COMPUTER TECHNOLOGY

This program prepares students for careers in a variety of computer technology related fields and enhances skills for those who are currently employed in that area.

Associate in Science Degrees

- Computer Technology - Associate in Science (https://lbcc-public.courseleaf.com/degrees-certificates/computer-technology/computer-technology-as/)

Certificates of Achievement

- Computer Technology - Certificate of Achievement (https://lbcc-public.courseleaf.com/degrees-certificates/computer-technology/computer-technology-certificate-achievement/)

Certificates of Accomplishment

- Cryptocurrency Fundamentals - Certificate of Accomplishment (https://lbcc-public.courseleaf.com/degrees-certificates/computer-technology/cryptocurrency-fundamentals-certificate-accomplishment/)

Certificates of Completion

- Computer Information Competency - Certificate of Completion (https://lbcc-public.courseleaf.com/degrees-certificates/computer-technology/computer-information-competency-certificate-completion/)
- Cryptocurrency Fundamentals - Certificate of Completion (https://lbcc-public.courseleaf.com/degrees-certificates/computer-technology/cryptocurrency-fundamentals-certificate-completion/)

Computer & Office Studies, Application Software

COSA 1   1 units
Computer Information Competency
18 hours lecture, 18 hours laboratory
Grading: letter grade or pass/no pass.
Formerly COMIS 1 and CAOTC 211. The course is designed for students to develop current computer information competency. It covers basic use of hardware, Internet knowledge and skills, word processing, spreadsheet, digital data presentations, and communications applications. This course satisfies the technology component of the Information Competency graduation requirement for Plan A.
Transferable to CSU Only

COSA 2   3 units
Critical Thinking Using Computers
54 hours lecture
Grading: letter grade or pass/no pass.
Formerly CPAS 2. This course will explore the various ways computer technology can be used to enhance critical thinking and information literacy skills. The student will learn to utilize multiple software programs critically to gather, diagnose, synthesize, and present information. Students will develop a fundamental understanding of critical thinking skills such as deductive and inductive reasoning, scientific reasoning, argument analysis and development in the context of computer technology.
Transferable to both UC and CSU; see counselor for limitations

COSA 3   3 units
Technology and Society
54 hours lecture
Grading: letter grade or pass/no pass.
This course critically examines the interrelationships among technology, the individual, and society. Students investigate the factors that influence the growth and development of technology and assess how individuals and society respond to the challenges and consequences of the technology revolution. Appropriate for both technical and non-technical majors, students explore principles, methodologies, and value systems from a technology perspective. Students will use case studies to illustrate how technology has affected specific industries.
Transferable to both UC and CSU; see counselor for limitations

COSA 5   3 units
Microsoft Windows Operating System
54 hours lecture
Grading: letter grade or pass/no pass.
Formerly CAOTC 31A and COSA 5AD. Students will learn basic to advanced features and concepts of the Microsoft Windows operating system. Topics will include the use of Microsoft applications, Internet technologies, email, maintenance and security. Conceptual materials covered in this course will be balanced with hands-on experience. This course satisfies the technology portion of the information competency requirement.
Transferable to CSU Only

COSA 10   3 units
Microsoft Word for Windows
54 hours lecture
Recommended Preparation: COSA 1.
Grading: letter grade or pass/no pass.
Materials Fee: $10.
Word processing using Microsoft Word. Students will learn how to edit, format, design, and use layout and customization tools to create documents such as letters, flyers, newsletters, and publications. Upon successful completion of this course, students will be provided with a voucher to take the Microsoft Office Specialist (MOS) industry certification exam. Formerly CAOTC 39A and COSA 10AD.
Transferable to CSU Only

COSA 15   3 units
Microsoft Excel for Windows
54 hours lecture
Recommended Preparation: COSA 1.
Grading: letter grade or pass/no pass.
Materials Fee: $10.
Formerly CAOTC 41E and COSA 15AD. Students will learn spreadsheet concepts using Microsoft Excel including formatting, formulas and functions, charts, linked worksheets, and pivot tables. Upon successful completion of this course, students will be provided with a voucher to take the Microsoft Office Specialist (MOS) industry certification exam.
Transferable to CSU Only

