Management Science (MSC)

MSC 500 - DEC SUPPORT SYS/EXPT SYS
Semester Hours: 3
Analysis of information support systems which aid the manager in the decision making process.

MSC 510 - TRANSPORTATION & LOGISTICS
Semester Hours: 3
An analysis of transportation and logistical services to include customer service, distribution operations, purchasing, order processing, facility design and operations, carrier selection, vehicle routing, and transportation costs. Understanding of business statistics is required.

MSC 570 - SPECIAL TOPICS IN MGMT SCI
Semester Hours: 3
In depth study of a selected topic relevant to contemporary management science. Different sections of this course may address different topics.

MSC 595 - INTERNSHIP IN MANAGEMENT SCIEN
Semester Hours: 1-3
Active involvement in a project in a business enterprise, professional organization or government agency that has particular interest and relevance to the student.

MSC 600 - QUANTITATIVE METHODS
Semester Hours: 3
An introduction to and application of several fundamental quantitative methods and business analytics tools in business. Topics include probability distributions, sampling distributions, confidence interval estimation, hypothesis testing, ANOVA, linear regression, linear optimization, and simulation. Basic proficiency in Excel is required.

MSC 605 - OPERATIONS MANAGEMENT
Semester Hours: 3
This course discusses the management of the operations function for the creation of goods and services and its relationship with other business functions in service, manufacturing, and government organizations. Topics include operations strategy and infrastructure decisions, merging process technologies, planning and scheduling, inventory management, just-in-time systems, quality management, six sigma and lean operations. Concepts are illustrated using the SAP software. Prerequisite: MSC 600.

MSC 615 - DECISION MODELING
Semester Hours: 3
This course focuses on tools and methods for modeling, analyzing and solving problems involving business decision making. Spreadsheet analysis, optimization, and simulation techniques will be covered. Topics include linear and nonlinear optimization, network models, decision analysis and simulation of complex models in a spreadsheet environment as well as using other commercial software packages. Proficiency in Excel is required. Prerequisite: MSC 600.

MSC 641 - ADVANCED ANALYTICS
Semester Hours: 3
This course focuses on concepts and methods in business analytics. Topics include data quality and cleaning, predictive modeling, design of experiments, segmentation, forecasting, usage and limitations of models, and interpretation and presentation of results. This course provides a hands-on environment using real data to prepare students to apply these techniques in business environments. Proficiency in Excel is required. Prerequisite: MSC 600.

MSC 650 - SELECTED RESEARCH TOPICS
Semester Hours: 3
Research in a particular topic relevant to management science by one student or a group of students. Each students research paper must be an original contribution showing a research design and results that meet the highest standard of management science research.

MSC 692 - BUSINESS ANALYTICS PRACTICUM
Semester Hours: 3
A capstone course emphasizing rigorously interpreting the results of analytic models and intuitively communicating the derived business insights to business clients and corporate executives. The majority of this course is devoted to a major practical project in which students apply skills learned from previous analytics courses to a real world business problem, preferably in cooperation with a local organization. Prerequisite: Completion (or concurrent enrollment in) all other required courses. Normally taken during the student's last semester of studies.
MSC 699 - MASTER'S THESIS
Semester Hours: 1-3

Required each semester a student is working and receiving direction on a masters thesis. A minimum of two terms is required, but no more than six hours credit is allowed for the thesis.