

Computer Technology Curriculum

Course Descriptions

BIT 210 Business Information Systems. (3)

Emphasizes basic concepts of business information systems including their scope, use, and evaluation; develops business computer application skills using commercial software packages for microcomputers and mainframes.

Recommended Prerequisite: MATHS 108, sophomore standing; keyboarding skills.

CHEM 111 General Chemistry. (4)

Chemistry of the elements and their compounds with emphasis on basic principles. Atomic and molecular structure, chemical bonding, stoichiometry, properties of solutions, and nature of matter. Three hours of lecture and one three-hour recitation-laboratory period weekly.

Prerequisite: one year of secondary school algebra or the equivalent

CS 120 Computer Science 1 (3)

Introduction to programming using a structured, strongly typed language. Topics include basic control structures, input/output, procedures and functions, arrays, text files, sets, records, introduction to software engineering, and ethics of computing.

Prerequisite: Introduction to calculus. MATHS 161

CS 121 Computer Science 2 (3)

Continuation of Computer Science 1. Topics include pointer variables, linked lists, stacks, queues, binary trees, binary search and its complexity, recursion, sorting algorithms and their complexity, binary files and file organization, and software development tools.

Prerequisites: CS 120 (or equivalent) and MATH 161

CS 124 Discrete Structures (3)

Introduction to topics in discrete structures for computer science majors. Topics include propositional and predicate logic, sets, induction, recursion, relations, functions, combinatorial enumeration, Boolean algebra, and finite state machines. Applications of these topics to computer science are discussed.

Prerequisites: CS 120 (or equivalent)

CS 232 Data Structures (3)

Topics include abstract data structures, trees and graphs and their traversal, priority queues, algorithm design techniques, external storage and sorting, hashing, data compression, memory management.

Prerequisites: CS 120 and MATH 161

ECON 201 Elementary Microeconomics. (3)

A study of why people specialize as producers and exchange what they produce with others. Includes analysis of how market structure affects prices. Discusses the issue of whether self-interested economic behavior promotes or hinders society.

ECON 221 Business Statistics. (3)

Introduction to various statistical and probabilistic concepts and techniques with application to business problems including random variables and probability distributions, measures of central tendency and dispersion, testing of hypotheses, simple linear regression, and correlation.

Prerequisite: MATHS 132 or its equivalent.

Recommended Prerequisite: BEOA 210.

Not open to students who have credit in MATHS 181.

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ITCMP 111 Microcomputer Assembly and Trouble Shooting (3)

A study of the microcomputer at the board level. Installing, trouble-shooting, and assembling microcomputers at the board level. Apple and Wintel computers will be studied and compared.

ITCMP 210 Internetwork Fundamentals (3)

The foundations upon which computer networking hardware and software is designed will be the focus. Major networking protocols will be studied (OSI model, TCP/IP). Concepts will be supported with hands-on projects.

Prerequisite: ITCMP 111

ITCMP 211 System Administration Fundamentals (3)

Introduction to the fundamentals of system administration in a client-server environment. The focus is on the management of resources on prevailing network operating systems

Prerequisite: ITCMP 111

ITCMP 221 Alternative Desktop Operating Systems (3)

Operating Systems are subject to life cycles. Alternative operating systems for desktop computers will be explored. In addition to their relative strengths and weaknesses, the installation, configuration and maintenance of these operating systems will be studied.

Prerequisite: ITCMP 111

ITCMP 310 Internetwork Administration (3)

Introduction to network (LAN/WAN) design and implementation. Topics may include switching technology, access control lists, WAN protocols. Theory and concept are reinforced through hands-on labs and case study.

Prerequisite: ITCMP 111, ITCMP 210, ITCMP 211

ITCMP 311 Infrastructure Services (3)

A study of the infrastructure services in a network operating system that are required for the functionality of an enterprise network environment. Topics may include DNS, DHCP, NAT, directory services.

Prerequisite: ITCMP 111, ITCMP 210, ITCMP 211

ITCMP 321 Alternative Server Operating Systems (3)

Operating Systems are subject to life cycles. Alternative operating systems for servers will be explored. In addition to their relative strengths and weaknesses, the installation, configuration and maintenance of these operating systems will be studied.

Prerequisite: ITCMP 111, ITCMP 211

ITCMP 330 Internetwork Switching (3)

A detailed study of switching technology in a networked environment. Topics may include multilayered switching, multicast, Spanning Tree, trunking and VLAN.

Prerequisite: ITCMP 111, ITCMP 210, ITCMP 310

ITCMP 350 Electronic Data Administration (3)

A study of data manipulation systems and how they are integrated into a networked environment. Topics may include database server administration, data mining, data warehousing. Design, selection, installation and management of these systems will be emphasized.

Prerequisite: ITCMP 111, ITCMP 211, ITCMP 311

ITCMP 380 Electronic Communications Administration (3)

A study of electronic communications methodologies in an enterprise network. Topics may include e-mail and groupware systems administration. Design, selection, installation and management of these systems will be emphasized.

Prerequisite: ITCMP 111, ITCMP 211, ITCMP 311

ITCMP 410 Scalable Internetworking (3)

Network design issues for the large to enterprise level network. Topics may include VLSM, OSPF, IS-IS, EIGRP, Border Gateway Protocol and routing optimization.

Prerequisite: ITCMP 111, ITCMP 210, ITCMP 310

ITCMP 421 Data Storage/Disaster Recovery (3)

A study of the strategies for data storage and recovery. Topics may include SAN, NAS, and disaster recovery methodologies.

