

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information				
معلومات المادة الدراسية				
Module Title	Statistics and probabilities		Module Delivery	
Module Type	B		☒ Theory ☐ Lecture ☒ Lab ☒ Tutorial ☒ Practical ☐ Seminar	
Module Code	AI110			
ECTS Credits	5			
SWL (hr/sem)	125			
Module Level	UG I	Semester of Delivery		2
Administering Department	AI	College	Information Technology – University of Fallujah	
Module Leader	Prof. Dr. Waleed khalid abduljabbar		e-mail	waleed75@uofallujah.edu.iq
Module Leader's Acad. Title	Prof.	Module Leader's Qualification	Ph.D.	
Module Tutor	Assist.Prof Dhia Ahmed Ibrahim Assist. Lec. Marwan Ghazwan Muteb		e-mail	Diaa.a.ibrahimi@uofallujah.edu.iq
Peer Reviewer Name	Asst. Prof. Dhia Ahmed		e-mail	Diaa.a.ibrahimi@uofallujah.edu.iq
Scientific Committee Approval Date	1/06/2026	Version Number	2.0	

Relation with other Modules			
العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	None	Semester	
Co-requisites module	None	Semester	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	- Elementary Statistics: A Step-by-Step Approach was written as an aid in the beginning statistics course to students whose mathematical background is limited to basic algebra. - The subject follows a nontheoretically approach without formal proofs, explaining concepts intuitively and supporting them with abundant examples. - The applications span a broad range of topics certain to appeal to the interests of students of diverse backgrounds, and they include problems in business, sports, health, architecture, education, entertainment, political science, psychology, history, criminal justice, the environment, transportation, physical sciences, demographics, eating habits, and travel and leisure.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	- Define statistical and probability concepts - Organize and present data - Perform descriptive and inferential analysis - Apply probability rules - Interpret and communicate results
Indicative Contents المحتويات الإرشادية	- Unit 1: The Nature of Probability of Statistics - Unit 2: Frequency Distributions and Graphs - Unit 3: Data Description - Unit 4: Probability and Counting Rules - Unit 5: Discrete Probability Distributions - Unit 6: The Normal Distribution - Unit 7: Confidence Intervals and Sample Size - Unit 8: Hypothesis Testing - Unit 9: Testing the Difference Between Two Means, Two Proportions, and Two Unit 10: Variances - Unit 11: Correlation and Regression - Unit 12: Other Chi-Square Tests - Unit 13: Analysis of Variance - Unit 14: Nonparametric Statistics

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	- Conceptual Understanding. - Hands-on Practice - Code Review and Feedback

	- Problem-Solving Exercises - Blended learning (lecture + coding lab) - Active learning and peer review. - Short coding challenges. - Problem-based assignments.
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Student Workload (SWL)			
الحمل الدراسي للطلاب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطلاب خلال الفصل	78	Structured SWL (h/w) الحمل الدراسي المنتظم للطلاب أسبوعيا	5
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطلاب خلال الفصل	47	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطلاب أسبوعيا	3
Total SWL (h/sem) الحمل الدراسي الكلي للطلاب خلال الفصل	125		

Module Evaluation					
تقييم المادة الدراسية					
		Time/Number	Weight (Marks)	Weekly Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	10% (10)	5 and 10	LO #1, #2 and #10, #11
	Assignments	2	10% (10)	2 and 12	LO #3, #4 and #6, #7
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO #5, #8 and #10
Summative assessment	Midterm Exam	2hr	10% (10)	7	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)	
المنهاج الاسبوعي النظري	
	Material Covered
Week 1	The Nature of Probability of Statistics
Week 2	Frequency Distributions and Graphs

Week 3	Data Description
Week 4	Probability and Counting Rules
Week 5	Discrete Probability Distributions
Week 6	The Normal Distribution
Week 7	Confidence Intervals and Sample Size
Week 8	Hypothesis Testing
Week 9	Testing the Difference Between Two Means, Two Proportions, and Two Variances
Week 10	Correlation and Regression
Week 11	Other Chi-Square Tests
Week 12	Analysis of Variance
Week 13	Nonparametric Statistics
Week 14	Sampling and Simulation
Week 15	Mid-term Exam
Week 16	Preparatory week before the final Exam

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Introduction to Microsoft Excel
Week 2	Represent and draw data using bar graphs, Pareto charts, time series graphs, pie graphs, dotplots
Week 3	Summarize data, using measures of central tendency, such as the mean, median, mode, midrange
Week 4	Determine sample spaces and find the probability of an event, using classical or empirical probability
Week 5	Mean, Variance, Standard Deviation, and Expectation (Binomial and other type of Distribution)
Week 6	Identify the properties and Find the area under the standard normal distribution, given various z values
Week 7	Find the confidence interval for the mean when σ is known
Week 8	Z & t Test for a Mean, T^2 Test for a Variance or Standard Deviation
Week 9	Testing the Difference Between Two Means: Using the z Test
Week 10	Draw a scatter plot for a set of ordered pairs, Compute the correlation coefficient
Week 11	Test a distribution for goodness of fit, using chi-square
Week 12	Test hypotheses, using the sign test, using the Wilcoxon rank sum test, using the signed-rank test
Week 13	Compute the Spearman rank correlation coefficient, Test hypotheses, using the runs test
Week 14	Mini Project Demo / Practice Test
Week 15	Exam

Learning and Teaching Resources		
مصادر التعلم والتدريس		
	Text	Available in the Library?
Required Texts	Bluman - Elementary Statistics ninth edition	No
Recommended Texts	Bluman - Elementary Statistics ninth edition	no
Websites	- https://www.minams.edu.pk/cPanel/ebooks/miscellaneous/Allan%20G.%20Bluman%20-%20Elementary%20Statistics%20A%20Step-By-Step%20Approach.%209th%20ed.-McGraw-Hill%20Education%20(2014).pdf	

Grading Scheme				
مخطط الدرجات				
Group	Grade	التقدير	Marks %	Definition
Success Group (50 - 100)	A - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	FX – Fail	راسب (قيد المعالجة)	(45-49)	More work required, but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required
Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example, a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails," so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.				

Module Contribution to Program Learning Outcomes (PLO mapping).

Apply computational thinking to solve statistical problems” This module contributes by teaching functions and algorithmic thinking in Excel.

Mode of Delivery: blended.

Software Used: Microsoft Excel

Lab Safety and Ethics statement (for university standardization).

- Ethical use of computing resources (e.g., no piracy, respect software licenses).
- Academic integrity (no cheating, plagiarism, proper attribution).
- Data protection (for real datasets).
- Safe usage of lab equipment and network (no illegal downloads, safe browsing).