DEPARTMENT CHAIR
Bhushan Kapoor

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PROGRAMS OFFERED
Bachelor of Arts in Business Administration
Concentrations:
- Decision Sciences
- Information Systems
- Marketing and Information Systems
- Joint Emphasis in Accounting and Information Systems

Minor in Information Systems
Master of Business Administration
Concentrations:
- Business Analytics
- Information Systems
- Decision Sciences

Master of Science in Information Systems
Concentrations:
- Business Analytics
- Decision Sciences

Master of Science in Information Technology

FACULTY

INTRODUCTION
The Information Systems and Decision Sciences Department offers courses in Information Systems, Decision Sciences and Business Analytics.

Information systems are computer-based systems that aid management in making decisions and assist in implementing and controlling management policies. They are used in business, industry and government operations. Applications include airline reservations, banking transactions, crime prevention networks, election returns, real estate assessment, tax records, newspaper databases, sports statistics and computer assisted learning.

Decision sciences is the application of the scientific method to decision-making in business and government using the techniques of operations research and statistics. Nearly all decision sciences problems involve solutions using computers. Operations research uses mathematical and simulation models to provide decision-makers with quantitative information pertaining to complex business situations. Statistics assists decision-makers by using techniques designed to draw inferences from experimental and sampling data.

Business analytics is a broad field consisting of a variety of business processes for data management and a wide range of analytical tools for performing data analysis to make better strategic and tactical business decisions. Business processes for data management include methods for planning, collecting, storing and structuring data into databases and data warehouses. Analytical tasks include querying, reporting, visualizing, generating online active reports and running advanced analytical techniques for classification, segmentation and prediction (e.g., data mining).

LEARNING GOALS AND STUDENT LEARNING OUTCOMES

B.A. Business Administration
The following goals and learning outcomes have been established for students pursuing a bachelor’s degree in Business Administration:

Problem solving and critical thinking skills
- Effectively use quantitative/analytical, problem-solving and critical thinking skills in a business situation

Interpersonal relations
- Motivate self and others to achieve group and organizational goals
- Diagnose and resolve conflict in group and organizational settings

Ethical awareness
- Demonstrate an awareness of ethical issues and responsibilities
Functional knowledge
- Understand and appreciate the principles and roles of each of the major business disciplines and the interrelationships of these disciplines within a strategic framework

Multicultural awareness
- Appreciate diversity and understand how workforce and market diversity challenge, benefit and influence the activities of the organization

Information technology skills
- Use information technology to support business analysis and operations

Global awareness
- Understand the impact of the global economy and business environment

Economic and legal environment knowledge
- Demonstrate knowledge about the economic and legal environments in which business operates

Communications skills
- Demonstrate knowledge and skills to communicate effectively about business issues using written and oral communications

M.S. Information Systems Concentration
The following goals and learning outcomes have been established for students pursuing a master’s degree in Information Systems:

Telecommunications
- Assess the telecommunications needs of an organization
- Supervise the development of a local or wide-area data and communications network

Use the Internet in support of operations
- Select the appropriate telecommunications hardware and software

Managerial
- Be familiar with the terminology and basic principles of business information systems and the Internet
- Understand ethical, global, political, social, legal, regulatory, environmental and technology issues
- Understand the impact of demographic diversity on organizations

Systems development process
- Analyze the information systems needs of an organization
- Design an information system to serve the needs of an organization

Data needs
- Design a database system to serve the needs of an organization
- Select appropriate software to operate a database system

Programming concepts
- Write a computer program using the fundamental concepts of programming
- Document a program
- Select a particular computer language for a programming application

Collaboration
- Work productively in a team or collaborative setting to achieve common goals

Research
- Conduct, evaluate and synthesize research, and apply theoretical ideas to practical settings

Communications
- Effectively present ideas in a logical framework in a variety of forms with proper language structure and mechanics

BACHELOR OF ARTS IN BUSINESS ADMINISTRATION, MINOR IN INFORMATION SYSTEMS, MASTER OF BUSINESS ADMINISTRATION
For information on the minor in Information Systems, as well as the Information Systems, Decision Sciences, Marketing and Information Systems concentrations, and Joint Emphasis in Accounting and Information Systems within the B.A. and MBA, please refer to the “Business Administration” programs section of this catalog.

