COURSES FOR INFORMATION SYSTEMS, STATISTICS AND MANAGEMENT SCIENCE

Management Information Systems Courses

MIS200 Fundamentals of Management Information Systems
Hours 3

Business process coordination and decision making through the use of information technology will be explored, emphasizing IT use by organizations in increasingly global markets. Students are limited to three attempts for this course, excluding withdrawals.

Prerequisite(s) with concurrency: MATH 112 or MATH 115 or MATH 121 or MATH 125 or MATH 126 or MATH 145 or MATH 146

MIS221 Business Programming I
C

Hours 3

This course is an introductory business-focused computer programming course. The course provides students the opportunity to learn analytical problem solving techniques, software development techniques and the syntax of the c# programming language to solve common business problems. Computing proficiency is required for a passing grade in this course. Students are limited to two attempts for this course, excluding withdrawals.

Prerequisite(s): MATH 121 or MATH 125 or MATH 145 or MATH 126 or MATH 146 or MATH 227 or MATH 247

Computer Science

MIS321 Business Programming II
C

Hours 3

A second business programming course for students pursuing the Management Information Systems major. Computing proficiency is required for a passing grade in this course. Students are limited to two attempts for this course, excluding withdrawals.

Prerequisite(s): MIS 221 and (EN 101 or EN 120) and (EN 102 or EN 121 or EN 103 or EN 104) and (MATH 121 or MATH 125 or MATH 145) and (EC 110 or EC 112) and (EC 111 or EC 113) and (AC 210 or AC 211) and (LGS 200 or LGS 201) and ST 260 and MIS 200 and GBA 146 and GBA 246

Computer Science

MIS330 Database Administration
Hours 3

Logical data modeling, RDBMS, and their use in the business enterprise are presented. Topics include anomalies/normalization, database-connections performance, n-tier architecture, query operations, stored processes and integrity triggers, and Web applications. Students are limited to two attempts for this course, excluding withdrawals.

Prerequisite(s): MIS 221 and (EN 101 or EN 120) and (EN 102 or EN 121 or EN 103 or EN 104) and (MATH 121 or MATH 125 or MATH 145) and (EC 110 or EC 112) and (EC 111 or EC 113) and (AC 210 or AC 211) and (LGS 200 or LGS 201) and ST 260 and MIS 200 and GBA 146 and GBA 246

MIS340 Data Communication in a Global Environment
Hours 3

Enabling international exchange of digital data to support business operations. Cultural, legal, security and operational requirements coupled with international standards evaluated in multiple network architectural configurations supporting transactional knowledge workers, e-business and e-commerce applications. Students are limited to two attempts for this course, excluding withdrawals.

Prerequisite(s): MIS 221 and (EN 101 or EN 120) and (EN 102 or EN 121 or EN 103 or EN 104) and (MATH 121 or MATH 125 or MATH 145) and (EC 110 or EC 112) and (EC 111 or EC 113) and (AC 210 or AC 211) and (LGS 200 or LGS 201) and ST 260 and MIS 200 and GBA 146 and GBA 246

MIS405 Enterprise Networking and Security
Hours 3

Data communications and networks; impact on business enterprises and issues pertaining to design and implementation. Security and operational requirements evaluated in multiple network architectural configurations.

Prerequisite(s): MIS 221 and (EN 101 or EN 120) and (EN 102 or EN 121 or EN 103 or EN 104) and (MATH 121 or MATH 125 or MATH 145) and (EC 110 or EC 112) and (EC 111 or EC 113) and (AC 210 or AC 211) and (LGS 200 or LGS 201) and ST 260 and MIS 200 and GBA 146 and GBA 246

MIS421 Enterprise Application Development
Hours 3

The study and application of advanced software engineering, application patterns, and file structures. Students design, construct and test software structures for effective information management.

Prerequisite(s): MIS 321 and MIS 330

MIS430 Systems Analysis & Design I
Hours 3

Intermediate-level skills in systems analysis and design techniques are presented. Emphasis is placed on systems development and delivery tools, methods, standards, and processes. Students are limited to two attempts for this course, excluding withdrawals.

Prerequisite(s): MIS 330 and MIS 321

MIS431 Systems Analysis & Design II
Hours 3

Advanced-level skills in systems analysis and design techniques are presented. Emphasis is placed on enterprise-level systems development, creation of tailored methodologies, creation of architectural standards, metrics, and business strategy alignment. Students are limited to two attempts for this course, excluding withdrawals.

Prerequisite(s): MIS 430 and MIS 330

Prerequisite(s) with concurrency: MIS 451

MIS440 Decision Support Systems
Hours 3

This course assesses information and process requirements to support business decisions in organizations. Students conceptualize, design, develop, and deliver model-based information systems designed to support effective managerial decision making.