Prerequisite: ITCMP 111, ITCMP 211, ITCMP 311

ITCMP 465 Data Security (3)

A study of data security in a networked environment. Design, selection, integration and management of data security systems will be emphasized.

Prerequisite: ITCMP 111, ITCMP 211, ITCMP 311

ITCMP 466 Project in Computer Technology 2 (3)

Individual or group project in the design, selection, installation, documentation, and startup of a computer system under the supervision of an assigned staff member.

Prerequisite: Senior standing

ITMFG 369 Technology Cooperative Education. (1-12 semester hours)

Students work in a manufacturing-related position in industry to integrate and expand upon theory learned in courses. A paid work and learning experience for industrial and manufacturing technology majors.

Prerequisite: Permission of the cooperative education coordinator. A total of 12 hours of credit may be earned.

ITMFG 270 Industrial Electronics. (3)

Theory and application of electronics in industry. Includes electron theory, circuit analysis, electromagnetism, motors, and generators. Weekly laboratory scheduled.

Prerequisite: MATHS 109 or 131; PHYCS 110.

ITMFG 371 Industrial Controls and Digital Instrumentation. (3)

Digital technology and its applications in manufacturing control. Weekly scheduled laboratory activities include sensor technology, analog and digital instrumentation, process control, and system interconnections.

Prerequisite: ITMFG 270.

ITMFG 390 Training and Development in Industry. (3)

Training and development in industry and their relationship to the job and the organization. Emphasizes skills needed to systematically plan, implement, evaluate, and revise training and development programs. Provides opportunities for practical application and practice.

MATHS 161 Applied Calculus 1. (3)

Review of algebra, topics in analytic geometry, limits, continuity, derivatives, differentials, and appropriate applications.

Prerequisite: MATHS 112 or permission of the department chairperson.

Not open to students who have credit in MATHS 165. v

MATHS 181 Elementary Probability and Statistics. (3)

Descriptive statistics, measures of central tendency and dispersion, basic probability concepts, random variables, binomial and normal distributions, confidence intervals, hypothesis testing, correlation and regression, and consideration of various applications.

Prerequisites: MATHS 109 or permission of the department chairperson.

Not open to students who have credit in MATHS 320.

MGT 200 Management Principles. (3)

Introduction to the basic concepts and principles of management. Focuses on structures within companies and processes within firms to bring principles to bear on the practical problems of managing organizations.

Not open to B.S. or B.A. candidates for a major or minor in the College of Business.

MGT 251 Introductory Operations Management. (3)

Introduction to the tools and techniques of management with practical applications to the production of goods and services.

Prerequisite: MGT 200 or equivalent or parallel MGT 300 or permission of the department chairperson.

Not open to B.S. or B.A. candidates for a major in the College of Business.

MGT 261 Personnel and Supervision. (3)

Introduction to the personnel and supervisory functions in organizations. Focuses on employee and union relationships; environmental business and social responsibilities; and leadership and supervision techniques, especially for the first-line supervisors.

Prerequisite: MGT 200.

Not open to B.S. or B.A. candidates for a major or minor in the College of Business.

MGT 271 Introductory Organizational Behavior. (3)

Study of human behavior in organizational settings. Topics covered include individual behavior; group processes including leadership, motivation, and organizational change. Special emphasis is placed on how these concepts can be applied in an organizational setting.

Not open to students who are B.S. or B.A. candidates for a major or minor in the College of Business.

MGT 300 - Managing Behavior in Organizations (3)

Examines the challenges of managing human behavior in organizations. Reviews foundations of modern management thought. Discusses current and emerging management topics: emphasizes leadership, motivation, communication, human relations, group dynamics, job design, organizational development, and managing a diverse workforce.

Prerequisite: junior standing.

MGT 311 Information System Concepts and Techniques. (3) Introduction to various concepts and techniques of information systems with application to solving managerial problems. Topics covered include information flows, application of computer-based information systems, managerial decision making, and mutual influence of organizations and information systems.

Prerequisite: BIT 210; ECON 221.

Prerequisite or parallel: MGT 300.

MKG 300 Principles of Marketing (3)

Examines marketing as a productive system within our economy. Studies promotional activities, product policies, retail and wholesale activities, pricing policies, international marketing, and the role of marketing in society.

Prerequisite: ECON 201 and junior standing or permission of the department chairperson

MKG 320 Consumer Behavior (3)

Practical business implications of the various features of consumer motivation and behavior. Students are given information to understand how and why a buyer reacts in a purchasing situation.

Prerequisite: ECON 201, junior standing

Prerequisite or parallel: MKG 300

MKG 420 Promotional Management (3)

Uses cases and problems to give experience in making decisions on a firm's promotional mix. Analysis of markets, media scheduling, budget allocation, campaign design, and promotion research.

Prerequisite: MKG 320

MKG 460 Industrial Procurement Management. (3)

A basic course in industrial procurement management. Principal topics include make or buy analysis, quality and quantity control, value analysis, price determination, sources of supply, the purchasing system, and legal aspects of purchasing.

Prerequisite: MKG 300.

MKG 470 International Marketing. (3)

Examines legal, economic, and cultural conditions influencing marketing abroad. Commercial policies, practices, and techniques needed to identify and evaluate foreign markets, as well as the problems of pricing, promoting, and distributing products in international markets.

Prerequisite: MKG 300.

PHYCS 110 General Physics (4)

Studies the laws of Newtonian mechanics. Introductory fluid statics and dynamics, heat and thermodynamics, and wave motion and sound.

Prerequisites: MATHS 108

Recommended Prerequisites: MATHS112