

Database Administration and Management					
Credit Hours:	2	Course Code:	INFT-3110	Prerequisites:	None
Course Learning Outcomes (CLOs):					
At the end of the course, the students will be able to:				Domain	BT Level*
1. <i>Understand basic concepts of DBMS architecture</i>				C	1
2. <i>Understand basic concepts of SQL *PLUS Overview and Oracle Views.</i>				C	2
3. <i>Understand basic concepts of Modifying Data and Oracle Processes.</i>				C	3
4. <i>Understand basic concepts of Managing Constraints in Oracle</i>				C	3
5. Understand basic concepts of Managing Views, User Access and Security					
* BT= Bloom's Taxonomy, C=Cognitive Domain, P=Psychomotor Domain, A=Affective Domain					
Course Contents:					
Introduction to DBMS architecture and data independence, DBA roles and responsibilities overview, SQLPlus and iSQLPlus fundamentals and usage, data manipulation language (DML) and transaction control, managing constraints (creation, modification, enabling, disabling, deferring), working with views and materialized views, user access and security management (user accounts, roles, privileges, profiles), Oracle DBMS architecture overview, instance management (startup, shutdown, session management, alerts), control file and redo log file management, tables, indexes, and constraints management, backup and recovery concepts and strategies, failure types and recovery techniques, performance tuning basics and methodology, introduction to network administration in DBMS, performance monitoring and tuning techniques, fundamentals of database configuration management, introduction to cloud database management and trends, introduction to NoSQL databases and their administration, Big Data concepts and tools relevant to DBAs, containerization and orchestration in database management (Docker, Kubernetes), advanced security practices (encryption, data masking, GDPR compliance), automation in DBA tasks using scripting and tools, introduction to Database as a Service (DBaaS) models.					
Teaching Methodology:					
Lectures, Written Assignments, Practical labs, Semester Project, Presentations.					
Course Assessment:					
Mid Term Exams, Final Term Exams, Assignments, Quizzes, Project, Presentations, Practical Exam					
Reference Material:					
1. Database Administration: The Complete Guide to DbA Practices and Procedures by Craig S. Mullins, 2 nd Edition, Year 2012, ISBN-13: 978-0133012729 2. Mastering SQL Server Database Administration. A Comprehensive Guide to Perfection and Productivity by Michael Kirshteyn, Year 2024, ISBN-13: 9798875587153 3. SQL in a Nutshell: A Desktop Quick Reference by Kevin Kline and Regina O. Obe, 4 th Edition, Year 2022, ISBN-13: 978-1492088820					