

INFORMATION TECHNOLOGY

Contact Information

Division

Business and Technology

Dean

Amy Schulz

Associate Dean

Darlene Jackson

Division Office

B3, Rocklin Campus

Overview

Information Technology programs prepare students for a wide array of Information Technology (IT) career paths. IT encompasses computer professional careers and positions, from Tech Support to Cyber Security, and from Office Work to Business Analyst. Careers in IT deal with the design, creation, management, maintenance, and business use of the varied components of computer systems, including software, hardware, networks, and the cloud. The field spans a broad range of industries, including technology, healthcare, finance, retail, government and education; and includes jobs that involve business computer applications, databases, technical and customer support services, web authoring/developing, Internet information research, network administration, and cybersecurity. Some courses prepare students for industry certifications such as CompTIA's, A+, Network+, Security+, or Microsoft's MSCE. The curriculum also provides valuable computer experience and training for students who are enrolled in other disciplines of the College.

Faculty

Denise Bushnell

Professor, Information Technology

B.S., University of Alabama

M.B.A., Walden University

Richard S. Monsen

Assistant Professor, Information Technology

B.S., California State University, Sacramento

Annette A. Nylander

Professor, Information Technology

A.S., Sierra College

B.A., The Union Institute

M.B.A., DeVry University, Keller Graduate School of Management

Melissa A. Prinzing

Professor, Information Technology

B.S., California Polytechnic State University, San Luis Obispo

M.B.A., California Polytechnic State University, San Luis Obispo

Information Technology Advisory Committee

- David Prinzing, Founder and CTO, Algorithmic Ads, Roseville
- Jaime B. Sainz, Cyber Security Service and Portfolio Manager, Hewlett Packard Enterprise, Roseville

- Jonathan "JT" Taylor, Manager, Technical Strategy, Planning and Architecture, Disaster Recovery, Sutter Health Information Services, Sacramento
- Alex Torres, Cybersecurity Engineer, Hewlett Packard Enterprise, Roseville
- George Usi, President, Sactech, Sacramento
- Sharon West, Solutions Management and Planning, Hewlett Packard Enterprise, Roseville
- Eric F.G. Wilson, Director of IT Core Services, Rabobank, Roseville

Degrees/Certificates

Associate Degrees

- Information Technology—Business Information Worker (p. 1)
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Certificates of Achievement

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Skills Certificates

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- Business Information Worker (Stage 2) (p. 3)
- Data Specialist (p. 3)
- Information Assurance and Cyber Defense (p. 3)
- IT Technician (p. 3)

Noncredit Certificate of Completion

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Information Technology –Business Information Worker AA or AS Degree and/or Certificate of Achievement

(formerly Computer Information Systems-Business Information Worker)

The Business Information Worker (BIW) program prepares students for entry-level employment in the field of Business Information Technology. Emphasis is on practical, career-oriented skills for professional office environment positions using current computer application programs for processing and presenting text, numerical data and graphics, as well as applying basic oral and written business communication. This program of courses aligns with the California Community College's statewide BIW career preparation pathway. For the degree, students must fulfill the following major requirements with grades of "C" or better, complete a minimum of 60 degree-applicable semester units (12 of which must be completed at Sierra College) with a grade point average of at least 2.0 and complete one of the following three general education patterns:

- Sierra College Associate Degree Requirements (<http://catalog.sierracollege.edu/archive/2019-2020/student-resources/general-education/associate-degree-requirements>);
- California State University General Education Breadth (CSU GE) (<http://catalog.sierracollege.edu/archive/2019-2020/student-resources/general-education/california-state-university-general-education-breadth-requirements>) pattern;
- Intersegmental General Education Transfer Curriculum (IGETC) (<http://catalog.sierracollege.edu/archive/2019-2020/student->

resources/general-education/intersegmental-general-education-transfer-curriculum-igetc).

A certificate is designed to provide career technical skills; it is not equivalent to an associate degree.

