

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. Prerequisite: MGT 600.

MSC 512 - ARMY SENIOR LOGISTICIAN-ADV

Semester Hours: 3

The Senior Logistician Advanced Course (SLAC) is part of the U.S. Army's new Master Logistician Certificate Program for logistics management specialists within the 0346 occupational series. SLAC is an 80-hour academic learning experience designed to improve senior logistician competencies at the strategic level. The program is organized around the logistics management specialist's 12 competencies, and the coursework is specially designed to better develop and further enrich the thinking and skills of the Army's Senior Logisticians. Special approval and enrollment in CPCS U.S. Army Senior Logistician Advanced Course 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. Prerequisite: MSC 600.

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 610 - MODELING & SIMULATION

Semester Hours: 3

Broad-based introductory survey of modeling and simulation intended to provide an overview that exposes those who will be using modeling and simulation to the full range of the discipline. Surveyed items include identification, categorization, and comparison of modeling methods, applications, architectures, and environments. Also covered are appropriate applications for different simulation paradigms, and relative advantages and disadvantages of each. Model testing and validation approaches, distributed simulation, graphics and visualization, and other topics are introduced. Case studies are discussed. 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. Basic skills in computer programming.

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 student's research paper must be an original contribution showing a research design and results that meet the highest standard of management science research.

MSC 690 - MANAGING TECH DEVELOPMENT

Semester Hours: 3

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.