



Course Specification of Decision Making and Business Intelligence

Course No (.....)

2020/2021

Head of Department	Vise Dean for Qulity Assurance	Dean of the Faculty	Dean of Development center and Quality Assurance
Assoc. Prof. Mansour N. Ali	Dr. Anwar Al-Shamiri	Dr. Nagi Al-Shibani	Assoc. Prof. Dr.Huda Al.Emad
Rector of Sana'a University			
Prof. Dr. Qassim Mohammed Abbas			



I. Course Identification and General Information:

1	Course Title:	Decision Making and Business Intelligence			
2	Course Code & Number:				
3	Credit hours:	C.H			
		Th.	Seminar	Pr	Tr.
		3	-	-	-
4	Study level/ semester at which this course is offered:	4 th Level -1 st Semester			
5	Pre –requisite (if any):	Database Systems			
6	Co –requisite (if any):	None			
7	Program (s) in which the course is offered:	IS			
8	Language of teaching the course:	English/Arabic			
9	Study System	Term based system			
10	Mode of delivery:	Full Time			
11	Location of teaching the course:	Faculty of Computer and Information Technology			
12	Prepared By:	Dr.Ebraheem M.Alhaddad			
13	Date of Approval				

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II. Course Description:

This course aims to equip students with highly demanded business analytics skills in the current job market. The course will focus on extracting business intelligence by leveraging firm's business data as well as online social media content for various applications, including (but not limited to) search engine marketing, social media analytics, crowd-sourcing management, market analysis and demand estimation, social network analysis, customer segmentation, customer relationship management (CRM), web mining and health care management. The class will be hands-on and the emphasis will be placed on the "know-how" aspect - how to extract and apply business intelligence to improve business decision making and marketing strategies. We will analyze real-world business data using various business intelligence tools such as Tableau, SAS Enterprise Miner, Spark and Hadoop.

III. Course Intended learning outcomes (CILOs) of the course		Referenced PILOs
a.1	Recognize the major frameworks of computerized decision support: analytics, decision support systems (DSS), and business intelligence (BI)	A
a.2	Identify the enabling technologies, methods, and tools used to derive value from Data mining & Big Data.	
b.1	Analyze real-world business problems and translate it into BI and data mining problems.	B
b.2	Exhibit ability in pre-preparing and visualizing the right data towards business problems.	
c.1	Apply BI strategies using BI tools such as Spark, Hadoop, Tableau, SAS Enterprise Miner.	C
c.2	Implement descriptive, predictive, prescriptive analytics in solving business problems.	
d.1	Work effectively as a member within a group or individually to accomplish a common goal.	D

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(A) Alignment Course Intended Learning Outcomes of Knowledge and Understanding to Teaching Strategies and Assessment Strategies:

Course Intended Learning Outcomes	Teaching strategies	Assessment Strategies
a1- Recognize the major frameworks of computerized decision support: analytics, decision support systems (DSS), and business intelligence (BI)	Lectures Tutorials Presentation	Written examinations. Assignments including business analysis tasks.
a2-Identify the enabling technologies, methods, and tools used to derive value from Big Data	Lectures Tutorials Presentation	Written examinations. Assignments including business analysis tasks.

(B) Alignment Course Intended Learning Outcomes of Intellectual Skills to Teaching Strategies and Assessment Strategies:

Course Intended Learning Outcomes	Teaching strategies	Assessment Strategies
b1- Analyze real-world business problems and translate it into BI and data mining problems.	Interactive lecture Seminar Exercises	Written examinations. Assignments including analysis exercises.
b2- Exhibit ability in pre-preparing and visualizing the right data towards business problems.	Interactive lecture Seminar Exercises	Written examinations, Individual and group project work Assignments including analysis exercises.

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(C) Alignment Course Intended Learning Outcomes of Professional and Practical Skills to Teaching Strategies and Assessment Strategies:

Course Intended Learning Outcomes	Teaching strategies	Assessment Strategies
c1.Apply BI strategies using BI tools such as Spark, Hadoop, Tableau, SAS Enterprise Miner.	Lecture Projects Use-cases	Implementing projects using BI tools.
c2.Implement descriptive, predictive, prescriptive analytics in solving business problems.	Lecture Projects Use-cases	Implementing projects using BI tools.

