

# DSE - DATA SCIENCE FOR ENGINEERING

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## **DSE 6000 Computing Platforms for Data Science Cr. 3**

Covers an overview of various computing platforms for developing, deploying, configuring a wide range of data science applications for different domains. The programming models, characteristics of supported workload, and management of performance, cost and scalability will be compared side by side. Offered Yearly.

**Restriction(s):** Enrollment is limited to students with a major in Data Sci & Business Analytics; enrollment limited to students in the College of Engineering or School of Business.

## **DSE 6100 Data Modeling and Management Cr. 3**

Covers both traditional data modeling and big data modeling from conceptual design, logical-to-physical mapping, to physical schema optimization. Provenance management, which concerns about the lineage and history of a data product, is important for the repeatability of data analysis. The course will present various concepts of provenance and its relationships to data quality and trust. Offered Yearly.

**Restriction(s):** Enrollment is limited to students with a major in Data Sci & Business Analytics; enrollment limited to students in the College of Engineering or School of Business.

## **DSE 6200 Modern Databases Cr. 3**

Covers an overview of databases, tools, and computing platforms. One focus is basic SQL, NoSQL, and NewSQL programming skills and a comparison of their cons and pros. In particular, the students will learn the criteria to choose a database system, either SQL or NoSQL, based on the requirements of an application domain. Offered Yearly.

**Restriction(s):** Enrollment is limited to students with a major in Data Sci & Business Analytics; enrollment limited to students in the College of Engineering or School of Business.

## **DSE 6300 Data Science Applications Development Cr. 3**

Focuses on the software engineering cycle of developing a comprehensive data science application. Students will have the freedom to choose a computing platform, or a NoSQL database as the underlying infrastructure for developing a data science application. Students will also choose a particular domain and problem in which one needs to address one of the big data challenges: volume, velocity, or variety. Offered Yearly.

**Restriction(s):** Enrollment limited to students in the College of Engineering or School of Business.

## **DSE 7500 Practicum Cr. 6**

Application of theoretical knowledge acquired during the Data Science and Business Analytics program to a project involving actual business problems/opportunities and data in a realistic setting. Engages the entire process of solving a real-world data science and business analytics project including: setting the project scope, collecting and processing data, applying analytic methods and presenting the developed solution platform. Both the problem statements for the project assignments and the datasets originate from real-world domains. Offered Yearly.

**Restriction(s):** Enrollment is limited to students with a major in Data Sci & Business Analytics; enrollment is limited to Graduate level students; enrollment limited to students in the College of Engineering or School of Business.

**Equivalent:** DSA 7500, DSB 7500