

Syrian Arab Republic	 الجامعة الافتراضية السورية SYRIAN VIRTUAL UNIVERSITY	الجمهورية العربية السورية
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Course Description: Introduction to Statistics

1- Basic Information:

Course Name	Introduction to Statistics
Course ID	GMA401
Contact Hours (Registered Sessions)	24
Contact Hours (Synchronized Sessions)	24
Mid Term Exam	-
Exam	75 Min
Registered Sessions Work Load	24
Synchronized Session Work Load	24
Credit Hours	4
Course Level	4

2- Pre-Requisites: Non

Course	ID
nothing	-

3- Course General Objectives:

The course aims to learn the student the basic statistical concepts and principles by explain statistics (its concept, parts, functions, importance, objectives, relationship with other sciences), and tourism statistics. Data (concept, types, and scales, collection Sources, collection methods classification and errors, arrangement, tabular and graphical presentation) histogram, types of frequency distribution with examples about tourism and hotel phenomena, samples, types, selection each of them, sampling errors.

The course provides a detailed explanation to the student, accompanied by applied examples about tourism and hotel phenomena, calculating the measures of central tendency (arithmetic mean, harmonic average, geometric mean, median, mode, quarters, deciles, percentiles) according to the state of the available data (single, arranged, tabulated), and the interpretation of their meanings properties, advantages and disadvantages. The course also provides a detailed explanation with practical applications about desperation measures (qualitative data desperation, range, variance and standard deviation, coefficient of variation, quartile deviation, mean deviation) according to the status of the available data (single, arranged, tabulated), measures of Skewness and Kurtosis.

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The course provides the student explaining about the concept of correlation, calculate the correlation coefficient, and explain its significance, according to the types of variables and their data scales and the most important of these coefficients (Pearson, Spearman, ..etc).

The course also aims to enable the student to study simple linear regression analysis, and estimate the regression model, study its significance, and do estimation and prediction.

The course provides knowledge about the normal distribution in its general and standard types and the properties of this distribution and its use in the estimation and prediction process, illustrated with practical applications.

In addition to provide the student with the concept of index number and its types, and testing them.

Presentation the most important indices, and how can change the base year.

4- Intended Learning Outcomes (ILO):

Code	Intended Learning Outcomes
ILO1	The student remembers basic statistical concepts and the functions and importance of statistics in general and tourism statistics in particular, its uses, objectives and two departments.
ILO2	The student will be able to define data and variables, and understand the difference between data and information. And distinguish between types of variables and their data scales. list the sources of data collection and data errors.
ILO3	The student distinguishes between population and sample, statistic and parameter, lists methods of data collection and types of random and non-random samples. And he remembers the mechanism for selecting each type and the conditions for that, as well as the sampling errors.
ILO4	With the help of the teacher, the student classifies the data in frequency tables according to various criteria. The student arranges the data into frequency distribution tables. And he is able to distinguish between the types of these tables. and presents the data tabular and graphically according to the nature of the data, draws the histogram and deduces the nature of the frequency distribution.
ILO5	With the help of the teacher, the student applies the measures of central tendency and desperation according to the state of the available data, and interprets them, recalling the advantages and disadvantages of each of them.
ILO6	Draw scatter diagram and deduce the nature of the relationship. The student remembers the concept of correlation, its types, and its interpret, and measures and analyzes the correlation between two phenomena by choosing the appropriate correlation coefficient according to the nature of data, interpreting it and study its statistical significance. The student remembers what regression is and study It. estimates a simple linear regression model, studies its significance, and uses it in estimation and prediction.
ILO7	The student remembers the concept of the normal distribution, distinguishes between the general normal distribution and the standard one, and uses the standard degree to change from a general normal distribution to a standard one and computes the various possibilities, and does estimation and prediction

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ILO8	The student remembers the concept of the index number, its importance. the base period and the conditions for its selection. He will be able to test the accuracy of indices, distinguish between their different types, remember the most important of them and explain their significance.
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5- Course Syllabus (24 hours of total Recorded Sessions, 24 hours of total synchronized sessions)

- **RS:** Recorded Sessions; **SS:** Synchronized Sessions;