Prerequisite(s): (EN 101 or EN 120) and (EN 102 or EN 121 or EN 103 or EN 104) and (MATH 121 or MATH 125 or MATH 145) and (EC 110 or EC 112) and (EC 111 or EC 113) and (AC 210 or AC 211) and (LGS 200 or LGS 201) and ST 260 and MIS 200 and GBA 146 and GBA 246; (MIS 330) or Permission of Instructor

MIS451 Systems Construction & Implementation II
Hours 3

Development of advanced software engineering skills to develop, deploy, test, document, and assess large-scale IT-based business solutions. Conversion, migration, training, maintenance, and operations plans and budget are emphasized. Students are limited to two attempts for this course, excluding withdrawals.

Prerequisite(s): MIS 430 and MIS 330

Prerequisite(s) with concurrency: MIS 431

MIS460 Applied Cyber Security
Hours 3

This course examines management issues and practical implications related to securing information systems. This course focuses on the Threat Environment, security Policy and Planning, Cryptography, Secure Networks, Access Control, Firewalls, Host Hardening, Application Security, Data Protection, Incident Response, and Networking and Review of TCP/IP. A clear theoretical understanding supports a large practical component where students learn to use contemporary security software to secure and assess information systems and network infrastructure using a hands-on approach.

Prerequisite(s): (EN 101 or EN 120) and (EN 102 or EN 121 or EN 103 or EN 104) and (MATH 121 or MATH 125 or MATH 145) and (EC 110 or EC 112) and (EC 111 or EC 113) and (AC 210 or AC 211) and (LGS 200 or LGS 201) and ST 260 and MIS 200 and GBA 146 and GBA 246

MIS462 Behavioral Cyber Security
Hours 3

This course is intended to provide students with a solid foundation of information security management, with an emphasis on its human element. As part of this understanding, we will explore how humans, as employees of an organization and consumers of organizational products and services, perceive threats to themselves, their digital assets, their privacy, and to their organizational affiliations. We also explore how these perceptions are operationalized in their behaviors as organizational insiders, serving to either undermine or facilitate security management practices.

Prerequisite(s): (EN 101 or EN 120) and (EN 102 or EN 121 or EN 103 or EN 104) and (MATH 121 or MATH 125 or MATH 145) and (EC 110 or EC 112) and (EC 111 or EC 113) and (AC 210 or AC 211) and (LGS 200 or LGS 201) and ST 260 and MIS 200 and GBA 146 and GBA 246

MIS464 Organizational Security Management
Hours 3

The course is intended to teach students how to develop and apply an information security management plan to an organization. Topics include governance and security policy, threat and vulnerability management, incident management, risk management, information leakage, crisis management and business continuity, compliance management, and security awareness and security implementation considerations. Students will also be exposed to the national and international policy and legal considerations related to cybersecurity and cyberspace such as privacy, intellectual property, and cybercrime.

Prerequisite(s): (EN 101 or EN 120) and (EN 102 or EN 121 or EN 103 or EN 104) and (MATH 121 or MATH 125 or MATH 145) and (EC 110 or EC 112) and (EC 111 or EC 113) and (AC 210 or AC 211) and (LGS 200 or LGS 201) and ST 260 and MIS 200 and GBA 146 and GBA 246

MIS466 Introduction to Cybercrime and Digital Forensics
Hours 3

This course introduces the topics of cybercrime and digital forensics. Students will learn different aspects of cybercrime and methods to uncover, protect and analyze digital evidence. They will learn different types of software and hardware tools and use them to perform rudimentary investigations. Cybercrime and digital forensics are increasingly important areas of study. Students will also gain an understanding of evidentiary law from the perspective of first responders. Tools are becoming more powerful and attacks more sophisticated. Consequently, there is a growing need for graduates with the skills to investigate these crimes.

Prerequisite(s): (EN 101 or EN 120) and (EN 102 or EN 121 or EN 103 or EN 104) and (MATH 121 or MATH 125 or MATH 145) and (EC 110 or EC 112) and (EC 111 or EC 113) and (AC 210 or AC 211) and (LGS 200 or LGS 201) and ST 260 and MIS 200 and GBA 146 and GBA 246

MIS491 Independent Study
SP

Hours 1-3

Students can apply a maximum of 3 credits of MIS 491 toward their degree.

