

Department of

Business Information Systems

College of Business

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Degrees offered: Associate of Applied Science (AAS) in Office Systems Support (two-year degree); Bachelor of Science (BS), Bachelor of Arts (BA), and Master of Science (MS) in Business Information Systems; BS and BA in Business Information Technology and Education; BS and BA in Marketing Education; Master of Education (MEd) in Secondary Education with specialization in Business Education; participates in the Interdepartmental Doctor of Philosophy (PhD) in Education and Doctor of Education (EdD) with a specialization in Business Information Systems

Undergraduate emphases: *Business Information Systems BS, BA*—Management Information Systems, Electronic Commerce, Office Systems Management; *Business Information Technology and Education BS, BA*—Business Teacher License, Training and Development; *Marketing Education BS, BA*—Marketing Teacher License, Training and Development. **Graduate specializations:** *Business Information Systems MS*—Business Education, Business Information Systems, Electronic Commerce, Management Information Systems, Marketing Education, and Training and Development

Distance Learning: The Bachelor of Science (BS) and Bachelor of Arts (BA) in Business Information Systems are offered throughout the State of Utah through the USU satellite Distance Learning Program. The MS in Business Information Systems is also offered through Distance Learning. For more information, contact the nearest USU Extension Center.

Undergraduate Programs

Objectives

The Department of Business Information Systems offers two major educational thrusts in undergraduate as well as graduate programs. The Business Information Systems major is designed to prepare individuals for positions as managers in business information systems, including information managers, information supervisors, network managers, worldwide web designers, electronic

commerce developers, systems analysts, applications programmers, systems trainers, and office systems managers by pursuing a bachelor's degree program in Business Information Systems.

The second major thrust is designed to prepare individuals as teachers and supervisors of business and marketing subjects at the secondary and postsecondary grade levels in the educational system or as teacher-trainers in private industry. Students may earn a bachelor's degree in Business Information Technology and Education or Marketing Education.

A comprehensive two-year Associate of Applied Science Degree in office systems support subjects is also available. In addition, the department provides service courses for many other groups of students.

The department has a modern microcomputer laboratory in seven separate rooms with more than 200 microcomputers. Students take microcomputer classes as part of their College of Business requirements, Computer and Information Literacy (CIL) examination preparation, and elective programs.

Requirements

College of Business Requirements. All bachelor's degree students majoring in Business Information Systems programs must satisfy the College of Business entrance requirements provided on pages 83-84. Academic advising about these requirements is provided by the College of Business Student Service Center, Business 308. Business Information Systems majors must also follow College of Business prespecialization requirements for advanced standing, detailed on pages 83-84. Prespecialization requirements for Business Information Technology and Education and Marketing Education majors are as follows: Acct 2010, 2020; BIS 1000, 2450, 2550; Econ 1500, 2010; MHR 2990; and Psy 1010.

Teacher Licensure. Persons planning to teach must also be admitted to the teacher licensure program in the College of Education. A cumulative college grade point average of 2.75 is required to be admitted to the College of Education, to student teach, and to graduate in Business Information Technology and Education or Marketing Education with a teaching license. Detailed information may be obtained from the Department of Secondary Education and/or the College of Education.

Two-year Associate of Applied Science Degree. Students indicating an interest in the Office Systems Support Associate of Applied Science Degree can be accepted directly into the program upon admission to the University. Students who desire to transfer to a four-year program offered by the College of Business must meet the requirements specified for bachelor's degree programs.

Competency-based Placement Program. Students who have acquired knowledge and skills that are not represented on their collegiate transcripts of credit are allowed to demonstrate competency by challenging related courses. Placement in a skills-oriented sequence can be accomplished by discussion with an advisor. Challenge of courses is done by successfully completing an examination similar to a final course test.

Students with potential for demonstrating competence have two options, one of which must be chosen prior to examination. One option is to challenge for credit (*P/D+*, *D*, *F* option) according to University established procedures; results of the test are recorded on the student's transcript. There is a fee for this option. A second option is to waive without credit required classes, if competence at the *B* level is demonstrated.

Program Requirements

Bachelor's Degree in Business Information Systems. The Information Systems program at Utah State University offers a common core of courses through two departmental majors: **Business Information Systems** and **Computer Science**. The curricula of the individual departments differ *substantially* in emphasis.

The **Business Information Systems major, Management Information Systems (MIS) emphasis**, is offered in the Business Information Systems Department, College of Business. The Bachelor of Science or Bachelor of Arts program is designed for students interested in business careers as information specialists, systems analysts, network managers, applications programmers, and information systems managers in business and industry. BIS majors take required courses in analysis and design, Internet management, telecommunications, decision support systems, spreadsheet and database applications, and information systems projects. All graduates are required to complete a common core of business subjects. The College of Business is accredited by the American Assembly of Collegiate Schools of Business. The department also offers a Master of Science in Business Information Systems with an area of emphasis in Management Information Systems.

