Jordan University of Science and Technology

Faculty of Computer & Information Technology

Computer Information Systems Department

CIS701 Data Science Essentials - JNQF Level: 9

First Semester 2023-2024

Course Catalog
3 Credit Hours. This course provides students with key concepts in data science. First, it gives an overview of the basic techniques of data science, including data analysis, statistical modeling, data engineering, relational databases, manipulation of data at scale (big data), data quality, and data visualization. Second, the course provides students with key concepts in data acquisition, preparation, and exploration alongside practical application-oriented examples. Students will learn how to produce a fully processed data set suitable for building analytical models that can be deployed to increase business profitability.
Teaching Method: On Campus

Text Book	
Title	Principles of Data Science
Author(s)	Sinan Ozdemir, Sunil Kakade, Marco Tibaldeschi
Edition	2nd Edition
Short Name	Ref# 1
Other Information	

Course References

Short name	Book name	Author(s)	Edition	Other Information
Ref# 2	Doing Data Science: Straight Talk from the Frontline	Cathy O'Neil, Rachel Schutt	1st Edition	

Instructor	
Name	**Prof. Hassan Najadat**
Office Location	A2 L3

Office Hours	Mon : 09:00 - 10:00 Mon : 12:00 - 13:45 Tue : 12:30 - 13:30 Wed : 09:00 - 10:00 Wed : 11:30 - 12:30 Thu : 08:00 - 08:15
Email	najadat@just.edu.jo

Class Schedule & Room
Section 1: Lecture Time: Tue : 13:30 - 16:30 Room: A2120

Tentative List of Topics Covered		
Weeks	**Topic**	**References**
Weeks 1, 2	INTRODUCTION TO DATA SCIENCE	From **Ref# 1**, From **Ref# 2**
Weeks 3, 4	TYPES of DATA	From **Ref# 1**
Week 5	STEPS of DATA SCIENCE	From **Ref# 1**
Week 6	BASIC STATISTICS and MATH	From **Ref# 1**
Week 7	EXPLORE THE DATA	From **Ref# 1**
Week 8	BUILDING MODELS	From **Ref# 1**
Weeks 9, 10	MACHINE LEARNING I	From **Ref# 1**, From **Ref# 2**
Weeks 11, 12	MACHINE LEARNING II	From **Ref# 1**, From **Ref# 2**
Weeks 13, 14	AN OVERVIEW OF DATA VISUALIZATION	From **Ref# 1**
Week 15	AN OVERVIEW OF BIG DATA	From **Ref# 1**, From **Ref# 2**
Week 16	Project Presentation	

Mapping of Course Outcomes to Program Outcomes and NQF Outcomes	Course Outcome Weight (Out of 100%)	Assessment method
The ability to find, acquire, and transform datasets into analysis-ready format. [1SO1] [1L9K1]	25%	Midterm Exam, Assignments
A basic understanding of common experimental and evaluation techniques for data science [1SO1] [1L9K1]	25%	Midterm Exam, Assignments, Final Exam

The ability to answer data science questions by analyzing the results of statistical and machine learning approaches. [1SO1] [1L9S1]	30%	Assignments, Final Exam
The ability to apply exploratory data analysis techniques. [1SO3] [1L9S1]	20%	Assignments, 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
											80		20			

Relationship to NQF Outcomes (Out of 100%)	
L9K1	L9S1
50	50

Evaluation	
Assessment Tool	**Weight**
Midterm Exam	30%
Assignments	20%
Final Exam	50%

Date Printed: 2024-02-28