

COMPUTER INFORMATION MANAGEMENT

School of Business Sciences

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CURRICULUM

The Computer Information Management (CIM) Department in the School of Business Sciences conducts a program designed to offer training in hardware and software applications used in a variety of environments and enterprises. The program encompasses a broad area of study, including computer operating systems, software applications, and networking and internet networking technologies. Courses are designed to prepare students at various levels of competence—from the novice to the expert—for immediate employment, professional careers, and/or transfer. The program combines classroom lecture/demonstration and individual hands-on training in a laboratory setting. Faculty members work closely with local businesses and industries to ensure relevant and state-of-the-art training.

ASSOCIATE DEGREE

- **Associate in Science Degree in Computer Information Management**

Emphases:

Administrative Assistant/
Word Processing
Desktop Publishing
Digital Media Technologies
Local Area Networks: Cisco
Microcomputer Applications
Web Authoring

Students must complete a minimum of 60 units of credit, including the courses in the major ("Major Requirements") and general education requirements (pages 43-49), with an overall GPA of 2.0 or better, and a grade of "A," "B," "C," or "P" in all courses to be counted toward the major. A minimum of 12 units must be completed at Irvine Valley College. See pages 33-34 for further information.

CERTIFICATE

- **Certificate of Achievement in Computer Information Management**

Emphases:

Administrative Assistant/
Word Processing
Desktop Publishing
Digital Media Technologies
Local Area Networks: Cisco
Microcomputer Applications
Web Authoring

- **Certificate of Proficiency**
Digital Graphics Applications
Digital Publishing
Spreadsheets
Web Page Authoring

Students must complete all courses in the certificate program ("Major Requirements") with a grade of "A," "B," "C," or "P." A minimum of 12 units in the certificate program must be completed at Irvine Valley College. See page 30 for further information.

TRANSFER PREPARATION

Courses that fulfill major requirements for an associate degree at Irvine Valley College may not be the same as those required for completing the major at a transfer institution offering a bachelor's degree. Students who plan to transfer to a four-year college or university should schedule an appointment with an IVC counselor to develop a plan of study before beginning their program. It may be helpful to meet with the department faculty at IVC.

ASSOCIATE IN SCIENCE DEGREE OR CERTIFICATE OF ACHIEVEMENT MAJOR REQUIREMENTS: COMPUTER INFORMATION MANAGEMENT ADMINISTRATIVE ASSISTANT/WORD PROCESSING EMPHASIS

This program is designed for those wishing to develop office occupation skills that may be applied in a variety of business settings.

Complete the following courses:

	Units
CIM 101A Document Processing I	2
CIM 101B Document Processing II	2
CIM 107.1 Introduction to Personal Computer Applications	3.5
CIM 210.1 Word Processing I	2
CIM 210.2 Word Processing II	2
CIM 210.3 Word Processing III—Certification	3.5
MGT 103 Business English	3
MGT 104 Business Communication	3

TOTAL UNITS: **21**

Recommended electives:

CIM 203.1

**ASSOCIATE IN SCIENCE DEGREE OR CERTIFICATE OF ACHIEVEMENT
MAJOR REQUIREMENTS:
COMPUTER INFORMATION MANAGEMENT
DESKTOP PUBLISHING EMPHASIS**

This program is designed for those wishing to develop expertise in applications used in the design and layout of print publications.

Complete the following courses:		Units
CIM 104.1	DOS for Technical Support Professionals	2.5
CIM 107.1	Introduction to Personal Computer Applications	3.5
CIM 210.1	Word Processing I	2
CIM 210.2	Word Processing II	2
CIM 221.1	Image Editing I	2
CIM 223.1	Integrating Vector and Bitmap Images	3.5
CIM 230.1	Digital Publishing I	2
CIM 230.2	Digital Publishing II	2
MGT 103	Business English	3
TOTAL UNITS:		22.5

**ASSOCIATE IN SCIENCE DEGREE OR CERTIFICATE OF ACHIEVEMENT
MAJOR REQUIREMENTS:
COMPUTER INFORMATION MANAGEMENT
DIGITAL MEDIA TECHNOLOGIES EMPHASIS**

The program in digital media prepares students for employment as entry-level specialists and/or media specialists in advertising, website production, prepress publication, and various areas of the entertainment industry. The program offers an integrated/interdisciplinary approach to meet current and future job market demand, emphasizing critical thinking, design techniques, and state-of-the-art computer skills.

