

Kathmandu University School of Management
Bachelor of Business Administration
Course Syllabus

Course Title	DATABASE MANAGEMENT SYSTEMS	
Course Code Number	COM 330	
Credit Hours	3	
Course Objective		
Main Objective	The course aims to develop thorough understanding of database; starting from the traditional data management to modern techniques of database management. The objective of the course is also to develop understanding on data-modeling, appropriate database design with normalization, queries for data access, transaction processing, and concurrency control and recovery techniques.	
Learning Unit		
Learning Unit One Net Contact Hours -3 hrs	1. Introduction Overview of Manual Database and Flat-file Systems; Purpose of DBMS; Database Users and Administrators; DBMS Architecture, Schemas and Instances, Data Independence, Data Models.	
Learning Unit Two Net Contact Hours - 6 hrs	2. Data Modeling Using E-R Diagrams Concept of Entity Sets, Relationships, Attributes; Keys - Candidate, Primary, Foreign; Entity-Relationship (E-R) Diagram; Weak Entity Sets, Reduction of E-R Schema to Tables.	
Learning Unit Three Net Contact Hours - 3 hrs	3. Relational Model Introduction, Structure of Relational Model	
Learning Unit Four Net Contact Hours - 10 hrs	4. Structured Query Language, SQL Form of a basic SQL Query, examples; Set Operations - UNION, INTERSECT, EXCEPT; Aggregate Operations using GROUP BY and HAVING Clauses; NULL Values, Logical Operators; Views; Database Modification; Querying in Multiple tables using joins; Data Definition Language, DDL	
Learning Unit Five Net Contact Hours - 5 hrs	5. Integrity Constraints Domain Constraints; Referential Integrity	
Learning Unit Six Net Contact Hours - 7 hrs	6. Normalization Un-normalized Forms and Decomposition; Definitions and Use of Functional Dependencies to get 1NF, 3NF and BCNF; Overview of Normalization using Multi-valued Dependencies	
Learning Unit Seven Net Contact Hours - 5 hrs	7. Transaction Processing Concept and State of Transaction; Desirable Properties of Transaction; Schedules, Serializability (Conflict and View) and Recoverability; Testing for Conflict Serializability	
Learning Unit Eight Net Contact Hours - 5 hrs	8. Concurrency Control Techniques Lock-based Protocols; Timestamp-based Protocols; Validation-based Protocols; Multiversion Techniques; Deadlock Handling	
Learning Unit Nine Net Contact Hours - 4 hrs	9. Database Recovery Techniques Recovery Concepts; Recovery Techniques based on Deferred and Immediate Update; Recovery with Concurrent Transactions; Database backup and Recovery from Catastrophic Failures.	
Total Contact Hours	48 hrs (excluding assessment, lab hours, and final examination)	
Basic Text	Elmasri and Navathe (2015), <i>Fundamentals of Database Systems</i> , 7 th Edition	
Other References	Abraham Silberschatz, Henry Korth, and S Sudarshan (2010), <i>Database System Concepts</i> ,6 th Edition	
Evaluation Scheme	In-Semester evaluation 50% End-Semester evaluation 50% Total 100%	