Jordan University of Science and Technology

Faculty of Computer & Information Technology

Computer Information Systems Department

CIS711 Statistics For Data Science - JNQF Level: 6

Second Semester 2023-2024

Course Catalog
3 Credit Hours. The objectives of this course are to develop an understanding of modern computationally intensive methods for statistical inference, exploratory data analysis, with applications. Advanced computational methods for statistics will be introduced, including univariate, multivariate and combinatorial optimization methods and simulation methods. In addition, the course will demonstrate how to apply the above techniques effectively for use on large data sets in practice. Finally, this course will show how to make inferences about populations of interest in data mining problems. In addition to that, other topics that will be covered including: theory of sampling distributions; principles of data reduction; interval and point estimation, sufficient statistics, order statistics, hypothesis testing, correlation and regression.
Teaching Method: On Campus

Text Book	
Title	An Introduction to Statistics with Python: With Applications in the Life Sciences (Statistics and Computing) 1st ed., Springer, 2016 Edition
Author(s)	Thomas Haslwanter
Edition	1st Edition
Short Name	None
Other Information	

Instructor	
Name	**Prof. Mostafa Ali**
Office Location	23917
Office Hours	Sun : 13:30 - 14:30 Tue : 13:30 - 16:30 Wed : 15:00 - 16:00 Thu : 13:30 - 14:30
Email	mzali@just.edu.jo

Class Schedule & Room

Section 2:
Lecture Time: Sun, Thu : 14:30 - 16:00
Room: A2120

Tentative List of Topics Covered		
Weeks	**Topic**	**References**
Week 1	Python	
Week 2	Data Input (different ready forms for statistical analysis)	
Week 4	Displaying different forms of statistical data	
Week 6	Distributions and Hypothesis Tests	
Week 8	Distributions of One Variable	
Week 10	? Hypothesis Tests	
Week 12	? Tests of Means of Numerical Data	
Week 14	? Analysis of Variance	

Mapping of Course Outcomes to Program Outcomes and NQF Outcomes	Course Outcome Weight (Out of 100%)	Assessment method
Introduce and understand modern computational methods used in statistics. Included are methods for simulation, estimation and visualization of statistical data. [1A, 1B, 1C, 1SO1, 1SO2] [1L6K1, 1L6K2, 1L6S1]	50%	Midterm exam, HW, Case study, Final project
Understand the role of computation as a tool of discovery in data analysis. Be able to appropriately apply computational methodologies to real world statistical problems [1K, 1SO4, 1SO5, 1SO6] [1L6S2, 1L6C1, 1L6C3]	50%	Final exam

Relationship to Program Student Outcomes (Out of 100%)																
A	B	C	D	E	F	G	H	I	J	K	SO1	SO2	SO3	SO4	SO5	SO6
10	10	10								12.5	10	10		12.5	12.5	12.5

Relationship to NQF Outcomes (Out of 100%)					
L6K1	L6K2	L6S1	L6S2	L6C1	L6C3
16.67	16.67	16.67	16.67	16.67	16.67

Evaluation	
Assessment Tool	**Weight**
Midterm exam	20%

HW	5%
Case study	10%
Final project	15%
Final exam	50%

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