COSA 20   3 units
Microsoft PowerPoint for Windows
54 hours lecture
Recommended Preparation: COSA 1.
Grading: letter grade or pass/no pass.
Materials Fee: $10.
Formerly CAOTC 44D and COSA 20AD. This class provides a thorough exploration of presentation graphics software. Skills are developed in planning, creating, formatting, enhancing, and delivering presentations. Through hands-on practice, students learn to combine text and graphic images, animation, sound, and other special effects to develop computerized slide shows. This course satisfies the technology component of the Information Competency graduation requirement. Upon successful completion of this course, students will receive a voucher to sit for the Microsoft Office Specialist (MOS) industry certification exam.
Transferable to CSU Only

COSA 25   3 units
Microsoft Access for Windows
54 hours lecture
Recommended Preparation: COSA 1.
Grading: letter grade or pass/no pass.
Materials Fee: $10.
Formerly CAOTC 47A and COSA 25AD. Relational databases concepts using Microsoft Access including design fundamentals, creation of tables, queries, forms, and reports are covered. This course satisfies the technology component of the Information Competency graduation requirement. Upon successful completion of this course, students will be provided with a voucher to take the Microsoft Office Specialist (MOS) industry certification exam.
Transferable to CSU Only

COSA 30 (C-ID ITIS 120)   3 units
Introduction to Computers
54 hours lecture
Recommended Preparation: COSA 1.
Grading: letter grade or pass/no pass.
Materials Fee: $10.
Formerly CAOTC 34. This course is a computer and information literacy course. This course will focus on: the relationship between technology, individuals, and society; the long-term physiological consequences of incorrect ergonomic design; and the use of critical thinking and logic to critically gather, diagnose, synthesize, and present information. Instruction also includes the use of computers, common software programs, peripherals, and social media. Students are instructed in the use of word processing, spreadsheet, presentation, and Internet applications. Upon successful completion of this course, students will be given a voucher to sit for the Internet and Computing Core (IC3) industry certification exam.
Transferable to CSU Only

COSA 35   3 units
Microsoft Office
54 hours lecture
Recommended Preparation: COSA 1.
Grading: letter grade or pass/no pass.
Formerly CAOTC 35. This course studies the concepts and features of Microsoft Office software in today's business office with hands-on application projects. Topics covered include computer concepts, operating system, file management browser fundamentals, MS Word, MS Excel, MS Access and MS PowerPoint. This course satisfies the technology component of the Information Competency requirement for Plan A.
Transferable to CSU Only

COSA 50 (C-ID ITIS 120)   4 units
Intro to IT Concepts and Applications
72 hours lecture
Recommended Preparation: COSA 1.
Grading: letter grade or pass/no pass.
Materials Fee: $10.
Formerly CBIS 6A. This course focuses on information systems, information literacy, and computer literacy. This course emphasizes: the relationship between technology, individuals, and society; the long-term physiological consequences of incorrect ergonomic design; and the use of critical thinking and logic to critically gather, diagnose, synthesize, and present information. Word processing, spreadsheets, databases, presentation software, and basic Internet use will be covered. Spreadsheet use for business will be emphasized. Upon successful completion of this course, students will be given a voucher to sit for the Microsoft Office Specialist (MOS) industry certification exam.
Transferable to both UC and CSU; see counselor for limitations

COSA 55   3 units
AI and Machine Learning Foundations
54 hours lecture
Grading: letter grade.
This course introduces students to foundational Artificial Intelligence (AI) and Machine Learning (ML) principles, preparing them for workplace applications in business, marketing, education, and healthcare. Topics include AI history, types of AI, machine learning basics, real-world applications, and ethical considerations. Students will analyze AI-powered tools and develop skills in evaluating AI technologies for responsible and effective use in professional environments.
Transferable to CSU Only

