

CS 59000DSP Spring 2020 tentative syllabus:

1) Access Control Models and Systems

- Discretionary models
- Mandatory models
- RBAC models
- Case studies: System R, Oracle, SQL Server
- Context-based access control
- Case study: Oracle VPD
- Multi-level database systems
- Case study: Labeled Oracle

2) Database Encryption Architectures

3) Data Integrity Models

4) Research papers (TBI): discussions on the papers

5) SQL Injection attacks

6) Insider threats

- Case study: Oracle Vault
- Research approaches: anomaly detection techniques, and machine learning techniques

7) Ransomware

- Research papers (TBI): discussions on the papers

8) Privacy techniques

- Foundations: k-anonymity, l-diversity, differential privacy
- Data transparency: research discussion

9) Digital identity Management