3500. Honors Thesis Proposal Development. 3 hours. Students develop a thesis proposal, including identification of a research topic, review of relevant literature and/or theory, formulation of hypotheses or research questions where relevant, addressing ethical and safety issues, developing a research budget, and developing a timeline for the research. Students should identify a thesis advisor in their major before the beginning of the course. Prerequisite(s): admission to Honors College and completion of 12 hours in honors courses.

4000. Honors Capstone Seminar: Global Perspectives. 3 hours. The Capstone Seminar is the final course for students enrolled in the Honors College. Students explore various issues of global importance. Prerequisite(s): good standing in the Honors College and completion of at least 12 semester hours of honors courses.

4100. Honors Colloquium. 3 hours. Interdisciplinary colloquium on various topics of significant interest. Prerequisite(s): acceptance to Honors College and upper-division standing or consent of college. May be repeated for credit as topics vary.

4900. Special Problems. 1–3 hours.

4951. Honors College Capstone Thesis. 3 hours. Major research project prepared by the student under the supervision of a faculty member and presented in standard thesis format. An oral defense is required of each student for successful completion of the thesis. Prerequisite(s): completion of at least 6 hours in honors courses; completion of at least 12 hours in the major department in which the thesis is prepared; approval of the department chair and the dean of the school or college in which the thesis is prepared; approval of the dean of the Honors College. May be substituted for HNRS 4000.

Human Service Management and Leadership

see Rehabilitation, Social Work and Addictions

Information Science

see *Graduate Catalog*

Information Technology and Decision Sciences

Business Computer Information Systems, BCIS

2610 (BCIS 1305 or 1405). Introduction to Computers in Business. 3 hours. A study of the introductory concepts of computing in business; basic computer components, computer history and programming. Prerequisite(s): MATH 1100.

3610. Basic Information Systems. 3 hours. Theory, capabilities, applications, benefits, liabilities and economics of business computer information systems. Using the computer to solve business problems. Management information systems and computer-based decision support emphasized. Use of standard support application packages. Prerequisite(s): BCIS 2610.

3615. Visual Display of Business Information. 3 hours. Explores the use of visual display techniques and tools in the creation of electronic business documents and presentations. Stresses development of good written and oral presentation skills, as well as familiarity with a wide range of multimedia tools. Prerequisite(s): BCIS 2610 or equivalent; BCIS 3610.

3620. File Concepts and Procedures. 3 hours. An introduction to COBOL programming in the business environment. Emphasis on the fundamentals of structured program design, development, testing, implementation and documentation of common business-oriented applications using COBOL. Coverage of language syntax, data and file structures editing, report generation, data validation, basic file processing and an introduction to batch and interactive JCL. Prerequisite(s): BCIS 2610 or equivalent; a grade of C or better in each previously taken BCIS course, or consent of department; 2.7 UNT GPA (2.7 transfer GPA if no courses taken at UNT).

3630. Object-Oriented Programming for Business. 3 hours. Introduction of abstract data types, inheritance, object identity, polymorphism as they relate to building business objects and business classes; use of Java programming language depicting the object orientation concepts; use of class libraries and Java packages for business object construction. Prerequisite(s): BCIS 2610 or equivalent; 2.7 UNT GPA (2.7 transfer GPA if no courses taken at UNT); a grade of C or better in each previously taken BCIS course; or consent of department.

3680. Enterprise-Oriented Programming. 3 hours. Concepts of enterprise-level Java development such as graphical interfaces, JavaBeans, database services, and distributed systems as they relate to building object-oriented applications at the enterprise-level. Prerequisite(s): BCIS 3630; 2.7 UNT GPA (2.7 transfer GPA if no courses taken at UNT); a grade of C or better in each previously taken BCIS course, or consent of department.

