
COMPUTER INFORMATION TECHNOLOGY

Division of Business

CIT 051

Keyboarding

Advisory: READ 043 or appropriate placement

The course is designed to enable the student to master the alphanumeric keyboard on a microcomputer by touch and to gain a thorough knowledge of current keyboarding techniques. This course is recommended for all students to provide them with the skills necessary to use touch keyboarding to prepare reports and general course assignments.

1 Unit

9 Lecture hours

27 Lab hours

CIT 060

Windows Operating System

Advisory: CIT 051

This course is a comprehensive course of the Microsoft Windows operating system and its graphical user interface. The student will learn: Graphical User Interface/Mouse, My Computer, File Management with Explorer, Wordpad, Paint, and data sharing using the clipboard. The find program, object linking and embedding, printers and fonts will also be included. Networking capabilities of Windows will be used and disk maintenance tasks will be performed.

3 Units

45 Lecture hours

27 Lab hours

CIT 101 (C-ID BUS 140)

Introduction to Computer Information Technology

Advisory: ENGL 035 or ENLA 100 or appropriate placement; READ 043 or appropriate placement; CIT 051

Transfers to: UC, CSU

This course is an examination of information systems and their role in business. It will focus on information systems, database management systems, networking, e-commerce, ethics and security, computer systems hardware and software components. It will apply these concepts and methods through hands-on projects developing computer-based solutions to business problems.

3 Units

54 Lecture hours

CIT 102

Introduction to Microsoft Office

Advisory: ENGL 035 or ENLA 100 or appropriate placement; READ 043 or

appropriate placement; CIT 051

Transfers to: CSU

This course is intended as an introduction for students wanting to learn the latest version of the integrated program suite of Microsoft Office Professional. The student will be provided with the basics of each of the programs in the suite - Word, Excel, Access, PowerPoint, and Outlook as well as their Internet integration. In addition, an introduction to fundamental computer concepts will be presented including hardware and software basics, file management, computer networks and communications.

3 Units

45 Lecture hours

27 Lab hours

CIT 103

Microsoft Word

Advisory: READ 043 or appropriate placement; CIT 101

Transfers to: CSU

This is a thorough introduction to the word processing application Microsoft® Word®. This course will provide instruction in the use of the latest version of word processing software for business applications. Students will learn the basic editing and formatting functions of the program. Document maintenance, formatting enhancements, and the creation and formatting of tables will also be presented. Additional topics include macros and styles, specialized tables, protected forms and shared documents. This course is intended for students desiring to complete the requirements for the Computer Information Technology Microcomputer Specialists Degree or professionals wanting to master Microsoft Word.

3 Units

45 Lecture hours

27 Lab hours

CIT 111

Introduction to Programming

Advisory: ENGL 035 or ENLA 100 or appropriate placement; READ 043 or appropriate placement; MATH 033 or appropriate placement; CIT 101

Transfers to: CSU

This course is for students who want to develop the problem-solving abilities required to work in the computer field. Programming concepts are discussed through a variety of techniques including hierarchy diagrams, flow-charting, data diagrams, and pseudocode. The course will also include information on integrated development environments (IDEs).

3 Units

54 Lecture hours

CIT 114

Introduction to Cloud Computing with DevOps

Advisory: READ 043 or appropriate placement; ENGL 035 or ENLA 100 or appropriate placement.

Transfers to: CSU

This course is an examination of information systems as it relates to developer operations (DevOps), cloud computing, and their role in business. It will focus on information systems, security, database management systems, networking, operating systems, cloud computing, project management strategies, version control, and programming methodologies. It will apply these concepts and methods through hands-on projects developing computer-based solutions to business problems.

4 Units

63 Lecture hours

27 Lab hours

CIT 117

Microsoft Excel

Advisory: CIT 101; READ 043 or appropriate placement

Transfers to: CSU

This is a comprehensive spreadsheet application course which will provide instruction in the use of the latest version of spreadsheet software for business applications. Students will learn to create and format a workbook, work with formulas and functions, create charts, tables and PivotTables. Students will also learn advanced functions, and develop Excel applications. This course is intended for students desiring to complete the requirements for the Computer Information Technology/Office Technologies Degree or Certificate of Achievement, or professionals wanting comprehensive knowledge of Microsoft® Excel®.

