DATA SCIENCE & ENGINEERING (DSEG)

DSEG 660 Applied Deep Learning **3 Credits**
Grade Mode: Standard Letter, Audit/Non Audit

This course covers intermediate-level topics in deep learning, including: deep neural network (DNN) components and architectures, DNN training and optimization, convolutional neural networks, recurrent neural networks, attention mechanism, reinforcement learning, and applications of deep learning in computer vision, speech recognition and natural language processing.

DSEG 682 Special Topics in Data Science and Engineering **3 Credits**
Grade Mode: Standard Letter

This course covers a variety of timely, cutting-edge areas in Data Science and Engineering. Taught by our faculty research scientists from our research institutes or industrials, this course allows students to keep up with critical trends and topics in the field of Data Science and Engineering.

DSEG 733 Advanced Data Management System **3 Credits**
Grade Mode: Standard Letter, Audit/Non Audit

This course covers several advanced data management systems that are commonly used in practice. These include data warehouses, graph databases, column-oriented databases, distributed databases, cloud-based databases, and spatial databases. Topics include storage, indexing, query processing, protocol design, transactions processing and system architecture.

DSEG 735 Learning from Data **3 Credits**
Grade Mode: Standard Letter, Audit/Non Audit

This course covers the theory, algorithms, and applications of computational learning. The technical topics covered include linear models, theory of generalization, regularization and validation, neural networks, support vector machines, as well as specialized techniques and a term-long project with big datasets.

DSEG 760 Machine Learning **3 Credits**
Grade Mode: Standard Letter, Audit/Non Audit

This course deals with intermediate and advanced topics in machine learning. Topics to be covered include: linear regression, logistic regression, support vector machines, Bayesian networks, Markov network, conditional random fields, inference methods based on graphical models, learning methods for graphical models, and recent applications of machine learning methods.