

Information Systems and Decision Sciences

The Department

Computer and information systems are at the forefront of most courses offered in the department. Every course deals with the use of information by managers in support of their decision-making roles. Those interested in specializing in the Information Systems option can choose from a broad set of courses designed to prepare one for a challenging and productive job in one of the fastest growing career paths.

The **Information Systems Option** provides students with knowledge, skills, and modern tools in the area of information technology. Students will learn about the strategic role of information systems in business decision making and how to solve management problems in all functional areas of business by implementing computer technology. Included are courses in end-user computing, data communication, network administration, database systems, decision support systems, expert systems, Web-page design, programming, and systems analysis and design.

The IS specialist is able to take on jobs such as network administrator in a firm using local area networks. This career path emphasizes management skills needed in a technical area and requires knowledge in hardware evaluation and acquisition.

As an end-user support technician, IS graduates can also gain employment helping others use the computer to get their jobs done. The IS professional knows how to get the most from personal productivity software, such as word processors, as well as how to design and implement systems.

Students skilled in both traditional and newer computer languages will find jobs as systems analysts who develop the larger systems that drive most business enterprises. Using a database orientation, these graduates use fourth-generation language development skills to provide speedy and effective solutions to business problems.

The Certificate in Business Information Systems is directed toward enhancing the knowledge of candidates for entry level data processing related positions. After candidates have demonstrated that they have met prerequisites for the certificate program, the approval of the program coordinator or of the department chair must be obtained before students may enter the program. Each student's individually designed program consists of a five-course

sequence chosen with the approval of the certificate program coordinator.

The Certificate in Network Administration is designed to enhance knowledge, practical experience, and employability of graduates in the computer network environment. Candidates must meet prerequisites for the certificate program and be approved by the program coordinator or the department chair. The program, designed individually for each student, consists of a five course sequence. It includes an internship and must be approved by the program coordinator.

Statistical and Computer Laboratories

In addition to the classroom instruction, guest speakers, and field trips, students who study in the Information Systems and Decision Sciences Department are exposed to modern computer laboratories for the quantitative, computer, and business communication classes throughout the semester. The computer laboratories provide the student with the valuable opportunity of hands-on computer experience for such classes as computer programming and statistical analysis. Seven laboratory rooms with over 185 microcomputers are the busiest rooms in the Leon S. Peters Business Building.

Faculty

The Department of Information Systems and Decision Sciences employs more than 20 full-time and part-time faculty with extensive expertise in systems analysis, sys-

The Sid Craig School of Business

Department of Information Systems and Decision Sciences

Charlotte J. Hiatt, *Chair*

Denise Biggert, *Department Administrative Assistant*

Peters Business Building, Room 287
(559) 278-2823

FAX: (559) 278-4911

<http://www.craig.csufresno.edu>

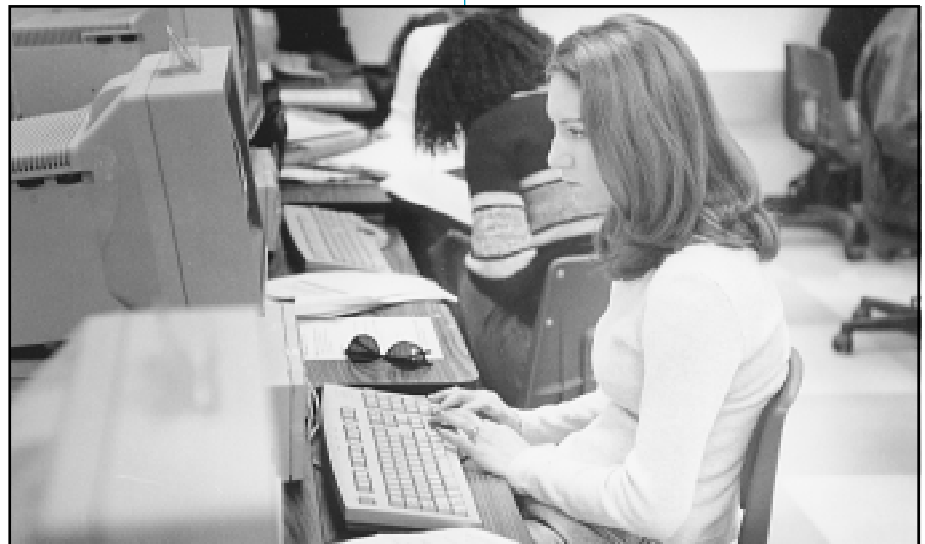
B.S. in Business Administration

Option: Information Systems

Certificate in Business Information Systems

Certificate in Network Administration

tems design, computer language programming, statistics, networking, telecommunications, word processing systems, office automation, business communication, and database systems. These faculty come from all over the world and have Ph.D. degrees from major American and foreign universities. The modern computer and statistics laboratories offer students a unique opportunity to become acquainted with the developments in the field of computer technology and applications.