3 Units

45 Lecture hours

27 Lab hours

CIT 119

Microsoft Access

Advisory: CIT 101; READ 043 or appropriate placement

Transfers to: CSU

This is a thorough microcomputer database applications course, which will provide instruction in the use of the latest version of database software for business applications. Students will learn to create and modify tables, build table relationships, add and edit records, create forms for data entry, produce simple queries and reports, advanced query functions, custom forms design for data entry, custom report writing, and sharing and integrating data with Web pages. This course is intended for students desiring to complete the requirements for the Computer

Information Technology Degree or professionals wanting a thorough introduction to Microsoft® Access®.
3 Units
45 Lecture hours
27 Lab hours

CIT 125

Introduction to C++ Programming

Advisory: ENGL 035 or ENLA 100 or appropriate placement; READ 043 or appropriate placement; MATH 033 or appropriate placement; CIT 111, CIT 101
Transfers to: UC, CSU

This course is for students who want to complete the requirements for the Computer Information Technology degree, or professionals who want to continue developing their programming skills using Visual C++ programming language. The course covers the fundamentals of software development using the most popular language (C++). Topics covered include designing, writing the source code, compiling, linking, executing, debugging, data types, arithmetic/logical expressions, pointers, looping, branching, classes, objects, and static and dynamic memory allocation.

4 Units
63 Lecture hours
27 Lab hours

CIT 126

Advanced C++ Programming

Prerequisite: CIT 125
Transfers to: UC, CSU

This course is intended for students desiring to complete the requirements for the Computer Information Technology degree, or professionals who want to continue developing their programming skills using an object-oriented programming language. The course will review the fundamentals of software development and cover the advanced programming skills using the C++ language. Advanced topics include classes and data abstraction, operator overloading, inheritance, virtual function and polymorphism, stream input and output, and exception handling.

4 Units
63 Lecture hours
27 Lab hours

CIT 127 (C-ID COMP 122)

Python Programming I

Prerequisite: CIT 111
Transfers to: UC, CSU

This course is an introduction to the discipline of computer science, with a focus on the design and implementation of algorithms to solve simple problems using Python. Topics include fundamental programming constructs, problem-solving strategies, debugging techniques, declaration models, and an overview of procedural and object-oriented programming languages. Students will

learn to design, implement, test, and debug algorithms using pseudocode and Python.

3 Units
45 Lecture hours
27 Lab hours

CIT 128 (C-ID COMP 132)

Python Programming II

Prerequisite: CIT 127
Transfers to: UC, CSU

This is a software engineering course focused on the application of software engineering techniques for the design and development of large programs. Topics include object oriented programming, data abstraction, data structures and their associated algorithms, and recursion. Students will learn to design, implement, test, and debug programs using Python.

3 Units
45 Lecture hours
27 Lab hours

CIT 130

Windows Configuration

Advisory: ENGL 035 or ENLA 100 or appropriate placement; READ 043 or appropriate placement; CIT 180
Transfers to: CSU

This course is designed for students preparing to take the Windows client operating system certification exam. Students will learn to install, upgrade and migrate from previous to the current Windows client operating system and deploy Windows using system images and configure virtual hard disks. Students will also learn to configure hardware & applications, network connectivity, access to resources, mobile computing, backup and recovery, and monitoring and maintaining systems that run Windows.

3 Units
45 Lecture hours
27 Lab hours

CIT 131

Windows Server Active Directory

Advisory: ENGL 035 or ENLA 100 or appropriate placement; READ 043 or appropriate placement; CIT 130
Transfers to: CSU

This course is designed for students preparing to take the Windows Server Active Directory, Configuring certification exam. Students will learn to configure Domain Name System, Active Directory infrastructure, Active Directory Roles & Services, creating and maintaining Active Directory objects, maintaining the Active Directory environment, and configure Active Directory Certificate Services.

3 Units
45 Lecture hours
27 Lab hours

CIT 133

Windows Server Applications Infrastructure

Advisory: ENGL 035 or ENLA 100 or appropriate placement; READ 043 or appropriate placement; CIT 101, CIT 130
Transfers to: CSU

This course is designed for students preparing to take the Windows Server Applications Infrastructure certification exam. Students will learn to deploy servers, configure remote desktop services, configure web services infrastructure, and configure network application services.