Complete the following courses:		Units
CIM 220.1	Digital Scanning and Capture	2
CIM 221.1	Image Editing I	2
CIM 221.2	Image Editing II	2
CIM 222.1	Digital Illustration I	2
CIM 224.1	Motion Graphics I	3.5
CIM 242.1	2D Animation I	3.5
CIM 243.1	Web Authoring I	2
CIM 243.2	Web Authoring II	2
DMA 55	Graphic Design I	3
DMA 140	2D Design and Color Theory	3
Complete 4 units from the following courses:		
CIM 230.1	Digital Publishing I	2
CIM 230.2	Digital Publishing II	2
CIM 245.1	Digital Sound and Video	3.5
TOTAL UNITS:		29

**ASSOCIATE IN SCIENCE DEGREE OR CERTIFICATE OF ACHIEVEMENT
MAJOR REQUIREMENTS:
COMPUTER INFORMATION MANAGEMENT**

LOCAL AREA NETWORKS: CISCO EMPHASIS

The Cisco CCNA (Cisco Certified Network Associate) is one of the most demanded certifications in networking. Cisco has designed a four-semester program which leads to this certification. Students may cover the entire track at IVC over four semesters; or they may take the college's accelerated program, completing two semesters' worth of material in one semester, in order to acquire the CCNA in one academic year.

Complete the following courses:		Units
CIM 104.1	DOS for Technical Support Professionals	2.5
CIM 206.1	A+ Hardware Concepts	3.5
CIM 260.1	Networking I	2
CIM 260.2	Networking II	3.5
CIM 263.1	Internetworking Technologies I	3.5
CIM 263.2	Internetworking Technologies II	3.5
CIM 263.3	Internetworking Technologies III	3.5
CIM 263.4	Internetworking Technologies IV	3.5
TOTAL UNITS:		25.5

**ASSOCIATE IN SCIENCE DEGREE OR CERTIFICATE OF ACHIEVEMENT
MAJOR REQUIREMENTS:
COMPUTER INFORMATION MANAGEMENT**

MICROCOMPUTER APPLICATIONS EMPHASIS

This program is designed for those wishing to develop expertise in a variety of applications that may be required in a number of business settings.

Complete the following courses:		Units
CIM 107.1	Introduction to Personal Computer Applications	3.5
CIM 203.1	Introduction to Windows	2
CIM 210.1	Word Processing I	2
CIM 212.1	Spreadsheets I	2
CIM 214.1	Database I	2
CIM 221.1	Image Editing I	2
CIM 230.1	Digital Publishing I	2
Complete a minimum of 6 units from the following courses:		
CIM 210.2	Word Processing II	2
CIM 212.2	Spreadsheets II	2
CIM 214.2	Database II	2
CIM 223.1	Integrating Vector and Bitmap Images	3.5
CIM 230.2	Digital Publishing II	2
CIM 240.1	Introduction to the Internet	2
TOTAL UNITS:		21.5

**ASSOCIATE IN SCIENCE DEGREE OR CERTIFICATE OF ACHIEVEMENT
MAJOR REQUIREMENTS:
COMPUTER INFORMATION MANAGEMENT
WEB AUTHORIZING EMPHASIS**

The primary purpose of the web authoring certificate and degree program is to prepare students for employment—and to maintain state-of-the-art skills of workers already employed—in California's rapidly expanding web authoring industry. This comprehensive program offers an integrated approach to meet current and expanding job market demand.

