



Jordan University of Science and Technology
Faculty of Science & Arts
Basic Sciences And Humanities Department

HSS233MATH Probability & Statistics (For Computer Sciences Students)

First Semester 2023-2024

Course Catalog

3 Credit Hours. Descriptive statistics and data visualization, probability, axioms, rules, conditional probability, Bayes theorem, independence, discrete and continuous random variables, Binomial, Poisson, exponential and normal distributions, sampling distributions (t, chi-square and F distributions), moment estimators, point and interval estimation, hypothesis testing, test for mean and variance, test for two means and two variances, paired t-test, test for one and two proportions, correlation and simple regression, generation of random numbers.

Text Book

Title	Probability & Statistics for Engineers & Scientists
Author(s)	Walpole, R.; Myers, R.; Myers, S. and Ye, K.
Edition	8th Edition
Short Name	Textbook
Other Information	

Course References

Short name	Book name	Author(s)	Edition	Other Information
Ref # 1	Probability and Statistics, the science of uncertainty	M. J. Evans, J. S. Rosenthal	2nd Edition	
Ref # 1	Applied Statistics and Probability for Engineers	D. Montgomery, C. Runger	4th Edition	

Instructor

Name	Miss Raofe Al Saidi
Office Location	PH2 L-2

Office Hours	Sun : 12:00 - 12:30 Sun : 13:30 - 14:30 Mon : 11:30 - 13:00 Tue : 12:00 - 12:30 Tue : 13:30 - 14:30 Wed : 11:30 - 13:00
Email	raofe@just.edu.jo

Instructor	
Name	Dr. Mohammed Shakhatreh
Office Location	-
Office Hours	Sun : 10:00 - 12:00 Mon : 10:30 - 11:30 Tue : 10:30 - 11:30 Wed : 13:30 - 14:30 Thu : 13:30 - 14:30
Email	mkshakhatreh6@just.edu.jo

Class Schedule & Room	
<p>Section 1: Lecture Time: Sun, Tue : 08:30 - 09:30 Room: SF12</p> <p>Section 2: Lecture Time: Mon, Wed : 11:30 - 12:30 Room: SF12</p> <p>Section 3: Lecture Time: Mon, Wed : 14:30 - 15:30 Room: NG41</p> <p>Section 4: Lecture Time: Sun, Tue : 14:30 - 15:30 Room: SF12</p> <p>Section 5: Lecture Time: Sun, Tue : 12:30 - 13:30 Room: SF11</p>	

Tentative List of Topics Covered		
Weeks	Topic	References
Weeks 1, 2	Ch 1 and Ch 2: 1.1, 2.1, 2.2, 2.3, 2.4, 2.5 Introduction to Statistics & Data Analysis Sample Space, Events, Counting Sample Points, Probability of an Event, Additive Rules	From Textbook
Week 3	Ch 2: 2.6, 2.7 Conditional Probability, Independent Events, Multiplicative Rules	From Textbook
Week 4	Ch 3: 3.1, 3.2, 3.3 Concept of Random Variable, Discrete Probability Distributions, Continuous Probability Distributions	From Textbook

Week 5	Ch 4: 4.1, 4.2, 4.3 Mean of a Random Variable, Variance, Means & Variances of a Linear Combination of Random Variables	From Textbook
Weeks 6, 7	Ch 5: 5.2, 5.3, 5.4, 5.6 Discrete Uniform Distribution, Binomial Distribution, Hypergeometric Distribution, Poisson Distribution	From Textbook
Weeks 7, 8	Ch 6: 6.1, 6.2, 6.3, 6.4 Continuous Uniform Distribution, Normal Distribution, Areas Under the Normal Curve, Applications of the Normal Distribution	From Textbook
Week 9	Ch 8: 8.1, 8.2, 8.4, 8.5 Random Sampling, Some Important Statistics, Sampling Distributions, Sampling Distribution of Means	From Textbook
Weeks 10, 11	Ch 9: 9.1, 9.2, 9.4, 9.5 Introduction to Estimation, Statistical Inference, Estimating the Mean, Standard Error	From Textbook
Weeks 11, 12	Ch 9: 9.8, 9.9, 9.10 Estimating the Difference Between Two Means, Estimating a Proportion	From Textbook
Weeks 13, 14	Ch 10: 10.1, 10.2, 10.3, 10.5, 10.7, 10.8, 10.11, 10.13 Statistical Hypotheses, Testing a Statistical Hypothesis, One- and Two-Tailed Tests, Tests Concerning a Single Mean, Tests on a Single Mean when variance is unknown Tests on Two Means, Tests on a Single Proportion, One- Sample Tests Concerning Variances	From Textbook
Week 15	Ch 11: 11.1, 11.2, 11.3, 11.4 Simple Linear Regression, Properties of the Least Squares Estimation, Inference Concerning the Regression Coefficients, Correlation	From Textbook

Mapping of Course Outcomes to Program Outcomes	Course Outcome Weight (Out of 100%)	Assessment method
Being able to describe data with tabular, visual, and numerical forms [1SLO1, 1SLO3]	10%	First exam
Being able to know and understand the basics and rules of probability [1SLO1]	20%	First exam, Second exam
Knowing and understanding univariate probability distributions (continuous and discrete) and the typical phenomena that each distribution often describes in computer sciences [1SLO1]	25%	Second exam
Being able to calculate and interpret point estimates and perform hypotheses testing. [1SLO1, 1SLO3]	35%	Final exam
Being able to carry out correlation and simple linear regression models. [1SLO1, 1SLO3]	10%	Final exam

Relationship to Program Student Outcomes (Out of 100%)					
SLO1	SLO2	SLO3	SLO4	SLO5	SLO6
72.5		27.5			

Evaluation	
Assessment Tool	Weight

First exam	30%
Second exam	30%
Final exam	40%

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