KINGDOM OF SAUDI ARABIA
IMAM MOHAMMAD IBN SAUD ISLAMIC UNIVERSITY
COLLEGE OF COMPUTER AND INFORMATION SCIENCES
INFORMATION SYSTEMS DEPARTMENT
BACHELOR IN INFORMATION SYSTEMS

المملكة العربية السعودية
جامعة الإمام محمد بن سعود الإسلامية
كلية علوم الحاسب والمعلومات
قسم نظم المعلومات
بكالوريوس نظم المعلومات

SYLLABUS

IS1220: Introduction to Databases

CREDIT HOURS	4 (Lectures: 3 hours +Lab:2 hours)

PREREQUISITE	1S1130–CS1242

Instructor:
Contact information and office hours
Office No: To be announced (TBA) **Office Hours: TBA** **E-mail: _____@imamu.edu.sa**

COURSE DESCRIPTION
The aim of the course is to introduce the concept of database, its purpose and advantages to the students. Relational model, normalization, ER diagrams, relational databases, and SQL. It will be taught as well as more recent developments such as NoSQL and big data in order to enforce theoretical and practical understanding of the course to build a complete database system.

	COURSE LEARNING OUTCOMES (CLOs)	Aligned SOs
1	**Knowledge and Understanding**	
1.1	Define the concept of databases, its purpose, advantages and concepts.	1(I)
1.2		
1.3		
1.4		
1.5		
2	**Skills :**	
2.1	Write a query statement based on SQL standards.	2(I)
2.2	Design a correct ER diagram based on informal system description.	2(I)

2.3	Apply the mapping rules to transform the ERD into a relational schema.	2(I)
2.4	Apply the normalization rules to transform the ERD into a relational schema.	2(I)
2.5		
3	**Values:**	
3.1	Function effectively on teams to accomplish a common goal.	5(P)
3.2	Present a topic in a compelling manner.	3(P)
3.3		
3.4		
3.5		

TEACHING Strategies
Lectures Self-Learning

No	List of Topics	Contact Hours	Self-Learning
1	Introduction to Database Systems	*4*	
2	Data Modelling Using the Entity-Relationship (ER) Model & UML Notations	*12*	
3	The Enhanced Entity-Relationship (EER) Model	*6*	
4	The Relational Data Model and Relational Database Constraints	*6*	
5	Relational Database Design by ER- and EER-to-Relational Mapping	*8*	
6	The SQL Database Language	*8*	*4*
7	Relational Algebra		*2*
8	Basics of Functional Dependencies and Normalization for Relational Databases	*12*	
9	NOSQL Databases and Big Data Storage Systems	*4*	*4*
10			
11			
12			
Total		**60**	**10**

TEXT BOOK
Fundamentals of Database Systems, 7th Edition, Ramez Elmasri and Shamkant B Navathe, Pearson, 2016. ISBN 13: 9781292097619 ISBN 10: 1292097612

REFERENCES
Database System Concepts, 7th Edition, Abraham Silberschatz Professor, Henry F. Korth and S. Sudarshan, The McGraw-Hill Companies 2019. ISBN 13: 9780078022159 ISBN 10: 0078022150 Modern Database Management, Global Edition, 13th edition Jeff Hoffer ; Ramesh Venkataraman ; Heikki Topi , Pearson, 2019, ISBN 13: 9781292263359 SBN 10: 1292263350

	Course Assessment Methods		
No	**Assessment Method**	**Due Week**	**% of Total Assessment**
1	**Quiz**	4	10
2	**Assignment**	9	10
3	**Midterm**	7	20
4	**Project / Lab Exam**	11	20
5	**Final Exam**	13	40