Complete the following courses:		Units
CIM 221.1	Image Editing I	2
CIM 221.2	Image Editing II	2
CIM 222.1	Digital Illustration I	2
CIM 224.1	Motion Graphics I	3.5
CIM 241.1	Creating a Web Page I	2
CIM 242.1	2D Animation I	3.5
CIM 242.2	2D Animation II	3.5
CIM 242.3	2D Animation III	3.5
CIM 243.1	Web Authoring I	2
CIM 243.2	Web Authoring II	2
DMA 180	Graphic Design for the Internet	3
Complete 6 units from the following courses:		
CIM 245.1	Digital Sound and Video	3.5
CIM 246.1	3D Animation I	2
CS 38	World Wide Web/Internet Using Java Programming	4
CS 50A	HTML Programming	4
CS 142	UNIX Operating System	4
TOTAL UNITS:		35

**CERTIFICATE OF PROFICIENCY
DIGITAL GRAPHIC APPLICATIONS**

This certificate is intended for the student who wants a foundation in and exposure to a variety of digital graphic applications before specializing in a particular area. Students take introductory classes in digital scanning, image editing and illustration, followed by courses that integrate these applications or extend them into other areas of exploration such as 2D animation, motion graphics and authoring tools for multimedia.

Complete the following courses:		Units
CIM 220.1	Digital Scanning and Capture	2
CIM 221.1	Image Editing I	2
CIM 221.2	Image Editing II	2
CIM 222.1	Digital Illustration I	2
CIM 224.1	Motion Graphics I	3.5
CIM 242.1	2D Animation I	3.5
CIM 246.1	3D Animation I	2
TOTAL UNITS:		17

Recommended Electives:
CIM 203.1, 223.1, 245.1

CERTIFICATE OF PROFICIENCY DIGITAL PUBLISHING

This certificate introduces students to the business and graphic applications necessary to publish in a changing print world. It prepares the student in three areas: page layout for print publishing, creating and distributing portable documents (PDFs), and web publishing using visual layout tools. The student will take introductory classes in digital scanning, image editing and illustration, followed by digital publishing classes.

Complete the following courses:		Units
CIM 210.1	Word Processing I	2
CIM 220.1	Digital Scanning and Capture	2
CIM 221.1	Image Editing I	2
CIM 222.1	Digital Illustration I	2
CIM 230.1	Digital Publishing I	2
CIM 230.2	Digital Publishing II	2
 Complete two of the following courses:		
CIM 210.2	Word Processing II	2
CIM 243.1	Web Authoring I	2
CIM 243.2	Web Authoring II	2
TOTAL UNITS:		16

Recommended Electives:

CIM 203.1

CERTIFICATE OF PROFICIENCY SPREADSHEETS

This program is designed for those wishing to develop spreadsheet and accounting skills that may be applied in a variety of business settings.

Complete the following courses:		Units
CIM 107.1	Introduction to Personal Computer Applications	3.5
CIM 212.1	Spreadsheets I	2
CIM 212.2	Spreadsheets II	2
CIM 212.3	Spreadsheets III—Certification	3.5
 Complete a minimum of 6 units from the following courses:		
ACCT 1A	Financial Accounting	4
ACCT 114	Business Mathematics	3
ACCT 204	Accounting Applications: QuickBooks	3
ACCT 215	General Accounting	3
CIM 100A	Computer Keyboarding and Document Processing I	2
CIM 100B	Computer Keyboarding and Document Processing II	2
TOTAL UNITS:		17

Recommended Electives:

CIM 203.1

CIM 101A: DOCUMENT PROCESSING I
2 Units**1.5 hours lecture, 1.5 hours lab****Transfers: CSU***Recommended Preparation: CIM 100B*

This course is designed for individuals seeking to develop skills in formatting various kinds of business correspondence, reports, tables, and desktop publishing projects from unarranged and rough-draft sources. Students concentrate on improving keyboarding speed and accuracy on production assignments. NR

CIM 101B: DOCUMENT PROCESSING II
2 Units**1.5 hours lecture, 1.5 hours lab****Transfers: CSU***Recommended Preparation: CIM 101A*

This course is designed to refine the skills required to create increasingly complex document-processing jobs, including correspondence using mail merge, a variety of reports, and complex tables. The course covers preparing employment documents, office publications, office forms, and international correspondence. Students prepare documents patterned after those commonly used in legal, medical, insurance, retail, and government offices. NR