Required Courses

Code	Title	Units
BUS 0085 or BUS 0102	Introduction to Oral Communication Business Communications	3
BUS 0116	Customer Service Skills	3
IT 0010	Applying Computer Software	3
IT 0015	Business Information Systems	3
IT 0020	Word Processing - Beyond the Basics	3
IT 0025	Spreadsheets in a Business Environment	3
IT 0035	Microsoft Outlook - Managing Information	3
Select 3 units from the following:		3
IT 0030	Software for Dynamic Presentations	
IT 0040	Creating Business Graphics with Microsoft Publisher	
IT 0045	Foundations for Creating Web Pages	
IT 0055	Database Management	
IT 0060	Project Management Concepts and Software	
IT 0065	Data Analytics/Visualization Using Tableau	
IT 0095	Internship in Information Technology	
Total Units		24

Information Technology—Cybersecurity

AA or AS Degree and/or Certificate of Achievement

(formerly Computer Information Systems—Networking and Security)

Successful completion of the curriculum in Cybersecurity prepares students to advance their Information Technology careers as network administrators and cyber security professionals. Many of the courses also help prepare students for industry recognized certification exams. For the degree, students must fulfill the following major requirements with grades of "C" or better, complete a minimum of 60 degree-applicable semester units (12 of which must be completed at Sierra College) with a grade point average of at least 2.0 and complete one of the following three general education patterns:

- Sierra College Associate Degree Requirements (<http://catalog.sierracollege.edu/archive/2019-2020/student-resources/general-education/associate-degree-requirements>);
- California State University General Education Breadth (CSU GE) (<http://catalog.sierracollege.edu/archive/2019-2020/student-resources/general-education/california-state-university-general-education-breadth-requirements>) pattern;
- Intersegmental General Education Transfer Curriculum (IGETC) (<http://catalog.sierracollege.edu/archive/2019-2020/student-resources/general-education/intersegmental-general-education-transfer-curriculum-igetc>).

A certificate is designed to provide career technical skills; it is not equivalent to an associate degree.

Required Courses

Code	Title	Units
IT 0075	Python for Many Uses	3
IT 0100	Information and Communication Technology Essentials	4
IT 0105	Computer Network Fundamentals	3
IT 0110	Installing, Configuring and Administering a Client OS	3
IT 0115	Server Systems Administration	3
IT 0120	Introduction to Information Systems Security	3
IT 0140	Implementing Network Security and Firewalls	3
IT 0145	Introduction to Cybersecurity: Ethical Hacking	3
Select 6 units from the following:		6
CSCI 0012	Programming Concepts and Methodology I	
CSCI 0050	Introduction to Unix/Linux	
IT 0060	Project Management Concepts and Software	
IT 0095	Internship in Information Technology	
IT 0125	Routing and Switching Essentials	
IT 0150	Principles of Cybersecurity Analysis	
IT 0155	Virtualization Concepts and Technologies	
IT 0165	Computer Forensics Fundamentals	
Total Units		31

Information Technology—IT Technician

AA or AS Degree and/or Certificate of Achievement

(formerly Computer Information Systems—IT Technician)

The IT Technician program prepares students for entry level positions in computer retail, helpdesk, system administration, computer application installation, and technically oriented administrative roles. Many of the courses also help prepare students for industry recognized certification examinations. For the degree, students must fulfill the following major requirements with grades of "C" or better, complete a minimum of 60 degree-applicable semester units (12 of which must be completed at Sierra College) with a grade point average of at least 2.0 and complete one of the following three general education patterns:

- Sierra College Associate Degree Requirements (<http://catalog.sierracollege.edu/archive/2019-2020/student-resources/general-education/associate-degree-requirements>);
- California State University General Education Breadth (CSU GE) (<http://catalog.sierracollege.edu/archive/2019-2020/student-resources/general-education/california-state-university-general-education-breadth-requirements>) pattern;
- Intersegmental General Education Transfer Curriculum (IGETC) (<http://catalog.sierracollege.edu/archive/2019-2020/student-resources/general-education/intersegmental-general-education-transfer-curriculum-igetc>).

A certificate is designed to provide career technical skills; it is not equivalent to an associate degree.