(D) Alignment Course Intended Learning Outcomes of Transferable Skills to Teaching Strategies and Assessment Strategies:

Course Intended Learning Outcomes	Teaching strategies	Assessment Strategies
d1.Work effectively as a member within a group or individually to accomplish a common goal.	Guided individual reading. Group discussions work Seminar/presentation	Technical or practical reports /Presentations

IV. Course Content:

A – Theoretical Aspect:

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Order	Units/Topics List	Learning Outcomes	Sub Topics List	Number of Weeks	contact hours
1	Decision Making and Analytics	a1,b1,b2,c1	<ul style="list-style-type: none"> - An Overview of Business Intelligence, Analytics, and Decision Support. - Foundations and Technologies for Decision Making 	2	4
2	Descriptive Analytics	a1,b1,b2,c1, c2	<ul style="list-style-type: none"> - Data Warehousing - Business Reporting, Visual Analytics, and Business - Performance Management 	2	4
3	Predictive Analytics	a1,b1,b2,c1, c2	<ul style="list-style-type: none"> - Data Mining - Techniques for Predictive Modeling - Text Analytics, Text Mining, and Sentiment Analysis - Web Analytics, Web Mining, and Social Analytics 	4	8
4	Prescriptive Analytics	a2,b1,b2,c2	<ul style="list-style-type: none"> - Model-Based Decision Making: Optimization and Multi-Criteria Systems. - Modeling and Analysis: Heuristic Search Methods and Simulation - Automated Decision Systems and Expert Systems. - Knowledge Management and Collaborative Systems 	3	6
5	Big Data and Future Directions	a2,b1,b2,c1	<ul style="list-style-type: none"> - Big Data and Analytics. 	3	6

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	for Business Analytics		- Business Analytics: Emerging Trends and Future Impacts		
Number of Weeks /and Units Per Semester				14	28

V. Teaching strategies of the course:

Lecture/Interactive lecture
Tutorial
Exercises
Group discussions work and problem-solving learning.
Lab sessions
Guided individual reading.
Seminar/presentation

VI. Projects:

No	Assignments	Aligned CILOs(symbols)	Week Due	Mark
1	Create & Manipulate data using Data warehouse	b1,c1,c2	3 rd	5
2	Implementing DM For business or marketing data.	a1,b1,c1	6 th	5
3	Visualize data using Tableau	a2,b2,c1	9 th	5
4	Install and use Spark for data analysis	b1,b2,c1,c2	14 th	5

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VII. Schedule of Assessment Tasks for Students During the Semester:

No.	Assessment Method	Week Due	Mark	Proportion of Final Assessment	Aligned Course Learning Outcomes
1	Projects	3 rd , 6 th , 9 th , 14 th	20	20%	a2, b1, b2, c1, c2
4	Mid Term Exam Theoretical	9 th	10	10%	a1, a2, b1, b2
6	Final Exam (theoretical)	16 th	70	70%	a1, a2, b1, b2, c1, c2
7	Total		100	100%	

VIII. Learning Resources:

- Written in the following order: (Author - Year of publication – Title – Edition – Place of publication – Publisher).

1- Required Textbook(s) (maximum two).

- 2 - Ramesh Sharda ,Dursun Delen ,Efraim Turban – 2018 - “Business Intelligence, Analytics, And Data Science”- 4th edition - USA - Pearson Education.
- 3- Thomas Erl,Wajid Khattak,Paul Buhler - 2016 - “Big Data Fundamentals: Concepts, Drivers & Techniques” – 1st edition – USA - Prentice Hall

2- Essential References.

- 1- Gordon S. Linoff, Michael J. A. Berry – 2011 - “Data Mining Techniques: For Marketing, Sales, and Customer Relationship Management” – 3rd edition - Wiley Publishing, Inc.
- 2- Joshua N. Milligan – 2019 – “Learning Tableau 2019” – 3rd edition - UK- Packt Publishing
- 3- Sandy Ryza, Uri Laserson, Sean Owen, and Josh Wills – 2017 – “Advanced Analytics with Spark” – 2nd edition – USA - O’Reilly.