COSA 60   3 units
Fundamentals of Generative AI
54 hours lecture
Grading: letter grade or pass/no pass.
This course provides students with theoretical knowledge and practical artificial intelligence (AI) skills tailored to meet industry demands. The curriculum encompasses a broad spectrum of AI, from foundational concepts to practical applications, including advanced prompt engineering techniques. It addresses ethical considerations and the broader societal impacts of AI. The pedagogical approach integrates weekly lectures with hands-on activities and projects, fostering an interactive learning environment emphasizing real-world applicability.
Transferable to CSU Only

COSA 210   3 units
Project Management Tools and Techniques
54 hours lecture
Recommended Preparation: COSA 50.
Grading: letter grade or pass/no pass.
Formerly CBIS 436A. This course focuses on equipping administrative professionals with essential project management skills. The course covers organization, time management, and communication strategies, emphasizing practical application in administrative settings. It includes hands-on training in software tools for efficient project planning, execution, and tracking. This course is integral for those seeking to enhance their administrative project management capabilities.

COSA 215   3 units
Microsoft Outlook for Windows
54 hours lecture
Recommended Preparation: COSA 1.
Grading: letter grade or pass/no pass.
Materials Fee: $10.
Formerly CAOTC 215A and COSA 215AD. This course provides comprehensive instruction in desktop management software using Microsoft Outlook. Topics include how to compose, format, and send e-mail, manage contacts, plan and track tasks, schedule calendar items, and integrate Outlook with other applications. Upon successful completion of this course, students will be given a voucher to sit for the Microsoft Office Specialist (MOS) industry certification exam.

COSA 240   1 units
Introduction to Cryptocurrency
18 hours lecture
Grading: letter grade or pass/no pass.
This course introduces the concepts and technologies behind cryptocurrency and blockchain. Topics include the basis of cryptocurrency, the relation to blockchain technology, the acquisition, management, and technology used in securing cryptocurrency in open and distributed financial systems. This course is for students who want to understand the role cryptocurrency plays in society.

COSA 241   1 units
Cryptocurrency Financial Software
18 hours lecture
Grading: letter grade or pass/no pass.
This course covers the software applications and platforms currently used in the field of Cryptocurrency. Topics will include the types of software commonly used to research, analyze, invest, and manage Cryptocurrency assets. This course is designed for anyone considering entering into Cryptocurrency financial services and investing.

COSA 251   3 units
Data Analytics with Power BI
54 hours lecture
Grading: letter grade or pass/no pass.
This course is designed to provide a comprehensive understanding of Power BI, a powerful data visualization and business analytics tool developed by Microsoft. This course equips students with the skills to transform raw data into meaningful insights, create interactive visualizations, and effectively communicate findings to stakeholders. Through hands-on exercises, real-world examples, and engaging discussions, students will learn how to leverage Power BI's capabilities to make data-driven decisions and enhance overall business performance.

COSA 252   3 units
Data Analytics with Tableau
54 hours lecture
Grading: letter grade or pass/no pass.
This course provides a comprehensive understanding of Tableau, a leading data visualization tool. This course is suitable for beginners with little to no experience in data visualization or Tableau, as well as intermediate users looking to deepen their knowledge. Students will master the art of creating captivating visualizations, interactive dashboards, and informative reports, all while uncovering valuable insights from data.

COSA 253   3 units
Introduction to Google Analytics
54 hours lecture
Grading: letter grade or pass/no pass.
This course provides an introduction to the field of data analytics using Google Analytics as a primary tool for data collection and analysis. It covers fundamental concepts and techniques of data analytics, data visualization, and data-driven decision-making. Students will gain hands-on experience in data collection, data cleaning, data analysis, and data visualization using Google Analytics and other relevant tools. The course also explores real-world applications of data analytics in various fields.

COSA 601   0 units
Computer Information Competency
18 hours lecture, 18 hours laboratory
Grading: non graded.
The course is designed for students to develop current computer information competency. It covers basic use of hardware, Internet knowledge and skills, word processing, spreadsheet, digital data presentations, and communications applications.

COSA 602   0 units
Critical Thinking Using Computers
54 hours lecture
Grading: non graded.
This course will explore the various ways computer technology can be used to enhance critical thinking and information literacy skills. The student will learn to utilize multiple software programs critically to gather, diagnose, synthesize, and present information. Students will develop a fundamental understanding of critical thinking skills such as deductive and inductive reasoning, scientific reasoning, argument analysis, and development in the context of computer technology.

