

Course Title	Database Systems
Course Code	CC-215
Credit Hours	3+1
Category	Computing Core
Prerequisite	None
Co-Requisite	None
Follow-up	None
Course Description	Basic database concepts, Database approach vs file based system, database architecture, three level schema architecture, data independence, relational data model, attributes, schemas, tuples, domains, relation instances, keys of relations, integrity constraints, relational algebra, selection, projection, Cartesian product, types of joins, normalization, functional dependencies, normal forms, entity relationship model, entity sets, attributes, relationship, entity-relationship diagrams, Structured Query Language (SQL), Joins and sub-queries in SQL, Grouping and aggregation in SQL, concurrency control, database backup and recovery, indexes, NoSQL systems.
Text Book(s)	Carlos Coronel, Steven Morris, Database Systems: Design, Implementation & Management, 13 th Edition, Cengage Learning, 2017. ISBN-10: 1337627909.
Reference Material	<p>Jeffrey A. Hoffer, Ramesh Venkataraman, Heikki Topi, Modern Database Management, 12th Edition, Pearson, 2015. ISBN-10: 0133544613.</p> <p>Thomas Connolly, Carolyn Begg, Database Systems: A Practical Approach to Design, Implementation, and Management, 6th Edition, Pearson, 2015. ISBN-10: 1292061189.</p> <p>Ramez Elmasri, Shamkant B. Navathe, Fundamentals of Database Systems, 7th Edition, Pearson, 2016. ISBN-10: 1292097612.</p> <p>C. J. Date, An Introduction to Database Systems, 8th Edition, Pearson, 2004. ISBN-10: 0321189566.</p> <p>Michael McLaughlin, Oracle Database 11g PL/SQL Programming, 1st Edition, McGraw-Hill Education, 2008, ISBN: 0071494456.</p>