Required Courses

Code	Title	Units
IT 0010	Applying Computer Software	3
IT 0015	Business Information Systems	3
IT 0100	Information and Communication Technology Essentials	4
IT 0105	Computer Network Fundamentals	3
IT 0110	Installing, Configuring and Administering a Client OS	3
Select 6 units from the following:		6
BUS 0085 or BUS 0102	Introduction to Oral Communication Business Communications	
BUS 0116	Customer Service Skills	
IT 0035	Microsoft Outlook - Managing Information	
IT 0095	Internship in Information Technology	
Total Units		22

Business Information Worker (Stage 1)**Skills Certificate**

The Business Information Worker (Stage 1) skills certificate prepares students for entry-level employment in an office. The emphasis is on practical, career-oriented skills for professional office environment positions using current computer application programs for processing and presenting text, numerical data and graphics; managing calendars and email; and applying basic oral and written business communication. This program of courses aligns with the California Community College's statewide BIW career preparation pathway. A skills certificate is designed to provide career technical skills; it is not equivalent to an associate degree.

Required Courses

Code	Title	Units
BUS 0085 or BUS 0102	Introduction to Oral Communication Business Communications	3
BUS 0116	Customer Service Skills	3
IT 0010	Applying Computer Software	3
IT 0015	Business Information Systems	3
IT 0035	Microsoft Outlook - Managing Information	3
Total Units		15

Business Information Worker (Stage 2)**Skills Certificate**

The Business Information Worker (BIW) (Stage 2) skills certificate further prepares students for employment in an office. The emphasis is on more advanced practical, career-oriented skills for professional office environment positions using current computer application programs for processing and presenting text, numerical data and graphics as well as using accounting software. This program of courses aligns with the California Community College's statewide BIW career preparation pathway. A skills certificate is designed to provide career technical skills; it is not equivalent to an associate degree.

Required Courses

Code	Title	Units
BUS 0008	Computerized Accounting for Windows	3
IT 0020	Word Processing - Beyond the Basics	3

IT 0025	Spreadsheets in a Business Environment	3
IT 0030	Software for Dynamic Presentations	3
IT 0055	Database Management	3
Total Units		15

Data Specialist**Skills Certificate**

This skills certificate provides students with the specific knowledge and skills needed for an entry-level data analyst position or to expand their current job skills to include basic data analytics. Today's business decisions are data driven and the skills developed in this sequence of classes will allow you to help businesses understand their data better. A skills certificate is designed to provide career technical skills; it is not equivalent to an associate degree.

Required Courses

Code	Title	Units
IT 0015	Business Information Systems	3
IT 0025	Spreadsheets in a Business Environment	3
IT 0055	Database Management	3
IT 0065	Data Analytics/Visualization Using Tableau	3
Total Units		12

Information Assurance and Cyber Defense**Skills Certificate**

This skills certificate provides students with the specific knowledge and skills of an entry level cyber security professional. This foundational level was established by the Department of Homeland Security (DHS) and the National Security Agency (NSA) through their co-sponsored National Centers of Academic Excellence in Information Assurance and Cyber Defense (CAE2Y) program. This skills certificate prepares students for a variety of information technology positions in the ICT industry sector, such as network administrator, network engineer, IT security professional, and security analyst. A skills certificate is designed to provide career technical skills; it is not equivalent to an associate degree.

Required Courses

Code	Title	Units
IT 0105	Computer Network Fundamentals	3
IT 0115	Server Systems Administration	3
IT 0120	Introduction to Information Systems Security	3
CSCI 0012	Programming Concepts and Methodology I	3
Total Units		12

IT Technician**Skills Certificate**

This skills certificate provides students with the specific knowledge and skills needed for an entry-level desktop support positions. The IT industry is a high demand area and this certificate can help you gain employment while continuing to build on your career and educational pathways. A skills certificate is designed to provide career technical skills; it is not equivalent to an associate degree.

Required Courses

Code	Title	Units
IT 0100	Information and Communication Technology Essentials	4
IT 0105	Computer Network Fundamentals	3
IT 0115	Server Systems Administration	3
Total Units		10

Computer Basics**Noncredit Certificate of Completion**

The Computer Basics Noncredit Certificate of Completion prepares students to work in an office. Students will develop keyboarding skills, and become familiar with business computer use. These skills are foundational for further studies in business computer applications and systems.

