

Special Topics to Consider

MA755: Machine Learning

Prerequisite(s): *MA710 or MA799 Data Science or Instructor Approval*

Also requires the assumption of working Familiarity with R/Python and willingness to understand the Mathematics involved and the algorithms used.

Notes: *This course may be used as an elective in the MSBA or an application elective in the Graduate Certificate in Business Analytics or Business Analytics Concentration in the MBA. It may also be used as a MBA unrestricted elective or an outside elective for certain MS degree programs. In Spring 2017 this is a combined graduate/undergraduate course.*

Course Description: In the course we further investigate the topics of learning from and predicting with data as introduced in MA710 and MA799. The course starts with the topics of regularization and dimensionality reduction (linear discriminant analysis and principal component analysis) which are methods to reduce feature space complexity. We will cover a selection from the following topics as time permits: support vector machines, neural networks, Bayesian methods, genetic algorithms, spectral clustering and self-organizing maps. In addition, we will learn to use distributed data mining techniques on very large datasets. The course will assume a working familiarity with either of the R or Python languages and a higher level of mathematical maturity than required in the prerequisites.

FI799 Financial Statements and Modeling

Pre-requisite(s): *FI 623*

Notes: This course may be used as an elective in the MSF or as a substitute for the required course FI 730. It will also satisfy a concentration elective in the Finance concentration. It may also be used as an MBA unrestricted elective or an outside elective for certain MS degree programs.

Course Description: Financial Statements and Modeling is focused on applying sophisticated Excel techniques to the most common modeling problems in finance, with an emphasis on financial statement analysis. Some additional specific topics include basic finance calculations, pro forma financial statement modeling, the cost of capital, and corporate valuation. The course will cover advanced features of Excel including TVM and statistical functions, array manipulation, text and date usage, regression, conditionals, Boolean operators, data tables and random number generation. Subsequently the course will cover macro recording as well as custom subroutine and function construction in the Visual Basic for Applications (VBA) development environment.