CS G130: SURVEY OF COMPUTER SCIENCE/ INFORMATION TECHNOLOGY

Item	Value
Curriculum Committee Approval Date	04/19/2022
Top Code	070100 - Information Technology, General
Units	4 Total Units
Hours	108 Total Hours (Lecture Hours 54; Lab Hours 54)
Total Outside of Class Hours	0
Course Credit Status	Credit: Degree Applicable (D)
Material Fee	No
Basic Skills	Not Basic Skills (N)
Repeatable	No
Open Entry/Open Exit	No
Grading Policy	Standard Letter (S), • Pass/No Pass (B)

Course Description

This class surveys computer science and information technology with emphasis on computer business applications. The student will be exposed to computer concepts including components of a computer, operating systems, utility programs, terminology, communications, networking, internet usage, ethical issues and computer application software, such as word processing, spreadsheets, database, database query and presentation software. The student will complete projects in a desktop computer environment. Lecture & lab. Transfer Credit: CSU; UC. C-ID: ITIS 120. **C-ID:** ITIS 120.

Course Level Student Learning Outcome(s)

1. Course Outcomes
2. Explain the activities of the components of a computer system such as: CPU, memory, ports, buses, input/output devices and component development.
3. Demonstrate the fundamentals of computer-based operating systems and utility programs.
4. Describe and demonstrate application software programs such as: word processing, spreadsheets, data base organizational concepts, entering and querying a data base, and presentation software.
5. Compare and contrast communication and networking concepts including local area networks (LAN), metropolitan area networks (MAN), wide area networks (WAN), topologies, wired and wireless media approaches, network connectivity issues and methods, general and firewall security.
6. Describe the information systems development approach, including system development life cycle, analysis, design, implementation and support.
7. Identify and discuss computer ethics, crime, privacy and other social implications.

Course Objectives

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- 5. Describe the information systems development approach, including system development life cycle, analysis, design, implementation and support.
- 6. Identify and discuss computer ethics, crime, privacy and other social implications.
- 7. Use the internet and library resources to research topics and communicate via e-mail.

Lecture Content

I. Introduction A. The World of Computers B. Computers in Society C. Historical Perspective II. Hardware A. The System Unit 1. CPU 2. Data Representation 3. Coding Systems 4. Memory 5. Busses 6. Ports B. Storage Devices C. Input/Output Devices III. Software A. System Software current operating systems (O/S) offerings 1. Windows 2. Mac O/S 3. Unix 4. Linux 5. OS/2 Warp 6. Mobile Devices O/S B. Utility Software 1. Diagnostic Programs 2. Backup Utilities 3. Uninstall Utilities 4. Defragmentati on Utilities 5. File Compression Programs 6. Virus Programs 7. Encryption Programs C. Application Software 1. Integrated Programs 2. Software Suite 3. Proprietary Software 4. Shareware 5. Freeware D. Business Application Software 1. Word Processing Software (formatting, spell check, clipart/charts, and all the basics) 2. Spreadsheet Software a. Basics Skills (data entry, formatting, copy, paste, insert, delete, column resize, row resize, cell size, font size, color, text, orientation, object linking and embedding) b. Intermediate Skills (Labels, Values, Formulas and Functions-Average, Max, Min, Sum, If, and Round, Absolute versus relative addresses, charting, adding text to worksheet, linking worksheets, what-if analysis/goal seeking, protecting data, printing options) 3. Data base Software (creating a data base, organization, entering data, editing data and records, defining fields, creating and saving tables, forms, queries, reports and sorting data) 4. Presentation Software (creating a presentation, enhancing a presentation, animation and transitions, presentation options) IV. Communications and Networks A. Communications Applications 1. Faxing 2. Wireless 3. Paging 4. GPS 5. Satellite Radio 6. Videoconferencing 7. Telecommuting B. Networks Topologies 1. LAN 2. MAN 3. WAN 4. Wired Medi 5. Wireless Media ; 6. Communications Protocols - Ethernet, Token Ring, TCP/IP, WAP, Bluetooth, Network Security, Viruses, Firewalls C. The Internet 1. WWW 2. searching via browser 3. search engines 4.

