INFORMATION SYSTEMS AND DECISION SCIENCES • ISDS

1100 Introduction to Management Information Systems (3) 1 hr. lecture; 4 hrs. lab. An honors course, ISDS 1101, is also available. Credit will not be given for both this course and ISDS 1101. Examine the expanding role of information technology in organizations including the development and use of information systems, hardware, and software, the strategic impact of IT, and the nature of the IT career; utilization of management information systems to improve managerial decision making.

1101 HONORS: Introduction to Management Information Systems (3) Same as ISDS 1100 or ISDS 1102, with special honors emphasis for qualified students. Credit will not be given for both this course and ISDS 1100 or ISDS 1102.

1102 Introduction to Management Information Systems for Business Majors (3) Role of information technology in business including the development and use of information systems, hardware and software, the strategic impact of IT for businesses, and the nature of the IT career; utilization of management information systems to improve managerial decision making.

2000 Introduction to Business Statistics (Prereq.: MATH 1431 or equivalent. An honors course, ISDS 2010, is also available. Credit will not be given for both this course and ISDS 2010. Statistical description and inference; descriptive statistics, sampling, basic probability theory; probability distributions, including normal and binomial; sampling distributions; inferential statistics including estimation, one- and two-sample hypothesis tests, and chi-square test of independence.

2001 Statistical Methods and Models (Prereq.: ISDS 2000 or equivalent. Continuation of ISDS 2000. An honors course, ISDS 2011, is also available. Credit will not be given for both this and ISDS 2011. Advanced statistical methods and decision models including ANOVA and linear regression analysis; management science models such as queuing and inventory analysis, math programming, waiting line models and simulation.

2010 HONORS: Introduction to Business Statistics (Same as ISDS 2000, with special honors emphasis for qualified students. Credit will not be given for this course and ISDS 2000.

2011 HONORS: Statistical Methods and Models (3) Same as ISDS 2001, with special honors emphasis for qualified students. Credit will not be given for this course and ISDS 2001.

3000 Statistical Methods and Models III (3) Prereq.: ISDS 2001. Continuation of ISDS 2001. Statistical inference; additional applications of sampling distribution; the chi-square, student’s t, and F distributions; estimation; hypothesis testing; survey sampling; linear regression; simple correlation; analysis of variance; nonparametric tests.

3070 Independent Reading and Research in Information Systems and Decision Sciences (1-6) Prereq.: ISDS 3100 and consent of instructor. May be taken for a max. of 6 sem. hrs. of credit. Student is responsible for registering with a faculty member and selecting an area of reading and/or research.

3075 Internship in Information Systems and Decision Sciences (3) Prereq.: permission of instructor and department chair required. Pass/fail grading. At least the equivalent of 144 hours per semester (3 credits) of learning experience in information systems under the general supervision of an ISDS faculty member and direct supervision of an information systems or decision sciences professional. Grading based on the faculty member's evaluation, a written report by the professional supervisor, and a written report by the student.

3100 Management of Information Resources (Prereq.: ISDS 1100 or ISDS 1102. Information as a resource; issues in information resource management; elements of information systems; development and maintenance of information systems; controlling information resources.

3110 Information Technology Project Management (3) Prereq.: ISDS 1100 or equivalent. Understanding of the Internet and its structure for use in business; technologies employed to develop Internet applications; development of business applications for the Internet.

3107 Beginning Programming (3) Prereq.: ISDS 1100 or ISDS 1102. Fundamentals of programming, program design, application development interfaces, debugging, testing, and implementation.

3110 Database Processing for Management (3) Prereq.: ISDS 4113 or concurrent enrollment. Structure and function of managerial databases; design options and implementation of database management systems in the firm; laboratory practice includes use of a particular software product.

3111 Telecommunications in Business (Prereq.: ISDS 3100 or equivalent. An honors course, ISDS 3111, is also available. Credit will not be given for both this course and ISDS 3111. Telecommunications in business, including both voice and data communication, technical applications development interfaces.

3112 Management of e-Business, Commerce and Internet Information Systems (3) Overview of key enterprise systems concepts from functional, technical, and implementation perspectives. An honors course, ISDS 3112, is also available.

3200 Advanced Business Programming (Prereq.: ISDS 3107 and ISDS 3110. Computer programming methods for business systems emphasizing contemporary programming environments and applications development interfaces.

4000 Introduction to Statistical Theory (Prereq.: ISDS 3110 or equivalent. Principles and methodologies concerning productivity and quality of manufacturing and service organizations; production and service systems design and process capacity design; total quality management; systems for just-in-time and purchasing management; inventory and materials management.