Information Systems and Decision Sciences

Faculty

Charlotte J. Hiatt, <i>Chair</i>	
Randy J. Anderson	Wallace C. Liu
Donald L. Beringson	William S. Mallios
Kelly J. Black	Kathleen E. Moffitt
Priscilla M. Chaffe-Stengel	Arlene A. Motz
Harry Costis	Sasan Rahmatian
Mostafa Elhag	Peter Simis
Myron E. Hatcher	Rafael Solis
Charlotte J. Hiatt	Donald N. Stengel
Richard C. Lacy	Tomasz R. Wielicki
Patricia A. LaRosa	

Bachelor of Science Degree Requirements

Business Administration Major

All students in the Sid Craig School of Business who are working toward the bachelor of science degree in business administration must complete, in addition to the university's General Education requirements, a ten-course group of pre-business courses, seven courses of upper-division core, and 23 to 32 units in an area of specialization or option. The pre-business classes include material considered essential for further study in business. The upper-division course classes provide a broad background and a breadth of knowledge and understanding. The option courses enable the students to specialize in a specific area of business and to prepare for effective performance in future employment.

Units

Pre-Business requirements* 20

ACCT 4A, 4B; B A 18;
CSB 50; DS 71, 73;
ECON 40 or AG EC 1;
ECON 50; ENGL 1; IS 50
(See *Pre-Business Policy*, page 206.)

Upper-division

core requirements 27

DS 123; FIN 120; IS 130;
MGT 110 or 104-106, 124,
187; MKTG 100
(See *Statement on Prerequisites*, page 207.)

Information Systems Option 24

IS core (15)
IS 51, 150, 158, 162, 166
Electives (9)

Approved electives

Elect from ACCT 146; IS 151, 156T,
164, 168, 181, 188, 189T, 190, 195;
MGT 126 or any other approved
upper-division IS elective.

General Education requirements..... 51

Upper-division writing skills requirement 3-4

Business majors must select either IS 105W or ENGL 160W (See *Writing Requirements*, page 206.)

Note: the Upper-Division Writing Exam is not an option for business administration majors.

Electives 0

Total 125-126

*DS 71, ECON 50, and ENGL 1 are used to satisfy General Education requirements.

Requirements for Certificate Programs

Before entering either of the programs, students will need to demonstrate that they have completed at least 6 units of elementary accounting and are conversant in computer concepts (equivalent to IS 50 at the minimum). Approval of the certificate program coordinator or the department chair is necessary.

Certificate in Business Information Systems

Students also need to meet either one of the following criteria:

1. a bachelor's degree in any field from an accredited institution or
2. an Associate of Arts degree from a two-year accredited college and a minimum of two years of business experience.

Units

Required Courses 12

IS 150, 158, 162, 166

Elective Courses 3

Select a minimum of 3 units from:
IS 151, 156T, 164, 168, 190, 195

Certificate in Network Administration

Students have to be IS majors with a strong interest in computer network environment and be eligible to enroll into the Craig School of Business internship program.

Units

Required Courses 12

IS 162, 181, 190, 195 (network related internship)

Elective Courses 3

Select a minimum of 3 units from:
IS 151, 156T, 164, 168, 188

COURSES

Decision Sciences (DS)

71. Quantitative Analysis I (3)

Prerequisite: students must take the ELM exam; students who do not pass the exam must record a grade of *C* or better in a college-taught intermediate algebra course. Quantitative formulation and solution of problems in various disciplines, including mathematics of finance, linear programming, probability, and differential calculus. G.E. Foundation B4.