CIM: PC APPLICATIONS**CIM 107.1: INTRODUCTION TO
PERSONAL COMPUTER
APPLICATIONS****3.5 Units****3 hours lecture, 1.5 hours lab****Transfers: CSU***Recommended Preparation: CIM 100A*

This course introduces Windows-based word processing, spreadsheet, database, presentation, and World Wide Web navigation software. Students will use computer hardware, peripherals, and software as problem-solving tools. The course includes a discussion of legal and ethical considerations involved in Internet use. NR

**CIM 270.1 FUNDAMENTALS OF
COMPUTER SECURITY FOR
HOME USERS****2 Units****1.5 hours lecture, 1.5 hours lab**

This course provides a practical introduction to security risks and countermeasures for home computer users. The course examines various types of fraud and hijack attacks, including identify theft, spam, viruses, worms, spyware, adware, Trojan houses, spoofing, and phishing. It also covers practical defenses such as passwords, backups, firewalls, securing Windows, wireless security, and protecting children online. NR

CIM: WORD PROCESSING**CIM 210.1: WORD PROCESSING I**
2 Units**1.5 hours lecture, 1.5 hours lab***Recommended Preparation: CIM 100 or CIM 100B*

This course is designed for those seeking to master introductory skills in using word processing software. Students will use a word processing program to create, edit, and manipulate documents of varying sophistication, including personal and business letters, reports, and tables. NR

CIM 210.2: WORD PROCESSING II
2 Units**1.5 hours lecture, 1.5 hours lab***Recommended Preparation: CIM 210.1*

This course is designed for those seeking to master advanced skills in using word processing software. Students will learn to work with shared documents; create specialized tables and indexes; use merge, sort, and select features; use macros and styles; and integrate clip art, graphics, and charts for school, work, or home. NR

**CIM 210.3: WORD
PROCESSING III—CERTIFICATION****3.5 Units****3 hours lecture, 1.5 hours lab***Recommended Preparation: CIM 210.2*

This course is designed for those wanting to review the commands and features of the word processing program and/or prepare for the MOUS (Microsoft Office User Specialist) Core and/or Expert Certification exams for word processing. The MOUS program is used to test and validate skills and supply objective proof to an employer that an individual knows how to use the word processing program efficiently and productively. NR

CIM: SPREADSHEETS**CIM 212.1: SPREADSHEETS I**
2 Units**1.5 hours lecture, 1.5 hours lab**

This course is designed for individuals seeking to master introductory skills in using spreadsheet software. Students will use a spreadsheet program to organize and manage financial data. Topics include formulas and functions, charts and graphs, and developing a professional-looking worksheet. CIM 212.1 is also listed as Acct. 212.1; credit will be given in either area, not both. NR

CIM 212.2: SPREADSHEETS II
2 Units**1.5 hours lecture, 1.5 hours lab***Recommended Preparation:**Acct./CIM 212.1*

This course provides instruction and training in the use of spreadsheet software at the intermediate level. Students will produce sophisticated spreadsheet documents for a variety of business applications. Topics include working with lists and pivot tables, consolidated multiple worksheets and workbooks, integrating the spreadsheet software with other software programs and the World Wide Web, and creating macros. CIM 212.2 is also listed as Acct. 212.2; credit will be given in either area, not both. NR

**CIM 212.3: SPREADSHEETS III—
CERTIFICATION****3.5 Units****3 hours lecture, 1.5 hours lab***Recommended Preparation:**Acct./CIM 212.2*

This course provides students with the advanced study and training required to qualify for certification in spreadsheet software. Students will review and learn to integrate all of the features of the spreadsheet program and incorporate data from other software programs and the World Wide Web. The course is designed to prepare students for the MOUS (Microsoft Office User Specialist) Core and/or Expert Certification exams for spreadsheets. CIM 212.3 is also listed as Acct. 212.3; credit will be given in either area, not both. NR

CIM: DATABASE

CIM 214.1: DATABASE I

2 Units

1.5 hours lecture, 1.5 hours lab

Recommended Preparation: CIM 203.1

This course is designed for individuals seeking to develop introductory skills in a personal computer-based relational database management system. Topics include the design of relational databases; creating tables, queries, basic forms and reports; entering data; finding and editing records; and importing from and exporting to other programs. NR