MASTER OF SCIENCE IN INFORMATION SYSTEMS (30 UNITS)
Concentrations in the M.S. in Information Systems include Business Analytics and Decision Sciences. For students with an undergraduate degree in business administration with a concentration in information systems, the curriculum may be completed in 1 1/2 years (full time) or 2 1/2 years (part time). Students with a bachelor’s degree in a field other than business administration are eligible to apply; however, such students will be required to complete additional courses or demonstrate proficiency as described under the Curriculum requirements.

Cal State Fullerton is the only university in Orange County accredited by the AACSB International at both the undergraduate and graduate level for both accounting and business administration.

Most graduate courses in the Mihaylo College of Business Administration and Economics require “classified MCBE status” and are open only to students with classified standing in the M.S. in Information Systems, M.S. in Taxation, M.A. in Economics, MBA or M.S. in Accountancy programs.
Admission Requirements

Admission is competitive. Students must meet the CSU requirements for admission to a master's degree program. Please consult the Graduate Admissions section in this catalog for complete information. In addition, applicants will be evaluated based on the following:

- Satisfactory score on the Graduate Management Admission Test (GMAT) or Graduate Record Exam (GRE). Students must score in the top 50 percent on the verbal, quantitative and analytical writing areas.
- A bachelor's degree with a major in business administration equivalent to the degree as offered at CSUF with at least an overall cumulative grade point average of 3.0 (B). The degree must include calculus and software applications equivalent to passing MATH 135, Business Calculus and ISDS 265, Introduction to Information Systems and Applications, with a "C" (2.0) or better in each. Courses in the major that are more than seven years old must be evaluated/validated for currency. Courses with grades lower than "C" (2.0) must be repeated.
- For international students, a minimum score of 570 on the TOEFL paper exam or 90 on the internet based (iBT) is required.
- Recommendation from the ISDS Admission Committee based upon a review of the above requirements, the student's "Statement of Purpose" and prior work experience. Additional coursework may be required of conditionally admitted students who holistically satisfy the criteria but are weak in one of the above areas.

Curriculum

At least 21 of the 30 units required for the Master of Science in Information Systems degree must be at the 500 level. In lieu of the Information Systems study plan, students may choose a concentration in either Business Analytics or Decision Sciences.

An overall 3.0 (B) GPA is required in study plan courses and all applicable coursework. Any study plan course with a grade lower than "C" (2.0) must be repeated with at least a "C" (2.0).

Students admitted with a bachelor's degree in a field other than business administration will be required to complete the following additional course requirements or their equivalent (either prior to or during their residency at CSUF):

- MATH 135 Business Calculus (3)
- ISDS 265 Introduction to Information Systems and Applications (3)
- ISDS 309 Introduction to Operating Systems and Programming (3)
- ISDS 361A Quantitative Business Analysis: Probability and Statistics (3)
- OR ISDS 513 Statistical Analysis (3) with a "C" (2.0) or better

Business foundation courses

- ACCT 510 Financial Accounting (3)
- ECON 515 Microeconomic Perspective for Managers (3)
  OR MGMT 339 Principles of Management and Operations (3)
- FIN 320 Business Finance (3)
- ISDS 514 Decision Models for Business and Economics (3)
- MGMT 518 Legal and Ethical Environment of Business (3)
  OR MKTG 351 Principles of Marketing (3)

These courses must be completed with at least a 3.0 (B) overall grade point average and with a "C" (2.0) or better in each course.

INFORMATION SYSTEMS STUDY PLAN

ISDS 309 (or equivalent) is a prerequisite to many courses and should be taken prior to the beginning of the program.

