

Syrian Arab Republic	 الجامعة الافتراضية السورية SYRIAN VIRTUAL UNIVERSITY	الجمهورية العربية السورية
Ministry of Higher Education		وزارة التعليم العالي
Syrian Virtual University		الجامعة الافتراضية السورية

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
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
ILO2	Probability (Using Z distribution , Using T distribution, Using χ^2 distribution)
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)
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)

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ILO5	Confidence intervals (small samples-T distribution) (Confidence interval for mean, Confidence interval for the difference between two means (independent sample, variances not equal), Confidence interval for the difference between two means (independent sample, variances equal)), Confidence interval for variance (χ^2 -distribution)
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)
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)
ILO8	Chi-square test for goodness of fit, Chi-square test for independence and homogeneity of proportions,
ILO9	Data analysis (Outliers, accuracy, precision, Error analysis (systematic errors, random errors)), 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	Type	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		<input checked="" type="checkbox"/> Exercises <input checked="" type="checkbox"/> Assignments <input type="checkbox"/> Seminars <input type="checkbox"/> Projects <input type="checkbox"/> Practices <input type="checkbox"/> Others	
ILO2	Probability (Using Z distribution, Using T distribution, Using χ^2 distribution)	3		<input checked="" type="checkbox"/> Exercises <input checked="" type="checkbox"/> Assignments <input type="checkbox"/> Seminars <input type="checkbox"/> Projects <input type="checkbox"/> Practices <input type="checkbox"/> 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)	3	<input checked="" type="checkbox"/> Exercises <input checked="" type="checkbox"/> Assignments <input type="checkbox"/> Seminars <input type="checkbox"/> Projects <input type="checkbox"/> Practices <input type="checkbox"/> Others	
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)	1.5	<input checked="" type="checkbox"/> Exercises <input checked="" type="checkbox"/> Assignments <input type="checkbox"/> Seminars <input type="checkbox"/> Projects <input type="checkbox"/> Practices <input type="checkbox"/> Others	
ILO5	Confidence intervals(small samples-T distribution)(Confidence interval for mean, Confidence interval for the difference between two means (independent sample ,variances not equal), Confidence interval for the difference between two means (independent sample ,variances equal)), Confidence interval for variance (χ^2 - distribution)	3	<input checked="" type="checkbox"/> Exercises <input checked="" type="checkbox"/> Assignments <input type="checkbox"/> Seminars <input type="checkbox"/> Projects <input type="checkbox"/> Practices <input type="checkbox"/> Others	

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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	<input checked="" type="checkbox"/> Exercises <input checked="" type="checkbox"/> Assignments <input type="checkbox"/> Seminars <input type="checkbox"/> Projects <input type="checkbox"/> Practices <input type="checkbox"/> 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	<input checked="" type="checkbox"/> Exercises <input checked="" type="checkbox"/> Assignments <input type="checkbox"/> Seminars <input type="checkbox"/> Projects <input type="checkbox"/> Practices <input type="checkbox"/> Others
ILO8	Chi-square test for goodness of fit, Chi-square test for independence and homogeneity of proportions,	1.5	<input checked="" type="checkbox"/> Exercises <input checked="" type="checkbox"/> Assignments <input type="checkbox"/> Seminars <input type="checkbox"/> Projects <input type="checkbox"/> Practices <input type="checkbox"/> Others
ILO9	Data analysis(Outliers, accuracy, precision, Error analysis (systematic errors, random errors)), correlation and regression	3	<input checked="" type="checkbox"/> Exercises <input checked="" type="checkbox"/> Assignments <input type="checkbox"/> Seminars <input type="checkbox"/> Projects <input type="checkbox"/> Practices <input type="checkbox"/> 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 Work		

ILO Code	ILO	Intended Results	Assessment Type				
			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		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input type="checkbox"/>
ILO2	Probability (Using Z distribution , Using T distribution, Using χ^2 distribution)		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input type="checkbox"/>
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)		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input type="checkbox"/>
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)		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input type="checkbox"/>
ILO5	Confidence intervals(small samples-T distribution)(Confidence interval for mean, Confidence interval for the difference between		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input type="checkbox"/>

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	two means (independent sample ,variances not equal), Confidence interval for the difference between two means (independent sample ,variances equal)), Confidence interval for variance (χ^2 -distribution)					
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)		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>
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)		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>
ILO8	Chi-square test for goodness of fit, Chi-square test for independence and homogeneity of proportions,		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>
ILO9	Data analysis(Outliers, accuracy, precision, Error analysis (systematic errors, random errors)), correlation and regression		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>

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*