CIM 214.2: DATABASE II

2 Units

1.5 hours lecture, 1.5 hours lab

Recommended Preparation: CIM 214.1

This course is designed for individuals seeking to develop intermediate skills in a personal computer-based relational database management system. Topics include the design of relational databases; the use of field properties; the creation of sophisticated queries; generating reports that use grouping and sorting techniques; working with joins; Server Query Language; macros; and the planning and design of user interfaces. NR

CIM: OPERATING SYSTEMS

CIM 104.1: DOS FOR TECHNICAL SUPPORT PROFESSIONALS

2.5 Units

2 hours lecture, 1.5 hours lab

Transfers: CSU

This course provides an overview of personal computer hardware and operating systems. The course covers the fundamentals of computer command syntax, focusing on the Disk Operating System (DOS) commands in the Windows environment. Topics include hardware; operating systems; command syntax; management and organization of disks, files and directories with DOS commands; and simple batch files. NR

CIM 203.1: INTRODUCTION TO WINDOWS

2 Units

1.5 hours lecture, 1.5 hours lab

This course provides an overview of the operating systems used with personal computers, including the fundamentals of the Windows user interface. Topics include: manipulating windows, using Help, launching applications, managing files and folders, maintaining disks, using accessories, and customizing the system. NR

CIM 208.1: A+ OPERATING SYSTEMS PREPARATION

3.5 Units

3 hours lecture, 1.5 hours lab

This course examines the Windows operating system in depth, including installing, configuring, troubleshooting and optimizing the system. It discusses the boot process, memory/disk management, networking, printing, and error messages. This is one of two courses designed to prepare students for the CompTIA A+ certification exam; the other course is CIM 206.1, Hardware Concepts. NR

CIM 261.1: FUNDAMENTALS OF LINUX

3.5 Units

3 hours lecture, 1.5 hours lab

This course is designed to prepare students to pass the CompTIA Linux+ exam. The course introduces the major components of Linux including installation, configuration, user accounts, file system management, printing, system monitoring and optimization, networking and troubleshooting. There is a strong hands-on component for improved learning. Course materials include the Linux operating system. NR

CIM: GRAPHICS

CIM 220.1: DIGITAL SCANNING AND CAPTURE

2 Units

1.5 hours lecture, 1.5 hours lab

Recommended Preparation: CIM 203.1

This course is an introduction to scanning and capturing images properly to prepare them for output to print, new media, and the web. Students will explore tonal and color correction, resolution, linescreen, sharpening, and file formats for final output. NR

CIM 221.1: IMAGE EDITING I

2 Units

1.5 hours lecture, 1.5 hours lab

Recommended Preparation: CIM 104.1

This course provides an introduction to a variety of graphics software packages that may be used to display business information in a visual format. Students will learn to use the software tools necessary to access and manipulate basic graphic elements and text and incorporate them into business presentations and products, such as brochures, business cards, newsletters, reports, and multimedia productions. The course includes a discussion of basic hardware requirements. NR

CIM 221.2: IMAGE EDITING II

2 Units

1.5 hours lecture, 1.5 hours lab

Recommended Preparation: CIM 221.1

This course explores image-editing techniques for producing sophisticated graphics for print, multimedia, and the web. The main focus of the course is image production essentials and the proper application of curves, color correction, masking, and channel operations. NR

CIM 222.1: DIGITAL ILLUSTRATION I

2 Units

1.5 hours lecture, 1.5 hours lab

Recommended Preparation: CIM 220.1

This course is an introduction to digital illustration using vector-based, object-oriented applications. The primary purpose is to create line art and typography that can be scaled without losing quality or detail. The course explores vector graphics for printing and web applications. NR

CIM 223.1: INTEGRATING VECTOR AND BITMAP IMAGES

3.5 Units

3 hours lecture, 1.5 hours lab

Recommended Preparation: CIM 221.1 and CIM 222.1

This course explores image editing tools and vector tools. Students refine their ability to produce sophisticated graphics for print, multimedia, and the web. The main focus of the course is the integration of bitmap images with vector images. NR