ILO	Course Syllabus	RS	SS	Type	Additional Notes
ILO1	<ul style="list-style-type: none"> Statistics, what it is, its departments, importance, objectives, functions, fields of use, and its relationship with other sciences. Tourism statistics, what it is and its divisions Stages of statistical research. 	2	2	<input type="checkbox"/> Exercises <input type="checkbox"/> Assignments <input type="checkbox"/> Seminars <input type="checkbox"/> Projects <input type="checkbox"/> Practices <input type="checkbox"/> Others	Assignment: put many cases about different tourist and hotel phenomena. And the student must specify to which section of the science of statistics it is: (Descriptive, Inference)
ILO2	<ul style="list-style-type: none"> What these concepts are: data, information, and variable. Quantitative and qualitative variables Scales of quantitative data (interval and percentile) and qualitative data (nominal, ordinal). Historical sources (primary and secondary) for data collection, and field sources for data collection and their tools (interview, observation, statistical form ... etc) Data errors 	2	2	<input type="checkbox"/> Exercises <input type="checkbox"/> Assignments <input type="checkbox"/> Seminars <input type="checkbox"/> Projects <input type="checkbox"/> Practices <input type="checkbox"/> Others	Assignment (1): A number of variables (different tourist and hotel phenomena.) are given and the student is asked to specify their type and measurement level of their data. Assignment (2): list a number of statistical Issuance and reports then asking the student to classify them as a source of data collection.
ILO3	<ul style="list-style-type: none"> Basic concepts (population, sample, statistic, parameter,...etc. Methods of data collection (experiment, comprehensive survey, sample) and reasons for preferring sample over 	2	2	<input type="checkbox"/> Exercises <input type="checkbox"/> Assignments <input type="checkbox"/> Seminars <input type="checkbox"/> Projects <input type="checkbox"/> Practices <input type="checkbox"/> Others	Exercise (1) put several cases on the results of data collection methods then asking the student to distinguish between the concepts of population and the sample in

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	<p>comprehensive survey.</p> <ul style="list-style-type: none"> Types of random samples (simple, stratified, Systematic, clustered) and non-random (Quota sample , Selective sample) The mechanism for elect each sample and the conditions that must be met for the use of each type. Identify sampling errors 				<p>addition to the concepts of statistic and parameter</p> <p>Exercise (2): put several cases about tourist and hotel populations then asking the student to select a sample of them, explaining their type and the mechanism for selecting them.</p>
ILO4	<ul style="list-style-type: none"> Data Classification, its concept, purpose and types (Chronological, geographical, qualitative, and quantitative one). Data arrangement (its concept, steps, ..) Data Tabulation (its concept, steps, types of tables of frequency distributions, and converting separate tables into continuous) Tabular presenting Data, conditions that must be met in the table, types of tables according to the number of phenomena studied, and the nature of frequencies. Present ungrouped data graphically (pictograms, pie charts, bar charts, graphical line), present tabulated data graphically, and histogram. 	4	4	<input type="checkbox"/> Exercises <input type="checkbox"/> Assignments <input type="checkbox"/> Seminars <input type="checkbox"/> Projects <input type="checkbox"/> Practices <input type="checkbox"/> Others	<p>Exercise (1): A set of raw data about a phenomenon then ask the student to arrange this data and calculate possible indicators from it.</p> <p>Exercise (2): a set of raw data, asking for its classification, calculating the different frequencies, drawing the histogram, the frequency polygon, the frequency curve, and determining the nature of the distribution.</p> <p>Exercise (3): put data about several phenomena to present them according to a specific criteria graphically and tabular, then asking the student to determine the appropriate type of tabular or graphical presentation.</p>
ILO5	<ul style="list-style-type: none"> Measures of central tendency (arithmetic mean, harmonic average, geometric mean, mode, median, quarters, deciles, and percentiles), the concept of each of them, method of calculating it according to the state of available data, advantages and 	6	6	<input type="checkbox"/> Exercises <input type="checkbox"/> Assignments <input type="checkbox"/> Seminars <input type="checkbox"/> Projects <input type="checkbox"/> Practices <input type="checkbox"/> Others	<p>Assignment: asking The student to prepare a practical case by collect data about a tourist or hotel phenomenon, then tabulates them and calculates the different frequencies, measures.</p>

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	disadvantages of each. <ul style="list-style-type: none"> Measures of Desperation (Desperation of qualitative data, range, variance, standard deviation, coefficient of variation), the concept of each of them, the method of calculating it according to the status of the available data, , advantages and disadvantages of each. Measures of Skewness and Kurtosis 				And interprets it. Exercise: an arranged data in frequency table of then ask the student to calculate and interpret measures and determine the nature of the distribution through them.
ILO6	<ul style="list-style-type: none"> Study scatter and conclude the power of the relationship between two variables. Correlation: its concept, its types, its interpretation. •Correlation measurement using coefficient (Pearson, Spearman, Coupling, and Coreton) and their respective use cases. And test its statistical significance. The concept of regression and the steps of its study. Estimate the simple linear regression model, test its significance, interpret its constants, and use it in forecasting 	4	4	<input type="checkbox"/> Exercises <input type="checkbox"/> Assignments <input type="checkbox"/> Seminars <input type="checkbox"/> Projects <input type="checkbox"/> Practices <input type="checkbox"/> Others	Many exercises where the student is given a set of phenomena and asked him to choose the appropriate correlation coefficient, measure and interpret it, study its statistical significance. Exercise 2: The student is given data about two variables, then asking him to estimate the simple linear regression model and testing its statistical significance and using it for estimation and prediction.
ILO7	<ul style="list-style-type: none"> The concept of a normal distribution, its function, and its properties. The difference between the general and standard normal distribution, and the concept of the standard value. Calculate probabilities and use the normal distribution in statistical estimation 	2	2	<input type="checkbox"/> Exercises <input type="checkbox"/> Assignments <input type="checkbox"/> Seminars <input type="checkbox"/> Projects <input type="checkbox"/> Practices <input type="checkbox"/> Others	Exercise: given a specific phenomenon and the parameters of the general normal distribution. Ask the student to estimate the probabilities after changing to the standard normal distribution by using the standard degree and estimating the values of the studied phenomenon.