3690. Information Systems Concepts. 3 hours. Concepts of advanced COBOL programming: computer utilization, business applications, data structures, information systems research potential and software design on interactive systems. Topics include structured designs, software development tools, advance file processing, utilities, OS and interactive JCL, report writer, debugging, sorting and other advanced COBOL language features. Prerequisite(s): BCIS 3620; 2.7 UNT GPA (2.7 transfer GPA if no courses taken at UNT); a grade of C or better in each previously taken BCIS course, or consent of department.

4610. Analysis of Business Information Systems. 3 hours. An integrated perspective of the problems in today's information systems environment, concentration on contemporary design methodologies and considerations unique to users of computers and information systems. Topics include current systems analysis, modular design, development and implementation, documentation, project planning and task definition, and other systems analysis topics. Prerequisite(s): BCIS 4620; 2.7 UNT GPA (2.7 transfer GPA if no courses taken at UNT); a grade of C or better in each previously taken BCIS course, or consent of department.

4620. Introduction to Database Applications. 3 hours. Analysis of file organization techniques and data structures. Consideration of the management of data as a resource. Design of data models and databases in business organizations. Use of database management systems and user-oriented data languages. Prerequisite(s): BCIS 3610 and 3630; 2.7 UNT GPA (2.7 transfer GPA if no courses taken at UNT); a grade of C or better in each previously taken BCIS course, or consent of department.

4630. Fundamentals of Information Technology Security. 3 hours. Introduction to the security systems development life cycle and its effects on application development, software engineering, traditional systems analysis and networking. Examines the various components of information privacy and security. Prerequisite(s): BCIS 4610; 2.7 UNT GPA (2.7 transfer GPA if no courses taken at UNT); a grade of C or better in each previously taken BCIS course, or consent of department.

4640. Administrative Problems in Information Systems. 3 hours. Advanced analysis of business information systems. An integrated investigation of business computer information systems programming and systems development concepts. Use of project management methodologies, concentration on tools and techniques, formal presentations and group dynamics. Prerequisite(s): BCIS 4610 and 4620; ACCT 2010 and 2020 with grades of C or better; ECON 1100 and 1110; MATH 1100; MATH 1190 or equivalent; 2.7 UNT GPA (2.7 transfer GPA if no courses taken at UNT); a grade of C or better in each previously taken BCIS course, or consent of department.

4650. Visual Programming for Business Applications. 3 hours. Business application design and development from the perspective of visual programming technologies. Emphasis on performance characteristics and user interface design considerations. Prerequisite(s): BCIS 4620; 2.7 UNT GPA (2.7 transfer GPA if no courses taken at UNT); a grade of C or better in each previously taken BCIS course, or consent of department.

4660. Decision Systems Design. 3 hours. Investigates model-based approaches to the design of decision systems for business and industry. Prerequisite(s): BCIS 3610; ACCT 2010 and 2020 with grades of C or better; DSCI 3710 or 3870; 2.7 UNT GPA (2.7 transfer GPA if no courses taken at UNT); a grade of C or better in each previously taken BCIS and DSCI course, or consent of department.

4670. Continuing Seminar in Computer-Based Information Systems. 3 hours. A seminar on current topics in business computer information systems. Examines state-of-the-art issues associated with the design, development, implementation, control and management of business computer information systems. Prerequisite(s): BCIS 4620; 2.7 UNT GPA (2.7 transfer GPA if no courses taken at UNT); a grade of C or better in each previously taken BCIS course, or consent of department.

4680. Distributed Systems and Teleprocessing. 3 hours. This course develops an understanding of the differences between centralized, decentralized and distributed data processing systems; their relationships with the business enterprise, data communications and the parameters affecting the implementation of the system; provides background for analysis, design, selection and evaluation of hardware, software and support required for a distributed data processing environment. Prerequisite(s): BCIS 4620; 2.7 UNT GPA (2.7 transfer GPA if no courses taken at UNT); a grade of C or better in each previously taken BCIS course, or consent of department.

