

Course Descriptions

DAVA 3000 & 7000 Data Visualization

Visualization is crucial for understanding complex information and for enabling humans to act on information appropriately. For example, visualization is used in many application areas such as social and health sciences, business, the natural sciences and engineering. This course introduces the foundations of information visualization rooted in cognitive psychology and perception. The course uses the visualization software Tableau and MS Excel to create visualizations. This course also teaches retrieving information from data sources, such as data bases and the internet, preparing data for processing, as well as creating and presenting information visualizations using standard software. *3 credits*

DAVA 3010 & 6010 Data Mining

This course introduces the foundations of applied data mining. There is a need for extracting useful information from raw data in fields such as social and health sciences, business, the natural sciences and engineering. This course covers the fundamental ideas and algorithms of data mining. Furthermore, it teaches applying data mining techniques in order to extract useful information from data. Standard software for data mining will be used. The course is intended for any student desiring an introduction to data mining.

Prerequisite for DAVA 3010: MATH 0012 or appropriate placement.

3 credits

PSYC 3214 & 7214 Cognition for Visualization.

An essential element of being able to create optimal visual displays of data is an understanding of the human cognitive system. What are its limitations? What are the data formats that it finds easiest to interpret? This course will survey basic and applied research in cognition with the goal of understanding how humans process information. Topics include attention, perception, memory, reasoning and decision making. This research will be applied to the design of visual displays of data that minimize cognitive processing load and maximize comprehension. Cross-listed with PSYC 3214 Cognitive Psychology.

Prerequisite: C- or better in PSYC 1101.

3 credits