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الجمهورية العربية السورية

وزارة التعليم العالمي

الجامعة الافتراضية السورية

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Course Description: Statistics

1- Basic Information:

Course Name	Statistics
Course ID	ST
Contact Hours (Registered Sessions)	16
Contact Hours (Synchronized Sessions)	16
Mid Term Exam	-
Exam	75 min
Registered Sessions Work Load	16
Synchronized Session Work Load	16
Credit Hours	3

2- Pre-Requisites:

Course	ID
Probability	prb

3- Course General Objectives:

4- Intended Learning Outcomes (ILO):

Code	Intended Learning Outcomes							
	Descriptive statistics, measures of central location(mean, Median ,mode), measures of							
ILO1	dispersion(mean deviation, standard deviation, variation coefficient), empirical rules, test of							
	normality of data							
ILO2	Probability (Using Z distribution , Using T distribution, Using χ^2 distribution)							
	Sampling distribution(central limit theorem for mean, central limit theorem for proportion,							
ILO3	central limit theorem for the difference between two means, central limit theorem for the							
	difference between two proportions)							
	Confidence intervals(large samples-Z distribution)(Confidence interval for mean, Confidence							
ILO4	interval for the difference between two means, Confidence interval for proportion, Confidence							
	interval for the difference between two proportions)							

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	Confidence intervals(small samples-T distribution)(Confidence interval for mean, Confidence
	interval for the difference between two means (independent sample ,variances not equal),
ILO5	Confidence interval for the difference between two means (independent sample ,variances
	equal)),
	Confidence interval for variance (χ^2 -distribution)
ПОС	Hypotheses testing(large samples-Z distribution)(test for mean, test for the difference between
ILU0	two means, test for proportion, test for the difference between two proportions)
	Hypotheses testing(small samples-T distribution)(test for mean, test for the difference between
	two means(independent sample ,variances not equal), test for the difference between two
ILO7	means(independent sample, variances equal)),
	Test for variance (χ^2 -distribution)
	Chi-square test for goodness of fit, Chi-square test for independence and homogeneity of
IL08	proportions,
	Data analysis(Outliers, accuracy, precision, Error analysis (systematic errors, random errors)).
ILO9	correlation and regression

5- Course Syllabus (18 hours of total synchronized sessions; 18 hours of total Recorded Sessions)

• RS: Recorded Sessions; SS: Synchronized Sessions;

ILO	Course Syllabus	RS	SS	Туре	Additional Notes
ILO1	Descriptive statistics, measures of central location(mean, Median ,mode), measures of dispersion(mean deviation , standard deviation, variation coefficient), empirical rules, test of normality of data	3		 ✓ Exercises ✓ Assignments Seminars Projects Practices Others 	
ILO2	Probability (Using Z distribution , Using T distribution, Using χ^2 distribution)	3		 Exercises Assignments Seminars Projects Practices Others 	

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ILO3	Sampling distribution(central limit theorem for mean, central limit theorem for proportion, central limit theorem for the difference between two means central limit theorem for the difference between two proportions)	it ll r t e s, r n		 ✓ Exer ✓ Assi ○ Sen ○ Pro ○ Pra ○ Oth 	rcises gnments ninars jects ctices lers			
ILO4	Confidence intervals(large samples-2 distribution)(Confidence interval for mean Confidence interval fo the difference between two means, Confidence interval for proportion Confidence interval fo the difference between two proportions)	Z r n 1.5 e i, r n		 ✓ Exer ✓ Assi ○ Sen ○ Pro ○ Pra ○ Oth 	rcises gnments ninars jects ctices ters			
	Confidence intervals(small samples- distribution)(Confidence interval for mean Confidence interval fo the difference between	Г ,, r n		☑ Exer	cises			

3

☑ Assignments

Practices

□ Seminars

□ Projects

□ Others

two means (independent

sample ,variances not

interval for the difference

sample ,variances equal)), Confidence interval for

(

two

Confidence

 χ^2

means

-

equal),

between

variance

distribution)

(independent

ILO5

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ILO6	Hypotheses testing(large samples-Z distribution)(test for mean, test for the difference between two means, test for proportion, test for the difference between two proportions)	1.5	 ☑ Exercises ☑ Assignments □ Seminars □ Projects □ Practices □ Others 	
ILO7	Hypotheses testing(small samples-T distribution)(test for mean, test for the difference between two means(independent sample ,variances not equal), test for the difference between two means(independent sample ,variances equal)), Test for variance (χ^2 - distribution)	1.5	 ☑ Exercises ☑ Assignments □ Seminars □ Projects □ Practices □ Others 	
ILO8	Chi-square test for goodness of fit, Chi- square test for independence and homogeneity of proportions,	1.5	 Exercises Assignments Seminars Projects Practices Others 	
ILO9	Data analysis(Outliers, accuracy, precision, Error analysis (systematic errors, random errors)), correlation and regression	3	 Exercises Assignments Seminars Projects Practices Others 	

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6- Assessment Criteria (Related to ILOs)

ISC	Interactive Synchronized Collaboration	Ex	Exams		Rpt	Reports	
PF2F	Presentations and Face-to-Face Assessments	PW	Practice Wo	rk			

по			Assessment Type						
Code	ILO	Intended Results	ISC	PW	Ex	PF2F	Rpt		
ILO1	Descriptive statistics, measures of central location(mean, Median ,mode), measures of dispersion(mean deviation , standard deviation, variation coefficient), empirical rules, test of normality of data		J		J				
ILO2	Probability (Using Z distribution , Using T distribution, Using χ^2 distribution)		V		Ø				
ILO3	Sampling distribution(central limit theorem for mean, central limit theorem for proportion, central limit theorem for the difference between two means, central limit theorem for the difference between two proportions)		D		J				
ILO4	Confidence intervals(large samples- Z distribution)(Confidence interval for mean, Confidence interval for the difference between two means, Confidence interval for proportion, Confidence interval for the difference between two proportions)		D		J				
ILO5	Confidence intervals(small samples-T distribution)(Confidence interval for mean, Confidence interval for the difference between		Ø		Ø				

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(independent two means sample variances. equal), not Confidence interval for the difference between two means (independent sample variances, equal)), Confidence interval for variance (χ^2 -distribution) Hypotheses testing(large samples-Z distribution)(test for mean, test for the difference between two means, ILO6 $\mathbf{\Lambda}$ $\mathbf{\Lambda}$ test for proportion, test for the difference between two proportions) Hypotheses testing(small samples-T distribution)(test for mean, test for the difference between two means(independent sample, variances not equal), test ILO7 $\mathbf{\nabla}$ $\mathbf{\nabla}$ for the difference between two means(independent sample ,variances equal)), Test for variance (χ^2 -distribution) Chi-square test for goodness of fit, ILO8 Chi-square test for independence $\mathbf{\nabla}$ $\mathbf{\nabla}$ and homogeneity of proportions, Data analysis(Outliers, accuracy, precision, Error analysis ILO9 \checkmark \checkmark (systematic errors, random errors)), correlation and regression

7-Practice Tools:

Tool Name	Description
Course Name	



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8-Main References

University's Syllabus of Statistics+ Three appendixes detailed and expanded added by Dr. M. Tlas

9-Additional References

- 1. Elementary statistics, Allan G. Bluman, Seventh Edition, McGraw-Hill
- 2. Probability and Statistics for Engineers and Scientists, Ronald E. Walpole, Raymond H. Myers, Sharon L. Myers, and Keying. Ye, Eighth Edition, McGraw-Hill
- 3. Probability and Statistics for Engineers and Scientists, Anthony Hayter, Third Edition, Thoson