

DIS Decision Science and Information Systems

***DIS 300 ANALYZING BUSINESS OPERATIONS. (3)**

To be well-prepared, a business graduate must appreciate the nature and importance of an enterprise's operations. This core business course introduces underlying concepts and basic analytical techniques essential for managing a firm's manufacturing and service operations. Operations decisions focus on how to plan, control, and coordinate the organizational resources and processes concerned with producing and distributing goods and/or services. This course emphasizes quantitative and technology-based analyses of real decision problems involving such operations issues as quality control, capacity planning, location analysis, layout analysis, inventory management, forecasting, and project management within a business firm. Prereq: (1) Completion of all college pre-major requirements; (2) Admission to Upper Division in Business and Economics.

***DIS 310 BUSINESS COMPUTING SYSTEMS. (3)**

This course investigates how business firms use computing systems to facilitate effective and efficient business processes – thereby improving individual and organizational productivity and competitiveness. The course is geared toward non-technical professionals who seek an overall understanding of how firms design and deploy computer-based solutions to organizational problems. Using cases and hands-on exercises as pedagogical tools, the course furnishes a business applications-oriented view of various computing technologies, such as communication networks, databases, decision support systems, and enterprise systems. The course also addresses ethical and global management issues arising from the worldwide deployment and use of such systems by modern, global business firms. Prereq: (1) CS 101 or MOS Certification; (2) Open only to Business Minors; not available for credit to Business and Economics Majors.

***DIS 320 INFORMATION SYSTEMS IN THE MODERN ENTERPRISE. (3)**

This course provides an introduction to the uses of information systems in the management of organizations. Recognizing that modern organizations rely on such systems, it is geared toward aspiring business professionals who need to understand both how these systems contribute to their organizations and how they can participate in the realization in value from these systems. The course covers basic systems concepts; socio-technical issues; emerging hardware, software, and telecommunications infrastructure technologies; systems analysis and design, database management; system implementation; project management; and systems management. It also introduces such applications as decision support, knowledge management, and e-business with an emphasis on relevant managerial problems within both local and global concepts. Prereq: (1) Completion of all college pre-major requirements; (2) Admission to Upper Division in Business and Economics.

***DIS 350 BUSINESS ANALYTICS: MODELING. (3)**

Analytical activities are rapidly expanding in businesses (plus government and not-for-profit organizations). For the modern enterprise, problems in practically every business domain are being formulated as models, which are then used to analyze data – producing explanations and predictions to help solve these problems as firms seek to make the decisions that will allow them to compete in a turbulent global economy. Using potentially vast volumes of data, these models are

implemented and solved via computers – generating solutions that must then be interpreted and appropriately applied in decisional processes. This course leads students through the steps of model formulation, solution, interpretation, and application in such crucial decision domains as investment, scheduling, production, inventory, and logistics. It furnishes hand-on experiences with such widely used modeling techniques as linear programming, network flow programming, and multiple-objective decision modeling. Prereq: (1) Completion of all college pre-major requirements; (2) Admission to Upper Division in Business and Economics.

***DIS 390 SPECIAL TOPICS
IN BUSINESS ANALYTICS.**

(3)

This course number gives faculty members the flexibility to teach various special topics of interest to students, subject to contemporary student demand and faculty availability. The special topics are concerned with techniques, technologies, and applications related to business analytics. The offerings include, but are not limited to, such courses as Supply Chain Management, Enterprise Systems, Electronic Commerce, Systems Analysis & Design, Business Data Mining, Data Warehouse & Database Management, Online Analytical Processing, Knowledge Management Systems, and Programming Languages. While a student may take as many distinct DIS 390 courses as are offered, only two of these can be counted as electives. A student may not repeat a special topics course under the same title. Prereq: (1) Completion of all college pre-major requirements; (2) Admission to Upper Division in Business and Economics.

***DIS 395 INDIVIDUAL WORK
IN BUSINESS ANALYTICS.**

(1-3)

This individually customized course enables the student to independently study a topic of personal interest that is not ordinarily covered in the standard curriculum. The student confers with a willing, qualified instructor to design the course – including the course scope, learning methods, timetable, milestones, deliverables, and evaluation metrics. Typically, a final written report or paper is required. To ensure progress, the student stays in contact with the instructor throughout the course of independent study. Examples of prior individual work include: Lean Logistics, Website Design & Implementation, Enterprise Resources Planning, Materials Requirement Planning, Lot Sizing, Advanced Six Sigma, Programming in Java, and Database Design. A course of independent study may not be requested/offered for material that is already covered in the normal curriculum, except under extenuating circumstances. May be repeated to a maximum of six credits. Prereq: (1) Completion of all college pre-major requirements; (2) Admission to Upper Division in Business and Economics; (3) Approval of Instructor and DSIS Director of Undergraduate Studies.

