Department of Computer Information Systems

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The mission of the Department of Computer Information Systems is to provide programs to prepare students to solve business problems through the use of computer information systems, computer tools, and techniques; to prepare students in the management of computer information systems; to provide foundation courses to students in other fields; to encourage intellectual contributions that advance the state of knowledge in the application of information technology and quantitative methods to the solution of business problems; and to promote the involvement of department members in service activities.

The Computer Information Systems program is designed to prepare the student to assume information systems/technology responsibilities in any organization. Exposure to a broad range of business functions coupled with learned information systems concepts and skills will serve the student well in positions such as computer programmer, database designer/administrator, data communications manager/specialist, systems analyst, computer marketing specialist, or information center specialist.

At least 50 percent of the required major hours must be taken in residence at MTSU for a major in Information Systems and 6 hours for a minor. All Information Systems majors have a built-in minor in Business Administration.

Curricular listings include General Education requirements in Communication, History, Humanities and/or Fine Arts, Mathematics, Natural Sciences, and Social/Behavioral Sciences categories as outlined on pages 64–67.

Major in Information Systems

In addition to meeting the business requirements (see page 175), an Information Systems major consists of 30 hours of information systems courses. Majors must earn an overall minimum GPA of 2.00 in their required information systems courses.

The following 24 hours are required of all Information Systems majors:

INFS   2400   Web Development
INFS   2600   Programming Logic with VB.Net
INFS   3200   Business Application Development
INFS   3400   Object-Oriented Programming with C#.Net
INFS   3800   Project Management and Systems Development
INFS   4790   Database Design and Development
INFS   4900   Business Data Communications
INFS   4950   Advanced Web-Enabled Application Development

In addition, 6 hours of electives must be chosen from the following courses:

INFS   2730   Programming Languages
INFS   3500   Decision Support Systems
INFS   3990/4990 Independent Study in Information Systems
INFS   4200   Data-Enhanced Internet Applications
INFS   4300   Security Assurance and Information Systems Auditing
INFS   4420   Information Systems Internship
INFS   4500   New Technologies in Information Systems
INFS   4740   Information Resource Management
INFS   4830   Database Programming

The following is the required course outline for the Information Systems major with a minor in Business Administration.

Required Program
Information Systems—B.B.A. Degree

FRESHMAN		SOPHOMORE	
ENGL 1010, 1020 (Comm)	6	ENGL 2020 or 2030 or	
MATH 1630 or 1810 (Math)	3	HUM 2610 (Hum/FA)	3
COMM 2200 (Comm)	3	Humanities and/or	
Natural Sciences (2 prefixes)	8	Fine Arts (2 prefixes)	6
ECON 2410 (Soc/Beh Sci)	3	HIST 2010, 2020, or 2030	6
INFS 2400	3	Social/Behavioral Sciences	3
Nonbusiness elective	4	ACTG 2110, 2120	6
	30	ECON 2420	3
		QM 2610	3
			30

JUNIOR		SENIOR	
QM 3620	3	INFS 3200, 3400, 3800,	
ECON 3210	3	4790, 4900, 4950	18
BLAW 3400	3	INFS electives	6
INFS 3100	3	QM 4010	3
MGMT 3610, 3620	6	BUAD 4980	3
MKT 3820	3		**30**
FIN 3010	3		
BCEN 3510	3		
INFS 2600	3		
	30		

Minor in Information Systems

A minor in Information Systems consists of 15 semester hours of coursework in information systems, 6 hours of which must be taken at MTSU. INFS 3100 and an INFS upper-division elective are required. In addition, 9 hours of approved INFS electives are required. A 2.00 GPA is required in the Information Systems minor

Combined Minor in Accounting/Information Systems

A student may obtain a combined Accounting/Information Systems minor consisting of 18 semester hours which include ACTG 3000 (or 2110 and 2120), INFS 2200, 3100, and 3800, plus 6 hours of upper-division ACTG electives, not to include both ACTG 3310 and 3020. This is an excellent minor for students pursuing majors outside the Jennings A. Jones College of Business. A 2.00 GPA is required in the Accounting/Information Systems minor.

Courses in Information Systems [INFS]

1000 Introduction to Computers and Related Topics. Three credits. An overview of the workings of a computer including hardware, software, and applications. Provides hands-on experience with various software packages. (Not open to business majors.)

2200 Introduction to Microcomputing. Three credits. Microcomputer applications and the microcomputer environment. (Not open to CIS majors.)

2400 Web Development. Three credits. Web development using HTML, XHTML, CSS, JavaScript, and multimedia Web content. Covers planning, design, development, and publishing of a Web site.

2600 Programming Logic with VB.NET. Three credits. Programming logic and concepts using the VisualBasic.NET programming environment. Includes program design, data types, data structures, flow control, arrays, error control, graphical user-interfaces, and file processing as applied in the context of business information systems problem solving.

2720 COBOL Applications. Three credits. Prerequisite: INFS 2200 or permission of instructor. Systems of commercial computer programming using Common Business Oriented Language in solving business problems.

2730 Programming Languages. Three credits. Object-oriented programming methods. Topics include fundamental programming structures, objects and classes, encapsulation, inheritance and polymorphism, exceptions, graphical user-interfaces and event handling, and file processing. Emphasis on practical applications of object-oriented concepts in business context.

3100 Principles of Management Information Systems. Three credits. Prerequisite: Junior standing. The role of information technology in organizations.

3200 Business Application Development. Three credits. Prerequisites: INFS 2200 or foundation knowledge of microcomputer applications; junior standing. An applications-oriented course; extensive laboratory work and development of projects.