3 Units
45 Lecture hours
27 Lab hours

CIT 135

Introduction to Java Programming

Advisory: ENGL 035 or ENLA 100 or appropriate placement; READ 043 or appropriate placement; CIT 101, CIT 111
Transfers to: UC, CSU

This course is intended for students who want to complete the requirements for the Computer Information Technology degree, or professionals who want an introduction to Java programming. The course will cover the fundamentals of software development using the most popular open source language (Java). Course topics include program design, algorithms, writing and testing source code, arithmetic/logic expressions, control structures, objects, and basic Java structures.

4 Units
63 Lecture hours
27 Lab hours

CIT 136

Advanced Java Programming

Prerequisite: CIT 135
Transfers to: UC, CSU

This course is for students who want to complete the requirements for the Computer Information Technology degree, or professionals who want to continue developing their programming skills using Java. The course covers the basics of the software development and the advanced programming skills using the Java language. Topics include Java data syntax, data structure, applets, graphics, animation, inheritance, abstract Windows toolkit, exception handling, file input and output, and multi-threading.

4 Units
63 Lecture hours
27 Lab hours

CIT 139

Linux 1

Prerequisite: CIT 114 or CIT 101
Transfers to: CSU

This course provides a skills foundation for students pursuing a career as Linux system administrators. The

course prepares students for the Red Hat System Administration I (RH124) certificate. Students must complete this course if they wish to pursue the Red Hat System Administration II (RH134) certificate.

3 Units

45 Lecture hours

27 Lab hours

CIT 140

Linux II

Prerequisite: CIT 139

Transfers to: CSU

This course provides skills that build on the skills learned in Linux I. It prepares students for the Red Hat System Administrator II (RH134) certificate. RH134 focuses on the key tasks needed to become a full time Linux administrator.

3 Units

45 Lecture hours

27 Lab hours

CIT 155

Introduction to E-Commerce

Advisory: ENGL 035 or ENLA 100 or appropriate placement; READ 043 or appropriate placement; MATH 033 or appropriate placement; CIT 101

Transfers to: CSU

This course provides a hands-on, problem-solving approach to learning both basic and more advanced aspects of doing business on the Internet. Students learn how to use electronic commerce effectively, including selling and marketing on the Internet, developing business-to-business online strategies, using online auctions, identifying the hardware and software required to support security for e-commerce, selecting electronic payment systems, and planning for e-commerce. Additionally, students learn how and why e-commerce is an important part of our economy and society.

3 Units

54 Lecture hours

CIT 160

Introduction to Operating Systems

Prerequisite: CIT 101

Advisory: CIT 060

Transfers to: CSU

This course provides an introduction to the operating systems used in modern business infrastructure, including Windows (desktop and server), Unix, Linux, and Mac OS X. Students will learn how these systems are used in the industry, desktop virtualization, networking basics, and information related to how to create mixed environments.

3 Units

45 Lecture hours

27 Lab hours

CIT 170

Server +

Prerequisite: CIT 101

Advisory: ENGL 035 or ENLA 100 or appropriate placement; READ 043 or appropriate placement

Transfers to: CSU

This course will provide a student with the knowledge and skills required to build, maintain, troubleshoot and support server hardware and software technologies. The student will be able to identify environmental issues; understand and comply with disaster recovery and physical/software security procedures; become familiar with industry terminology and concepts; understand server roles/specializations and interaction within the overall computing environment. This course also prepares students for the current version of CompTIA's Server+ certification exam.

3 Units

45 Lecture hours

27 Lab hours

CIT 171

Network +

Prerequisite: CIT 101 or CIT 114

Advisory: ENGL 035 or ENLA 100 or appropriate placement; READ 043 or appropriate placement

Transfers to: CSU

This course provides an overview of the architecture, structure, functions, components, and models of the Internet and other computer networks. The principles and structure of Internet protocol (IP) addressing and the fundamentals of ethernet, media, and operations concepts are introduced to provide a foundation for further study of computer networks. The Open Systems Interconnection (OSI) and Transmission Control Protocol (TCP) layered models are used to examine the nature and roles of protocols and services at the application, network, data link, and physical layers. This course prepares students for the CompTIA Network+ certification exam.