Required Courses

Code	Title	Units
IT 0820	Beginning Computer Familiarization	0
IT 0830	Beginning Computer Applications	0
IT 0835	Beginning Computer Keyboarding	0
Total Units		0

IT 0010. Applying Computer Software

Units: 3

Formerly known as CIS 50

Hours: 72 (54 lecture, 18 laboratory)

An overview of business and academic use of common office application software for word processing, spreadsheets, charting data, databases, and presentations. Using current operating system software, managing files, using online tools, transmitting files via the Internet. Common computer hardware and software system concepts; impact of computers on society, networks and security. Also includes exploration and practice of 21st century career skills: Resilience, Self-awareness, Digital Fluency. (CSU)

IT 0015. Business Information Systems

Units: 3

Formerly known as CIS 62

Advisory: Eligibility for ENGL 1A

Hours: 72 (54 lecture, 18 laboratory)

Examination of information systems and their role in business. Focus on information systems, database management systems, networking, e-commerce, ethics and security, computer systems hardware and software components. Application of these concepts and methods through hands-on projects developing computer-based solutions to business problems. Also includes exploration and practice of 21st century career skills: Digital Fluency - Professional Networking (Social Media), Collaboration – Teamwork, Social/Diversity Awareness. (C-ID ITIS 120) (CSU)

IT 0020. Word Processing - Beyond the Basics

Units: 3

Formerly known as CIS 70

Advisory: Keyboarding skill of 25 w.p.m.; completion of IT 10 and SKDV 10 with grades of "C" or better

Hours: 72 (54 lecture, 18 laboratory)

Advanced word processing techniques, including styles and outlines, generating form letters, mailing labels and envelopes using mail merge, working with master documents, indexes and tables of content, creating reports using wizards and templates, applying macros, integrating software, creating web pages and online forms. Also includes exploration and practice of 21st century career skills: Adaptability, Communication, Empathy and Digital Fluency. (CSU)

IT 0025. Spreadsheets in a Business Environment

Units: 3

Formerly known as CIS 80

Advisory: Completion of IT 10 and SKDV 10 with grades of "C" or better

Hours: 72 (54 lecture, 18 laboratory)

Design and use of "what-if" analysis, static and dynamic web pages, financial functions, data and lookup tables, amortization schedules and templates. Includes working with multiple worksheets and workbooks, analyzing worksheet results, sorting and querying a worksheet database, using macros, and integrating software. Also includes exploration and practice of 21st century career skills: Adaptability, Analysis/Solution Mindset, Entrepreneurial Mindset and Personal Finance. (CSU)

IT 0028. Independent Study

Units: 1-3

Formerly known as CIS 28

Designed for students interested in furthering their knowledge at an independent study level in an area where no specific curriculum offering is currently available. Independent study might include, but is not limited to, research papers, special subject area projects, and research projects. See Independent Study page in catalog. (CSU)

IT 0030. Software for Dynamic Presentations

Units: 3

Formerly known as CIS 100

Advisory: Completion of IT 10 with grade of "C" or better or equivalent digital fluency

Hours: 72 (54 lecture, 18 laboratory)

Amplify your message by integrating graphics, animation, music, video and use various software applications to develop unique, effective, professional quality presentations. Design and customize high quality presentations employing best practices. Also includes exploration and practice of 21st century career skills: Communication, Social/Diversity Awareness, Digital Fluency and Collaboration. (CSU)

IT 0035. Microsoft Outlook - Managing Information

Units: 3

Formerly known as CIS 105

Advisory: Completion of IT 10 with grade of "C" or better

Hours: 72 (54 lecture, 18 laboratory)

Includes managing email folders; sending, receiving, forwarding email messages; using "netiquette" and distribution lists; scheduling appointments, meetings, events; creating contacts, address books and calendars; tracking tasks; setting reminders; sharing information and publishing schedules via the web. Also includes exploration and practice of 21st century career skills: Communication. (not transferable)

IT 0040. Creating Business Graphics with Microsoft Publisher*Units: 3*

Formerly known as CIS 120

Advisory: Completion of IT 10 with grade of "C" or better

Hours: 72 (54 lecture, 18 laboratory)

Designed to assist the office professional in utilizing Microsoft Publisher to create high-quality desktop publishing documents. Learning activities include preparation of a flyer, newsletter, logo, CD liner, business card, tri-fold brochure, calendar, catalog, event program, coupon, and certificate.