Prerequisite(s): (EN 101 or EN 120) and (EN 102 or EN 121 or EN 103 or EN 104) and (MATH 121 or MATH 125 or MATH 145) and (EC 110 or EC 112) and (EC 111 or EC 113) and (AC 210 or AC 211) and (LGS 200 or LGS 201) and ST 260 and MIS 200 and GBA 146 and GBA 246

Special Topics Course

MIS492 Internship
Hours 1-3

Students are selected through a competitive process for assignments in approved business or public-sector organizations. Students can apply a maximum of 3 credits of MIS 492 toward their degree.

Prerequisite(s): (EN 101 or EN 120) and (EN 102 or EN 121 or EN 103 or EN 104) and (MATH 121 or MATH 125 or MATH 145) and (EC 110 or EC 112) and (EC 111 or EC 113) and (AC 210 or AC 211) and (LGS 200 or LGS 201) and ST 260 and MIS 200 and GBA 146 and GBA 246

MIS497 Special Topics
SP

Hours 1-3

Special topics in MIS. Students can apply a maximum of 9 credits of MIS 497 toward their degree.

Prerequisite(s): (EN 101 or EN 120) and (EN 102 or EN 121 or EN 103 or EN 104) and (MATH 121 or MATH 125 or MATH 145) and (EC 110 or EC 112) and (EC 111 or EC 113) and (AC 210 or AC 211) and (LGS 200 or LGS 201) and ST 260 and MIS 200 and GBA 146 and GBA 246

Special Topics Course

Operations Management Courses

OM300 Intro Operations Management
C

Hours 3

This course is an introduction to the field of operations management and addresses the design and management of the activities and resources that a firm uses to produce and deliver its products or services. Topics include operations strategy, product and process design, total quality management, statistical quality control, supply chain management, location analysis, forecasting, inventory management, operations planning, and lean/JIT business processes. Computing proficiency is required for a passing grade in this course. Students are limited to three attempts for this course, excluding withdrawals.

Prerequisite(s): ST 260 and MIS 200

Computer Science

OM305 Information Technology for Operations Management
C

Hours 3

Introduction to the components of management information systems and applications of computer-based systems to business decisions using Microsoft Excel, SQL, and Python. Computing proficiency is required for a passing grade in this course. Students are limited to two attempts for this course, excluding withdrawals.

Prerequisite(s): (EN 101 or EN 120) and (EN 102 or EN 121 or EN 103 or EN 104) and (MATH 121 or MATH 125 or MATH 145) and (EC 110 or EC 112) and (EC 111 or EC 113) and (AC 210 or AC 211) and (LGS 200 or LGS 201) and ST 260 and MIS 200 and GBA 146 and GBA 246

Computer Science

OM310 Introduction to Management Science
Hours 3

Concepts of management science and their application to decision making. Topics include linear programming, transportation models, integer programming, dynamic programming, queuing theory, decision theory, and network models. Students are limited to two attempts for this course, excluding withdrawals.

Prerequisite(s): OM 300 and OM 305

OM321 Prod Planning & Contrl
Hours 3

The planning and control of production and service systems. Attention is given to forecasting, operations planning, scheduling, materials management, and operations control. Students are limited to two attempts for this course, excluding withdrawals.

Prerequisite(s): OM 300 and OM 305

OM375 Statistical Quality Control
Hours 3

Statistical methods that can be used in control of quality in manufacturing or service industry. Topics include Shewhart control charts for variables and attributes; process capability analysis; acceptance sampling plans; design of experiments; total quality management; and six sigma principles. Emphasis is on understanding, design, implementation, and interpretation of these techniques. Students are limited to two attempts for this course, excluding withdrawals.

Prerequisite(s): (EN 101 or EN 120) and (EN 102 or EN 121 or EN 103 or EN 104) and (MATH 121 or MATH 125 or MATH 145) and (EC 110 or EC 112) and (EC 111 or EC 113) and (AC 210 or AC 211) and (LGS 200 or 201) and ST 260 and MIS 200 and GBA 146 and GBA 246

OM417 Logistics Management
Hours 3

Logistics deals with the planning and control of material flows and related information in organizations. This course covers logistics systems planning, organization, and control of these activities with a special emphasis on quantitative aspects of the decisions.

Prerequisite(s): OM 300 and OM 321 or OM 310

OM418 Principles of Global Transportation Management
Hours 3

The course includes review of the key elements of transportation such as modes of transportation, transportation procurement, cost minimization techniques, international trade terms, and emerging techniques.