3 Units

45 Lecture hours

27 Lab hours

CIT 172

Database Essentials in Amazon Web Services

Prerequisite: CIT 101 or CIT 114

Transfers to: CSU

This course provides the students with an introduction to the core concepts in data and information management in traditional and cloud systems. It is centered around the core skills of identifying organizational information requirements, modeling them using conceptual data modeling techniques, converting the conceptual data models into

relational data models and verifying its structural characteristics with normalization techniques, and implementing and utilizing a relational database using an industrial-strength database management system in Amazon Web Services. The course will also include coverage of basic database administration tasks and key concepts of data quality and data security. In addition to developing database applications, the course helps the students understand how large-scale packaged systems are highly dependent on the use of Database Management Systems (DBMSs). Building on the transactional database understanding, the course provides an introduction to data and information management technologies that provide decision support capabilities under the broad business intelligence umbrella.

3 Units

45 Lecture hours

27 Lab hours

CIT 173

Compute Engines in Amazon Web Services

Prerequisite: CIT 114

Advisory: ENGL 035 or ENLA 100 or appropriate placement; READ 043 or appropriate placement

Transfers to: CSU

This course addresses how cloud computing systems are built using a common set of core technologies, algorithms, and design principles centered around distributed systems. Students will use the Amazon Web Services (AWS) Management Console to provision, load-balance and scale their applications using the Elastic Compute Cloud (EC2) and the AWS Elastic Beanstalk. The course discusses, from a developer perspective, the most important reasons for using AWS and examines the underlying design principles of scalable cloud applications.

1.5 Units

22.5 Lecture hours

13.5 Lab hours

CIT 174

Security in Amazon Web Services

Prerequisite: CIT 114

Advisory: ENGL 035 or ENLA 100 or appropriate placement; READ 043 or appropriate placement

Transfers to: CSU

This course focuses on protecting the confidentiality, integrity and availability of computing systems and data. Students learn how Amazon Web Service (AWS) uses redundant and layered controls, continuous validation and testing, and a substantial amount of automation to ensure the underlying infrastructure is continuously monitored and protected. Students examine the AWS Shared

Responsibility Model and access the AWS Management Console to learn more about security tools and features provided by the AWS platform.

1.5 Units

22.5 Lecture hours

13.5 Lab hours

CIT 175

DevOps Engineering in Amazon Web Services

Prerequisite: CIT 173 and CIT 174

Advisory: ENGL 035 or ENLA 100 or appropriate placement; READ 043 or appropriate placement; CIT 127

Transfers to: CSU

In this course, students explore how development processes can be automated and integrated with operations so changes to software can be deployed to cloud computing environments according to DevOps (developer and operations) best practices. Students will use Amazon Web Services (AWS) products to provision infrastructure then deploy code using a managed pipeline. Operations topics include initializing infrastructure as code, applying security, monitoring service health, and troubleshooting. Development topics include secure deployment practices with continuous integration and continuous delivery as it relates to the software development life cycle. Students will build their skills by participating in in-class interactive lectures, hands-on lab activities, and working on comprehensive assignments.

3 Units

45 Lecture hours

27 Lab hours

CIT 180 (C-ID ITIS 110)

PC Maintenance-A+ Certification

Prerequisite: CIT 101

Advisory: READ 043 or appropriate placement

Transfers to: CSU

This course will prepare students with the necessary competencies of an entry-level IT professional with hands-on experience and theory in computer technology, networking and security. The student will also learn communication skills and professionalism now required of all entry-level IT professionals. This course is intended for IT students wishing to prepare for the CompTIA A+ Essentials and CompTIA A+ Practical Application examinations, the two exams required to achieve CompTIA A+ certified status.

4 Units

54 Lecture hours

54 Lab hours

CIT 192

Security+

Prerequisite: CIT 101; CIT 210

Advisory: ENGL 035 or ENLA 100 or

appropriate placement; READ 043 or

appropriate placement; CIT 180

Transfers to: CSU

This course provides an introduction to the fundamental principles and topics of information technology security and risk management at the organizational level. It addresses hardware, software, processes, communications, applications, and policies and procedures with respect to organizational cybersecurity and risk management. This course provides preparation for the CompTIA Security+ certification exam.