Also includes exploration and practice of 21st century career skills: Social/Diversity Awareness. (CSU)

IT 0045. Foundations for Creating Web Pages*Units: 3*

Formerly known as CIS 67

Advisory: Completion of IT 10 with grade of "C" or better

Hours: 72 (54 lecture, 18 laboratory)

Introduction to building Web pages using HTML and basic Web-authoring software; technical and design concepts behind Web pages: how the Internet works, connection technologies, Web search techniques, evaluating Web pages, file transfer and management, file compression, browser tips and tricks, mailing lists, Internet security. Also includes exploration and practice of 21st century career skills: Social/Diversity Awareness and Entrepreneurial Mindset. (CSU)

IT 0055. Database Management*Units: 3*

Formerly known as CIS 90

Advisory: Completion of IT 25 with grade of "C" or better

Hours: 72 (54 lecture, 18 laboratory)

Discover the intricacies of relational databases using the current version of Microsoft Access. Includes designing database structures: tables, queries, forms, reports, and macros. Also includes integrating with the Web, Excel and other programs. Emphasis on hands-on learning. Also includes exploration and practice of 21st century career skills: Analysis/Solution Mindset, Critical Thinking, Problem Solving and Digital Fluency. (CSU)

IT 0060. Project Management Concepts and Software*Units: 3*

Formerly known as CIS 136

Advisory: Completion of IT 55 with grade of "C" or better

Hours: 72 (54 lecture, 18 laboratory)

Explores Project Management concepts and terminologies along with the use of Microsoft Office Project and other project management tools through discussions, hands-on exercises and classroom learning experiences. Includes WBS, budgeting, and resource allocation and other important PM topics such as Scope and Project Team Development. Helps prepare students to use the software package in their daily duties as a project manager or project assistant. Also includes exploration and practice of 21st century career skills: Adaptability, Collaboration and Social/Diversity Awareness. (not transferable)

IT 0065. Data Analytics/Visualization Using Tableau*Units: 3*

Formerly known as CIS 91

Advisory: Completion of IT 25 and IT 55 with grades of "C" or better

Hours: 72 (54 lecture, 18 laboratory)

Learn how to use Tableau, a leading data analysis and visualization tool, to bring the world's data into views that everyone can use and understand. Go beyond basic charts by building powerful dashboards and drill down reports to support business decision makers or help explain visually the global impact of a single voice. (not transferable)

IT 0070. Systems Analysis and Design*Units: 3*

Advisory: Completion of IT 10 and IT 15 with grades of "C" or better

Hours: 72 (54 lecture, 18 laboratory)

This course is a detailed study of business systems analysis and design theory and application techniques. Issues in systems analysis and design, from project identification, requirements, specification and analysis, design to implementation and maintenance, will be presented. Focus will be on tools and principles related to object oriented systems analysis and design. Attention is given to the role of the systems analyst within the business environment. Also includes exploration and practice of 21st century career skills: Adaptability, Analysis/Solution Mindset, and Communication. (CSU)

IT 0075. Python for Many Uses*Units: 3*

Advisory: Completion of IT 105 with grade of "C" or better

Hours: 72 (54 lecture, 18 laboratory)

Learn to use Python to manipulate data for analytics, to manage IoT devices and/or for creating scripts to improve network security. This course will start at a very basic level and work up to applied solutions for real world work environments. (CSU)

IT 0080. IoT - Internet of Things*Units: 3*

Prerequisite: Completion of IT 105 with grade of "C" or better

Advisory: Eligibility for ENGL 1A; Completion with grades of "C" or better or concurrent enrollment in IT 75 and IT 125 recommended

Hours: 72 (54 lecture, 18 laboratory)

Introduction to the Internet of Things (IoT), where people, processes, things, and data are connected via emerging Internet technologies. A variety of networking and computer hardware devices will be integrated into end-to-end systems to solve practical problems. (CSU)