***DIS 406 PRODUCTION AND INVENTORY SYSTEMS.**

(3)

This course is an advanced introduction to the complexities of managing production and inventory systems. An enterprise's success in today's highly-competitive, often-global business environment, depends on effectively managing its production activities and the related inventories at various production-process stages. Because such decisions are invariably tied to demand forecasts, the course begins with an examination of forecasting. Students are then led through the topics of production planning, master scheduling, material-requirements & manufacturing-resources planning, production activity control, capacity management, and sequencing & scheduling. The course culminates with coverage of contemporary trends toward just-in-time manufacturing systems and lean manufacturing systems. Applications of analogous systems and principles in the

service sector are also addressed throughout the course. Prereq: (1) Completion of all college pre-major requirements; (2) Admission to Upper Division in Business and Economics; (3) DIS 300.

***DIS 450 BUSINESS ANALYTICS: TECHNOLOGIES. (3)**

This course develops business-computing skills relevant to the construction, maintenance, and usage of systems for business analytics. It does so by combining the facets of technology (e.g., advanced spreadsheet computing), realistic workplace decision making, and decision support system development into a capstone experience. Prior courses introduce students to analytical techniques commonly used in organizational decision making, as well as current information technologies. This course combines students' abilities in both areas within an advanced software context. Specifically, the course enhances students' abilities in developing computer-based systems that employ analytical techniques for the purpose of aiding organizational decision makers. Prereq: (1) Senior standing in the College of Business and Economics; (2) Must have completed two other DIS courses.

***DIS 506 PRODUCTIVITY AND QUALITY MANAGEMENT. (3)**

This course is an advanced treatment of two related concepts that are vital to the success of an enterprise: quality and productivity. As a key ingredient of competitive strategy, quality encompasses many attributes of a product or service – such as its design, its features, fit and finish, durability, safety, and customer treatment. In highly competitive settings, a firm that achieves and sustains high quality levels for its goods and/or services, while remaining at least as efficient as competitors in processes used to produce these outputs, tends to outperform its competitors. Beginning with an examination of connections between quality and productivity, this course examines their underlying philosophic, strategic, and human issues. The coverage includes emergent practices for continuous improvement including Kaizen, Six Sigma, customer relationship management, and strategic planning. Prereq: (1) Completion of all college pre-major requirements; (2) Admission to Upper Division in Business and Economics; (3) DIS 300.

***DIS 520 ADVANCED TOPICS IN BUSINESS ANALYTICS. (3)**

This course is designed for students seeking advanced treatments of business analysis and their relations to business data, analysis, and decision making. It covers topics enjoying high levels of contemporary interest. Such topics have included Business Data Mining, Business Data Communications & Networking, and Valuation of Business Information. Students who enroll in this course are expected to be highly motivated self-starters, who seek to distinguish themselves from peers by demonstrating an interest in, and the ability to master, cutting-edge business analysis methods that are highly relevant in modern enterprises. The kinds of topics addressed and the treatment of these topics makes the course also valuable to students from programs such as Computer Science, Statistics, and Engineering. Being a 500-level course, it is open to both Undergraduate and Graduate students. Prereq: (1) Completion of all college premajor requirements; (2) Admission to Upper Division in Business and Economics; (3) Non-B&E Upper Division Undergraduate students and Graduate students may be enrolled with the consent of the instructor.

DIS 600 PRODUCTION MANAGEMENT. (3)

This course exposes the MBA generalist to the functional area of production in both manufacturing and service sectors. Topics include tactical decisions in production and operative relationships with corporate strategy. The course emphasizes operations planning and control. Prereq: Graduate standing; MGT 611, ECO 610, ACC 628, DIS 650, ECO 611, FIN 600, DIS 651, MKT 600.