Prerequisite(s): OM 310 and OM 321

OM420 Computer Simulation
C

Hours 3

This course teaches the use of simulation as a tool to investigate complex problems, systems, and processes. Fundamental simulation concepts and statistical evaluation are covered through the analysis of existing simulation models and the development of new models. Model development and analysis will be performed using spreadsheet software and a commercially available process simulation software. The primary goal of this course is to help you develop a fundamental understanding of simulation modeling with regard to use, development, and analysis. Another important goal of this course is to develop a more disciplined and rational process in the way you approach management decisions. As a result of this course, you will become more confident in understanding and using simulation models to support management decisions. Computing proficiency is required for a passing grade in this course. Students are limited to two attempts for this course, excluding withdrawals.

Prerequisite(s): OM 305 and OM 310 and OM 321 and OM 375

Computer Science

OM421 Business Analytics for Operations
C

Hours 3

This course aims to equip undergraduate business students with the fundamental concepts and tools for using data and analytics to solve operations management problems. Students use computer programming and software to manipulate data, conduct analyses, and develop models. This course also teaches Monte Carlo Simulation and Logistic Regression methods with applications on how these methods are used to address business problems. The ultimate learning outcome of this course is to learn how to develop a data-driven solution strategy for a complex business problem and use business analytics methods to generate actionable insights and recommendations to improve business operations or solve a particular problem. Students are limited to two attempts for this course, excluding withdrawals. Computing proficiency is required for a passing grade in this course.

Prerequisite(s): OM 305 and OM 375 and OM 310 and OM 321

Computer Science

OM422 Production Scheduling Problems
Hours 3

A broad investigation into a variety of scheduling activities in a variety of environments. Topics include scheduling as applied to projects, job-shops, assembly lines, parallel machine systems, workforce, and transportation. Students are limited to two attempts for this course, excluding withdrawals.

Prerequisite(s): OM 305 and OM 310 and OM 321 and OM 375

OM423 Inventory Management
Hours 3

The basics of inventory control techniques and the role of inventory management within an organization's overall supply chain. This course covers topics including inventory cost components, types and uses of inventory, the process of ordering, planning inventory levels, and metrics associated with inventory management. Students are limited to two attempts for this course, excluding withdrawals.

Prerequisite(s): OM 305 and OM 310 and OM 321 and OM 375

OM427 Purchasing and Sourcing
Hours 3

Course covers fundamental purchasing systems applications, supplier relations and evaluation, strategic planning in purchasing, purchasing techniques, value analysis and cost analysis.

Prerequisite(s): (EN 101 or EN 120) and (EN 102 or EN 121 or EN 103 or EN 104) and (MATH 121 or MATH 125 or MATH 145) and (EC 110 or EC 112) and (EC 111 or EC 113) and (AC 210 or AC 211) and (LGS 200 or LGS 201) and ST 260 and MIS 200 and OM 300 and GBA 146 and GBA 246

OM450 Process Management & Improvement
Hours 3

An analytical study of strategies, tactics, and techniques for designing, evaluating and analyzing, controlling and improving processes. Emphasis is on topics such as Design for Flexibility, Lean, Six Sigma, Constraint Management will all be included along with process application of OM analytical tools such as simulation, queuing analysis, and value stream mapping.

Prerequisite(s): OM 321

OM492 Internship In Operations Management
Hours 1-3

Students are selected through a competitive process for assignments in approved business or public sector organizations. Students can apply a maximum of 3 credits of OM 492 toward their degree.

Prerequisite(s): (EN 101 or EN 120) and (EN 102 or EN 121 or EN 103 or EN 104) and (MATH 121 or MATH 125 or MATH 145) and (EC 110 or EC 112) and (EC 111 or EC 113) and (AC 210 or AC 211) and (LGS 200 or LGS 201) and ST 260 and MIS 200 and GBA 146 and GBA 246

OM497 Special Topics
SP

Hours 1-3

Operations Management special topics course. Students can apply a maximum of 9 credits of OM 497 toward their degree.

Prerequisite(s): (EN 101 or EN 120) and (EN 102 or EN 121 or EN 103 or EN 104) and (MATH 121 or MATH 125 or MATH 145) and (EC 110 or EC 112) and (EC 111 or EC 113) and (AC 210 or AC 211) and (LGS 200 or LGS 201) and ST 260 and MIS 200 and GBA 146 and GBA 246

Special Topics Course

Statistics Courses

ST260 Statistical Data Analysis
C

Hours 3

Introduction to the use of basic statistical concepts in business applications. Topics include extensive graphing; descriptive statistics; measures of central tendency and variation; regression, including transformations for curvature; sampling techniques; designs; conditional probability; random variables; probability distributions; sampling distributions; confidence intervals; and statistical inference. Computer software applications are utilized extensively. Emphasis throughout the course in on interpretation. Computing proficiency is required for a passing grade in this course. Students are limited to three attempts for this course, excluding withdrawals.