COSA 603   0 units
Technology and Society
54 hours lecture
Grading: non graded.
This course critically examines the interrelationships among technology, the individual, and society. Students investigate the factors that influence the growth and development of technology and assess how individuals and society respond to the challenges and consequences of the technology revolution. Appropriate for both technical and non-technical majors, students explore principles, methodologies, and value systems from a technology perspective. Students will use case studies to illustrate how technology has affected specific industries.

COSA 605   0 units
Microsoft Windows Operating System
54 hours lecture
Grading: non graded.
Students will learn basic to advanced features and concepts of the Microsoft Windows operating system. Topics will include the use of Microsoft applications, Internet technologies, email, maintenance and security. Conceptual materials covered in this course will be balanced with hands-on experience.

COSA 610   0 units
Microsoft Word, Introductory
18 hours lecture
Grading: non graded.
This course provides hands-on instruction using basic features of Microsoft Word for the PC and its editing, formatting, and language tools to create, format, save, revise, and print various business and report documents.

COSA 611   0 units
Microsoft Word, Intermediate
18 hours lecture
Grading: non graded.
This course provides hands-on instruction using intermediate features of Microsoft Word for the PC and its editing, formatting, and language tools to create, format, save, revise, and print various business and report documents.

COSA 612   0 units
Microsoft Word, Advanced
18 hours lecture
Grading: non graded.
This course provides hands-on instruction using advanced features of Microsoft Word for the PC and its editing, formatting, and language tools to create, format, save, revise, and print various business and report documents.

COSA 613   0 units
Microsoft Word for Windows
54 hours lecture
Recommended Preparation: COSA 601.
Grading: non graded.
Materials Fee: $10.
Word processing using Microsoft Word. Students will learn how to edit, format, design, and use layout and customization tools to create documents such as letters, flyers, newsletters, and publications. Upon successful completion of this course, students will be provided with a voucher to take the Microsoft Office Specialist (MOS) industry certification exam.

COSA 615   0 units
Microsoft Excel, Introductory
18 hours lecture
Grading: non graded.
This course covers beginning spreadsheet concepts using Microsoft Excel including formatting, formulas and functions, charts, linked worksheets, and pivot tables.

COSA 616   0 units
Microsoft Excel, Intermediate
18 hours lecture
Grading: non graded.
This course covers intermediate spreadsheet concepts using Microsoft Excel including formatting, formulas and functions, charts, linked worksheets, and pivot tables.

COSA 617   0 units
Microsoft Excel, Advanced
18 hours lecture
Grading: non graded.
This course covers advanced spreadsheet concepts using Microsoft Excel including formatting, formulas and functions, charts, linked worksheets, and pivot tables.

COSA 618   0 units
Microsoft Excel for Windows
54 hours lecture
Recommended Preparation: COSA 601.
Grading: non graded.
Materials Fee: $10.
Students will learn spreadsheet concepts using Microsoft Excel including formatting, formulas and functions, charts, linked worksheets, and pivot tables. Upon successful completion of this course, students will be provided with a voucher to take the Microsoft Office Specialist (MOS) industry certification exam.

COSA 620   0 units
Microsoft PowerPoint, Introductory
18 hours lecture
Grading: non graded.
This course covers basic presentation concepts using Microsoft PowerPoint including combining text and graphic images to develop computerized slide shows, charts, and printed materials for presentations.

COSA 621   0 units
Microsoft PowerPoint, Intermediate
18 hours lecture
Grading: non graded.
This course covers intermediate presentation concepts using Microsoft PowerPoint including combining text and graphic images to develop computerized slide shows, charts, and printed materials for presentations.

COSA 622   0 units
Microsoft PowerPoint, Advanced
18 hours lecture
Grading: non graded.
This course covers advanced presentation concepts using Microsoft PowerPoint including combining text and graphic images to develop computerized slide shows, charts, and printed materials for presentations.