The **Computer Science major with an Information Systems emphasis** is located in the College of Science and is designed for students interested in a career as a Computer Scientist with a background in Information Sciences and Systems. Majors in this emphasis are trained in all phases of the analysis, design, and implementation of Information Systems. As part of this emphasis, students also receive training in the theory and application of information. Students select an application area such as Business, Accounting, or Economics. Other application areas can be developed by working closely with an advisor. This program of study leads to a Bachelor of Science, Bachelor of Arts, or Master of Science degree in Computer Science. See page 196 for additional details.

General requirements for all Business Information Systems majors are: Acct 2010, 2020; BA 3400, 3500, 3700; BIS 1000, 1400 (or Computer and Information Literacy Examination), 2450, 2550, 3100, 3250, 3500, 4250; Econ 1500, 2010, 3400; MHR 2990, 3110; MHR 4880 or 4890; Math 1050, 1100; Stat 2300; Psy 1010 or Soc 1010; and University Studies requirements.

Students must choose a management information systems emphasis, an electronic commerce emphasis, or an office systems management emphasis.

The **management information systems** emphasis provides knowledge and skills for business systems analysts, applications programmers, information managers, web masters, and other business information systems positions.

Required classes for the management information systems emphasis are: BIS 2300, 3330, 4330, 5100, 5110, 5300, 5400; BIS 5050 or 5650 or 5700; CS 1700, 1710; and one of the following classes: CS 1720, 3410, or 3510; plus 6 credits outside the College of Business related to the major. It is strongly recommended that students take BIS 5050, 5450, and 5650. See advisor for current checklist of requirements.

The **electronic commerce** emphasis provides knowledge and skills for students who wish to work in the electronic economy using high-speed Internet networks and applications, while providing competitive tools for all Internet-driven electronic commerce. This expertise includes business-to-business electronic commerce, as well as business-to-consumer electronic commerce. Students gain expertise in establishing and designing websites from the technical point of view, as well as expertise in electronic commerce from a strategic business point of view.

Required classes for the electronic commerce emphasis are: BIS 3330, 4330, 5050, 5300, 5450, 5650, 5700; BA 4510 or 4540 or 4550; CS 1700, 1710; and CS 1720 or 3410.

The **office systems management** emphasis provides knowledge and skills for office managers, administrative assistants, and other practitioners who assist with analysis, design, and use of computerized information from a user's perspective.

Required classes for the office systems management emphasis are: BIS 1420, 2300, 2400, 2520, 2600, 5450, and 5700, plus 13 credits of approved upper-division classes outside the College of Business related to the major. BIS 3330, 4350, 5300, and 5400 are strongly recommended. See advisor for current checklist of requirements.

Bachelor's Degree in Business Information Technology and Education. A composite major in Business Information Technology and Education is designed for students desiring to qualify for a license to teach business subjects in grades 7-12 or to teach in business and industry. Required courses include: Acct 2010, 2020; BA 3500; BIS 1000, 1400 (or Computer and Information Literacy Examination); BIS 2250 or 4250; BIS 2300, 2400, 2450, 2520, 2550, 3100, 3140, 4550, 5400; BIS 5300 or 5450 or 5700; Econ 1500, 2010; MHR 2990, 3110; Psy 1010; and other University Studies courses required by the University. Required English classes are Engl 1010 and 2010. Students must also complete at least one of the following emphases:

1. Business Teacher License Emphasis: BIS 3000, 3300, 3400, 4300, 4400, 5500, 5600; InsT 5200; ScEd 3100, 3210, 4200, 4210, 5300; and SpEd 4000.

2. Training and Development Emphasis: BIS 4250, 4350, 5450; InsT 5220; and 12 additional credits chosen from the following: MHR 3710, InsT 5210, 5230, 5240, 5250, 5260, 5300, 5400, 5900.

Those who do not wish to receive a license to teach in the public schools may select an emphasis in Training and Development for business and industry.

Bachelor's Degree in Marketing Education. A composite major in marketing education is designed for students desiring to qualify for a license to teach marketing and distributive education subjects in the public secondary schools or in business and industry. Required courses for students wishing to receive a license to teach include: Acct 2010, 2020; BA 3500, 4510, 4540, 4550; BIS 1000, 1400 (or Computer and Information Literacy Examination), 1420, 2250, 2300, 2400, 2450, 2550, 3140, 4550; Econ 1500, 2010; MHR 2990, 3710; Psy 1010. Two fashion merchandising classes, HEnv 1120 and 4070, may be substituted for BA 4540 and MHR 3710. Students must also complete at least one of the following emphases:

1. Marketing Teacher License Emphasis: BIS 3000, 3300, 3400, 4300, 4400, 5500, 5600; InsT 5200; ScEd 3100, 3210, 4200, 4210, 5300; and SpEd 4000.

2. Training and Development Emphasis: BIS 4250, 4350, 5450; InsT 5220; and 12 additional credits chosen from the following: MHR 3710, InsT 5210, 5230, 5240, 5250, 5260, 5300, 5400, 5900.

Those who do not wish to receive a license to teach in the public schools may select an emphasis in Training and Development for business and industry.