Required Core Courses (15 units)

- ISDS 418 Privacy and Security (3)
- ISDS 550 Telecommunications and Business Networks (3)
- ISDS 551 Info Resources and IT Project Management (3)
- ISDS 552 Systems Analysis, Design and Development (3)
- ISDS 555 Business Databases: Design and Processing (3)

Electives (12 units)

Four courses (12 units) to be selected in consultation with and approved by the student's adviser. Additional electives to those below may be available. Students should contact the department office for a current listing. Note that students who do not have an undergraduate degree in Information Systems must take ISDS 411 as an elective.

Note: No more than nine units of electives may be at the 400 level.

- ISDS 411, 415, 431, 433, 435, 437, 443, 474, 485, 553, 554, 556, 557, 558, 563, 568, 576

Students may use one applied management science course and one applied business course as electives. The applied management science course may be selected from the following:

- ISDS 462, 473, 526, 560, 561

The applied business course electives may be selected from the following:

- ACCT 511, MGMT 444, MGMT 573, MKTG 565

Terminal Evaluation (3 units)

ISDS 577 Seminar in Information Systems Implementation (3)

Students must complete the individual project in ISDS 577 with a grade of "B" (3.0) or better. In exceptional cases, a thesis (BUAD 598) may serve as an option to the individual written project. See the departmental graduate adviser for details.
BUSINESS ANALYTICS CONCENTRATION

Required Courses (12 units)
ISDS 415 Principles of Business Intelligence (3)
ISDS 474 Data Mining for Managers (3)
ISDS 555 Business Databases: Design and Processing (3)
ISDS 556 Data Warehousing and Foundations of Business Intelligence (3)

Electives (15 units*)
Information Systems (6 units minimum)
ISDS 550 Telecommunications and Business Networks (3)
ISDS 551 Info Resources and IT Project Management (3)
ISDS 552 Systems Analysis, Design and Development (3)
ISDS 558 Advance Software Development with Web Applications (3)
ISDS 563 Geographic Information Systems for Business (3)
ISDS 565 Wireless Information Systems (3)
ISDS 568 Information Systems for Knowledge Management (3)

Decision Sciences (6 units minimum)
ISDS 440 Integrative Decision Tools for Business Operations (3)
OR ISDS 442 Business Modeling Using Spreadsheets (3)
ISDS 443 Marketing Analytics Decision-Making in the Information Age (3)
ISDS 462 Applied Business Regression Analysis with SAS (3)
ISDS 473 Applied Business Forecasting (3)
OR ISDS 526 Forecasting, Decision Analysis and Experimental Design (3)
ISDS 521 Revenue Management Modeling (3)
ISDS 560 Advanced Deterministic Models (3)

Electives Outside ISDS (3 units minimum)
ACCT 511, ECON 440, 504, FIN 432, MGMT 516, 535, MKTG 565

* No more than three units of electives may be taken at the 400 level

Terminal Evaluation (3 units)
ISDS 577 Seminar in Information Systems Implementation (3)
Students must complete the individual project in ISDS 577 with a "B" (3.0) or better. In exceptional cases, BUAD 598 (thesis) may serve as an option to the individual written project. See departmental graduate adviser for details.

DECISION SCIENCES CONCENTRATION

Required Courses (9 units)
ISDS 415 Principles of Business Intelligence (3)
ISDS 526 Forecasting, Decision Analysis and Experimental Design (3)
OR ISDS 473 Applied Business Forecasting (3)
ISDS 560 Advanced Deterministic Models (3)
OR ISDS 561 Advanced Probabilistic Models (3)

Statistics Course (3 units minimum)
One or more of the following:
ISDS 422 Surveys and Sampling Design and Applications (3)
ISDS 461 Statistical Theory for Decision Sciences (3)
ISDS 462 Applied Business Regression Analysis (3)
ISDS 467 Statistical Quality Control (3)
ISDS 472 Design of Experiments (3)
ISDS 474 Data Mining for Managers (3)
ISDS 475 Multivariate Analysis (3)

Electives (15 units maximum)
ISDS 443, 450, 465, 490, 516, 521, 551, 552, 553, 555; 560 or 561; 563, 568

Electives Outside ISDS (6 units maximum)
ACCT 511, ECON 440, 504, FIN 432, MGMT 516, 535, MKTG 565

Terminal Evaluation (3 units)
ISDS 576 Business Modeling and Simulation (3)
Students must complete the individual project in ISDS 576 with a "B" (3.0) or better. In exceptional cases, BUAD 598 (thesis) may serve as an option to the individual written project. See departmental graduate adviser for details.