Prerequisite(s): MATH 112 or MATH 115 or MATH 121 or MATH 125 or MATH 126 or MATH 145 or MATH 146

Prerequisite(s) with concurrency: MIS 200

Computer Science

ST360 Intermediate Statistical Methods
Hours 3

This course provides a more in-depth exploration of statistical techniques including a much more focused review of inference. Additionally, 6 nonparametric alternatives to common parametric tests will be introduced as well as sampling concepts and basic linear models.

Prerequisite(s): (EN 101 or EN 120) and (EN 102 or EN 121 or EN 103 or EN 104) and (MATH 121 or MATH 125 or MATH 145) and (EC 110 or EC 112) and (EC 111 or EC 113) and (AC 210 or AC 211) and (LGS 200 or LGS 201) MIS 200 and ST 260 and GBA 146 and GBA 246

ST440 Statistical Programming and Computing with R
Hours 3

This course explores the syntax of the R language and its capabilities for statistical data analysis, computing, and graphics.

Prerequisite(s): (EN 101 or EN 120) and (EN 102 or EN 121 or EN 103 or EN 104) and (MATH 121 or MATH 125 or MATH 145) and (EC 110 or EC 112) and (EC 111 or EC 113) and (AC 210 or AC 211) and (LGS 200 or LGS 201) and ST 260 and MIS 200 and GBA 146 and GBA 246

ST445 Statistical Learning and Data Mining
Hours 3

This course offers an introduction to the field of statistical learning, an essential toolkit far making sense of vast and complex data sets.

Prerequisite(s): (EN 101 or EN 120) and (EN 102 or EN 121 or EN 103 or EN 104) and (MATH 121 or MATH 125 or MATH 145) and (EC 110 or EC 112) and (EC 111 or EC 113) and (AC 210 or AC 211) and (LGS 200 or LGS 201) and ST 260 and MIS 200 and GBA 146 and GBA 246

ST450 Statistical Methods in Research I
Hours 3

Development of fundamental concepts of organizing, exploring, and summarizing data; probability; common probability distributions; sampling and sampling distributions; estimation and hypothesis testing for means, proportions, and variances using parametric and nonparametric procedures; power analysis; goodness of fit; contingency tables. Statistical software packages are used extensively to facilitate valid analysis and interpretation of results. Emphasis is on methods and on selecting proper statistical techniques for analyzing real situations.

ST451 Statistical Methods in Research II
Hours 3

Analysis of variance and design of experiments, including randomization, replication, and blocking; multiple comparisons; correlation; simple and multiple regression techniques, including variable selection, detection of outliers, and model diagnostics. Statistical software packages are used extensively to facilitate valid analysis and interpretation of results. Emphasis is on appropriate analysis of data in real situations.

Prerequisite(s): ST 450 or GES 255

ST452 Applied Regression Analysis
Hours 3

Data analysis using multiple linear regression, including residual plots, transformations, hypothesis tests, outlier diagnostics, analysis of covariance, variable selection techniques and co-linearity. Logistic regression uses similarly discussed for dealing with binary valued independent variables.

Prerequisite(s): (EN 101 or EN 120) and (EN 102 or EN 121 or EN 103 or EN 104) and (MATH 121 or MATH 125 or MATH 145) and (EC 110 or EC 112) and (EC 111 or EC 113) and (AC 210 or AC 211) and (LGS 200 or LGS 201) and ST 260 and MIS 200 and GBA 146 and GBA 246

ST454 Statistical Inference I
Hours 3

Distributions of random variables, moments of random variables, probability distributions, joint distributions, and change of variable techniques.

Prerequisite(s): (EN 101 or EN 120) and (EN 102 or EN 121 or EN 103 or EN 104) and (MATH 121 or MATH 125 or MATH 145) and (EC 110 or EC 112) and (EC 111 or EC 113) and (AC 210 or AC 211) and (LGS 200 or LGS 201) and ST 260 and MIS 200 and (MATH 227 or MATH 247) and GBA 146 and GBA 246

ST455 Statistical Inference II
Hours 3

Theory of order statistics, point estimation, interval estimation, and hypothesis testing.

Prerequisite(s): ST 454

ST497 Special Topics
SP

Hours 1-3

Students can apply a maximum of 9 credits of ST 497 toward their degree.

Prerequisite(s): (EN 101 or EN 120) and (EN 102 or EN 121 or EN 103 or EN 104) and (MATH 121 or MATH 125 or MATH 145) and (EC 110 or EC 112) and (EC 111 or EC 113) and (AC 210 or AC 211) and (LGS 200 or LGS 201) and ST 260 and MIS 200 and GBA 146 and GBA 246

Special Topics Course