DATA (DATA)

DATA 600 - Data Analysis & Visualization, 3 credits.
This course focuses on technical and visual aspects of inspecting and presenting data. Technical topics include importing data from various sources, establishing relationships between data tables, transforming data, filtering, sorting, and aggregation. Visuals will be designed to focus attention on what the data is saying, with a special focus on visuals that respond dynamically to user manipulations. Emphasis will be placed on the design/refinement cycle for visualizations.

DATA 608 - Statistics & Research Analysis, 3-4 credits.
This course allows the student to understand and demonstrate knowledge of descriptive and inferential statistics used in research, and apply their knowledge to real-world situations and research questions. Emphasis is placed on distinguishing similarities and differences among statistical tests, and recognizing the essentiality of statistics for producing and comprehending scientific research

DATA 617 - Forecasting, 3 credits.
Forecasting is the science of predicting future events and outcomes. In this course students will learn how to effectively use both data and theory to create forecasts and how to quantify and communicate uncertainty in forecasts. Topics include random walks, Markov models, time series analysis, Bayesian methods and qualitative forecasting.
Frequency: *Alternate Years - 1st Semester*

DATA 618 - Data Mining, 3 credits.
Data mining is the study of discovering and assessing patterns, relationships and information within large data sets. This course provides an introduction to data mining with an emphasis on predictive modeling techniques and machine learning algorithms. Examples and applications will be drawn from various disciplines.
Prerequisites: DATA 608

DATA 640 - Agriculture Data Analytics, 3 credits.
The students will study different patterns of agricultural organizations' decision-making and ways that data analysis can be effectively used for each type. The course provides an understanding of the basics of several important analytic methods for agriculture business. Students will learn various machine learning models using Python in this course which will help them in making better decisions.
Frequency: *Every Year - Second Semester*

DATA 665 - Advanced Operations Management/Research, 3 credits.
Students will learn specialized applications of operations research to problems arising from business. These will include data envelope analysis, transportation/transshipment problems, goal programming, network models (including PERT-CPM), and capital budgeting. Other topics such as inventory models, facility location problems, etc. will be covered as time and student interest permit. Special attention will be paid to the development and analysis of models for realistic medium- to large-scale problems.

DATA 680 - Special Topics, 0-4 credits.
Repeatable: Yes

DATA 685 - Integrative Capstone Experience I, 3 credits.
The main purpose of the capstone course is to provide the culminating, integrative curricular experience for students. The course consolidates students' learning to develop a project with knowledge gained from many areas in the MSQM. The focuses of the course are case analyses and professional development.

DATA 686 - Integrative Capstone Experience II, 3 credits.
Integrative Capstone Experience II's main purpose is to provide a structured means for students to get hands-on experience in real-life business analytics practices. Students will apply skills and knowledge gained throughout the MSQM program, such as statistical techniques, models, and analytical decision-making that support the business-defined problems scoped collaboratively between companies and Concordia.
Prerequisites: DATA 685 (may be taken concurrently)