CIM 224.1: MOTION GRAPHICS I

3.5 Units

3 hours lecture, 1.5 hours lab

This course is an extended study of compositing techniques used to create sophisticated motion graphics for video. It explores layering, masking, pre-compositions, and nested compositions and how they may be applied to the animation of text, illustrations and images in an integrated video with sound. NR

CIM 225.1: CREATIVE SUITE

3.5 Units

3 hours lecture, 1.5 hours lab

This course provides an overview of the graphic, design, publishing and web applications in the Adobe Creative Suite: Photoshop, Illustrator, InDesign, Acrobat, Bridge, and Dreamweaver. Students investigate how these applications interrelate and how to apply them to manage the workflow of a business or personal project. NR

CIM: DIGITAL PUBLISHING

CIM 230.1: DIGITAL PUBLISHING I

2 Units

1.5 hours lecture, 1.5 hours lab

Recommended Preparation: CIM 104.1
Computer Information Management 230.1 provides instruction and hands-on training in the use of state-of-the-art microcomputers, laser printers, and various desktop publishing packages. Students will learn to produce camera-ready, near typeset-quality reports, newsletters, business forms, and presentations. NR

CIM 230.2: DIGITAL PUBLISHING II

2 Units

1.5 hours lecture, 1.5 hours lab

Recommended Preparation: CIM 230.1
Computer Information Management 230.2 provides advanced training in the use of advanced microcomputer software to produce business forms, newsletters, and presentations. Emphasis will be placed on the integration of sophisticated text and graphic elements, and on the use of batch processing layout software. NR

CIM 231: PDF PUBLISHING

2 Units

1.5 hours lecture, 1.5 hours lab

This course provides a thorough introduction to Adobe's Portable Document Format (PDF). The course covers how to create, secure, and distribute PDF files for print and online viewing. Students work with text, graphic and web sources. NR

CIM: ANIMATION

CIM 242.1: 2D ANIMATION I

3.5 Units

3 hours lecture, 1.5 hours lab

Recommended Preparation: CIM 241.1
This course introduces software used to create 2D graphics, animation, and interactivity for the web. The course explores drawing and painting tools; key-frame and tweened animation; and the power of reusable elements, libraries, scripting, and multiscene movies. Students will integrate, test, and publish animations for the web. NR

CIM 242.2: 2D ANIMATION II

3.5 Units

3 hours lecture, 1.5 hours lab

Recommended Preparation: CIM 242.1
This course extends the exploration of animation and interactivity for the web using scripting. The course focuses on action scripting to create dynamic graphics and intermediate to advanced interactivity for web design. NR

CIM 242.3: 2D ANIMATION III

3.5 Units

3 hours lecture, 1.5 hours lab

Recommended Preparation: CIM 242.1 and CIM 242.2

This course extends the exploration of animation and interactivity for the web by applying animation and scripting techniques to case studies. Students will focus on deconstructing animations, programming techniques to create utilities, and high-end techniques for the web. NR

CIM 246.1: 3D ANIMATION I

2 Units

1.5 hours lecture, 1.5 hours lab

Recommended Preparation: CIM 221.1

This course is an introduction to the fundamentals of 3D animation to include modeling and creating 3D elements, applying textures to them, lighting them, building a scene, and animating the 3D elements in that scene. It integrates the process to rendering a final output appropriate for video or for delivery to the web. NR

CIM: MULTIMEDIA

CIM 245.1: DIGITAL SOUND

AND VIDEO

3.5 Units

3 hours lecture, 1.5 hours lab

Recommended Preparation: CIM 104.1 and Phot. 50

This course introduces digital video equipment, computer technologies, software applications, and production techniques used to capture, edit, and export audio and video for multimedia productions. The course covers how to capture collected audio and video on the computer and manipulate them into media that can be exported from the computer to tape, DVD, CD or the web. There is a major hands-on component to this course, allowing students to practice video production techniques, sound production, and non-linear editing. CIM 245.1 is also listed as Phot. 245.1; credit will be given in either area, not both. NR