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ILO8	<ul style="list-style-type: none"> The concept of the index number, its importance and utility. Simple index and weighted index numbers. The most important indices (cost of living, wages, purchasing power of money) benchmark testing. Standardization of the base year for the time series. 	2	2	<input type="checkbox"/> Exercises <input type="checkbox"/> Assignments <input type="checkbox"/> Seminars <input type="checkbox"/> Projects <input type="checkbox"/> Practices <input type="checkbox"/> Others	Exercise 1: It is given to the prices and quantities of a group of commodities during two different periods. Then asking to calculate the simple and weighted index numbers, Exercise 2: A time series for the values of a phenomenon is given and there are two base years, asking to unify the series with one base year.
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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	The student remembers basic statistical concepts and the functions and importance of statistics in general and tourism statistics in particular, its uses, objectives and two departments.	The student remembers the points presented in the previous lecture	x				
		The student will be able to distinguish between the departments of statistics in general and tourism statistics in particular	x		x		
		The student remembers the most important points within the scientific content	x		x		

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		by answering direct and deductive questions					
ILO2	The student will be able to define data and variables, and understand the difference between data and information. And distinguish between types of variables and their data scales. list the sources of data collection and data errors.	Through a discussion with the teacher, the student can distinguish between data scales and variables types and illustrate them with examples	x		x		
		The student remembers the most important data sources and data errors by answering direct and deductive questions			x		x
ILO3	The student distinguishes between population and sample, statistic and parameter, lists methods of data collection and types of random and non-random samples. And he remembers the mechanism for selecting each type and the conditions for that, as well as the sampling errors.	The student remembers the basic concepts, and through this conclusion, the appropriate sampling method can be determined	x				x
		Distinguish between random and non-random samples and apply the mechanism of their withdrawal		x	x		
		Student remembers scientific content through direct and deductive questions	x				x
ILO4	With the help of the teacher, the student classifies the data in frequency tables according to	The student collects data about some tourist and	x	x	x		

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	<p>various criteria. The student arranges the data into frequency distribution tables. And he is able to distinguish between the types of these tables. and presents the data tabular and graphically according to the nature of the data, draws the histogram and deduces the nature of the frequency distribution.</p>	hotel phenomena and classifies them according to classification criteria or arranges them and tabulates them in frequencies tables					
		The student remembers the graphical and tabular presenting methods of data and applies them in practice	x	x	x		
		The student is able to deduce the nature of the frequency distribution by applying it to specific phenomena	x	x	x		
ILO5	With the help of the teacher, the student applies the measures of central tendency and desperation according to the state of the available data, and interprets them, recalling the advantages and disadvantages of each of them.	The student is expected to be able to calculate various statistical measures by solving problems and applications	x		x		
ILO6	<p>Draw scatter diagram and deduce the nature of the relationship. The student remembers the concept of correlation, its types, and its interpret, and measures and analyzes the correlation between two phenomena by choosing the appropriate correlation coefficient according to the nature of data, interpreting it and study its statistical significance. The student remembers what regression is and study It. estimates a simple linear</p>	After studying this unit, the student demonstrates the ability to choose, study and analyze the appropriate correlation coefficient	x		x		
		The student demonstrates the ability to do simple linear regression analysis	x		x		

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	regression model, studies its significance, and uses it in estimation and prediction.						
ILO7	The student remembers the concept of the normal distribution, distinguishes between the general normal distribution and the standard one, and uses the standard degree to change from a general normal distribution to a standard one and computes the various possibilities, and does estimation and prediction	The student remembers the scientific content through direct questions	x		x		
		The student demonstrates the ability to compute the various probabilities of a normal distribution	x		x		
ILO8	The student remembers the concept of the index number, its importance. the base period and the conditions for its selection. He will be able to test the accuracy of indices, distinguish between their different types, remember the most important of them and explain their significance.	The student demonstrates the ability to remembers Index Numbers by direct questions	x		x		
		The student calculates Index Numbers and applies this to phenomena		x	x		

7- Practice Tools:

Tool Name	Description
non	---

8- Main References

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9- Additional References

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