Course Description Form

1. Course Name:
Design and Analysis of Agricultural Experiment
2. Course Code:
DAAE302
3. Semester / Year:
2023 – 2024 Second Semester (Spring).
4. Description Preparation Date:
1 / 2 / 2025
5. Available Attendance Forms:
Attendance
6. Number of Credit Hours (Total) / Number of Units (Total)
75 hours (2 theoretical, 3 practical) / 3.5 units
7. Course administrator's name (mention all, if more than one name)
Name: Khalid Mohammed Dawod / Ahmed Majeed Abdulaah Email: khalid.dawod@uomosul.edu.iq / ahmed3079@uomosul.edu.iq
8. Course Objectives

Course Objectives	• Enable the student to understand, comprehend and identify the types of designs used in agricultural experiments. • Selection of results after analysis to reach superior coefficients. • Identify the types of tests that are performed before and after the experiment

9. Teaching and Learning Strategies

Strategy	- Interactive lectures. - Dialogue and discussion. - Brainstorming. - Reports and homework. - Scientific visits.

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10. Course Structure

Week	Hours	Code	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	Theoretical (2)	a1	Recalls statistical symbols and measures of mediation and dispersion	General statistical review	Interactive lecture and brainstorming, dialogue, and discussion	Quiz
	Practical (3)	b5	Performs a general statistical review	General statistical review	Interactive lecture and brainstorming, dialogue, and discussion	Quiz

2	**Theoretical (2)**	b1 Shows the concept of experimental design and some definitions related to the design and analysis of experiments	definitions Full random design, complete random sectors, and Latin square	Interactive lecture and brainstorming, dialogue, and discussion	Quiz
	Practical (3)	a3 Recalls the types of designs used in agricultural experiments	Types of designs used in agricultural experiments	Interactive lecture and brainstorming, dialogue, and discussion	Quiz
3	**Theoretical (2)**	c1 Demonstrates what a complete random design is	Complete Randomized Design (CRD)	Interactive lecture and brainstorming, dialogue, and discussion	Quiz
	Practical (3)	b6 the complete random design CRD	Complete Randomized Design (CRD)	Interactive lecture and brainstorming, dialogue, and discussion	Quiz
4	**Theoretical (2)**	c2 shows the equation of the mathematical model and estimates the components of the mathematical variance	Equation of the mathematical model and estimation of its components	Interactive lecture and brainstorming, dialogue, and discussion	Quiz
	Practical (3)	c6 the components of variance	Variance Components	Interactive lecture and brainstorming, dialogue, and discussion	Quiz Homework
5	**Theoretical (2)**	d1 Demonstrates the advantages and disadvantages of designing complete random Blocks	Randomized Complete Design	Interactive lecture and brainstorming, dialogue, and discussion	Quiz
	Practical (3)	c7 Shows what is the design of complete random blocks RCBD	Randomized Complete Design	Interactive lecture and brainstorming, dialogue, and discussion	Quiz Homework
6	**Theoretical (2)**	d2 Organizes and analyzes a table of statistical data	of contrast components – missing observations – Relative efficiency of design	Interactive lecture and brainstorming, dialogue, and discussion	1st Exam
	Practical (3)	b7 Identifies methods of data collection and analysis statistically	Variation Components – Estimating Missing Observation Values – Estimating the Relative Efficiency of Design	Interactive lecture and brainstorming, dialogue, and discussion	1st Exam
7	**Theoretical (2)**	b2 Enumerates the advantages and disadvantages of the Latin square	Latin Square Design	Interactive lecture and brainstorming, dialogue, and discussion	Quiz Homework
	Practical (3)	b8 Shows what is the design of the Latin LSD box	LSD Latin Square Design	Interactive lecture and brainstorming, dialogue, and discussion	Quiz
8	**Theoretical (2)**	a2 Explains how to use the three designs in field experiments	Visit the Field Crops Department Research Station to learn about the designs used in the experiments	Interactive lecture and brainstorming, dialogue, and discussion	Quiz Homework
	Practical (3)	c8 Visits the research station of the field crops department to learn about the designs used in agricultural experiments	Visit the field crops research station to learn about the designs used in agricultural experiments	Interactive lecture and brainstorming, dialogue, and discussion	Quiz
9	**Theoretical (2)**	c3 Distinguish between methods of testing averages	of comparisons between averages of transactions	Interactive lecture and brainstorming, dialogue, and discussion	Quiz
	Practical (3)	d5 Uses methods of testing and comparing averages	of testing and comparing averages	Interactive lecture and brainstorming, dialogue, and discussion	Quiz Homework
10	**Theoretical (2)**	d3 Shows what factorial experiments are and when to use	efficiency and lost viewing of LSD design	Interactive lecture and brainstorming, dialogue, and discussion	Quiz Report
	Practical (3)	c9 the first part of factor experiments	first part of factorial experiments	Interactive lecture and brainstorming, dialogue, and discussion	Quiz
11	**Theoretical (2)**	b3 Explains factor experiments and what is the concept of interaction between factors	first part of factorial experiments	Interactive lecture and brainstorming, dialogue, and discussion	Quiz Report
	Practical (3)	d6 The second part of the factor experiments shows	second part of factorial experiments	Interactive lecture and brainstorming, dialogue, and discussion	Quiz