3 Units

45 Lecture hours

27 Lab hours

CIT 200

Systems Analysis and Design

Prerequisite: CIT 101 or CIT 114

Advisory: ENGL 035 or ENLA 100 or appropriate placement; READ 043 or appropriate placement

Transfers to: CSU

The course presents a systematic methodology for analyzing a business problem or opportunity, determining what role, if any, computer-based technologies can play in addressing the business need, articulating business requirements for the technology solution, specifying alternative approaches to acquiring the technology capabilities needed to address the business requirements, and specifying the requirements for the information systems solution in particular, in-house development, development from third-party providers, or purchased commercial-off-the-shelf packages.

3 Units

54 Lecture hours

CIT 210 (C-ID ITIS 150)

Cisco Networking I

Prerequisite: CIT 101

Advisory: ENGL 035 or ENLA 100 or appropriate placement; READ 043 or appropriate placement; CIT 180

Transfers to: CSU

This course introduces the architecture, structure, functions, components, and models of the Internet and other computer networks. The principles and structure of IP (Internet Protocol) addressing and the fundamentals of Ethernet concepts, media, and operations are introduced to provide a foundation for further study of computer networks. It uses the OSI (Open Systems Interconnection) and TCP (Transmission Control Protocol) layered models to examine the nature and roles of protocols and services at the application, network, data link, and physical layers. This course is also the first of two courses designed to prepare students for the ICND 1 examination to achieve CCENT (Cisco® Certified Entry

Networking Technician) Certification and helps in preparation for the CompTIA Network+ certification exam.

3 Units

45 Lecture hours

27 Lab hours

CIT 211

Cisco Networking II

Prerequisite: CIT 210

Advisory: ENGL 035 or ENLA 100 or appropriate placement; READ 043 or appropriate placement; CIT 180

Transfers to: CSU

This course describes the architecture, components, and operations of routers and switches in a small network. Students learn how to configure a router and a switch for basic functionality. By the end of this course, students will be able to configure and troubleshoot routers and switches and resolve common issues with RIPv1, RIPv2, single-area and multi-area OSPF, virtual LANs, and inter-VLAN routing in both IPv4 and IPv6 networks. This course is the second of two courses designed to prepare students for the ICND 2 examination to achieve CCENT (Cisco® Certified Entry Networking Technician) certification.

3 Units

45 Lecture hours

27 Lab hours

CIT 212

Cisco Networking III

Prerequisite: CIT 211

Advisory: ENGL 035 or ENLA 100 or appropriate placement; READ 043 or appropriate placement; CIT 180

Transfers to: CSU

This course is the first of two courses designed to prepare students for the ICND-2 examination to achieve CCNA (Cisco® Certified Network Administrator) certification. Students will learn the architecture, components and operations of routers and switches in a large and complex network. Students will also learn to configure and troubleshoot routers and switches and resolve common issues with OSPF, EIGRP, STP, and VTP in both IPv4 and IPv6 networks along with developing skills needed to implement DHCP and DNS operations in a network.

3 Units

45 Lecture hours

27 Lab hours

CIT 213

Cisco Networking IV

Prerequisite: CIT 212

Advisory: ENGL 035 or ENLA 100 or appropriate placement; READ 043 or appropriate placement; CIT 180

Transfers to: CSU

This course is the second of two courses designed to prepare stu-

dents for the ICND-2 examination to achieve CCNA (Cisco® Certified Network Administrator) certification. Students will learn about WAN technologies and network services for complex networks. Students will learn to troubleshoot network devices and issues with data link protocols, and implement IPSec and virtual private networks.

3 Units
45 Lecture hours
27 Lab hours

CIT 221

Ethical Hacking

Prerequisite: CIT 171 or CIT 210 and CIT 192

Transfers to: CSU

This course introduces the network security specialist to the various methodologies for attacking a network. Students will be introduced to the concepts, principles, and techniques, supplemented by hands-on exercises, for attacking and disabling a network within the context of properly securing a network. The course will emphasize network attack methodologies with the emphasis on student use of network attack techniques and tools and appropriate defenses and countermeasures. Students will receive course content information through a variety of methods: lecture and demonstration of hacking tools will be used in addition to a virtual environment. Students will experience a hands-on practical approach to penetration testing measures and ethical hacking.