MASTER OF SCIENCE IN INFORMATION TECHNOLOGY (30 UNITS)

Subject areas required for a M.S. in Information Technology are programming, accounting, data communications, management of an IT organization, systems analysis and design, e-commerce and database development.

Admission Requirements
Students must meet the CSU requirements for admission to a master’s degree program. Please consult the Graduate Admissions section in this catalog for complete information. In addition, applicants will be evaluated based on the following:
- Minimum of 2 years practical experience in a functional area of business
- Minimum average score of 530 on the GRE or a total scaled score of 530 on the GMAT
- Submission of a written self-assessment explaining why they believe they would be a good candidate for the program
- Successful passage of a phone or face-to-face interview designed to assess their level of technology knowledge, skills and abilities to be an online learner
• Proficiency in office productivity tools using a personal computer and knowledge and experience in utilizing Internet-based systems
• For international students, a TOEFL score of 570 on the paper exam is required

Application Deadlines

The deadline for completing an online application is March 1 for the following fall semester (see: www.csumentor.edu). Mailed applications need to be postmarked by the same deadline. However, the deadline may be changed based upon enrollment projections.

Curriculum

Each student is required to attend and successfully complete an on-campus orientation session for new students and maintain a GPA of 3.0. If circumstances force a student to fall out of the original cohort schedule, the student will be permitted to continue in the program, but will default to the next cohort cycle, provided the student remains in good academic standing.

INFORMATION TECHNOLOGY STUDY PLAN

Required Courses (21 units)

- ACCT 509  Accounting for Information Technology (3)
- ISDS 405  Programming Concepts for Information Technology (3)
- ISDS 550  Telecommunications and Business Networks (3)
- ISDS 551  Info Resources and IT Project Management (3)
- ISDS 552  Systems Analysis, Design and Development (3)
- ISDS 553  Electronic Commerce: Analysis and Evaluation (3)
- ISDS 555  Business Databases: Design and Processing (3)

Elective Courses (6 units)

- ACCT 507
- ISDS 435, 518, 521, 554, 556, 558

Required Capstone Course (3 units)

- ISDS 577  Seminar in Information Systems Implementation (3)

INFORMATION SYSTEMS AND DECISION SCIENCES COURSES

Courses are designated as ISDS in the class schedule.

161 Discovering Business through Decision Science (1)

How businesses operate through tours of a number of manufacturing and service facilities. Emphasizes how businesses use quantitative analysis to improve operations.

162 Introduction to Excel Spreadsheets (1)

Introduction to the Excel spreadsheet with emphasis on business applications. Topics include how to enter data, formulas, functions and enhancing the worksheet to create graphs and databases. Students who take ISDS 265 cannot receive credit for ISDS 162.

163 Electronic Research of Business Enterprises (1)

How to utilize electronic and non-electronic resources to research the history of a business. The resulting history will be published on the World Wide Web.

165 Navigating the Information Superhighway (1)

A hands-on course surveying information resources available through the Internet. Topics include e-mail, the World Wide Web, Internet search engines and computerized library resources.

166 Developing Computer Based Presentations (1)

Concepts, principles and techniques for developing computer-based presentations. Create presentation outlines, use masters and templates, work with graphs and organization charts, and develop electronic slides and transparencies.

167 Practical Approach to Database Systems (1)

Hands-on methods to plan, create and maintain databases. Create customized forms and queries, as well as develop professional looking reports. Students who take ISDS 265 cannot receive credit for ISDS 167.