Students must also complete Engl 1010 and 2010, as well as Econ 1500 and BIS 3140, which may be counted toward their University Studies requirements.

Graduation Requirements. To be recommended by the department for graduation with a bachelor's degree, BIS majors must have a minimum GPA of 2.5 in courses required for their major. Business Information Systems majors must have an overall GPA of 2.5. Business Information Technology and Education and Marketing Education majors must have an overall GPA of 2.75. This includes transfer credit. The College of Business requires that at least 60 semester credits be taken in courses taught outside the College of Business. Up to 9 semester credits of economics and 6 semester credits of statistics can be considered as courses taught outside the College of Business. At least 50 percent of the business credits required for a business degree must be taken on the Utah State University campus or at a designated residence center.

Communications Literacy requirements are Engl 1010 and 2010 plus two Communications Intensive courses.

Office Systems Support Associate of Applied Science Degree. This program is designed for students desiring two years (a minimum of 65 semester credits) of college to prepare for positions as office supervisors and other office and information systems support personnel. Emphasis is placed on job skills. Requirements are: Acct 2010; BIS 1000, 1400, 1420, 1550, 2250, 2300, 2400, 2450, 2520, 2550, 2600. In addition, students are required to complete a minimum of 9 credits in business-related areas as approved by their advisor.

A minimum of 18 credits of University Studies must be taken. Required University Studies classes are: 6 credits of communications literacy (Engl 1010 and 2010), 3 credits of quantitative literacy (Math 1050 or 1100), and 9 credits of breadth requirements.

Students who initially enroll for the two-year Associate of Applied Science degree may readily change to a four-year bachelor's degree program and complete the requirements for the business information systems major, business information technology and education major, or another major in the College of Business.

Minors. The Department of Business Information Systems is authorized to award teaching minors in Business Information Technology and Education, Marketing Education, and Business Computer and Information Systems. A minor in Business Information Systems and a minor in Electronic Commerce are also authorized.

Requirements for the *Business Information Technology and Education teaching minor* are Acct 2010; BIS 1400 (or Computer and Information Literacy Examination), 1420, 2300, 2450, 3000, 3300 or 4300, 3400, 4400, 5400; BIS 5300 or 5450 or 5700; and Econ 1500.

A *teaching minor in Marketing Education* consists of the following courses: Acct 2010; BA 3500; BIS 1400 (or Computer and Information Literacy Examination), 1420, 2300, 3000, 3300 or 4300, 3400, 2400 or 3550, 4400; Econ 1500; BA 4510 or 4550.

Requirements for the *Business Computer and Information Systems teaching minor* are: BIS 1400 (or Computer and Information Literacy Examination), 1420, 2300, 2400, 2450, 3000, 3100, 3300 or 4300, 3400, 3500, 5300, 5400.

The minors listed above are **teaching minors** and are available only to those working toward a teaching license.

Students wishing to *minor in Business Information Systems* must complete the following courses: BIS 2300, 2450, 3100, 3330, 3450 or 3500; CS 1700 or 3410 or 3510. In addition, they must choose one course from the following: Acct 4500; BIS 4330, 5100/5110 (take both), 5150, 5300, 5400, 5700; CS 1700 or 3410

(if not taken in *required* section) or 3510. The following courses are also required for nonbusiness majors: Acct 2010, 2020; BIS 1400.

Requirements for the *Electronic Commerce minor* are: BIS 2400, 3330, 3450 or 3500, 5300, 5700; BA 4510 or 4540 or 4550. Students whose majors are *not* in the College of Business must take the following courses, in addition to those listed above, in order to complete an Electronic Commerce minor: Acct 2010, BIS 2450, and BA 3500.

Student Organizations

The Department of Business Information Systems sponsors or co-sponsors four student organizations. Each group provides unique experiences that can complement and enrich formal coursework. Leadership development and human relations skills are among the personal attributes enhanced by involvement in the various organization activities.

Association for Computing Machinery (ACM). ACM, a professional society for the information systems industry, sponsors a student chapter at USU. The goals of ACM are to: (1) provide leadership experiences for undergraduate and graduate business information systems majors; (2) help student members plan their careers and find employment by introducing them to practicing systems professionals; and (3) foster a professional attitude among business information systems majors so that they will contribute to their field.

Phi Beta Lambda (PBL) is a cocurricular student organization. The organization's goal is to provide opportunities to develop business career competencies and to promote civic and personal responsibility. Membership is open to all students interested in business.

Delta Epsilon Chi (DEX) is a cocurricular organization designed for marketing education and marketing majors. The major goal of DEX is to help students prepare for careers in marketing or marketing education. DEX provides students with opportunities to compete in marketing events at the state and national levels. Membership is open to all students interested in business and marketing.

Delta Pi Epsilon (DPE) is a national honorary fraternity for graduate students. Purposes of the organization include enhancement of research, scholarship, service, and cooperation in the profession. Election to membership requires review by members and faculty of the Department of Business Information Systems.