73. Statistical Analysis I (3)

Prerequisites: ELM exam, DS 71 or equivalent; ECON 40, 50 recommended. Introduction to descriptive statistical tools as applied to management decision making. Central tendency and dispersion measures; index numbers (CPI, deflators); time series analysis (trends, seasonal variations); probability theory; probability and sampling distributions (normal, exponential, binomial, Poisson); central limit theorem.

123. Statistical Analysis II (3)

Prerequisites: DS 71, 73, IS 50. Statistical inference as applied to managerial problems and decision making. Emphasizes the inferential process; interval estimation, hypothesis testing, one- and two-way analysis of variance, regression, and correlation and related inferential analysis, nonparametric methods, Bayesian decision theory. (May include computer lab hours) (Formerly DS 173)

189T. Topics in Decision Sciences

(1-3; max total 6 if no topic repeated)

Prerequisites: 12 units in decision sciences. Theory or application of statistics or operations research applied to current developments.

190. Independent Study

(1-3; max total 6)

See *Academic Placement — Independent Study*. Approved for *SP* grading.

193. Supervised Work Experience (1)

Open only to business majors. Prerequisite: permission of instructor. Work-study: learning through on-the-job experience in a business. Written reports. *CR/NC* grading only.

195. Internship (3; max total 6)

Prerequisite: permission of internship coordinator. Requires 150 hours of work at a prequalified, academically-related work station (business, government, or nonprofit agency.) Reflective journal, final report, and work station evaluation. *CR/NC* grading only. As a course substitution, prior department approval required. Only one internship may count towards option requirements.

200 Series Courses

Graduate courses are listed under *Business — Graduate Program*.

Information Systems (IS)

1A. Office Applications — Word Processing (1)

Elementary concepts and practice in computer applications for the modern office. Five-week block. Current software in place includes Microsoft Word, Excel, and Access. (2 lab hours)

1B. Office Applications — Spreadsheet (1)

See IS 1A.

1C. Office Applications — Database (1)

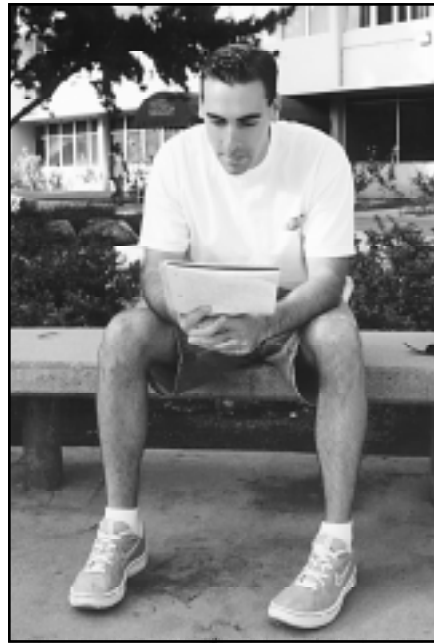
See IS 1A.

3. Business Presentations (2)

Theory and practice of effective presentation of ideas in a business setting. Appropriate use of multimedia techniques and equipment in making presentations. Presentation software and techniques for its use. Current software in use is Microsoft PowerPoint. (4 lab hours)

50. Computer Concepts (3)

Introduction to computer hardware and software systems, impact of computers on society, ethical issues, application of computer technology in many career fields, hands-on laboratory experience with personal productivity software. (2 lecture, 2 lab hours)



51. Programming Fundamentals (3)

Prerequisite: IS 50 or equivalent. Structured program design using Visual Basic. Concepts of object-oriented and event-driving programming, user interface design, algorithm development, testing and debugging, and documentation using business examples. (2 lecture, 2 lab hours)

104. Advanced Word/Information Processing Applications (3)

Prerequisite: IS 50. Advanced word information processing applications, including additional desktop publishing applications. Also meets the needs of students working toward a standard secondary teaching credential in business subjects. (2 lecture, 2 lab hours)

105W. Business Communication (3)

Prerequisites: satisfactory completion (*C* or better) of the ENGL 1 graduation requirement or approved equivalent, and junior standing. Business communication theory; analysis of communication alternatives; effective business writing and speaking; case studies. Meets the upper-division writing skills requirement for graduation.

116. Office Systems Management (3)

The study of the management and administration of the office support function, including management of facilities, workstations, office support services, and productivity. Attention is also given to evaluation and acquisition of hardware and software as well as to personnel management and career development.