168 Mastering the World Wide Web (1)

How the World Wide Web works and how one can set up a website and author web pages. Topics include: web browsers, design of a website, HTML, multimedia, interactive techniques, CGI, security and site promotion.

262 Visual Basic for Excel (1)

Prerequisite: ISDS 162 or equivalent. Introduction to the Visual Basic programming language that is a subset of the Excel spreadsheet. Students who take ISDS 265 cannot receive credit for ISDS 262.

265 Introduction to Information Systems and Applications (3)

Information systems, hardware, software, information systems concepts in business; telecommunications; e-commerce; enterprise systems; system development/acquisition; ethics, crime and security; microcomputer applications and hands-on exercises in the business arena.

309 Introduction to Programming (3)

Prerequisite: ISDS 265 or equivalent. Basic problem-solving techniques; structured programming principles; object-oriented programming principles; using GUI objects; handling events; processing files and streams.

351 Information Technology for Managers (3)

Prerequisite: ISDS 265. Essential concepts of information technology (IT) in business settings, using IT for competitive advantage, IT oversight and management frameworks, and various business and IT-related issues, such as ethical implications of information technology.
352 Advanced Data and Information Analysis in Business (3)
Prerequisites: FIN 320, MKTG 351. Advanced spreadsheet topics for professional business, downloading of databases into spreadsheets and database packages and statistical analyses for decision support; database concepts and design; querying and report writing; applications to financial/marketing forecasting models.

361A Quantitative Business Analysis: Probability and Statistics (3)
Prerequisites: MATH 135 and ISDS 265 or equivalents. Corequisite: BUAD 301; 2.5 cumulative GPA for online section registration. Probability concepts; expectations; descriptive statistics; discrete and continuous random variables; sampling; estimation; hypothesis testing; simple and multiple regression; nonparametric statistics.

361B Quantitative Business Analysis: Statistics and Decision Sciences (3)
Prerequisites: ISDS 361A; 2.5 cumulative GPA for online section registration. Quantitative methods and their application to business and economic problems. Forecasting, ANOVA, quality control, decision analysis, mathematical modeling, optimization, PERT/CPM, inventory.

371 C++ For Business Applications (3)
Prerequisite: ISDS 309. C++ syntax, structured programming, table handling, design standards, object oriented programming.

372 Java Programming for Business Applications (3)

402 Database Management Systems (3)
Prerequisite: BUAD 301. Concepts, principles and methods for analysis, design and implementation of database management systems; theory and practice; the relational model; issues and problems associated with developing single and multiple user applications both today and in the future; project required. One or more sections offered online.

405 Programming Concepts for Information Technology (3)
Prerequisite: admission to the M.S. in Information Technology program. Application programming fundamentals for IT systems; structured and object-oriented programming, accessing and management of database tables and external files; layout design and data extraction for advanced output; testing, debugging and analysis tools.

406 Systems Analysis and Design (3)
Prerequisites: BUAD 301, ISDS 265, 402. Systems analysis and design for business information systems; systems development methodologies; managing changes to system parameters; systems process and data models; case tool types and their use; structured vs. object oriented analysis and design.

409 Business Telecommunications for Information System Design (3)
Prerequisites: BUAD 301, ISDS 309. Pre- or corequisite: ISDS 406. Concepts for developing a data communication architecture to support Information Systems for a business enterprise. Requires students to undertake a group project to design a LAN.

411 Business Applications Using Web (3)
Prerequisites: BUAD 301, ISDS 309. Corequisite: ISDS 402. Contemporary issues in the design and development of integrated, graphical user interface-based business applications.

412 Statistics with SAS Applications (3)
Prerequisite: ISDS 361A. Statistical concepts beyond the basic applications. Uses SAS application program to solve statistical problems. Project required using concepts taught in the class.

414 Internet Technologies and Applications (3)
Corequisite: ISDS 402. Contemporary Internet technologies and Web applications: Internet infrastructures, development of Web sites and dynamic Web pages, Web databases, business applications. Not applicable to graduate degree requirements.

