



Jordan University of Science and Technology
Faculty of Science & Arts
Mathematics Department

MATH233 Probability & Statistics (For Computer Sciences Students)

First Semester 2017-2018

Course Catalog

3 Credit Hours. Descriptive statistics, Probability; axioms of probability, rules of probability, conditional probability, independence. Discrete and continuous random variables, expectation, probability distributions. Sampling distributions; t and Chi square and F distributions, CLT. Point estimation: for mean and variance, the difference between two means and the ratio of two variances, testing hypotheses for small, large and dependent samples, correlation, simple linear and multiple regression. Goodness of fit tests.

Text Book

Title	Probability & Statistics for Engineers & Scientists
Author(s)	R. Walpole, R. Myers, S. Myers, and K. Ye
Edition	8th Edition
Short Name	TextBook
Other Information	2007

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	2010
Ref 2	Applied Statistics and Probability for Engineers	D. Montgomery, C. Runger	4th Edition	2007
Ref 3	Mathematical Statistics with Applications	D. Wackerly, W. Mendenhall, R. Scheaffer, R.	7th Edition	2008

Instructor

Name	Dr. HANAN HAMMOURI
Office Location	Ph4 level 0

Office Hours	Sun : 13:30 - 14:30 Mon : 11:30 - 13:00 Wed : 13:00 - 14:00 Thu : 10:00 - 12:30
Email	hmhammouri@just.edu.jo

Class Schedule & Room
Section 1: Lecture Time: Sun, Tue, Thu : 12:30 - 13:30 Room: NF40

Tentative List of Topics Covered		
Weeks	Topic	References
Week 1	Introduction to Statistics & Data Analysis Sample Space, Events, Counting Sample Points, Probability of an Event, Additive Rules	Sections 1.1, 2.1, 2.2, 2.3, 2.4, 2.5 From TextBook
Week 2	Conditional Probability, Independent Events, Multiplicative Rules	Sections 2.6, 2.7 From TextBook
Week 3	Concept of Random Variable, Discrete Probability Distributions, Continuous Probability Distributions	Sections 3.1, 3.2, 3.3 From TextBook
Week 4	Mean of a Random Variable, Variance, Means & Variances of a Linear Combination of Random Variables	Sections 4.1, 4.2, 4.3 From TextBook
Week 5	Discrete Uniform Distribution, Binomial Distribution, Hypergeometric Distribution, Poisson Distribution	Sections 5.2, 5.3, 5.4, 5.6 From TextBook
Week 6	Continuous Uniform Distribution, Normal Distribution, Areas Under the Normal Curve, Applications of the Normal Distribution	Sections 6.1, 6.2, 6.3, 6.4 From TextBook
Week 7	Random Sampling, Some Important Statistics	Sections 8.1, 8.2 From TextBook
Week 8	Sampling Distributions, Sampling Distribution of Means	Sections 8.4, 8.5 From TextBook
Week 9	Introduction to Estimation, Statistical Inference, Estimating the Mean, Standard Error	Sections 9.1, 9.2, 9.4, 9.5 From TextBook
Week 10	Estimating the Difference Between Two Means, Estimating a Proportion,	Sections 9.8, 9.9, 9.10 From TextBook
Week 11	Statistical Hypotheses, Testing a Statistical Hypothesis	Sections 10.1, 10.2 From TextBook
Week 12	One- and Two-Tailed Tests, Tests Concerning a Single Mean, Tests on a Single Mean when variance is unknown	Sections 10.3, 10.5, 10.7 From TextBook
Week 13	Tests on Two Means, Test on a Single Proportion, One- Sample Tests Concerning Variances	Sections 10.8, 10.11, 10.13 From TextBook

Week 14	Goodness of fit test, Test for independence	Sections 10.14, 10.15 From TextBook
Week 15	Simple Linear Regression, Properties of the Least Squares Estimation, Inference Concerning the Regression Coefficients, Correlation	Sections 11.1, 11.2, 11.3, 11.4 From TextBook
Week 16	Final Exam Week	

Mapping of Course Objectives to Program Student Outcomes¹	Assessment method
Using basic counting techniques to compute probability with applying general probabilities rules. [1a]	
Understanding the concept of random variable and Setting up and working with discrete and continues distributions. [1a]	
Using point estimate and interval estimate to make inference on population parameters [1a, 2b, 1c]	
Using hypothesis testing to answer a question about the population parameters. [1a, 2b, 1c]	
Evaluating the linear relationship using correlation and simple linear regression. And using the last to make future prediction. [1a, 2b, 1c]	

Relationship to Program Student Outcomes (Out of 100%)										
a	b	c	d	e	f	g	h	i	j	k
55	30	15								

Date Printed: 2017-11-28

1.9 The Role of Probability. 1.10 Approaches to Statistical Inference. 2. Introduction to Probability. Available. Instructor's Solutions Manual (Download only) for Probability & Statistics with R for Engineers and Scientists. Download Instructor's Solutions Manual--Complete (application/zip) (1.3MB). Download Instructor's Solutions Manual--frontmatter (application/zip) (0.1MB). @inproceedings{Walpole2006ProbabilityS, title={Probability & Statistics for Engineers & Scientists}, author={Ronald E. Walpole and Raymond H. Myers and Sharon L. Myers and Keying Ye}, year={2006} }. Ronald E. Walpole, Raymond H. Myers, +1 author Keying Ye. Published 2006. Introduction to Probability and Statistics for Engineers and Scientists is intended for upper level undergraduate and graduate students taking a probability and statistics course in engineering programs as well as those across the biological, physical and computer science departments; it is also appropriate for scientists, engineers, and other professionals seeking a reference of foundational content and application to these fields. Key Features. Provides the author's uniquely accessible and engaging approach, tailored for the needs of Engineers and Scientists. Features real data examples that