Database Systems
and
Cloud Computing

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Course Goal

> At the end of this course, students will be able to:

- Understand the basics of database management systems
- Understand ER modeling components and apply them for database conceptual design.
- Understand Relational Algebra queries and develop relation algebra queries
- Understand Relational Calculus and SQL queries.
- Understand the indexing mechanism in databases.
- Understand the basic levels of normalization and apply them for database design improvement.
- Understand transaction isolation levels
- Understand fundamentals of cloud computing, its technologies, challenges and applications

Course Content

1. Introduction to DB Concepts
2. DB Design Concepts
   ER Modeling, Advanced Modeling, Normalization
3. Relational Algebra and SQL
4. Indexes and Query Processing
5. Transaction Processing and Concurrency Control
6. Database Performance Tuning and Query Optimization
7. NoSQL Databases and Big Data
8. MIDTERM
9. Database Connectivity and Web Applications
10. Fundamentals of Cloud Computing
11. Cloud Service Models

Course Content

11. Virtualization and Containerization
12. Cloud Native Applications and MicroServices Architecture
13. Cloud Security
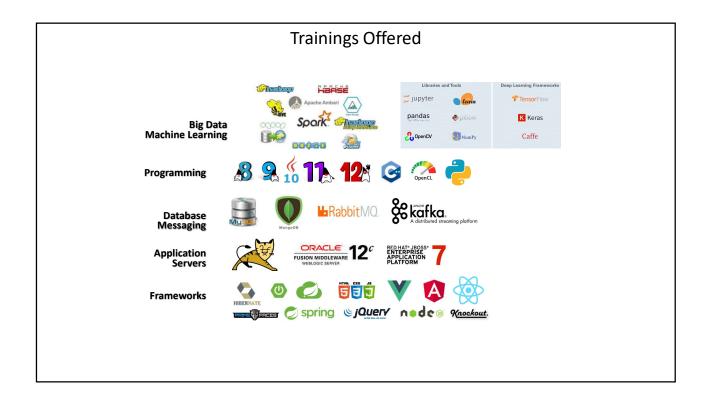14. Cloud Computing Platforms: Azure, AWS, GCP

Course Information

> Duration

14 Weeks

− Course Hours

15:30-18:30

Background

> **1995, B.Sc., ITU Computer Engineering**

> **1997, M.Sc., ITU Computer Engineering**

> **2007, Ph.D., ITU Computer Engineering**

> **1995-2003, RA, *ITU CE***

> **2004-2008, Lecturer, ITU CE**

> **2008-2017, Consultant and Trainer, *Omega Training & Consultancy***

> **2018-to date, Founder & CEO, DEEPCLOUDLABS**

> **2022-to date, Director of Big Data Education and Research Center, BAU**

> **2022-to date, Assistant Prof., AI Engineering Department, BAU**

Areas of Interest

> Java Desktop and Enterprise Technologies

> Spring Framework: Spring Data, Spring MVC, Spring Boot

> MySQL, MySQL Cluster

> Programming Paradigms: OOP, FP, GP, RP

> Oracle Fusion Middleware Technologies: SOA, BPM, OSB

> Big Data and Machine Learning

> Algorithmic Trading & High-frequency Trading

> Crypto-Currency & Block-chain

> Digital Image & Video Analysis and Processing

> Real-Time Computer Vision Systems

Trainings Offered

My Certifications

Contact

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> https://binkurt.blogspot.com

> https://www.**deepcloudlabs**.com