4690. Information Technology Management. 3 hours. Overview of the management of an organization's information assets. Emphasizes techniques and issues specific to information systems department management; the development, implementation and operation of computer-based information systems; as well as personnel, career management, assessment, legal, ethical, global and societal issues. Prerequisite(s): BCIS 4610; 2.7 UNT GPA (2.7 transfer GPA if no courses taken at UNT); a grade of C or better in each previously taken BCIS course, or consent of department; completion of all other business foundation courses with a grade of C or better and senior standing. BCIS degree majors must take this course within 12 hours of graduation.

4700. Problem Solving and Decision Making Process. 3 hours. Study of the process of decision making, and the information requirements of decisions; decision support system tool selection and DSS applications development. Prerequisite(s): BCIS 4610 or BCIS 4660 or ACCT 4100; 2.5 UNT GPA (2.5 transfer GPA if no courses taken at UNT); a grade of C or better in each previously taken BCIS course, or consent of department.

4710. Object-Oriented Methodologies. 3 hours. Examines the object-oriented paradigm and the analysis and design of information systems using object-oriented approaches. Prerequisite(s): BCIS 4610; 2.7 UNT GPA (2.7 transfer GPA if no courses taken at UNT); a grade of C or better in each previously taken BCIS course, or consent of department.

4720. Web-Based Information Technologies. 3 hours. Provides tools, skills, and an understanding of technology, business concepts and issues that surround the emergence of electronic commerce. In addition to acquiring basic skills for navigating the Internet and creating a personal electronic presence on the World Wide Web (WWW), the student develops an understanding of the current practices and opportunities in electronic publishing, electronic shopping, electronic distribution, and electronic collaboration. The student also explores several of the problem areas in electronic commerce such as security (authentication, privacy), encryption, safeguarding of intellectual property rights, acceptable use policies, and legal liabilities. Prerequisite(s): BCIS 3630 and 4610; 2.7 UNT GPA (2.7 transfer GPA if no courses taken at UNT); a grade of C or better in each previously taken BCIS course, or consent of department.

4740. Administration and Policy in Information Security. 3 hours. Investigates the major concepts and techniques used in client-server systems architecture and information security, beginning with a strategic planning process for security. Subjects include security practices, security architecture and models, continuity planning and disaster recovery planning. Prerequisite(s): BCIS 4610; 2.7 UNT GPA (2.7 transfer GPA if no courses taken at UNT); a grade of C or better in each previously taken BCIS course, or consent of department.

4800. Cooperative Education. 1–3 hours. Supervised work in a job related to student's career objective. Prerequisite(s): BCIS 3620 or BCIS 3630; 2.7 UNT GPA (2.7 transfer GPA if no courses taken at UNT); student must meet the employer's requirements, and have consent of the department chair or BCIS undergraduate coordinator. Pass/no pass only, and cannot be used as a support course.

4900. Special Problems. 1–3 hours. Prerequisite(s): BCIS 2610 or equivalent; ACCT 2010 and 2020 with a grade of C or better; ECON 1100 and 1110; MATH 1100; MATH 1190 or equivalent; 2.7 UNT GPA (2.7 transfer GPA if no courses taken at UNT); a grade of C or better in each previously taken BCIS course or consent of department.

4951. Honors College Capstone Thesis. 3 hours. Major research project prepared by the student under the supervision of a faculty member and presented in standard thesis format. An oral defense is required of each student for successful completion of the thesis. Prerequisite(s): completion of at least 6 hours in honors courses; completion of at least 12 hours in the major department in which the thesis is prepared; approval of the department chair and the dean of the school or college in which the thesis is prepared; approval of the dean of the Honors College. May be substituted for HNRS 4000.

Decision Sciences, DSCI

2710. Data Description and Analysis with Spreadsheets. 3 hours. Collection, description and analysis of numerical data. Data presentation, tables, charts and graphs, descriptive statistics, analysis of time series and index numbers, sampling techniques and distributions, estimation, confidence intervals, with applications in quality control and productivity. Prerequisite(s): MATH 1100 or equivalent, BCIS 2610 with a grade of C or better.