Graduate Programs

Master of Science

Students applying for admission to the Master of Science program in Business Information Systems must take the GMAT test. A score at the 40th percentile or better on the GMAT is required for admission. Undergraduate GPA should be 3.0 or above. Meeting minimum requirements does not guarantee admission.

The MS requires a minimum of 33 credits. A minimum of 24 credits of academic work must be in classes numbered 6000 and above. Twelve or more credits should be in the area of specialization. Students with bachelor's degrees outside of business may be required to complete additional coursework.

Students in the master's program pursue the *Plan C* option, where a research paper is completed in a special research class. Those who wish to pursue the *Plan A* thesis option must have permission from their committee to do so.

All MS degrees in the BIS Department require the following core: BIS 6150, 6440, 6810.

The specialization in **Management Information Systems (MIS)** is for students who wish to work as systems analysts, application programmers, network managers, information managers, information center managers, and trainers in business information systems.

Students are expected to have a background in business information systems. Required courses are BIS 6120, 6200, 6330, and BIS 6400 *or* 6700, in addition to the departmental core. Students who choose the Plan A option must complete 6 credits of BIS 6970. Students may take credits in Business Information Systems, Computer Science, Instructional Technology, Business Administration, Accounting, Economics, or other approved electives to complete the 9 credits of electives required.

The specializations in **Business Education, Marketing Education, and Training and Development** are designed for those who are teaching in an area of business or who wish to work in training and development in business and industry. Required courses for the Business Education or Marketing Education specialization are BIS 6350, 6450, 6700, 6720, 6730, and 6770. Students must complete 15 credits of electives chosen from the following list (or select others with committee approval): BIS 6250, 6350, 6400, 6600, 6720, 6730, 6770.

Required courses for the Training and Development specialization are BIS 6250, 6350, and 6450. Students must complete 15 credits of electives chosen from the following list (or select others with committee approval): BIS 6120, 6330, 6410.

For a current checklist of requirements, students should contact their departmental graduate advisor.

The USU MS in Business Information Systems is the **only** master's program in Business Information Systems in the state of Utah. Graduates are placed in the West and throughout the nation.

Master of Education

Students desiring admission to the MED program must also meet the requirements of the Secondary Education Department.

The MEd degree in secondary education with specialization in business education has a master's project requirement as part of the program. The program is devised specifically for the practicing secondary school teacher of business or marketing education. Students complete a core area in secondary education, as well as requirements in business education and subject-matter-oriented courses. The program is also designed to prepare people to teach in public secondary schools.

Doctor of Philosophy and Doctor of Education

Applicants for admission to the College of Education PhD or EdD programs with a specialization in Business Information Systems must take the GRE. Scores on the verbal and quantitative test must be at or above the 40th percentile. No minimum score is required on the analytical section (required by the Educational Testing Service).

The Department of Business Information Systems cooperates with other departments in offering the interdepartmental Doctor of Philosophy (PhD) and Doctor of Education (EdD). Within the Business Information Systems specialization, emphases can be pursued in business education, marketing education, business information systems, and business communications. Other subject-matter emphases are also available. The PhD is a research-based degree. The EdD degree is a practitioner's degree. Both degrees require dissertations. Graduates secure positions teaching business subjects or business-teacher education in colleges and universities or in business and industry. Former graduates are currently in various positions in higher education, including higher education administration; in teacher education instruction; and in business and industry.

Additional Information

Specific details about each of the foregoing degree programs are outlined in policy and procedure documents available through the department. All requirements are subject to change; check with the department for current requirements.

The business and marketing teacher education programs, at the undergraduate and graduate levels, are ranked highly and respected throughout the nation, with faculty who are nationally and internationally recognized.

All students must meet admission requirements as specified by the School of Graduate Studies (see pages 72-73).

Research

Faculty in the Department of Business Information Systems are active in research and scholarly endeavors. Current and published research topics include business communications; international communications; improvement of instruction in teaching; business information systems as related to business and industry; curriculum for business schools; business reengineering; electronic commerce; group decision support systems; microcomputer applications; use of microcomputers in various subjects, including accounting and business communications; cooperative education; issues in higher education; and other areas related to business information systems, marketing education, and business education.

Financial Assistance and Assistantships

Funds for scholarships are provided through the School of Graduate Studies and administered in the department. Those interested in scholarships should contact the graduate director or the department head.

Each year several high-quality graduate teaching assistants are needed. These assistants generally teach classes in keyboarding, word processing, business communications, and microcomputer applications. Those who are interested in teaching assistantships must apply through the department head. They must have had teaching experience or be willing to take teaching methods classes, as well as the School of Graduate Studies-sponsored teaching assistant workshop, prior to receiving an assistantship.

Career Opportunities

Business Information Systems is one of the fastest growing fields in business and industry. Follow-up studies show that information systems positions pay excellent salaries, and the placement rate of students is almost 100 percent. Currently, there is also a great demand for business teachers in public education.