CIM: WEBSITE DESIGN

CIM 240.1: INTRODUCTION TO THE

INTERNET

2 Units

1.5 hours lecture, 1.5 hours lab

This course prepares students to use the Internet to access information. Emphasis is on introducing the features of the Internet. Students practice using various browser programs to access the Internet; configuring and using email client programs to send, receive, and maintain email messages and attachments; using FTP (File Transfer Protocol) software to exchange files over the Web; using search engines and keyword searches to find information and services; and working with Internet service providers. NR

CIM 241.1: CREATING A WEB PAGE I

2 Units

1.5 hours lecture, 1.5 hours lab

Recommended Preparation: CIM 203.1

This course prepares the student to create and publish a Web page. Emphasis will be on constructing an effective and appealing page, exploring authoring utilities, and understanding hypertext markup languages (HTML). NR

CIM 243.1: WEB AUTHORING I**2 Units****1.5 hours lecture, 1.5 hours lab***Recommended Preparation: CIM 241.1 and CIM 221.1*

This course introduces web authoring tools for building sophisticated web pages and supporting a dynamic workflow between visual and text-based editors. It explores the appropriate use of linking; typography; layout; and various approaches to presenting data, graphics, and dynamic media on the web. NR

CIM 243.2: WEB AUTHORING II**2 Units****1.5 hours lecture, 1.5 hours lab***Recommended Preparation: CIM 243.1*

This course extends the potential of web authoring tools for building sophisticated web pages and explores various approaches to presenting data, graphics, and dynamic media on the web. NR

CIM 244.1: WEB PAGE USABILITY AND STRUCTURE**2 Units****1.5 hours lecture, 1.5 hours lab***Recommended Preparation: CIM 243.1*

This course explores what can be done to enhance the usability of a web page and make the web experience user-friendly. It focuses on the critical issues of content, page structure, site architecture, and intranets. It also addresses international user issues and accessibility for users with disabilities. NR

CIM 251.1: DYNAMIC WEB DATABASE MANAGEMENT**3.5 Units****3 hours lecture, 1.5 hours lab**

This course provides an overview of how to create and manage database-driven web sites using ASP (Active Server Pages), ColdFusion, and PHP (PHP Hypertext Preprocessor) with web application development tools to interact with Access, MySQL and other databases. Students create interactive, dynamic web pages that can activate server-based databases. NR

CIM: HARDWARE**CIM 206.1: A+ HARDWARE CONCEPTS****3.5 Units****3 hours lecture, 1.5 hours lab**

This course helps prepare students to take the industry-standard A+ hardware exam and will prepare students to install, configure and troubleshoot PC hardware components. Topics include system types, motherboards, expansion cards, hard drives, video and network cards, and other computer peripherals. Students will build a PC from component parts. NR

CIM: NETWORKING**CIM 260.1: NETWORKING I****2 Units****1.5 hours lecture, 1.5 hours lab**

This course provides an introduction to the fields of local area networking (LAN) and wide area networking (WAN). The course focuses on terminology, the various functions at work within a LAN/WAN, and the hardware and software associated with the various components of a LAN/WAN. NR

CIM 260.2 NETWORKING II**3.5 Units****3 hours lecture, 1.5 hours lab**

This course examines the concepts of data communication, networking and connectivity. It covers the Open Systems Interconnection (OSI) reference model; network protocols; data transmission; network structures; network hardware; and network security. This course is designed to prepare students for the CompTIA Network+ certification exam. NR

CIM 260.4: FUNDAMENTALS OF WIRELESS NETWORKING**3.5 Units****3 hours lecture, 1.5 hours lab**

This course discusses the major components and issues of wireless networking including its history and uses, required hardware and software, and advantages and disadvantages (vs. wired networking). The course covers radio frequency communications, wireless communication models and standards (IEEE 802.2), Bluetooth, infrared (IR) technology, WLAN's, security, and business applications. Students will have hands-on experience with wireless equipment in the classroom. NR

CIM 263.1: INTERNETWORKING TECHNOLOGIES I**3.5 Units****3 hours lecture, 1.5 hours lab***Recommended Preparation: CIM 260.1*

