Course Plan for Bachelor program - Study Plan Development and Updating Procedures/ Artificial Intelligence Department	QF01/0408-4.0E

Study plan No.	2023-2024		**University Specialization**		Data Science and Artificial Intelligence		
Course No.	**0135214**		**Course name**		Probabilities and Statistics for Artificial Intelligence		
Credit Hours	3		**Prerequisite Co-requisite**				
Course type	☐ MANDATORY UNIVERSITY REQUIREMENT	☐ UNIVERSITY ELECTIVE REQUIREMENTS	☑ FACULTY MANDATORY REQUIREMENT	☐ SUPPORT COURSE FAMILY REQUIREMENTS	☐ MANDATORY REQUIREMENTS	☐ ELECTIVE REQUIREMENTS	
Teaching style	☐ Full online learning		☑ Blended learning		☐ Traditional Learning		
Teaching model	☐ **2 Synchronous: 1asynchronous**		☐ **2 face to face : 1synchronous**		☑ **3 Traditional**		

Faculty member and study divisions' information (to be filled in each semester by the subject instructor)

Name	Academic rank	Office No.	Phone No.	E-mail	
Dr. Salahiddin Altahat	**Assistant Professor**	**9213**		**s.altahat@zuj.edu.jo**	
Section number	**Time**	**Place**	**Number of students**	**Teaching style**	**Approved model**
1	**12:30 - 14:00 Su, Tu**	**9105**	**24**	**Blended**	
3	**11:00 - 12:30 Mo, We**	**9136**	**23**	**Blended**	
Name	**Academic rank**	**Office No.**	**Phone No.**	**E-mail**	
Jafar.Abu khait	**Full Professor**	**336**		**j.abukhait@zuj.edu.jo**	
Section number	**Time**	**Place**	**Number of students**	**Teaching style**	**Approved model**
2	**11:00 - 12:30 Mo, We**	**9136**	**24**	**Blended**	
Name	**Academic rank**	**Office No.**	**Phone No.**	**E-mail**	
Dr. Shadi Alzubi	**Full Professor**			**Smalzubi@zuj.edu.jo**	
Section number	**Time**	**Place**	**Number of students**	**Teaching style**	**Approved model**
4	**9:30 -11:00 Sun, Tue**	**9010**	**24**	**Blended**	

Brief description

This course introduces probability and statistics for science and AI students.
It is mainly concerned about understanding basic probability and statistical concepts and how to link probability with AI. The prerequisite course needed since for this course is Computerized Mathematical Applications 0101274.
This course will Demonstrate knowledge of statistical terms, and understand different statistics and data types, and basic sampling techniques. Also, students will learn basic data visualization techniques: frequency distribution, pie graphs, stem and leaf plot …
Furthermore, students will apply basic descriptive model parameters: measures of central tendency, variations, position and exploratory data analysis for raw and grouped data.
Finally, sample spaces and probability will be introduced, along with the addition and multiplication rules for probability and conditional probability, and probability counting rules.

Learning resources

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Course book information (Title, author, date of issue, publisher ... etc)	1- Elementary Statistics: A Step by Step Approach, Allan G Bluman, , 7th Edition, 2009 McGraw-Hill—Main textbook			
Supportive learning resources (Books, databases, periodicals, software, applications, others)	Students need to watch assigned online lectures during the class activities. In class discussion will follow to enhance student comprehension.			
Supporting websites				
The physical environment for teaching	☐ Class room	☑ labs	☐ Virtual educational platform	☐ Others
Necessary equipment and software	**Excel**			
Supporting people with special needs	-			
For technical support	**Lectures are held in the lab to enhance hands on skills in excel application**			

Intended learning outcomes (S *= Skills, C= Competences K= Knowledge,)*

No.	Course learning outcomes	The associated program learning output code
	Knowledge	
ILO1 - K1	Understand different methods of collecting, presenting, and organizing data.	**PLO-K2**
ILO2 - K2	Demonstrate knowledge of statistical terms, and understand different statistics and data types, and basic sampling techniques.	**PLO-K2**
ILO3 - K3	Learn basic data visualization techniques: frequency distribution, pie graphs, stem and leaf plot…	**PLO-K2**
ILO4 - K4	Understand basic probability concepts	**PLO-K2**
	Skills	
ILO5 - S1	Apply basic descriptive model parameters: measures of central tendency, variations, position and data visualization	**PLO-S1**
ILO6 - S2	Apply basic data science concepts using Excel application	**PLO-S1**
	Competences	
ILO7 – C1	Use concepts of probability in solving real life problems.	**PLO-C1**
	Transferrable Skills	

Mechanisms for direct evaluation of learning outcomes

Type of assessment/learning style	Fully electronic learning	Blended learning	Traditional Learning (Theory Learning)	Traditional Learning (Practical Learning)
First exam	0	**0**	0	0
Second / midterm exam	%30	**30%**	30%	30%
Quizzes / homeworks	0	**15%**	15%	30%
PBL***	0	**15%**	15%	

Asynchronous interactive activities	%30	(15-25)%	0	0
final exam	%40	%40	40%	40%

Note: Asynchronous interactive activities are activities, tasks, assignments, research, studies, projects, work within student groups ... etc, which the students carry out on their own, through the virtual platform without a direct encounter with the subject teacher.

Schedule of simultaneous/face-to-face encounters and their topics

Week	Subject	learning style*	Reference **
1 – 2	statistical terms, and understand different statistics and data types, and basic sampling techniques.	Lectures + activity	**TB1:Ch1**
3 – 5	basic data visualization techniques	Lectures + activity	**TB1:Ch2**
6 – 7	learn basic descriptive model parameters	Lectures + activity	**TB1:Ch3**
8	Discuss the PBL project requirement, and link the in-lab Excel skill with the project requirement	Lectures + activity	
Midterm			
10-11	Apply basic descriptive model parameters on raw and grouped data	Lectures + activity	**TB1:Ch3**
12-14	Understand basic probability concepts	Lectures + activity	**TB1:Ch4**
15	PBL Project submission and discussion	Lecture (in lab demonstration and discussion)	
16	**Final Exam**		

*** Learning styles: Blended lecture, learning through problem-solving, participatory learning ... etc.**
**** Reference: Pages in a book, database, recorded lecture, content on the e-learning platform, video, website ... etc.**
*****PBL: Project Based Learning**