**DIS 611 THE MANAGEMENT OF
COMPUTER INTEGRATED MANUFACTURING. (3)**

This course is to provide a broad introduction to the state of the art developments in computer integrated manufacturing systems and the problems of managing such technologies and systems. Topics dealing with the evolving "factory of the future" such as computer aided design, computer aided manufacturing, group technology, flexible manufacturing systems, etc., will be studied. Strategic and managerial implications will be emphasized. Prereq: DIS 600.

#DIS 612 SUPPLY CHAIN MANAGEMENT. (3)

An introduction to the terminology, concepts, and skills related to supply chain management. Students develop an understanding of the complexities associated with the movement of goods and information, and how they affect the mission of the firm. Discussions address the various processes and activities within an organization and how they interface with other members of the supply chain. Prereq: DIS 651; ECO 610.

**DIS 620 MANAGEMENT INFORMATION
SYSTEMS IN DECISION MAKING. (3)**

In-depth consideration of the value of information in managerial decision making. Topics include issues in design and evaluation of management information systems, decision support systems, and business expert systems. Prereq: DIS 651.

DIS 621 BUSINESS EXPERT SYSTEMS. (3)

Introduction to expert systems and artificial intelligence in the business setting. Discussions include past and current applications of expert systems in business and considerations of future application possibilities. Prereq: DIS 620.

**DIS 622 BUSINESS DATA SYSTEM
ANALYSIS AND DESIGN. (3)**

An introduction to the comparative analysis and business use of various data models. Topics include the theory and design of information storage and retrieval procedures in the context of business information needs. Prereq: DIS 620, CS 101 or consent of instructor.

DIS 623 BUSINESS DECISION SUPPORT SYSTEMS. (3)

Discussion of business decision support system concepts and the applications of these concepts in business organizations. The theoretical development of the decision support system concept is analyzed through review of important literature in this area. Emphasis is placed on the impact of technological advances which form the basis of decision support system software. Current decision support systems are studied and future likely applications considered. Prereq: DIS 620.

**DIS 624 MANAGEMENT OF
INFORMATION RESOURCES. (3)**

The course is designed to prepare students to understand and analyze major issues related to the management of information resources, evaluate the current state of information resources management within an organization, and participate in the management of such resources. Prereq: DIS 620 or consent of instructor. (Same as MGT 624.)

**DIS 651 QUANTITATIVE ANALYSIS
IN BUSINESS DECISION MAKING. (3)**

A study of key problem formulation and solution procedures in business decision making. The topics studied include statistical techniques integrated in decision making under uncertainty, decision trees, queuing problems, and value of information. A major segment of the course is devoted to the study of linear programming problems, sensitivity analysis, assignment problems and transportation problems. Prereq: MBA standing.

DIS 695 INDIVIDUAL WORK IN DSIS. (3)

Students confer individually with instructor. May be repeated to a maximum of six credits. Prereq: Consent of the instructor.

DIS 700 TOPICS IN OPERATIONS MANAGEMENT. (3)

To review the various topics of operations management and to survey the status of the art research in each topic area. Research methodology and research opportunities in each topic area will be identified. May be repeated to a maximum of nine credits.

**DIS 720 MANAGEMENT INFORMATION
SYSTEMS THEORY. (3)**

A theoretical consideration of the role of MIS in managerial decision making. Emphasis is placed on current research in MIS and interrelationships with management science and operations management. Prereq: Consent of instructor.

DIS 753 SEMINAR IN MANAGEMENT SCIENCE. (3-6)

Each semester some topic in management science such as simulation, queuing theory, stochastic processes, numerical methods, and Bayesian Decision Theory will be studied intensively. Prereq: DIS 751, 752.

**DIS 780 STUDIES IN DECISION SCIENCE
AND INFORMATION SYSTEMS. (3)**

This course will analyze the current research topics of interest in the decision sciences. Possible areas of study may include: network management, multiple-criteria decision making; data envelopment analysis, combative decisions, and models for service organizations. May be repeated to a maximum of nine credits. Prereq: DIS 751 or consent of instructor.

**DIS 790 SPECIAL TOPICS IN MANAGEMENT DECISION
SYSTEMS (Subtitle required). (3)**

This is a variable topic course enabling focused doctoral student investigation of current research areas. It is anticipated that the course grade will be based on individual student semester research papers in the course topic area. May be repeated to a maximum of 12 credits under different subtitles. Prereq: Consent of instructor.