IT 0090. IT Fundamentals*Unit: 1.5*

Hours: 36 (27 lecture, 9 laboratory)

Designed to prepare students to identify and explain basic computer components, set up a basic workstation, conduct basic software installation, establish basic network connectivity, identify compatibility issues, and identify/prevent basic security risks. Further, this course will prepare students in the areas of safety and preventative maintenance of computers. This course is intended for students who are considering a career in IT and later considering the pursuit of completing IT 100 and the CompTIA A+ certification exam. (not transferable)

IT 0095. Internship in Information Technology*Units: 0.5-4*

Formerly known as CIS 95

Designed for advanced students to work in an area related to their educational or occupational goal. Provides new on-the-job technical training under the direction of a worksite supervisor, allowing students to expand knowledge and skills in the chosen field. Mandatory orientation session and faculty approval to determine eligibility. One unit of credit is equal to each 60 hours of non-paid work, or each 75 hours of paid work. Students may earn up to a total of 16 units in internship courses (any course numbered 95 and PDEV 94). (CSU-with unit limitation)

IT 0100. Information and Communication Technology Essentials*Units: 4*

Formerly known as CIS 26

Hours: 72 lecture

Provides an introduction to the computer hardware and software skills needed to help meet the growing demand for entry-level ICT professionals. Focuses on the fundamentals of computer hardware and software as well as advanced concepts such as security, networking, and the responsibilities of an ICT professional. Preparation for CompTIA's A+ certification exam. Also includes exploration and practice of 21st century career skills: Self Awareness, Communication, Social/Diversity Awareness. (C-ID ITIS 110) (CSU)

IT 0105. Computer Network Fundamentals*Units: 3*

Formerly known as CIS 65

Advisory: Completion of IT 100 with grade of "C" or better

Hours: 72 (54 lecture, 18 laboratory)

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. Uses 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. Preparation for the CompTIA Network+ certification exam. Also includes exploration and practice of 21st century career skills: Digital Fluency and Resilience. (C-ID ITIS 150) (CSU)

IT 0110. Installing, Configuring and Administering a Client OS*Units: 3*

Formerly known as CIS 141

Advisory: Completion of IT 105 with grade of "C" or better

Hours: 72 (54 lecture, 18 laboratory)

Setup and support for a desktop operating system using a current desktop operating system in a networked environment. Creation of local and domain-level accounts, creation of shared resources, use of network services, remote access, resource management and monitoring, and security considerations. Also includes exploration and practice of 21st century career skills: Analysis/Solution Mindset, Digital Fluency and Adaptability. (CSU)

IT 0115. Server Systems Administration*Units: 3*

Formerly known as CIS 142

Prerequisite: Completion of IT 105 with grade of "C" or better

Advisory: Completion of IT 15 with grade of "C" or better

Hours: 72 (54 lecture, 18 laboratory)

Provides knowledge and skills required to build, maintain, troubleshoot and support Microsoft server OS technologies. Covers environmental issues, disaster recovery, physical/software security procedures, industry terminology and concepts, server roles, specializations, and interaction within the overall computing environment. Also includes exploration and practice of 21st century career skills: Analysis/Solution Mindset, Communication, Collaboration. (C-ID ITIS 155) (CSU)

IT 0120. Introduction to Information Systems Security*Units: 3*

Formerly known as CIS 147

Prerequisite: Completion of IT 105 with grade of "C" or better

Advisory: Completion of IT 115 with grade of "C" or better

Hours: 72 (54 lecture, 18 laboratory)

Introduction to the fundamental principles and topics of Information Technology Security and Risk Management at the organizational level. Addresses hardware, software, processes, communications, applications, and policies and procedures with respect to organizational Cybersecurity and Risk Management. Preparation for the CompTIA Security+ certification exams. (C-ID ITIS 160) (CSU)

IT 0125. Routing and Switching Essentials*Units: 3*

Formerly known as CIS 66

Prerequisite: Completion of IT 105 with grade of "C" or better

Hours: 72 (54 lecture, 18 laboratory)

