Course Name	Database Systems-I	Course Code	221 INFS - 3		
Credit Hours	3	Contact Hours	Theory	Lab	Total
			2	2	4
Offered as	☐ University Requirement ☒ College Requirement ☐ Program Requirement		☒ Required ☐ Elective		
Offered in	☒ BS - Computer Science ☒ BS – Information Systems ☒ BS - Computer & Network Engineering				
Level	5th Level	Prerequisite	INFS 111		

Course Description:

This course aims to discuss the basic concepts and designs of the database. It covers topics such as database system architecture, data model, levels of abstraction, data independence, and concurrency control. It focuses on how to design databases for given problems, and how to use database effectively, including ER modelling, key and participation constraints, weak entities, class hierarchies, aggregation and conceptual DB design using the ER model. Relational model: creating and modifying relation using query language, enforcing integrity constraints, ER to relational and view. Schema refinement and normal forms: Functional dependencies, reasoning about functional dependencies, normal forms, decompositions and normalization. Relational Queries: Relation algebra operation and commercial query languages. Students will be trained on one of the software tools: Oracle, Sybase, and DB2.

Course objectives:

This course will develop the students' ability to:

- Understand and discuss the concepts of database design
- Design a conceptual data model and logical database model, convert the logical database designs to physical designs and develop the physical database
- Evaluate a set of query using relational algebra operations
- Be able to execute a set of query using query language

Grading	☒ Exam 1	10%	☒ Exam 2	10%	☒ Assignment(s)	5%
	☒ Final	40%	☒ Lab	20%	☐ Mini Project	15%

Text Book:

Elmasri, R., Navath,S., and Navath, B.,"***Fundamentals of Database Systems***", Pearson New International Edition, 6th Edition, 2015, ISBN-10: 0133970779 | ISBN-13: 9780133970777.

Reference Book:

Date, C. J., "Introduction Database Systems", Addison-Wesley, 8th ed., 2003, ISBN 0321197844.
Carlos Coronel, Steven Morris, Peter Rob. "Database Systems: Design, Implementation, and Management". Course Technology-cengage Learning, 2011.