415 Principles of Business Intelligence (3)
Prerequisites: BUAD 301, ISDS 402. Principles and procedures related to the design and use of expert systems and decision support systems principles in management decision making; development of expert systems using shells.

418 Privacy and Security (3)
Corequisites: BUAD 301, ISDS 402. Security and privacy problems associated with the use of computer systems; ways to minimize risks and losses.

422 Surveys and Sampling Design and Applications (3)
Prerequisites: BUAD 301, ISDS 361A. Principles for designing business and economic surveys. Applications in accounting, marketing research, economic statistics and the social sciences. Sampling: simple random, stratified and multistage design; construction of sampling frames; detecting and controlling non-sampling errors.

431 Enterprise Systems Implementation, Configuration and Use (3)
Prerequisite: MGMT 339. Methodology and tools for configuring an ERP system to support critical business processes. Topics include system modules, implementation tools and data settings. Focuses on configuring the system to support a variety of business scenarios.

433 Enterprise Systems Administration (3)
Prerequisite: ISDS 406 or 552. Technical administration practices required to manage the day-to-day operations of an Enterprise Resource Planning (ERP) system. Topics include system architecture, security, system performance and installation of upgrades.
435 Integrated Enterprise Information Systems (3)
Prerequisite: MGMT 339. Application programming fundamentals for ERP systems; accessing and management of ERP database tables and external files; layout design and data extraction for advanced output; testing, debugging and analysis tools; security issues in an ERP system.

437 Enterprise Networks for Information Systems (3)
Prerequisite: ISDS 409 or 550. Placing the network in perspective within the overall enterprise that it serves, and the issues involved in constructing, updating and managing the networks which make up the infrastructure of those information systems.

440 Integrative Decision Tools for Business Operations (3)
Prerequisites: BUAD 301, ISDS 361B. Intermediate management science modeling and solution techniques, including topics in linear and non-linear programming, integer programming, dynamic programming, Markov processes, queuing theory and inventory models.

442 Business Modeling Using Spreadsheets (3)
Prerequisite: ISDS 361B or equivalent. Microsoft Excel will be used to implement business models. Excel will be used to effectively organize, analyze and present information. Examples include operations, production, marketing and finance. Macros, goal seek, solver, simulation and data tables.

443 Marketing Analytics Decision-Making in the Information Age (3)
(Same as MKTG 443)

454 Senior Project: Information Systems Development (3)
Prerequisites: BUAD 301, ISDS 402, 409. Integrates information systems development concepts of analysis, design and implementation. Students will develop an information system from concept to completion. Individual and team effort.

461 Statistical Theory for Decision Sciences (3)

462 Applied Business Regression Analysis with SAS (3)
Prerequisite: ISDS 361A. Regression analysis where prediction models are developed to tackle a variety of business decision problems. Data issues and appropriate use of SAS software.

465 Linear Programming in Decision Sciences (3)
Prerequisites: BUAD 301; ISDS 361B or MATH 250B. Mathematical and theoretical foundations for linear programming; geometric and linear algebraic approaches and proofs; simplex method, duality, sensitivity and parametric analyses, extensions to specialized algorithms and large-scale models; practical and computer based applications will be discussed.

467 Statistical Quality Control (3)
Prerequisites: BUAD 301, ISDS 361A. Control charts for variables, percent defective and defects. Tolerances, process capacity; special control charts, acceptance sampling and batch processing problems. Bayesian aspects of process control.

472 Design of Experiments (3)
Prerequisites: BUAD 301, ISDS 361A. Corequisite: ISDS 440. Fundamentals of experimental design. Analysis of variance, factorial experiments, nested designs, confounding and factorial replications.

473 Applied Business Forecasting (3)
Prerequisites: BUAD 301, ISDS 361A. Forecasting methods applied to problems in business and industry; practical multiple regression models with computer solutions; basic techniques in time-series analysis of trend, cyclical and seasonal components; correlation of time-series and forecasting with the computer.