2870. Basic Operations Research. 3 hours. Quantitative methods of analyzing business problems; survey of cost, volume and profit analysis; inventory and production models, and linear programming; game theory; network analysis. Prerequisite(s): completion of mathematics requirement.

3710. Business Statistical Analysis Using Spreadsheets. 3 hours. Statistical inference for means and proportions, analysis of variance, correlation, simple and multiple regression. Extensive use of cases and spreadsheets. Prerequisite(s): DSCI 2710 with a grade of C or better; ACCT 2010 and 2020 with grades of C or better; ECON 1100.

3870. Management Science. 3 hours. Introduction to operations research for business decision making. Spreadsheet methods are used to evaluate the following: deterministic models; allocation problems, linear programming, sequencing and scheduling, and network models. Prerequisite(s): DSCI 2710 or consent of instructor; ACCT 2010 and 2020 with grades of C or better; ECON 1100 and 1110; MATH 1100; MATH 1190 or equivalent.

4510. Model-Based Decision Support Systems. 3 hours. How model-based decision support systems can be utilized as a key element within a managerial decision process. Attention is paid to how and why such a model is used in a support system environment. Topics include the use of mathematical, statistical and business models that are embedded within a decision support system for dealing with both structured and semi-structured decision problems. Prerequisite(s): DSCI 3870; BCIS 3610; 2.7 UNT GPA (2.7 transfer GPA if no courses taken at UNT); a grade of C or better in each previously taken DSCI course, or consent of department.

4520. Data-Based Decision Support Systems. 3 hours. Knowledge discovery in large databases, using data mining tools and techniques. Topics include data exploration, modeling and model evaluation. Decision making in a case-embedded business environment is emphasized. Prerequisite(s): DSCI 3710; BCIS 3610; 2.7 UNT GPA (2.7 transfer GPA if no courses taken at UNT); a grade of C or better in each previously taken DSCI course, or consent of department.

4700. Problem Solving and Decision Making Process. 3 hours. Study of the process of decision making and the information requirements of decisions; decision support systems tool selection and DSS applications development. Prerequisite(s): BCIS 4660 or ACCT 4100 or LSCM 3960 or MGMT 3830; 2.7 UNT GPA (2.7 transfer GPA if no courses taken at UNT); a grade of C or better in each previously taken DSCI course, or consent of department.

4900. Special Problems. 1–3 hours.

4951. Honors College Capstone Thesis. 3 hours. Major research project prepared by the student under the supervision of a faculty member and presented in standard thesis format. An oral defense is required of each student for successful completion of the thesis. Prerequisite(s): completion of at least 6 hours in honors courses; completion of at least 12 hours in the major department in which the thesis is prepared; approval of the department chair and the dean of the school or college in which the thesis is prepared; approval of the dean of the Honors College. May be substituted for HNRS 4000.

Management Science, MSCI – see *Graduate Catalog*

International Studies

International Studies, INST

2100. Introduction to International Studies. 3 hours. Introduces students to the six areas of concentration of the major—international politics and security, international business and economics, international development, regional studies, Africa and the Middle East, and peace studies.

4800. International Studies Internship. 3 hours. Students seek supervised work-related internships to any of the areas of concentration in the international studies major. The internship aims at the advancement of the student's professional field of study and career objectives. Prerequisite(s): international studies major status; junior or senior classification; minimum GPA of 3.0 and 6 upper-level hours in the student's primary area of concentration at UNT; student must meet employer's requirements and have consent of department internship supervisor. May be repeated for credit; up to 6 hours of internship may count towards the major. Pass/no pass only.

4850. International Studies Seminar. 3 hours. Topics vary and may cover any of the six areas of concentration of the major: international politics and diplomacy, international business and economics, international development, area studies, international security, and peace and human rights issues. Students explore issues that affect our world in the 21st century. May be repeated for credit as topics vary.

4900-4910. Special Problems. 1–3 hours each. Prerequisite(s): consent of department.