Architecture, components, and operations of routers and switches in a small network. Configuring a router and a switch for basic functionality. 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. Along with IT 105, prepares students for the current version of the Cisco Certified Entry-level Network Technician (CCENT) certification examination. Also includes exploration and practice of 21st century career skills: Analysis/Solution Mindset, Collaboration, and Adaptability. (CSU)

IT 0130. Cisco CCNA 3 Scaling Networks*Units: 3*

Prerequisite: Completion of IT 125 with grade of "C" or better

Hours: 72 (54 lecture, 18 laboratory)

Scaling Networks covers the architecture, components, and operations of routers and switches in larger and more complex networks. Students learn how to configure routers and switches for advanced functionality. This is the 3rd of four classes leading to the Cisco CCNA certification. Also includes exploration and practice of 21st Century Skills: adaptability, digital fluency, analysis/solution mindset. (CSU)

IT 0135. Cisco 4 - Connecting Networks*Units: 3*

Prerequisite: Completion of IT 130 with grade of "C" or better

Hours: 72 (54 lecture, 18 laboratory)

Connecting Networks discusses the WAN technologies and network services required by converged applications in a complex network. The course enables students to understand the selection criteria of network devices and WAN technologies to meet network requirements. This is the last of four classes needed for the Cisco CCNA certification. Also includes exploration and practice of 21st Century Skills: resilience, digital fluency, analysis/solution mindset. (CSU)

IT 0140. Implementing Network Security and Firewalls*Units: 3*

Prerequisite: Completion of IT 120 with grade of "C" or better

Hours: 72 (54 lecture, 18 laboratory)

Firewalls are one of the primary tools used to prevent unauthorized access to corporate networks. Students will learn how to design and configure firewalls to allow access to key services while maintaining an organization's security, as well as how to implement firewall-to-firewall Virtual Private Networks (VPNs). Also includes exploration and practice of 21st century career skills: Analysis/Solution Mindset, Collaboration, and Adaptability. (CSU)

IT 0145. Introduction to Cybersecurity: Ethical Hacking*Units: 3*

Formerly known as CIS 152

Prerequisite: Completion of IT 120 with grade of "C" or better

Advisory: Completion of CSCI 50 with grade of "C" or better

Hours: 72 (54 lecture, 18 laboratory)

Immerses IT Professionals in hands-on intensive environment providing in-depth knowledge and experience with current essential security systems. Provides understanding of perimeter defenses and leads to scanning and attacking networks; no real networks are harmed. Students learn how intruders escalate privileges and the steps to be taken to secure a system. Also covers Intrusion Detection, Policy Creation, Social Engineering, DDoS Attacks, Buffer Overflows, and Virtual Creation. Focus includes legal and regulatory requirements, ethical issues, basic methodology and technical tools used for ethical hacking and penetration tests. Students establish a pre-test agreement with the enterprise, discover and exploit vulnerabilities, participate as a member of a pen test team and prepare a penetration test report. Also includes exploration and practice of 21st century career skills: Self-Awareness and Empathy. (CSU)

IT 0150. Principles of Cybersecurity Analysis*Units: 3*

Formerly known as CIS 153

Prerequisite: Completion of IT 120 with grade of "C" or better or CompTIA Security+ certification as determined by the Information Technology Department Chair

Hours: 72 (54 lecture, 18 laboratory)

Focuses on the critical knowledge and skills required to prevent, detect and combat cybersecurity threats; includes the application of behavioral analytics to improve the overall state of IT security. Covers exam objectives relating to the CompTIA Cybersecurity Analyst (CSA+) industry certification. (CSU)

IT 0155. Virtualization Concepts and Technologies*Units: 3*

Formerly known as CIS 148

Advisory: Completion of IT 105 with grade of "C" or better

Hours: 72 (54 lecture, 18 laboratory)

Knowledge and skills necessary to understand and implement Virtualization Concepts. The core concepts of creating and managing virtual machines, network servers, and network design presented. Labs demonstrate benefits associated with virtualization such as fault tolerance and high availability. Successful completion of this course meets the educational requirement for VMware certification. Also includes exploration and practice of 21st century career skills: Adaptability and Analysis/Solution Mindset. (CSU)