Business Information Systems Courses (BIS)

BIS 1000. Business Orientation. Orients freshmen and transfer students to College of Business programs, academic and student services, professional organizations, and career possibilities. Also taught as Acct 1000, BA 1000, Econ 1000, and MHR 1000. (0.5 cr) (F,Sp)

BIS 1110. Keyboarding. For students with no previous keyboarding experience. Designed so student can touch type and learn basic concepts related to word processing and document formatting. (2 cr) (F,Sp)

BIS 1400. Microcomputer Applications in Business. Using microcomputers at school and work. How to operate a PC. Includes operating systems, word processing, Internet, graphics, database, and spreadsheet applications. Includes preparation for University Studies Computer and Information Literacy examination. Prerequisite: Ability to keyboard at a minimum of 25 wpm. (3 cr) (F,Sp,Su)

BIS 1410. Special Topics. Selected topics related to using computers in business. (1-3 cr) (F,Sp,Su) ®

BIS 1420. Word Processing Applications. Word processing software instruction designed for office applications. Emphasizes creating business documents and improving keyboarding skills. Assumes ability to keyboard by touch at a minimum of 50 wpm. (3 cr) (F,Sp)

BIS 1550 (CI). Business Correspondence. Development and application of effective business writing skills, emphasizing business correspondence. Includes thorough review of grammar, spelling, and punctuation related to business correspondence. (3 cr) (F,Sp)

BIS 2250. Introductory Internship. Introductory-level experience in a career-related position approved by the Cooperative Education Office. One credit for every 75 hours of internship experience, with a maximum of 9 credits. A maximum of 12 credits of 2250 and 4250 combined can be counted toward the minimum degree requirements for the College of Business. (1-9 cr) (F,Sp,Su) ®

BIS 2300. Business Data Communications and Networking. Emphasizes business data communications in a LAN and WAN networking environment. Includes network protocols, cable technology, telecommunications standards, security issues, and general telecommunications management issues. Prerequisite: BIS 1400 or CIL exam. (3 cr) (F,Sp,Su)

BIS 2400. Web Design for Business Applications. Design, development, and evaluation of business documents for electronic media utilizing the worldwide web. Prerequisite: BIS 1400 or CIL exam. (3 cr) (F,Sp,Su)

BIS 2450. Spreadsheets and Databases for Business. Concepts related to integration of microcomputer spreadsheets and databases into business. Use of spreadsheets and databases to accomplish business operations. Prerequisite: Computer competency exam or equivalent. (3 cr) (F,Sp,Su)

BIS 2520. Integrating Office Technology. Advanced applications of office technology for production of business documents, emphasizing efficient use of word processing, graphics, and desktop publishing. Prerequisites: BIS 1420, 2550. (3 cr) (F,Sp,Su)

BIS 2550 (CI). Business Communication. Development and application of effective oral and written business communication skills. Language/mechanics, grammar, and document formatting. Prerequisite: Engl 1010. (3 cr) (F,Sp,Su)

BIS 2600. Office Procedures. Finishing course which integrates office knowledge and skills. Applies administrative activities which are part of the office process. Prerequisites: BIS 2520; BIS 1550 or 2550. (3 cr) (F,Sp)

BIS 3000. Principles of Business and Marketing Education. Covers principles of business and marketing education, including professionalism, historical overview of the field, student organizations, advisory committees, applied technology education, and school-to-careers program. (1 cr) (F,Sp)

BIS 3100 (DSS). Business Information Systems. Survey of business uses of information technology, emphasizing vocabulary, concepts, career emphases, and systems components. Includes general systems theory and business functional information subsystems (e.g., accounting, management, finance, and marketing). (3 cr) (F,Sp,Su)

BIS 3140 (QI). Managing Personal Finances. Management of personal business affairs, including insurance, investments, installment buying, and estate planning. Emphasizes personal business affairs as related to economic developments in the public and private sectors. Prerequisite: Math 1030 or Math 1050 or Stat 1040. (3 cr) (Sp) ©

BIS 3250. Discussions With Business Leaders. Students attend Partners in Business Program seminar sessions to examine new methods for improving performance in organizations. Repeatable to a maximum of 1.5 credits. (0.5 cr) (F,Sp) ®

BIS 3300. Clinical Experience I. First business/marketing clinical practicum (40 hours minimum) in middle and secondary schools; must be taken concurrently with BIS 3400 methods class. Required at Level I. Prerequisite: Program admission. (1 cr) (F,Sp)

BIS 3330. Database Management. Theory and application of designing, developing, and maintaining database systems. Principles of management of data resources to support effective information systems in organizations. Prerequisites: BIS 3100 and one programming language. (3 cr) (F,Sp,Su)

BIS 3400. Methods of Teaching Keyboarding and Microcomputing. Psychological principles and methodology for teaching keyboarding, word processing, microcomputing, and accounting. Includes equipment and laboratory needs, classroom management, and lesson planning. Prerequisite: BIS 1420. (3 cr) (F)

BIS 3450. Business Applications Using Visual Basic. Designed to teach nontechnical students to solve business problems with Visual Basic. After students learn key elements of Visual Basic, advanced features of Microsoft Access (which require some knowledge of Visual Basic) are introduced. This course is *not* for BIS majors who have had C++. Prerequisite: BIS 2450. (3 cr) (F,Sp,Su)