3 Units
45 Lecture hours
27 Lab hours

CIT 290

Cooperative Work Experience/Internship for Computer Technology Related Fields

Advisory: ENGL 035 or ENLA 100 or appropriate placement; READ 043 or appropriate placement

Transfers to: CSU

This course supports and reinforces on-the-job training in business and industrial establishments under supervision of a college instructor, and is facilitated by the use of learning objectives. Students work in a skilled or professional-level assignment in their area of vocational interest and meet performance objectives related to instruction that are above and beyond the conditions of regular employment. This course is intended for students whose job is related to the field of computer information technology and who have completed or enrolled in the appropriate coursework. Instructor approval is needed to enroll in the course. Contact the CWE office regarding re-enrollment procedures.

Student Unpaid Internship:

1 Unit/60 hours; 2 Units/120 hours;
3 Units/180 hours; 4 Units/240 hours

Student Paid Internship:

1 Unit/75 hours; 2 Units/150 hours;
3 Units/225 hours; 4 Units/300 hours.

1 to 4 Units
3 Lecture hours
60 to 300 hours

COMPUTER SCIENCE

Division of Business

CS 142 (C-ID COMP 142)

Computer Architecture and Organization

Prerequisite: CIT 127

Transfers to: UC, CSU

This course examines the organization and behavior of real computer systems at the assembly-language level. The mapping of statements and constructs in a high-level language onto sequences of machine instructions is studied, as well as the internal representation of simple data types and structures. Numerical computation is examined, noting the various data representation errors and potential procedural errors.

3 Units
54 Lecture hours

CS 152 (C-ID COMP 152)

Discrete Structures

Prerequisite: CIT 127

Transfers to: UC, CSU

This course is an introduction to the discrete structures used in Computer Science with an emphasis on their applications. Topics covered include: Functions, Relations and Sets; Basic Logic; Proof Techniques; Basics of Counting; Graphs and Trees; and Discrete Probability.

3 Units
54 Lecture hours

COOPERATIVE WORK EXPERIENCE- GENERAL

Division of Career & Technical Education

CWEG 290

Cooperative Work Experience Education - General

Advisory: ENGL 035 or ENLA 100 or appropriate placement; READ 043 or appropriate placement

Transfers to: CSU

This course supports and reinforces on-the-job training in an actual work environment under the supervision of a college instructor and is facilitated by the use of learning objec-

tives. The student will be working in a professional environment and will meet performance objectives related to instruction that are above and beyond the conditions of regular employment.

Student Paid Internship:

1 unit/75 hours;
2 units/150 hours;
3 units/225 hours

1 to 3 Units
3 Lecture hours
75 to 225 Other hours

CORRECTIONS

Division of Public Safety

CORR 060

Corrections Basic Academy

Prerequisite: Enrollment is restricted to sworn cadets employed by California Department of Corrections and Rehabilitation

This course is designed for the California Department of Corrections and Rehabilitation (CDCR) cadet who has successfully passed and completed the employment requirements established for a position as a state correctional officer. This course covers relevant topics required by the Commission of Correctional Peace Officer Standards and Training (CPOST) per California Penal Code Sections 13600 through 13603.

23 Units
364 Lecture hours
156 Lab hours

CORR 101 (C-ID AJ 200)

Introduction to Corrections

Advisory: ENGL 035 or ENLA 100 or appropriate placement; READ 043 or appropriate placement

Transfers to: CSU

This course provides students with an overview of the history and trends of adult and juvenile corrections. It focuses on probation, parole, legal issues, specific laws and the general operation of correctional institutions. The relationship between corrections and other components of the justice system is also examined. This course has been identified by the Correctional Peace Officer Standards and Training (CPOST) Board of the Peace Officers Association as fulfilling the educational requirements of the CPOST Certificate for newly-hired officers after July 1, 1995 by the California Department of Corrections and Rehabilitation (CDCR) and California Youth Authority (CYA).

3 Units
54 Lecture hours