474 Data Mining for Managers (3)
Prerequisite: ISDS 361A or equivalent. Fundamentals of data mining. Topics may include association, classification, clustering, decision trees, statistical modeling and visualization. Motivation for the applications of data mining techniques. Use of data mining software suites on data sets.

475 Multivariate Analysis (3)
Prerequisites: BUAD 301, ISDS 361A. The least squares principle; estimation and hypothesis testing in linear regression; multiple and curvilinear regression models; discriminant analysis; principle components analysis; application of multivariate analysis in business and industry.

476 Web Mining and Text Mining (3)
Prerequisite ISDS 402. Corequisite: 474. Fundamental concepts related to text (Web) document pre-processing and analysis. Topics include information extraction, structuring and dimension reduction, similarities between documents, classification, clustering, predictive modeling and social network analysis. Individual and group effort.

485 Wireless Business Networks for Information Systems (3)
Corequisite: ISDS 409 or equivalent. Concepts of wireless networks and technologies and their management from the perspective of an organization. Wireless LANs, services offered by wireless carriers, analysis and design of wireless networks, wireless security and how organizations can leverage wireless technologies to their advantage.

490 Queuing and Stochastic Models in Decision Sciences (3)
Prerequisites: BUAD 301 and ISDS 361B or MATH 335. Probabilistic models in management science; theoretical foundation and model development for Poisson process models, birth-death models, Markovian and general queuing situations and Markov chains; renewal theory and/or reliability models; practical business applications.
495 Internship (1-3)
Prerequisites: BUAD 301; at least junior standing, 2.5 GPA and one semester in residency at the university; and consent of internship adviser. For Information Systems concentration, ISDS 309; for Management Science concentration, ISDS 361B; for International Business concentration, ISDS 309 or ISDS 361B. Planned and supervised work experience. May be repeated for credit up to a total of six units. Credit/No Credit only.

499 Independent Study (1-3)
Prerequisites: BUAD 301, ISDS 361B, senior standing and approval by the Department Chair. Open to qualified students desiring to pursue directed independent inquiry. May be repeated for credit. Not open to students on academic probation.

513 Statistical Analysis (3)
Prerequisites: MATH 135, ISDS 265 (or equivalents) and classified MCBE status. Basic probability and descriptive statistics; sampling techniques; estimation and hypothesis testing; simple and multiple regression, correlation analysis; computer packages and other optional topics.

514 Decision Models for Business and Economics (3)
Prerequisites: ISDS 513 and classified MCBE status. Linear programming; inventory; PERT-CPM; queuing; computer simulation; time-series forecasting; and other optional topics.

516 Introduction to Logistics Analysis Techniques (3)
Prerequisites: ISDS 514 and classified MCBE status. Scope of logistics; external and internal environment; analysis of demand, analysis of cost, commodity and transportation rates; structure of transport industry, inventory management, merchandise storage and warehousing; framework of regional analysis; methods of location analysis.

518 Quantitative Tools for Information Technology Management (3)
Quantitative tools that are useful in management of an IT organization. Topics include review of probability concepts, linear programming, network modeling, project management, decision analysis, forecasting, queuing theory and simulation. Students may not receive credit for both ISDS 514 and 518.

521 Revenue Management Modeling (3)
Prerequisite: ISDS 514 or equivalent. Corequisite: ECON 515. Revenue management deals with how prices are set in organizations. Analytical tools and a conceptual framework to determine optimal price recommendations. Reinforces concepts student may have learned in other business courses such as marketing or economics.

526 Forecasting, Decision Analysis and Experimental Design (3)

550 Telecommunications and Business Networks (3)
Concepts for developing a data communication architecture for a business enterprise. Issues of transmission media, speed, efficiency, protocols, security in a variety of network architectures such as LAN, WAN, VPN, leading to “the state of the art” wireless networks. Concludes with a discussion on the technical implications of doing business on the Internet.

551 Info Resources and IT Project Management (3)
Prerequisite: admission to MCBE graduate program. Expanding role of information systems in the overall strategy and management of organizations. Topics include strategic value of information systems, data and knowledge management, information systems development management, procurement process and IT projects.