117. Data and Records Control (3)

Management of creation, use, maintenance, and disposition of data/records. Examines management of data/records stored on paper, microforms, and computers. Emphasis placed on ways of introducing, maintaining, and updating a data records program.

130. Management Information Systems (3)

Prerequisites: IS 50 or demonstration of computer literacy; upper-division standing; IS 105W or ENGL 160W (may be taken concurrently). Management concepts in the role/administration of information/information system functions in organizations; enhancement of management with computers; management of systems development; planning and budgeting, analysis, design, implementation and operation of computer-based systems; measurement of operating performance. (Formerly IS 160)

150. End-User Computing (3)

Prerequisite: IS 50, 51 recommended. Use of data resources in business problem solving. Integration of microcomputer packages with systems development concepts to implement information systems. Topics include information centers, 4GLs, and decision support tools. (2 lecture, 2 lab hours)

151. Advanced Applications Software — Microcomputers (3)

Prerequisites: IS 51. Advanced software development using the management of visual objects on microcomputers. Emphasis on structure and style, using visual environments, windows, and graphics. Program planning, logic structures, sorts and searches, variable passing, and file/database access. (2 lecture, 2 lab hours)

156T. Topics in Emerging Information Technologies (3; max total 6 if no topic repeated)

Prerequisites: IS 50. Overview of the most recent tools and techniques in information technology, and their utilization in the business environment with specific content of the course updated and refocused every year. (2 lecture, 2 lab hours)

Information Systems and Decision Sciences

158. Database Systems (3)

Prerequisites: IS 51, 150 recommended. Data structures; file design; database design concepts emphasizing the relational model; data administration; application of database management system software. (2 lecture, 2 lab hours) (Formerly IS 165)

162. Data Communications (3)

Resource sharing; computer traffic characterizations; multiplexing; network structure; packet switching and other switching techniques; computer network examples; routing and flow control; satellite and ground radio packet switching; transmission media and methods; line control procedures; line capacity assignment; communication processors. (Formerly IS 109)

164. Systems Configurations (3)

Prerequisite: IS 130. In-depth study of computer system technology: processors, storage devices, I/O devices; distributed processing; client-server; connectivity; LANs and WANs; selection, installation, and implementation processes.

166. Information Systems Analysis and Design (3)

Prerequisite: IS 158, ACCT 4A, 4B, and upper-division standing. Systems approach to problem solving; systems development life cycle; systems analysis; use of system modeling tools; logical systems design, including user interfaces, database, structure, and controls; implementation and testing. (2 lecture, 2 lab hours)

168. Information Systems Management (3)

Prerequisites: ACCT 4A, 4B, IS 130. Theories, costs, and problems associated with the operation of information systems. Organizational environments, security and legal issues, information center operations, end-user support, strategic information system planning, policy development, control and integration of information systems.

181. Computer Networks Management (3)

Prerequisites: IS 50, 130, 162. Theory and practice of computer network administration focusing on the role of the communications system in distributed computing network configuration; connectivity, network security, network hardware and software solutions; configuration of software in network environment, data transferability and access, routing, flow and congestion control. (2 lecture, 2 lab hours)

188. Decision Support and Expert Systems (4)

Prerequisites: IS 50, 130, 150. Overview of the basic topics in decision support and expert systems. Methodological foundation for integration of quantitative and expert knowledge with the computer for improving the decision-making process. Integrating databases, DSS models, and business analysis. Introduction to artificial intelligence and expert systems. (3 lecture, 2 lab hours) (Formerly DS 188)

189T. Topics in Information Systems (1-3; max total 6 if no topic repeated)

Prerequisite: permission of instructor. Theory or application of information systems or information management as applied to current developments in the field.

190. Independent Study (1-3; max total 6)

See *Academic Placement — Independent Study*. Approved for *SP* grading.

193. Supervised Work Experience (1)

Open only to business majors. Prerequisite: permission of instructor. Work-study: learning through on-the-job experience in a business. Written reports. *CR/NC* grading only.

195. Internship (3; max total 6)

Prerequisite: permission of internship coordinator. Requires 150 hours of work at a pre-qualified, academically related work station (business, government, or nonprofit agency). Reflective journal, final report, and work station evaluation. As a course substitution, prior department approval required. Only one internship may count towards option requirements. *CR/NC* grading only.

200 Series Courses

Graduate courses are listed under *Business — Graduate Program*.