BIS 3500. Integrated Projects Using Visual Basic. Creation of applications to solve typical business problems or support common functions, such as inventory control, accounts receivable, or personnel management. Students create working systems using widely-used Windows software. Prerequisites: BIS 2450 and CS 1700. (3 cr) (F,Sp,Su)

BIS 3550. Principles of Selling. Focuses on the sales process, including prospecting, qualifying customers, planning and delivering the sales presentation, overcoming objections, closing the sale, and satisfying the customer's needs. (2 cr) ©

BIS 4250. Advanced Internship. Advanced or middle-level internship experience in a career-related position approved by the Cooperative Education Office. One credit for every 75 hours of internship experience, with a maximum of 9 credits. (1-9 cr) (F,Sp,Su) ®

BIS 4300. Clinical Experience II. Second business/marketing clinical practicum (40 hours minimum) in middle and secondary schools; must be taken concurrently with BIS 4400 methods class. Required at Level 2. Prerequisites: Program admission and completion of Level 1. (1 cr) (F,Sp)

BIS 4330 (d6330).¹ Database Implementation. Application of database concepts using industrial database products. Includes structured query language (SQL) development, database programming development, front- and back-end interface development, web database design, database administration basics, and integration of database tools within a project context. Prerequisite: BIS 3330 or equivalent. (3 cr) (F,Sp)

BIS 4350. Introduction to Training and Development. Introductory course in training and development. Examines various roles of the human resource manager in the training domain. Students learn systems approach to developing and implementing training programs in business. (3 cr) (Sp)

BIS 4400. Business Education and Marketing Education Methods. Instructional methods for conceptual business and marketing classes. Includes methods for advising student organizations, school to careers programs, and relationships between general and applied technology education. Prerequisites: Econ 1500, MHR 2990, BIS 3140, Acct 2010. (3 cr) (Sp)

BIS 4550 (CI). Principles of International Business Communications. Culture-general and culture-specific study of business communication in the diverse world of international business from both theoretical and applied perspectives. (3 cr) (Sp)

BIS 4950H. Senior Honors Thesis/Project. Creative project that will then be written up, and presented, as a Senior Thesis as required for an Honors Plan. (3 cr) (Sp)

BIS 5050 (d6050). Creating Internet Commerce Sites with Visual Interdev and SQL Server. Explores design, development, and operation of corporate information centers (corporate interfaces for customers and employees), Internet commerce sites (direct sales to customers), and AI problem-solving sites (with an expert system to help the user with tasks). Prerequisites: BIS 3100, 3330, and 3500. (3 cr) (F,Sp)

BIS 5100. Systems Design and Implementation. Management, evaluation, documentation, maintenance, and reengineering of business information systems projects. Prerequisite: BIS 3330. (3 cr) (F,Sp)

BIS 5110. Systems Design Laboratory. Required laboratory for BIS 5100, allowing students to complete assigned team projects. (1 cr) (F,Sp)

BIS 5150. Management Support Systems. Survey of information technology to support management activities, including decision support systems, executive information systems, group support systems, electronic meeting systems, and expert systems. Prerequisite: BIS 3100. (3 cr)

BIS 5300. Advanced Data Communications. Principles of data communications, local and wide-area networks, hardware, software, media standards, management, and business applications. Management and strategic use of local-area networks (LANs) and wide-area networks (WANs) to solve business problems. Prerequisites: BIS 2450 and 3100. (3 cr) (F,Sp)

BIS 5400 (d6400). Local Area Network Management for Business. Application of networking concepts related to the management of local area networks. Includes topics related to setup, management, and maintenance of local area networks and installation of electronic mail handling systems. Prerequisite: BIS 3100. (3 cr) (F,Sp,Su)

BIS 5450 (d6450). Designing Graphical User Interfaces for Electronic Commerce. Integration of specialized web-design software, current multimedia technology (e.g., video/audio streaming, computerized slide shows, graphic animations, digital graphics) and web-design principles to create graphical user interfaces for e-commerce sites. Prior completion of BIS 2400 recommended. (3 cr) (F,Sp)

BIS 5500. Business/Marketing Teaching Seminar. Capstone seminar focused upon student business teaching issues, professional development, and principles of effective instruction, emphasizing reflective teaching. Must be taken concurrently with BIS 5600. Prerequisites: Level 1 and Level 2 completion; student teaching placement. (2 cr) (F,Sp)

BIS 5600. Business/Marketing Student Teaching. A 10-week culminating student teaching experience in which students assume full-time teaching responsibilities under the direction of cooperating teachers in major and minor fields. Must be taken concurrently with BIS 5500. Prerequisites: Level 1 and Level 2 completion; student teaching placement. (8 cr) (F,Sp)

BIS 5640 (d6640). E-Commerce Data Interchange Using XML. Designed to build e-commerce applications using XML (Extensible Markup Language) as the underlying technology. Students will also learn to parse XML documents, use Extensible Style Sheet language, and use XSQL (an Oracle technology) to tie XML with its database. Prerequisites: BIS 3100, 3330, and 3500. (3 cr)