Head of Department

Assoc. Prof. Mansour N. Ali

Vise Dean for Quality Assurance

Dr. Anwar Al-Shamiri

Dean of the Faculty

Dr. Nagi Al-Shibani

Dean of Development center and Quality Assurance

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4- Holden Karau, Andy Konwinski, Patrick Wendell & Matei Zaharia- 2014 -“Learning Spark” – 1 st edition - USA - O’Reilly.
3- Electronic Materials and Web Sites etc.
1- https://www.tableau.com/ 2- https://spark.apache.org/

VIII. Course Policies:	
Unless otherwise stated, the normal course administration policies and rules of the Faculty of Computer and Information Technology apply. For the policy, see: ----- -- The University Regulations on academic misconduct will be strictly enforced. Please refer to ----- ----	
1	Class Attendance: A student should attend not less than 75 % of total hours of the subject; otherwise he will not be able to take the exam and will be considered as exam failure. If the student is absent due to illness, he/she should bring a proof statement from university Clinic
2	Tardy: For late in attending the class, the student will be initially notified. If he repeated lateness in attending class he will be considered as absent.
3	Exam Attendance/Punctuality: A student should attend the exam on time. He is Permitted to attend an exam half one hour from exam beginning, after that he/she will not be permitted to take the exam and he/she will be considered as absent in exam.
4	Assignments & Project The assignment is given to the students after each chapter; the student has to submit all the assignments for checking on time.
5	Cheating: For cheating in exam, a student will be considered as fail. In case the cheating is repeated three times during his/her study the student will be disengaged from the Faculty.
6	Plagiarism: Plagiarism is the attending of a student the exam of a course instead of another student. If the examination committee proofed a plagiarism of a student, he will be

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	disengaged from the Faculty. The final disengagement of the student from the Faculty should be confirmed from the Student Council Affair of the university.
7	Other policies: <ul style="list-style-type: none"> - Mobile phones are not allowed to use during a class lecture. It must be closed, otherwise the student will be asked to leave the lecture room - Mobile phones are not allowed in class during the examination. - Lecture notes and assignments my given directly to students using soft or hard copy



Faculty of Computer & Information Technology

Department of Information System

Program of Information System

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I. - Information about Faculty Member Responsible for the Course:							
Name of Faculty Member		Office Hours					
Location & Telephone No.		SAT	SUN	MON	TUE	WED	THU
E-mail							

II. Course Identification and General Information:						
1-	Course Title:	Decision Making and Business Intelligence				
2-	Course Number & Code:					
3-	Credit hours:	C.H				Total
		Th.	Seminar	Pr.	F. Tr.	
		3	-	-	-	3
4-	Study level/year at which this course is offered:	4 th Level -1 st Semester				
5-	Pre –requisite (if any):	Database Systems				
6-	Co –requisite (if any):	None				
7-	Program (s) in which the course is offered	IS				
8-	Language of teaching the course:	English/Arabic				
9-	System of Study:	Term based system				
10-	Mode of delivery:	Full Time				
11-	Location of teaching the course:	Faculty of Computer & Information Technology				

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IX. Intended learning outcomes (ILOs) of the course:

1. Recognize the major frameworks of computerized decision support: analytics, decision support systems (DSS), and business intelligence (BI)
2. Identify the enabling technologies, methods, and tools used to derive value from Data mining & Big Data.
3. Analyze real-world business problems and translate it into BI and data mining problems.
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X. Course Content:				
A – Theoretical Aspect:				
Order	Units/Topics List	Sub Topics List	Number of Weeks	contact hours
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4	Midterm Exam	Exam	1	2
5	Prescriptive Analytics	<ul style="list-style-type: none"> - Model-Based Decision Making: Optimization and Multi-Criteria Systems. - Modeling and Analysis: Heuristic Search Methods and Simulation - Automated Decision Systems and Expert Systems. - Knowledge Management and Collaborative Systems 	3	6
6	Big Data and Future Directions for Business Analytics	<ul style="list-style-type: none"> - Big Data and Analytics. - Business Analytics: Emerging Trends and Future Impacts 	3	6
7	Final exam	Exam	1	2

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Number of Weeks /and Units Per Semester	16	32
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IV. Teaching strategies of the course:

Lecture/Interactive lecture
Tutorial
Exercises
Group discussions work and problem-solving learning.
Lab sessions
Guided individual reading.
Seminar/presentation

XI. Projects:

No	Assignments	Week Due	Mark
1	Create & Manipulate data using Data warehouse	3 rd	5
2	Implementing DM For business or marketing data.	6 th	5
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2- <https://www.tableau.com/>

2- <https://spark.apache.org/>

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اللجنة الإشرافية			
م.م	الاسم	الصفة	التوقيع
١	أ.م.د. عبد الماجد الخليدي	نائب عميد الكلية للشؤون الأكاديمية	
٢	أ.م.د. احمد مجاهد	نائب عميد مركز التطوير الأكاديمي وضمان الجودة	
٣	د. حسين الأشول	ممثل المركز في الكلية	
٤	أ.د. إبراهيم المطاع	نائب رئيس الجامعة للشؤون الأكاديمية	

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