Course Description Form

1. Course Name:
Statistical
2. Course Code:
STAT109
3. Semester / Year:
2023/2024 First semester (Autumn)
4. Description Preparation Date:
1/2/2024
5. Available Attendance Forms:
Attended
6. Number of Credit Hours (Total) / Number of Units (Total)
2 Theoretical + 3 Practical / 3.5 Unit
7. Course administrator's name (mention all, if more than one name)
Name: Dr. Zaid Mohammed Talal Alhabbar Email: zaid.alhabbar@uomosul.edu.iq
8. Course Objectives
• Knows the science of statistics and its types, and also differentiates between descriptive statistics and inferential or inferential statistics • Explains what descriptive variables are and recognizes the difference between a sample and a population • Organize and draw a frequency distribution table and identify its parts • Organizes a table of relative frequency distribution and ascending and descending grouping • He finds the arithmetic mean - and learns about the properties of the arithmetic mean • Works on how to find the range, mean deviation, variance, and standard deviation • Distinguish the difference between permutations, combinations and a random experiment • Expresses the components of discrete probability distributions • Identify the statistical hypothesis, the null hypothesis, and the alternative hypothesis - compare the types of error • Learn about the T-test and the Z-test and the difference between them • Learn how to perform the chi-square test steps • Learn about correlation, regression, correlation coefficient, regression, and the properties of each
9. Teaching and Learning Strategies

Theoretical:	Practical
• Interactive lecture • Brainstorming • Dialogue and discussion • Assigning tasks and reporting	• Assigning group work to reveal leadership skills • Assigning tasks and a report for each lecture

• The student is assigned to prepare reports based on his own diligence and prepared for discussion with the students	

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2 Theoretical + 3 Practical	a1: Knows the science of statistics and its types, and also distinguishes between descriptive statistics and inferential statistics a7: Differentiate between descriptive and inferential statistics, as the most important statisticians in the twentieth century remember	Theoretical: Statistics, its definition and types Practical: Solve mathematical exercises on the topic	Theoretical: auditory methods Style of writing on the blackboard Direct dialogue style Practical: Assigning tasks and reporting	Short exams, assignment of duties, discussions
2	2 Theoretical + 3 Practical	a2: Explains what descriptive variables are and recognizes the difference between a sample and population a8: Compares quantitative variables and descriptive variables It also distinguishes between the population and the sample, giving examples of each	Theoretical: The nature and types of statistical data Practical: Solve mathematical exercises on the topic	Theoretical: auditory methods Style of writing on the blackboard Direct dialogue style Practical: Assigning tasks and reporting	Short exams, assignment of duties, discussions
3	2 Theoretical + 3 Practical	c1: Organize and draw a frequency distribution table and identify its parts b2: Organizes a frequency distribution table and identifies its components. He also experiments with finding the ascending and descending group frequencies	Theoretical: tabular presentation and graphical representation Practical: Solve mathematical exercises on the topic	Theoretical: auditory methods Style of writing on the blackboard Direct dialogue style Practical: Assigning tasks and reporting	Short exams, assignment of duties, discussions
4	2 Theoretical + 3 Practical	c2: Organizes table the relative frequency distribution and ascending and descending grouping	Theoretical: Types of frequency distribution tables and how	Theoretical: auditory methods Style of writing on the	Short exams, assignment of duties, discussions

		b3: Calculates the arithmetic mean, geometric mean, and harmonic mean. It also determines the squared mean, median, and mode.	to draw them Practical: Solve mathematical exercises on the topic	blackboard Direct dialogue style Practical: Assigning tasks and reporting	
5	2 Theoretical + 3 Practical	b1: Finds the arithmetic mean - and learns about the properties of the arithmetic mean c6: The range law, mean deviation, variance of the mean deviation, and standard deviation are applied to the classified and unclassified data	Theoretical: Measures of concentration or mediation Practical: Solve mathematical exercises on the topic	Theoretical: auditory methods Style of writing on the blackboard Direct dialogue style Practical: Assigning tasks and reporting	Short exams, assignment of duties, discussions
6	2 Theoretical + 3 Practical	c3: Works out how to find the range, mean deviation, variance, and standard deviation c7: Explains probability theory for random experiment, sample space, and mutually exclusive events with solving examples	Theoretical: measures of dispersion or difference Practical: Solve mathematical exercises on the topic	Theoretical: auditory methods Style of writing on the blackboard Direct dialogue style Practical: Assigning tasks and reporting	Short exams, assignment of duties, discussions
7	2 Theoretical + 3 Practical	c4: Distinguish the difference between permutations, combinations and a random experiment b4: Explains the variables of the binomial distribution law	Theoretical: Principles of probability theory Practical: Solve mathematical exercises on the topic	Theoretical: auditory methods Style of writing on the blackboard Direct dialogue style Practical: Assigning tasks and reporting	Short exams, assignment of duties, discussions
8	2 Theoretical + 3 Practical	c5: Expresses the components of discrete probability distributions c8: Explains the null hypothesis and the alternative hypothesis and compares them	Theoretical: Piecewise probability distributions Practical: Solve mathematical exercises on the topic	Theoretical: auditory methods Style of writing on the blackboard Direct dialogue style Practical: Assigning tasks and reporting	Short exams, assignment of duties, discussions

