

1.	Course Title	Database Management System		
2.	Course Code	CCPS1533		
3.	Status	Faculty		
4.	Credit Hour	3 (2+1) 2 lecture (2 hours lecture x 14 weeks) 1 tutorials (1.5 hours per x 14 weeks) using simulator & emulator supervised by tutor		
5.	Semester/Year	2/1		
6.	Prerequisites	CCPS1513 Computer Programming		
7.	Teaching method:	Distance Learning (Electronic)		
8.	Evaluation	Assessment and Marking Percentage: Participation 5% Quizzes 15% Project 15% Mid Sem Exam 15% Final Examination 50%		
9.	Lecturer			
10.	Objective of the Subject	The objectives of the subject are to enable students to understand the: • Concepts of database management systems • query optimization and its impact on programming • database management systems integrity, recovery, concurrency, security and transaction management mechanisms • Capabilities of a DBMS		
11.	Learning Outcomes	After completing this subject, the student should be able to: • explain the basic concept of database systems development apply the normalization of database tables • construct the database design • create the database and tables structures • develop the transactional management and concurrency control • Able to apply DBMS concepts using standard DBMS software.		
12.	Synopsis	This course covers the aspect of the theory, design and management of databases. Emphasis will be given on solving problems encountered when designing a database and the use of database system. The main topics of this course include the DBMS, E-R model, SQL and etc. Students are expected to carry out a project on database. This course also covers the usage of a generic DBMS system that are platform independent (in terms of O/Ses), very low TOC, easy embedded deployment, easily integrated with leading development systems, support for JDBC, advanced security systems, web and client based applications development.		
13.	Topics	Details	Lecture (Hrs)	Tutorial (Hrs)
	Week 1	Introduction to Database Management • Database Characteristics • Features of Database Management Systems	2	1.5
	Week 2	Introduction to Database Management • Evolution of Database Technology • Architectures of Database Management Systems	2	1.5
	Week 3	The Relational Database Model • A Logical View of Data • Keys • Integrity Rules	2	1.5
	Week 4	• Relational Database Operators • The Data Dictionary and System Catalog • Relationships Within The Relational Database	2	1.5
	Week 5	Entity Relationship (E-R) Modeling	2	1.5

Bachelor of Information Technology in System Development and Administration (Hons)

		- Basic Modeling Concepts - Data Model (The Conceptual Model, The Internal Model, The External Model And The Physical Model - The Entity Relationship Model (E-R) Model. (Entities, Attributes, Relationships, Connectivity And Cardinality, Relationship Strength, Composite Entities, Entity Supertypes and Subtypes)		
	Week 6	Normalization of Database Tables - The Need For Normalization - Conversion To First Normal Form - Conversion To Second Normal Form	2	1.5
	Week 7	- Conversion To Third Normal Form - The Boyce-Codd Normal Form(BCNF) - Higher-Level Normal Form	2	1.5
	Week 8	Database Design - Changing Data Into Information - The Information System	2	1.5
	Week 9	- The Systems Development Life Cycle (Planning, Analysis, Detailed Systems Design, Implementation, Maintenance). - The Database Life Cycle (The Database Initial Study, Database Design, Implementation and Loading, Testing And Evaluation, Operation, Maintenance And Evolution	2	1.5
	Week 10	Structured Query Language (SQL) - Creating the database and tables structures - Data Entry	2	1.5
	Week 11	Saving, Listing, Restoring And Deleting Tables contents Advanced Data Management commands More complex queries and SQL Functions Procedural SQL	2	1.5
	Week 12	- Transaction Management and Concurrency Control - What is a Transaction - Concurrency Control - Concurrency Control with Locking Methods	2	1.5
	Week 13	Transaction Management and Concurrency Control - Concurrency Control with Time Stamping Methods - Concurrency Control with Optimistic Methods	2	1.5
	Week 14	Database Recovery Management		
		Total contact hours	28	21
		Equivalent lecture hours	28	14
		Total lecture hours	42	
		Credit hours	3	
14.	Main reference: Textbook:	1. Ramez Elmasri and Shamkant B. Navathe, Fundamentals of Database Systems (5th Edition) (2006) 2. Hector Garcia-Molina, Jeffrey D. Ullman, and Jennifer Widom, Database Systems: The Complete Book (2nd Edition) (2008)		
15.	Additional References:	1. Clare Churcher, Beginning Database Design: From Novice to Professional (2007) 2. Toby J. Teorey, Database Modeling and Design: Logical Design, 4th Edition (The Morgan Kaufmann Series in Data Management Systems) (2005)		
	Other Materials:	All materials will be available to the students online.		