BIS 5650 (d6650). Advanced Website Development. Creation of static and dynamic HTML pages, CGI, Perl, and Java script. Students create websites using Access or Oracle as the database backend. This technical course maintains a business focus as a transaction-oriented commercial site. Prerequisites: BIS 3100, 3330, and 3500. (3 cr) (F,Sp,Su)

BIS 5660 (d6660). The Adult Business Learner. Focuses on the adult business learner, the concept of the "learning organization," and the different types of postsecondary institutions that provide adult training and education in business. (3 cr)

BIS 5700 (DSS). Internet Management and Electronic Commerce. Familiarizes students with concepts and technologies relating to business and the Internet. Focuses on the new business environment that has evolved through the Internet, as well as associated technologies and strategies. Prerequisite: BIS 1400 or Computer and Information Literacy Examination. Some programming experience is helpful. (3 cr) (F,Sp)

BIS 5800 (d6800). Security of Business Information Systems. In-depth exploration of security issues in business information systems. Includes workstation, workgroups, intranet, and wide-area network security. Covers development of security policies and procedures. Includes information necessary to pass Certified Information Systems Security Professionals exam. Prerequisite: BIS 3500 or graduate admission. (3 cr) (F,Sp,Su)

BIS 5950. Independent Readings. Designed for individual student projects as approved by the department. (1-5 cr) (F,Sp,Su) ®

BIS 6050 (d5050). Creating Internet Commerce Sites with Visual Interdev and SQL Server. Explores design, development, and operation of corporate information centers (corporate interfaces for customers and employees), Internet commerce sites (direct sales to customers), and AI problem-solving sites (with an expert system to help the user with tasks). Prerequisites: BIS 3100, 3330, and 3500. (3 cr) (F,Sp)

BIS 6110. Workshop. Intensive workshops. (1-3 cr) (F,Sp,Su) ®

BIS 6120. Business Information Systems Development. Business information systems development, including analysis, design, and implementation. Students develop a working prototype to solve a real-world information systems problem. (3 cr) (Sp)

BIS 6150. Communication for Business. In-depth study of the process for preparing written business communications and related oral presentations. Preparation of reports relevant to student's major. Prerequisite: BIS 2550 or equivalent. (3 cr) (F,Su)

BIS 6160. Integrative Pre-MBA Core. Integrates financial reporting, analysis, and markets; domestic and global economic and legal environments; creation and distribution of goods and services; and human behavior in organizations. Upon completion, students without undergraduate degrees in business are prepared to enter advanced MBA core. Also taught as Acct 6160, BA 6160, Econ 6160, and MHR 6160. (18 cr) (Su)

BIS 6180. Intrasession MBA Workshop. Intensive workshops designed to enhance the MBA experience. (0.5-1 cr) ®

BIS 6200. Business Data Communication Systems. Introduction to business data communications, including concepts, network architecture, data communication soft-

ware and hardware, distributed information systems, and business communication system services. (3 cr) (F)

BIS 6250. Graduate Internship. Graduate-level internship in business, industry, or government position approved by department. Requires written learning objectives, performance evaluation, and a final internship written report. Requires 75 hours internship per 1 semester credit. (1-6 cr) (F,Sp,Su) ®

BIS 6330 (d4330). Database Implementation. Application of database concepts using industrial database products. Includes structured query language (SQL) development, database programming development, front- and back-end interface development, web database design, database administration basics, and integration of database tools within a project context. Prerequisite: BIS 3330 or equivalent. (3 cr) (F,Sp)

BIS 6350. Managing Business Training Programs. Examines various management topics in the training and development field, including program development, implementation, and evaluation. Discusses the various roles of training program managers. (3 cr) (F)

BIS 6400 (d5400). Local Area Network Management for Business. Application of networking concepts related to the management of local area networks. Includes topics related to setup, management, and maintenance of local area networks and installation of electronic mail handling systems. Prerequisite: BIS 3100. (3 cr) (F,Sp,Su)

BIS 6410. Human-Computer Interface Design. Integrates aspects of industrial psychology, work physiology, human environments, job analysis, and hardware/software engineering in the study of designing effective, efficient input/output interfaces for business information systems. (3 cr) (Sp)

BIS 6440. Information and Decision Making. Case-based approach to learning role of information technology when making quantitative and qualitative analyses, including statistical techniques to solve business problems through the use of information technology. Prerequisite: At least one graduate or undergraduate class in statistics. (3 cr) (Sp,Su)

BIS 6450 (d5450). Designing Graphical User Interfaces for Electronic Commerce. Integration of specialized web-design software, current multimedia technology (e.g., video/audio streaming, computerized slide shows, graphic animations, digital graphics) and web-design principles to create graphical user interfaces for e-commerce sites. Prior completion of BIS 2400 recommended. (3 cr) (F,Sp)

BIS 6500. Developing Business Information Systems with Advanced Software Concepts. Creation of custom applications to solve typical business problems or support common functions, using Visual Basic programming and OLE Automation with MS Office software. Prerequisite: Knowledge of database and spreadsheet software. (3 cr) (F,Sp,Su)