This is the first of four semester-long courses which qualify the student to take the Cisco CCNA exam. After passing the certification exam, the student will be a Cisco Certified Network Associate. Topics in this course include the OSI Reference Model; layered communications; the TCP/IP network protocol; network design and documentation; and structured cabling. NR

CIM 263.2: INTERNETWORKING TECHNOLOGIES II**3.5 Units****3 hours lecture, 1.5 hours lab***Recommended Preparation: CIM 263.1*

This is the second of four semester-long courses which qualify the student to take the Cisco CCNA exam. After passing the certification exam, the student will be a Cisco Certified Network Associate. Topics in this course include WANs and routers; router setup and configuration; IOS images; and routing protocols. NR

CIM 263.3: INTERNETWORKING TECHNOLOGIES III**3.5 Units****3 hours lecture, 1.5 hours lab***Recommended Preparation: CIM 263.2*

This is the third of four semester-long courses which qualify the student to take the Cisco CCNA exam. After passing the certification exam, the student will be a Cisco Certified Network Associate. Topics in this course include LAN switching; VLAN standards, architecture, and implementation; LAN design considerations and concerns; IP routing; and Access Control Lists (ACLs). NR

CIM 263.4: INTERNETWORKING TECHNOLOGIES IV**3.5 Units****3 hours lecture, 1.5 hours lab***Recommended Preparation: CIM 263.3*

This is the last of four semester-long courses which qualify the student to take the Cisco CCNA exam. After passing the certification exam, the student will be a Cisco Certified Network Associate. Topics in this course include Wide Area Network (WAN) theory and design; ISDN and its relations to WAN technology and the OSI Reference Model; Frame Relay and LMI; and network troubleshooting. NR

CIM 263.5: FUNDAMENTALS OF THE CISCO PIX FIREWALL**3.5 Units****3 hours lecture, 1.5 hours lab**

This course examines the features and technology of the Cisco PIX firewall device. It is recommended preparation for the Cisco Secure PIX Firewall exam. Topics include NAT (network address translation), PAT (port address translation), ACLs (access control lists), URL filtering, attack guards, intrusion detection, VPNs (virtual private networks) and failover. Students will use a PIX firewall device in the class. NR

CIM 264.1: FUNDAMENTALS OF NETWORK SECURITY**3.5 Units****3 hours lecture, 1.5 hours lab**

This course will discuss the many threats to network security and techniques to prevent them, including authentication, email and web security, firewalls, intrusion detection, cryptography and disaster recovery. Class includes both lecture and hands-on exercises. NR

CIM 264.5: HARDENING THE INFRASTRUCTURE**3.5 Units****3 hours lecture, 1.5 hours lab**

Recommended Preparation: Security + certification or equivalent knowledge.
This is the first of two courses leading to the Security Certified Network Professional (SCNP) certification. The course covers advanced TCP/IP; implementation of the IP Security Protocol (IPSec); securing Linux, Windows and Cisco operating systems; securing routers and creating access-control lists (ACLs); contingency planning; and Internet security. The course includes a strong hands-on component. NR

**CIM 264.6: NETWORK DEFENSE AND COUNTERMEASURES****3.5 Units****3 hours lecture, 1.5 hours lab***Recommended Preparation: CIM 264.5*

This is the second of two courses leading to the Security Certified Network Professional (SCNP) certification. The course covers the fundamentals of network defense, the design and implementation of firewalls, virtual private networks (VPNs), and intrusion detection systems (IDS). The course includes a strong hands-on component. NR

CIM 266.1: FUNDAMENTALS OF INTERNET PROTOCOL TELEPHONY I**3.5 Units****3 hours lecture, 1.5 hours lab**

Recommended Preparation: Cisco CCNA or equivalent knowledge strongly recommended.

This course investigates Internet Protocol (IP) Telephony, also known as Voice Over IP or VoIP. Topics include IP Telephone functions, components and architectures; IP Telephone gateways, dial plans and security; voice ports, interfaces, dial peers and connections. The course is designed to prepare students for Cisco's CVOICE certification exam. NR