9	2 Theoretical + 3 Practical	a3: Recognizes the statistical hypothesis, the null hypothesis, and the alternative hypothesis - compares the types of error b5: Shows the T test "T-test" and shows the Z test "Z-test"	Theoretical: Hypothesis testing Practical: Solve mathematical exercises on the topic	Theoretical: auditory methods Style of writing on the blackboard Direct dialogue style Practical: Assigning tasks and reporting	Short exams, assignment of duties, discussions
10	2 Theoretical + 3 Practical	a4: Learn about the T-test and the Z-test and the difference between them b6: Enumerate the types of applications of chi-square	Theoretical: Hypothesis testing Practical: Solve mathematical exercises on the topic	Theoretical: auditory methods Style of writing on the blackboard Direct dialogue style Practical: Assigning tasks and reporting	Short exams, assignment of duties, discussions
11	2 Theoretical + 3 Practical	a5: Learn how to perform the chi-square testing steps b7: Explains the simple connection, and reinforces it with examples	Theoretical: Chi-square distribution Practical: Solve mathematical exercises on the topic	Theoretical: auditory methods Style of writing on the blackboard Direct dialogue style Practical: Assigning tasks and reporting	Short exams, assignment of duties, discussions
12	2 Theoretical + 3 Practical	a6: Learn about correlation, regression, correlation coefficient, regression, and the properties of each b8: Explains the nature of the distribution of F. It also explains the relationship between the distributions of Z, T, and F and the distinction between each of them	Theoretical: simple correlation and regression Practical: Solve mathematical exercises on the topic	Theoretical: auditory methods Style of writing on the blackboard Direct dialogue style Practical: Assigning tasks and reporting	Short exams, assignment of duties, discussions
13	2 Theoretical + 3 Practical	d1: Training on how to apply statistics in designing agricultural experiments d2: Organize a report on the statistics topics	Theoretical + practical: report and discussion	Theoretical: auditory methods Style of writing on the blackboard Direct dialogue	Short exams, assignment of duties, discussions

		studied and learn how to apply statistics in agricultural sciences		style Practical: Assigning tasks and reporting	
14	2 Theoretical + 3 Practical	e1: Visit to the Statistics Department with the aim of learning about the most important statistical processes and how to implement E3: The student assumes some problems in agricultural fields and laboratories and how to develop statistical solutions	Theoretical + practical: A field visit to the Department of Statistics - University of Mosul	Theoretical: auditory methods Style of writing on the blackboard Direct dialogue style Practical: Assigning tasks and reporting	Short exams, assignment of duties, discussions
15	2 Theoretical + 3 Practical	e2: Visit to the Mathematics Department with the aim of learning about the most important statistical operations and how to implement them e3: The student assumes some problems in agricultural fields and laboratories and how to develop statistical solutions	Theoretical + practical: A field visit to the Department of Mathematics - University of Mosul	Theoretical: auditory methods Style of writing on the blackboard Direct dialogue style Practical: Assigning tasks and reporting	Short exams, assignment of duties, discussions

11. Course Evaluation

	Evaluation methods	Evaluation date (week)	Degree	Percentage weight %
1	Report 1	Fourth week	2.5	2.5
2	Report 2	Fifth week	2.5	2.5
3	Short test (1) Quiz	Sixth week	2	2
4	Short test (2) Quiz	Fourteenth week	2	2
5	Short test (3) Quiz	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 semester test	40	40
9	Practical field project	The fifteenth week	5	5
10	Field evaluation	Third and fifth week	2	2
11	Practical short test (1) Quiz	First week	1	1
12	Short practical test (2) Quiz	Fourth week	0.5	0.5
13	Short practical test (3) Quiz	Fourteenth week	1	1
14	Live drawings and homework	Weeks 6, 8, 9, 10, 11, 12 and 13	5.5	5.5
15	Final practical test	Final semester test	20	20
	Total	100	Degree	Percentage weight %

12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	Introduction to statistics
Main references (sources)	Principles of statistics
Recommended books and references (scientific journals, reports...)	Statistics book and methods of statistics
Electronic References, Websites	

Practical lecturer

Khalil Ibrahim Khalil

Theoretical lecturer

Dr. Zaid Mohammed Alhabbar

Head of department of plant protection

Dr. Firas Kadhim Aljuboori

Head of the Scientific Committee

Dr. Juhina Idress Mohammad Ali