4010 NON-HONORS: Introduction to Operations Management (3) Same as ISDS 3115, with special honors emphasis for qualified students. Credit will not be given for this course and ISDS 3115.

4100 Management of the IT Function (Prereq.: ISDS 3100 or equivalent. Single-equation multiple regression and time series modeling procedures for business and economic forecasting; using time series data in regression models; time series modeling, including classical decomposition procedures and exponential smoothing; use of computer programs for regression and time series modeling and forecasting.

4101 Sample Survey Methods (3) Prereq.: ISDS 3000 or equivalent. Designing sampling systems; alternative sample designs; problems of bias; techniques of inference from alternative designs; criteria for selecting optimal sampling plans; methods and applications of sample surveys.

4102 Applied Nonparametric Statistics (3) Prereq.: ISDS 3000 or equivalent. Applied nonparametric statistics including techniques for one-sample problems, comparison of two treatments, paired comparisons, randomized complete blocks, comparison of more than two treatments, tests of randomness and independence, and measures of correlation.

4103 Bayesian Probability and Statistical Methods (Prereq.: ISDS 3000 or equivalent. Assessment of subjective probability distributions; Bayesian estimation and inference; applications of Bayesian methods to business problems.

4104 Operations Research for Managerial Decisions (Prereq.: ISDS 2001 or equivalent. Managerial decision making, including decision analysis, linear programming, transportation models, integer programming, project scheduling, and waiting line models; basic understanding and evaluation of operations research techniques.

4105 Foundations of Mathematical Programming (Prereq.: credit or registration in ISDS 4020. Theoretical foundations of linear programming in single and multiple objectives; linear optimization under conditions of convex functions, Kuhn-Tucker conditions and quadratic programming.

4106 Applied Linear Models (Prereq.: ISDS 3000 or equivalent. Development of a unified approach to estimation and hypothesis testing in linear statistical models; emphasis on appropriate specification and interpretation of models and statistical hypothesis; use of available computer routines and interpretation of results; unbalanced analyses, linear regression models, linear regression models, and analysis of covariance.

4110 Business Decision Support and Expert Systems (Prereq.: ISDS 3110 or equivalent. Laboratory practice includes use of a particular software system; Business decision modeling; constructing a decision support system (DSS); DSS development tools, executive information systems; expert systems (ES) in business; building ES; process, tools, and strategy; integration of DSS and ES.

4111 Enterprise Systems (Prereq.: ISDS 3100. Overview of key enterprise systems concepts from functional, technical, and implementation perspective; emphasis on the process-centered organization and how integrated systems are designed to support cross-functional business; hands-on computer exercises involving a hypothetical glucose monitoring system.

4112 Data Warehousing (Prereq.: ISDS 3100 Data Warehouses for business; topics include: top-down design, bottom-up design, data charts, multidimensional data, data mining, Web-enabled data warehouse, knowledge management.

4113 Information Technology Project Management (3) Prereq.: ISDS 3100 or equivalent. Topics on effectively managing information technology projects including: setting goals and objectives; work breakdown structures; project scheduling; managing project resources; evaluation and review; incentives and quantitative analysis; project accounting; extensive use of cases involving hands-on computer analyses with state-of-the-art project management software.

4114 Software Assurance (Prereq.: ISDS 3100. Modern practices of software quality management; topics include: software development process models, software quality metrics, basic quality tools, software reliability models, customer satisfaction measures, and the ISO 9000 quality system standard.


4118 Web Analyses (3) Prereq.: ISDS 3100. Principles of web analytics; key performance indicators, benchmarks, A/B testing, personalized content, customer-centric Web site design; process flow analysis, usability, research design, and statistical methods.

4120 Business Data Communications (3) Prereq.: ISDS 3100 or CSC 1350. Telecommunications in business, including both voice and data communication, technical details (hardware, software, protocols, network configurations), network management, and security issues.

4125 Networking Security (Prereq.: ISDS 4120 Sec. ISDS 4120 Sec). Corporate risk assessment, access control, authentication, transmission control protocol and internet protocol packet content analysis, firewall hardware and software, types of encryption, cryptographic systems, application security issues, and laws governing security and privacy.

4126 Analysis and Design of Management Information Systems (3) Prereq.: ISDS 3100, 3200. Design philosophies and techniques for the creation of information systems for management decision making; conceptual design of actual information systems.
7510 Database Management (3) Prereq.: BADM 7050. Analysis, design, and implementation of databases based on the relational database model; data modeling using entity-relationship (E-R) diagramming; logical and physical database design; SQL; hardware/software architecture considerations; data and database administration; emerging database technologies and advanced database applications.