Internet2, email 5. Newsgroups 6. FTP sites/downloading 7. connections (dial-up, mobile, ISDN, DSL, Cable, satellite, fixed wireless) 8. security 9. service 10. support 11. cost V. Information Systems and Systems Development A. Information Systems Types 1. Office systems 2. Transaction processing 3. Management information systems 4. Decision support systems 5. Enterprise-wide systems 6. Design and manufacturing systems 7. Artificial intelligence systems B. Systems Development Life Cycle 1. Problem analysis 2. Program design 3. Program coding 4. Program debugging and testing 5. Program maintenance C. Program Development Tools 1. Application generators 2. Computer-aided software engineering (CASE) 3. Rapid-application development 4. Programming languages 5. Categories of programming languages 6. Popular languages VI. Business and Industry Issues A. Business Issues 1. Ethical 2. Legal 3. Security 4. Computer crime 5. Privacy and e-mail 6. Privacy and marketing 7. Intellectual property rights 8. Health and ergonomics B. Jobs and Career Option s (A view of the job trends and job career options)

Lab Content

(Approximately 33 lab assignments/research tasks will be given in the lab component) A. Orientation (3 hours) 1. lab/operating system environment 2. utility tools available in lab 3. server drive environment 4. usage B. Word Processing (12 hours) 1. document construction 2. formatting 3. mporting 4. drill 5. practice C. Spreadsheets (15 hours) 1. Terminology 2. Commands 3. Shortcuts 4. Wizards 5. document construction 6. data entry 7. formatting 8. copy, paste 9. insert, delete 10. column resize 11. row resize 12. ce ll size 13. font size 14. color 15. text orientation 16. object linking and embedding 17. Labels, 18. Values 19. Formulas and Functions Average, Max, Min, Sum, If, and Round, Absolute versus relative addresses, charting, adding text to worksheet, linking worksheets what-if analysis/goal seeking, protecting data, printing options C. Data Bases (12 hours) 1. Terminology 2. Commands 3. Shortcuts 4. Wizards 5. Organization 6. creating a data base 7. entering data 8. editing data and records 9. defining fields 10. creating and saving tables 11. forms 12. queries ; 13. reports 14. sorting data D. Presentation Graphics (6 hours) 1. creating a presentation 2. enhancing a presentation 3. animation and transition 4. presentation options E. Open Selection (3 hours) (At the discretion of the instructor for content) Options for Open Selection: 1. May be used for special new subject exposure 2. May be used for on-site tours 3. May be used to cover new technology exposure

Method(s) of Instruction

- Lecture (02)
- DE Live Online Lecture (02S)
- DE Online Lecture (02X)
- Lab (04)
- DE Live Online Lab (04S)
- DE Online Lab (04X)

Reading Assignments

Chapter assignments in the textbook and laboratory workbook,Topical readings from the Internet and library database resources,Additional materials as provided by the Instructor.

Writing Assignments

Students will be required to complete the following assignments in either the lecture or lab environment: 1. On-line research on selected subjects with discussion or paper. 2. 33 lab assignments connected with the word processing, spreadsheet, database and presentation software. 3. Off-campus hardware/software research

Out-of-class Assignments

An optional library/internet research paper will promote further study and research practice in a selected area of the computer field.

Demonstration of Critical Thinking

Class assignments will be presented to the students in the form of problems requiring students to devise solutions in the form of business decisions. Lab participation will require the students to complete in model construction of what-if problems. Optional research papers and classroom presentations will further demonstrate the students critical thinking and problem solving abilities.

Required Writing, Problem Solving, Skills Demonstration

Students will be required to complete the following assignments in either the lecture or lab environment: 1. On-line research on selected subjects with discussion or paper. 2. 33 lab assignments connected with the word processing, spreadsheet, database and presentation software. 3. Off-campus hardware/software research

Eligible Disciplines

Business: Master's degree in business, business management, business administration, accountancy, finance, marketing, or business education OR bachelor's degree in any of the above AND master's degree in economics, personnel management, public administration, or Juris Doctorate (J.D.) or Legum Baccalaureus (LL.B.) degree OR bachelor's degree in economics with a business emphasis AND master's degree in personnel management, public administration, or J.D. or LL.B. degree OR the equivalent. Master's degree required. Computer science: Master's degree in computer science or computer engineering OR bachelor's degree in either of the above AND master's degree in mathematics, cybernetics, business administration, accounting or engineering OR bachelor's degree in engineering AND master's degree in cybernetics, engineering mathematics, or business administration OR bachelor's degree in mathematics AND master's degree in cybernetics, engineering mathematics, or business administration OR bachelor's degree in any of the above AND a master's degree in information science, computer information systems, or information systems OR the equivalent. Note: Courses in the use of computer programs for application to a particular discipline may be classified, for the minimum qualification purposes, under the discipline of the application. Master's degree required.

Textbooks Resources

1. Required Vermaat. MS Office 2013 Introductory, 1st ed. Cengage, 2013

Other Resources

1. Storage devices for lab work (floppy disk, zip disk, or rewritable CD)