552 Systems Analysis, Design and Development (3)
Prerequisite: admission to MCBE graduate program. Systems analysis and design concepts, life cycle and prototyping; planning and managing projects; systems evaluation, selection and development. Interface design with controls, object-oriented design concepts and tools, including the use of cases and UML.

553 Electronic Commerce: Analysis and Evaluation (3)

554 E-Commerce: Technological Perspective (3)
Corequisite: ISDS 555. Expanding role of the Internet in the overall strategy, implementation and management of enterprise-wide information systems. Topics include organizational utilization of electronic information resources, as well as Internet application planning, development, implementation and control.

555 Business Databases: Design and Processing (3)
Internet and multi-user databases; accessing Web servers; data warehouse, structured query language, client-server database systems and programming; object-oriented databases.

556 Data Warehousing and Foundations of Business Intelligence (3)
Prerequisites: ISDS 552, 555. Basic concepts, architectures and development strategies of data warehousing, issues in managing data as organizational assets and its potentials for competitive advantages in dynamic business environments.
557  Issues in Business Information Systems and Global Telecommunications (3)
Prerequisite: MGMT 515. Advanced concepts of global networks, advanced communications design and management, global information security and privacy, global communications protocol and applications to industry, government and commercial sectors.

558  Advanced Software Development with Web Applications (3)
Prerequisites: ISDS 552, 555 and 411 or equivalent programming course. Advanced client/server software development techniques with specific emphasis on the Internet. Topics include file structure, managing relational databases with data control and SQL and ActiveX components and objects.

560  Advanced Deterministic Models (3)
Prerequisite: ISDS 514. Advanced linear programming, dynamic programming, integer programming, non-linear programming, business applications. Software packages and computer utilization.

561  Advanced Probabilistic Models (3)
Prerequisites: ISDS 514 and classified MCBE standing. Stochastic processes, Markov processes, advanced queuing and inventory models; reliability. Software packages and computer utilization.

563  Geographic Information Systems for Business (3)
Prerequisite: ISDS 555. Geographic Information Systems in support of business applications such as site location, scheduling, marketing and real estate. Students will develop GIS applications for local businesses.

565  Wireless Information Systems (3)
Prerequisite: ISDS 550. Contemporary wireless technologies; wide-area and local-area wireless infrastructures; design, planning and operation of wireless communication systems; 3G and next-generation wireless architectures. Wireless spectrum and regulatory issues.

568  Information Systems for Knowledge Management (3)
Knowledge management systems are useful for businesses to leverage their intellectual capital. How knowledge is created, captured, represented, stored and used to solve business problems. Software demonstrations and case studies will be used for illustrations.

576  Business Modeling and Simulation (3)
Prerequisite: ISDS 514. Theory and application of modeling and simulation methodology. Probabilistic concepts in simulation; arrival pattern and service times; simulation languages and programming techniques; analysis of output; business applications. Requires projects. The individual project will fulfill the terminal degree requirement.

577  Seminar in Information Systems Implementation (3)
Prerequisite: to be taken in the last semester or with completion of at least seven ISDS courses in the program. Integrates the development concepts of project management, analysis, design and implementation with telecommunications, database design, programming, testing and system integration issues. Students will develop information systems from concept to completion through individual and team effort. Requires projects. Individual project will fulfill the terminal degree requirement.

578  Seminar in Logistics Models (3)
Prerequisites: ISDS 516, 526, MKTG 519. Integrates the concepts of logistics to systematically analyze a distribution system. Students will conduct a complete analysis of an existing distribution system to investigate the value added role of logistics in distribution. Includes article analysis, case analysis, a research project, individual and group reports and oral and written presentations. Requires projects. Individual project will fulfill the terminal degree requirement.

597  Project (3)
Prerequisite: classified MCBE status. Directed independent inquiry. Not open to students on academic probation.

599  Independent Graduate Research (1-3)
Prerequisites: classified MCBE status and consent of department chair and associate dean. May be repeated for credit. Not open to students on academic probation.