3400 Object-Oriented Programming with C#.NET. Three credits. Prerequisite: INFS 2600 or equivalent. Introduction to object-oriented programming methods. Topics include objects and classes, encapsulation, inheritance and polymorphism, exceptions, graphical user-interfaces and event handling, streams and files, and deployment. Emphasis on practical applications of object-oriented concepts in a business context.

3500 Knowledge Management Systems. Three credits. Analysis, design, and implementation of knowledge management systems in organizations. Addresses the facilitating and enabling role of information management and communication technologies. Technologies covered include neural network, software agent,

workflow management, integrated communication network, expert systems, content management, Web portal, and search mechanisms. Hands-on projects to reinforce understanding of theoretical frameworks.

3700 Systems Analysis and Design. Three credits. Prerequisites: 6 hours of information systems; junior standing. Applied system analysis and design (concepts and techniques) including problem definition, feasibility analysis, various modeling methods, hardware and software selection, documentation, physical design, and auditing procedures. Appropriate automated technologies used.

3800 Project Management and Systems Development. Three credits. Prerequisite: Junior standing. Explores the roles and environments of project management, the product life cycle, and techniques for work planning, control, and evaluation. Covers developing a project plan, resource management, project scope and quality, budgeting, and managing project risk

3990 Independent Study in Information Systems. One to three credits. Prerequisites: Junior standing and consent of department chair. Assigned research or projects in contemporary problem areas in the information systems discipline under direct faculty supervision. Aggregate credits allowable toward a degree may not exceed 3 hours under 3990 courses.

4200 Data-Enhanced Internet Applications. Three credits. Prerequisite: INFS 3200 or permission of instructor. Focuses on database system design, deploying, maintaining, and querying a database using appropriate hardware and software. E-commerce applications in a microcomputer environment.

4300 Security Assurance and Information Systems Auditing. Three credits. An in-depth look at developing, implementing, monitoring, and auditing an information system's security. Managerial concepts for security of operating systems, administering security, and legal/ethical/policy issues examined as well as a hands-on approach to implementing operating systems security techniques. Explores the advancement in security detection and implementation, problem-solving techniques, and the role and importance of the information systems auditor.

4420 Information Systems Internship. Three credits. Prerequisites: Junior standing, consent of advisor, and a plan of activities with the associated firm prior to registration. Active employment with a governmental agency or business firm for information systems/accounting fieldwork; credit given for experience and research upon completion of acceptable work and formal report. Aggregate credits allowable toward a degree in information systems may not exceed 3 hours under 4420 courses.

4500 New Technologies in Information Systems. Three credits. Prerequisites: 12 hours of information systems credit; senior standing. Future technological advances including automating the creation and maintenance of systems with CASE tools, systems engineering packages, and integrated CASE technologies.

4740 Information Resource Management. Three credits. Prerequisites: 6 hours of information systems; junior standing. Information technologies utilizing computers as a competitive tool in a global environment.

4760 Advanced Programming. Three credits. Prerequisites: INFS 2720; junior standing. Functional programming experience in structured programming techniques; top-down design; advanced file handling and maintenance techniques to include sequential, indexed sequential, direct, and relative file organization; interactive, menu-driven applications; and uploading/downloading programs to a central site. Requires extensive laboratory work.

4790 Database Design and Development. Three credits. Prerequisites: INFS 3200; junior standing. Fundamental concepts: conventional data systems, integrated management information systems, database structure systems, data integration, complex file structure, online access systems. Emphasis on total integrated information systems database and database management languages.

4830 Database Programming. Three credits. Prerequisites: INFS 2200, 3700, and junior standing. Operational database design and implementation. Development of the interfaces that enable end users to query the database contents and transform data into information. Requires each student to participate fully in a group project.

4900 Business Data Communications. Three credits. Prerequisites: 6 hours of information systems; junior standing. Practical explanation of data communications technologies and basic applications for business. Includes projects to develop a prototype network in a lab environment for hands-on experience.

4950 Advanced Web-Enabled Application Development. Three credits. Prerequisites: INFS 2400, 3400, and 3800. Server-side Web programming techniques and multitier application development. Includes accessing databases and XML documents, creating and processing Web forms, methods of Web form validation, maintaining session state, Web application security, and configuration and deployment.

4980 Information Systems Project. Three credits. Prerequisites: Senior standing and 12 hours of information systems credit including INFS 3200 and 3700. Systems Development Life Cycle (SDLC) design and implementation. Appropriate automated technologies used throughout the course.

4990 Independent Study in Information Systems. One to three credits. Prerequisites: Senior standing and consent of department chair. Assigned research or projects in contemporary problem areas in the information systems discipline under direct faculty supervision. Aggregate credits allowable toward a degree may not exceed 3 hours under 4990 courses.

Courses in Quantitative Methods [QM]

2610 Statistical Methods I. Three credits. Prerequisite: MATH 1630 or 1810. Identification, interpretation, and use of statistical data. Topics include measures of central tendency, variation, probability theory, point and interval estimation, and hypothesis testing. Computer applications emphasized.

3620 Statistical Methods II. Three credits. Prerequisites: QM 2610; junior standing. More advanced methods of statistical analysis including simple and multivariate tests of hypotheses, non-parametric methods, correlation, regression, and time-series analysis. Computer applications emphasized.

3640 Introduction to Operations Research. Three credits. Prerequisites: QM 3620; junior standing. Optimization techniques used in business decision making.

4010 Decision Science Techniques. Three credits. Prerequisites: QM 2610 and MGMT 3620; junior standing. Current topics of quantitative management decision analysis and modeling. Computer application emphasized.

Graduate Study
Requirements for the Master of Science in Accounting/Information Systems and for the Master of Business Administration degrees and a list of the courses offered for graduate credit are published in the Graduate Catalog.