7511 Advanced Database Management (3) Prereq.: ISDS 7510 or equivalent. Decision support systems, online analytical processing, multidimensional data modeling, web-enabled data warehousing, data marts, data mining, knowledge management, Internet business intelligence.

7520 Network Information Systems (3) Prereq.: BADM 7050. Broad overview of network technologies including protocols, network operating systems, and network management; LAN, WAN design; Internet technology; network security.

7522 Internet Systems Development (3) Prereq.: ISDS 7520. In-depth look at Internet applications architecture, server-side programming, web/database connectivity, integration of Web and other business applications, and Web development methods; emphasis on self-management, cross-project coordination, technology and time management; construct Internet based systems and manage Internet based systems development.

7530 Information Systems Analysis and Design (3) Prereq.: BADM 7050, ISDS 7510. Both courses may be taken concurrently. Analysis and design of information systems from a management perspective; software development methodology; topics include requirements determination; feasibility determination; project management; evaluation of a software development strategy and application design; modeling using ER diagrams, and DFDs; systems implementation.

7535 Information Technology Management (3) Prereq.: BADM 7050. Management of the organization’s information technology (IT) resources; planning and management of IT strategy, applications; hardware/software infrastructure, information resources, and IT professionals; organization and governance of the IT function, IT policies and standards, measurement of IT investments and returns, and deployment of new information technologies.

7540 Electronic Commerce (3) Prereq.: BADM 7050. Use of information technology and the Internet in creating new forms of business organization; creating a marketplace; disintermediation / reinintermediation; and virtual organization.

7543 Electronic Commerce II (1.5) Prereq.: ISDS 7540. Continuation of ISDS 7540. Advanced management issues, organizing principles and technologies; working in electronic communities; newsgroups, virtual communities, extranet and intranet.

7545 Collaborative Computing (1.5) Prereq.: BADM 7050. Foundation of collaborative computing; issues of motivation, synchronicity, anonymity, group size, group proximity, and group tasks.

7550 Enterprise Systems (3) Prereq.: BADM 7050. Study of the broad area of Integrated Enterprise-wide Systems; emphasis on features and capabilities of enterprise systems and their related technologies, the methodologies used to implement these technologies, and the implications of their deployment in organizations.

7553 Business and Systems Change (3) Prereq.: ISDS 7550. Foundation of critical issues in the design and implementation of business and information systems change including business process reengineering, project and change management, and information systems design and management; emphasis on the systems perspective of business, and the change that these enabling emerging and disruptive technologies and systems permit that have the greatest impact on business and industries.

7555 Auditing Enterprise Systems (1.5) Prereq.: ISDS 7550 and ACCT 2233. Principles of auditing enterprise wide information systems in business; audit plans; controls and security issues.

7560 Social and Organizational Issues in MIS (3) Prereq.: BADM 7050. Impact of electronic communities on organizations; implications of design choices on business, ethical considerations.

7565 Global Information Technology Management (3) Prereq.: BADM 7050. National IT policies; IT and national culture; IT management in multinational companies; IT diffusion in developed versus developing countries; IT and national development; global electronic commerce; global telecommunications infrastructure; and competitive advantage through global IT management.

7900 Contemporary Issues in Statistics and Management Science (3) Prereq.: advanced PhD study and consent of instructor. Philosophical foundations of science and their implications for contemporary management science.

7910 Contemporary Issues in Production/Operations Management (3) Prereq.: advanced PhD standing or consent of instructor. May be taken for a max. of 9 hrs. of credit when topics vary. Philosophical foundations and contemporary issues in production/operations management.

7920 Contemporary Issues in Management Information Systems (3) Prereq.: advanced PhD standing or consent of instructor. May be taken for a max. of 9 hrs. of credit when topics vary. Philosophical foundations and contemporary issues in management information systems.

7950 Research Seminar in Information Systems Topics (3) Required for all PhD students. May be taken for a max. of 6 sem. hrs. of credit when topics vary. Contemporary research and critical issues in information systems.

7990 Project (3-6) Prereq.: permission of instructor. May be taken for a max. of 6 hrs. of credit. Pass-fail grading.

8000 Thesis Research (1-12 per sem.) “S”/“U” grading.

8900 Pre-dissertation Research (1-9) May be repeated for credit.

9000 Dissertation Research (1-12 per sem.) “S”/“U” grading.