12	**Theoretical (2)**	c4 Determines how data is collected and tabulated for the purpose of statistical analysis	second part of factorial experiments	Interactive lecture and brainstorming, dialogue, and discussion	Quiz
	Practical (3)	b9 Suggests a method for collecting and analyzing data statistically	collection and analysis statistically	Interactive lecture and brainstorming, dialogue, and discussion	Quiz
13	**Theoretical (2)**	b4 Demonstrates the importance of interference in factorial experiments	Interaction in factor experiments	Interactive lecture and brainstorming, dialogue, and discussion	Quiz
	Practical (3)	a4 Recognizes the overlap between factors through a table of analysis of variance and graph	Interaction between factors through Anova table and graph	Interactive lecture and brainstorming, dialogue, and discussion	Quiz
14	**Theoretical (2)**	c5 Determines when to use splinter plate system factor experiments	Split-plot Experiments	Interactive lecture and brainstorming, dialogue, and discussion	2nd Exam
	Practical (3)	a5 experiments with splinter plate system	Split-plot Experiments	Interactive lecture and brainstorming, dialogue, and discussion	2nd Exam
15	**Theoretical (2)**	d4 Organizes a report on how to take measurements of traits	How to take measurements of traits and put them in tables	Interactive lecture and brainstorming, dialogue, and discussion	Write a report
	Practical (3)	b10 Writes a report on how measurements of traits are taken in the field and placed in tables	How to take measurements of traits in the field and put them in tables	Interactive lecture and brainstorming, dialogue, and discussion	Write a report

11. Course Evaluation

No.	Evaluation Methods	Evaluation Date (week)	Degrees	Relative weight
1	A report 1	fourth week	2.5	2.5
2	A report 2	fifth week	2.5	2.5
3	Short test (1) Quiz	sixth week	2	2
4	Short test (2) Quiz	The fourteenth week	2	2
5	Short test (3)	The fifteenth week	1	1
6	semester test (1)	sixth week	7.5	7.5
7	semester test (2)	eleventh week	7.5	7.5
8	Final theoretical test	Final theoretical exam	40	40
9	Practical field project	The fifteenth week	5	5
10	Laboratory evaluation	third and fifth week	2	2
11	Practical short test (1) Quiz	First week	1	1
12	Practical short test (2) Quiz	fourth week	0.5	0.5
13	Practical short test (3) Quiz	The fourteenth week	1	1
14	Live drawings and homework	6,8,9,10,11,12,13 weeks	5.5	5.5
15	Final practical test	Final practical exam	20	20
	Total		100	100%

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Book of Design and Analysis of Agricultural Experiments - Khasha Mahmoud Al-Rawi and Abdul Aziz Muhammad Khalaf Allah 2000
Main references (sources)	Book of Statistical Methods in Agricultural Experiments - Khaled Muhammad Dawood and Zaki Abdel Elias 1990

Recommended books and references (scientific journals, reports...)	Lectures in Probability and Statistics: Lectures given at the Winter School in Probability and Statistics held in Santiago de Chile
Electronic References, Websites	https://www.statista.com/

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Theoretical Lecturer	Practical Lecturer	Chairman of the Scientific Committee	Head of Department
Prof. Khaled Mohamed Dawod	Mr. Ahmed Majeed Abdullah	Prof. Adel Ahmed Abdullah	Assist Prof. Noufal Issa Muhammed