IT 0165. Computer Forensics Fundamentals*Units: 3*

Formerly known as CIS 88

Advisory: Completion of ADMJ 54 and IT 120 with grades of "C" or better

Hours: 72 (54 lecture, 18 laboratory)

Introduction to the methods used to properly conduct a computer forensics investigation, beginning with a discussion of ethics, while mapping the objectives of the International Association of Computer Investigative Specialists (IACIS) certification. Topics covered include an overview of computer forensics as a profession; the computer investigation process; understanding operating systems boot processes and disk structures; data acquisition and analysis; technical writing; and a review of familiar computer forensics tools. Also includes exploration and practice of 21st century career skills: Analysis/Solution Mindset. (CSU)

IT 0820. Beginning Computer Familiarization*Units: 0*

Formerly known as CIS 820

Advisory: Completion of IT 835 with grade of "Pass"

Hours: 36 (27 lecture, 9 laboratory)

This introductory course develops basic computer skills needed for college-level courses, workplace productivity, and personal enrichment. It provides the individuals who are new to computing or who have very little computing experiences with slower paced, general, non-technical information as well as in-class hands-on instruction reinforcement. This course introduces use of common computer terminology and concepts, file management, electronic mail, online course management system, and internet. (pass/no pass grading) (noncredit)

IT 0830. Beginning Computer Applications*Units: 0*

Formerly known as CIS 830

Advisory: Completion of IT 820 and IT 835 with grades of "Pass"

Hours: 36 (27 lecture, 9 laboratory)

Designed to introduce students to the use of word processing, spreadsheet, presentations, and database programs. It provides the individuals who are new to computing or who have very little computing experiences with slower paced, general, non-technical information as well as in-class hands-on instruction reinforcement. The course includes basic operations of creating, editing, formatting, saving, retrieving, and printing documents. (pass/no pass grading) (noncredit)

IT 0835. Beginning Computer Keyboarding*Units: 0*

Formerly known as CIS 835

Hours: 36 (27 lecture, 18 laboratory)

Introduces touch typing of alphabetic, numeric, and symbol keys. It covers keyboarding techniques, speed-and-accuracy development, and essential computer-keyboarding information. This course is specifically designed for the beginning typist as well as those who have been typing for a long time using improper technique. Not recommended for students with one year of high school keyboarding. (pass/no pass grading) (noncredit)

IT 0865. CompTIA Network+ Exam Prep*Units: 0*

Formerly known as CIS 865

Advisory: Completion of IT 105 with grade of "C" or better or equivalent

Hours: 12 lecture

Intended to prepare students to take and pass the CompTIA Network + Certification Exam. Students taking this class should have taken IT 105 class or equivalent, and have a thorough understanding of the key concepts covered in exam. The course will discuss the layout and content areas of the exam, example test questions, and high-level review of key concepts when needed. (pass/no pass grading) (noncredit)

IT 0890. IT Fundamentals*Units: 0*

Hours: 36 (27 lecture, 9 laboratory)

Designed to prepare students to identify and explain basic computer components, set up a basic workstation, conduct basic software installation, establish basic network connectivity, identify compatibility issues, and identify/prevent basic security risks. Further, this course will prepare students in the areas of safety and preventative maintenance of computers. This course is intended for students who are considering a career in IT and later considering the pursuit of completing IT 100 and the CompTIA A+ certification exam. (pass/no pass grading) (noncredit)

Program Student Learning Outcomes (PSLOs)

- Design LAN and WAN logical topologies that support various sized organizations.
- Assess security risks and identify ways to minimize their threat and/or impact.
- Analyze various operating system options and make recommendations based on organization needs.
- Demonstrate digital literacy and work habits required for a successful virtual business.
- Evaluate effectiveness of web-based business tools for successful operation of a virtual business.
- Develop and implement common deliverables for virtual office entrepreneur.
- Diagnose common software and hardware problems.
- Analyze and integrate software solutions for the business environment.
- Demonstrate professional communication and customer services skills.
- Demonstrate computer literacy.
- Analyze scenarios, investigate options, and appropriately apply workplace computer programs.
- Demonstrate file management proficiency.