

BZAN 6356 \*

Course covers principles of major database types and DBMS architecture (i.e. relational, federated, MapReduce); modern scalable database architecture (i.e. cloud-native database systems) and alternative means to build cloud-based analytics databases (IAAS, PAAS, SAAS); topics of systems design, architecture, and analysis (e.g. storage engines, transactions engines, structured query languages, normalization, concurrency); and physical database systems component/architecture considerations (e.g. disks, memory, network, distributed architectures, shared architectures, and controllers).

BZAN 6357 \*

Drawing on descriptive analytics, artificial intelligence, and machine learning, the data mining process aims at discovering novel, interesting, and actionable patterns in large datasets. This course will not only introduce students to the fundamentals, but will also take a deeper dive into the most critical algorithms of data mining: linear and logistic regression modeling, decision trees and random forests, shallow and deep neural networks, and comparison of these models. The class follows a learning-by-doing approach in which students will complete bi-weekly assignments using real world datasets. Students will also complete a data mining research project.

\* Course descriptions of the above courses may be subject to change at any time without pre-notification.