

Data Science (DS)

Courses

DS 390 Research Project in Industrial Mathematics 3 Credits (3,0)

Authentic data-enabled research projects, based on original real-world problems provided directly by businesses, industry, and government (BIG). Industry related challenges: problem formulation, identification of steps toward solution, data visualization and interpretation, as well as data analyses. Written and oral skills along with teamwork.

Prerequisites: MA 243

DS 440 Data Mining 3 Credits (3,0)

Data Mining is to gather, assimilate, and make sense of large amounts of data. The course includes techniques, algorithms, and open-source software to automatically classify data, to discover novel and useful patterns, and to help predict future outcomes.

Prerequisites: MA 243 and MA 305

DS 444 Scientific Visualization 3 Credits (3,0)

Scientific visualization is the representation of data graphically as a means of gaining understanding and insight into the data. This course will introduce different aspects of scientific visualization: computer graphics and related mathematics concepts, application packages for interactive display and analysis of data.

Prerequisites: MA 243 and EGR 115

DS 490 Data Science Capstone 3 Credits (3,0)

Capstone course integrating learning outcomes from Data Science program courses applied to projects in the students' areas of concentration. Generating applied questions; determining which data can address the question; locating data; acquiring data; data cleaning; data exploration; modeling and data analysis; data visualization; presentation of results; presenting to technical and nontechnical audiences