#4

Week 12	Correlation and regression, agronomic trials, variety trials, pasture trials?..	From Ref#1, From Ref#2, From Ref#3, From Ref#4
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Mapping of Course Outcomes to Program Outcomes and NQF Outcomes	Course Outcome Weight (Out of 100%)	Assessment method
Acquire a comprehensive understanding of the theoretical concepts of experimental design, including randomization, replication, and blocking, as applied to agricultural research. [1L9K1]	20%	
Demonstrate the ability to design robust agricultural experiments that effectively address specific research questions, utilizing appropriate methodologies and statistical techniques. [1L9C1, 1L9C3, 1L9C6]	20%	
Evaluate and critique existing agricultural research studies, identifying strengths and weaknesses in experimental design to foster a deeper understanding of best practices in the field. [1L9C1, 1L9C2, 1L9C3, 1L9C5, 1L9C6]	20%	
Acquire skills in analyzing experimental data using advanced statistical software, enabling them to interpret results accurately and make informed decisions based on empirical evidence. [1L9S1, 1L9S3]	20%	
Develop effective communication skills to present experimental findings and research proposals clearly and persuasively to diverse audiences, including academic, industry, and policy stakeholders. [1L9S2, 1L9S3]	20%	

Relationship to Program Student Outcomes (Out of 100%)								
SLO 1	SLO 2	SLO 3	SLO 4	M.PLO1	M.PLO2	M.PLO3	M.PLO4	M.PLO5

Relationship to NQF Outcomes (Out of 100%)								
L9K1	L9S1	L9S2	L9C1	L9C2	L9C3	L9C5	L9S3	L9C6
20	10	10	10.67	4	10.67	4	20	10.67

Policy	
Exams	Written exams will be a combination of True and False, Multiple Choice, fill in the blank, problems, and short essay questions. No makeup exams unless the student is excused. Makeup exams will not be the same exam given to the rest of the class
Cheating	Prohibited; and in case of cheating the student will be subject to punishment according to the rules of JUST
Attendance	According to the Just policy: 20% of the total class count
Participation	Essential and highly encouraged

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