BIS 6550. International Business Communication. Culture-general and culture-specific study of business communication in the diverse world of international business, from both theoretical and applied perspectives. (3 cr) (F,Su)

BIS 6600. Business Teaching Internship. Graduate-level business teaching experience at approved corporate, secondary, or post-secondary sites. (1-3 cr) (F,Sp,Su) ®

BIS 6640 (d5640). E-Commerce Data Interchange Using XML. Designed to build e-commerce applications using XML (Extensible Markup Language) as the underlying technology. Students will also learn to parse XML documents, use Extensible Style Sheet language, and use XSQL (an Oracle technology) to tie XML with its database. Prerequisites: BIS 3100, 3330, and 3500. (3 cr)

BIS 6650 (d5650). Advanced Website Development. Creation of static and dynamic HTML pages, CGI, Perl, and Java script. Students create websites using Access or Oracle as the database backend. This technical course maintains a business

focus as a transaction-oriented commercial site. Prerequisites: BIS 3100, 3330, and 3500. (3 cr) (F,Sp,Su)

BIS 6660 (d5660). The Adult Business Learner. Focuses on the adult business learner, the concept of the “learning organization,” and the different types of postsecondary institutions that provide adult training and education in business. (3 cr)

BIS 6700. Information Systems Strategies for Electronic Commerce. A management-oriented treatment of general information systems principles and topics relating to information systems strategies for electronic commerce, such as business models, mass customization, market research, security and assurance, entrepreneurship, intelligent agents, virtual corporations, electronic payments, and customer service. (3 cr) (F)

BIS 6720. Instruction and Training in Business and Marketing Education. Designed for experienced training and educational personnel. Focuses on ways to improve instructional techniques and approaches. Compares traditional teacher/trainer-style teaching to student-centered teaching and training. (3 cr) (Su)

BIS 6730. Teaching Methods in Business Education, Marketing Education, and Information Systems. Advanced methodology for teaching business, marketing, and information system subjects, including techniques for teaching word processing, keyboarding, Internet, basic business, accounting, marketing, economics, and other business subjects in cognitive, psychomotor, and affective instructional domains. Taught online. (3 cr)

BIS 6750. Business Process Reengineering Using Information Technology. Examines methodologies and state-of-the-art thinking in the area of business process reengineering. Designed to help students understand how organizations manage change in contemporary global business environments by utilizing the latest information systems and technology techniques. (3 cr)

BIS 6760. The Administration and Organization of School-to-Careers Programs in Business. Covers the philosophy of the school-to-careers movement in the U.S., as well as how to organize and administer such a program. Includes discussion of the school-based, linking, and work-based components of such a program. (3 cr)

BIS 6770. Competency-based Instruction. Business teachers learn how to develop competency-based instruction by completing a CBI project. (3 cr) (F,Sp,Su)

BIS 6800 (d5800). Security of Business Information Systems. In-depth exploration of security issues in business information systems. Includes workstation, workgroups, intranet, and wide-area network security. Covers development of security policies and procedures. Includes information necessary to pass Certified Informa-

tion Systems Security Professionals exam. Prerequisite: BIS 3500 or graduate admission. (3 cr) (F,Sp,Su)

BIS 6810. Introduction to the Research Process. Essential scientific research concepts of theory development and data collection. The technology of research, including writing and funding proposals, experimental and study design, and project management. Includes a hands-on research project conducted by the student. (3 cr) (Sp,Su) ®

BIS 6950. Independent Readings. Specialized projects for graduate students. (1-3 cr) (F,Sp,Su) ®

BIS 6970. Master’s Paper. Master’s-level thesis or Plan B research credit. (1-6 cr) (F,Sp,Su) ®

BIS 6990. Continuing Graduate Advisement. (1-3 cr) (F,Sp,Su) ®

BIS 7250. Graduate Research Internship. For doctoral students desiring to improve their research capability. Prior approval required. Repeatable to a maximum of six credits. (1-3 cr) (F,Sp,Su) ®

BIS 7330. School-Based Internship. Internship for doctoral candidates preparing to be school supervisors. Repeatable to a maximum of 9 credits. (3-9 cr) (F,Sp,Su) ®

BIS 7610. Critical Analysis of Issues. Examines critical analysis/thinking techniques, creative problem solving, and the identification of issues and trends in the field. (3 cr)

BIS 7950. Independent Readings. Independent readings for graduate students. Repeatable to a maximum of 6 credits. (1-3 cr) (F,Sp,Su) ®

BIS 7970. Doctoral Dissertation. Doctoral-level dissertation research credit. (1-12 cr) (F,Sp,Su) ®

BIS 7990. Continuing Graduate Advisement. (1-9 cr) (F,Sp,Su) ®

¹ Parenthetical numbers preceded by *d* indicate a *dual* listing.

® Repeatable for credit. Check with major department for limitations on number of credits that can be counted for graduation.

© This course is also offered by correspondence through Continuing Education Independent and Distance Education.