COSA 623   0 units
Microsoft PowerPoint for Windows
54 hours lecture
Recommended Preparation: COSA 601.
Grading: non graded.
Materials Fee: $10.
This class provides a thorough exploration of presentation graphics software. Skills are developed in planning, creating, formatting, enhancing, and delivering presentations. Through hands-on practice, students learn to combine text and graphic images, animation, sound, and other special effects to develop computerized slide shows. Upon successful completion of this course, students will receive a voucher to sit for the Microsoft Office Specialist (MOS) industry certification exam.

COSA 624   0 units
Microsoft Access for Windows
54 hours lecture
Recommended Preparation: COSA 601.
Grading: non graded.
Materials Fee: $10.
Relational database concepts using Microsoft Access including design fundamentals, and the creation of tables, queries, forms, and reports are covered. Upon successful completion of this course, students will be provided with a voucher to take the Microsoft Office Specialist (MOS) industry certification exam.

COSA 625   0 units
Microsoft Access, Introductory
18 hours lecture
Grading: non graded.
This course covers basic database concepts using Microsoft Access including creating and modifying tables, running queries, generating reports, and creating forms.

COSA 626   0 units
Microsoft Access, Intermediate
18 hours lecture
Grading: non graded.
This course covers intermediate database concepts using Microsoft Access including creating and modifying tables, running queries, generating reports, and creating forms.

COSA 627   0 units
Microsoft Access, Advanced
18 hours lecture
Grading: non graded.
This course covers advanced database concepts using Microsoft Access including creating and modifying tables, running queries, generating reports, and creating forms.

COSA 628   0 units
Microsoft Outlook, Introductory
18 hours lecture
Grading: non graded.
This course provides instruction in desktop management using Microsoft Outlook. Topics include how to send and receive e-mail, use email special features, and create contacts.

COSA 629   0 units
Microsoft Outlook, Intermediate
18 hours lecture
Grading: non graded.
This course provides instruction in intermediate Outlook tasks. Students will learn how to plan and track tasks, schedule calendar items, and create rules to manage their Inbox.

COSA 630   0 units
Microsoft Outlook, Advanced
18 hours lecture
Grading: non graded.
This class provides instruction in advanced functions of Microsoft Outlook. Through hands-on practice, student learn to share and manage multiple calendars, import and export contacts, archive and adjust security options, and customize Outlook components.

COSA 631   0 units
Microsoft Outlook for Windows
54 hours lecture
Recommended Preparation: COSA 601.
Grading: non graded.
Materials Fee: $10.
This course provides comprehensive instruction in desktop management software using Microsoft Outlook. Topics include how to compose, format, and send e-mail, manage contacts, plan and track tasks, schedule calendar items, and integrate Outlook with other applications. Upon successful completion of this course, students will be given a voucher to sit for the Microsoft Office Specialist (MOS) industry certification exam.

COSA 632   0 units
Introduction to Computers
54 hours lecture
Recommended Preparation: COSA 601.
Grading: non graded.
Materials Fee: $10.
This course is a computer and information literacy course. This course will focus on: the relationship between technology, individuals, and society; the long-term physiological consequences of incorrect ergonomic design; and the use of critical thinking and logic to critically gather, diagnose, synthesize, and present information. Instruction also includes the use of computers, common software programs, peripherals, and social media. Students are instructed in the use of word processing, spreadsheet, presentation, and Internet applications. Upon successful completion of this course, students will be given a voucher to sit for the Internet and Computing Core (IC3) industry certification exam.

COSA 635   0 units
Microsoft Office
54 hours lecture
Recommended Preparation: COSA 601.
Grading: non graded.
This course studies the concepts and features of Microsoft Office software in today's business office with hands-on application projects. Topics covered include computer concepts, operating systems, file management browser fundamentals, MS Word, MS Excel, MS Access and MS PowerPoint.

COSA 640   0 units
Introduction to Cryptocurrency
18 hours lecture
Grading: non graded.
This course introduces the concepts and technologies behind cryptocurrency and blockchain. Topics include the basis of cryptocurrency, the relation to blockchain technology, the acquisition, management, and technology used in securing cryptocurrency in open and distributed financial systems. This course is for students who want to understand the role cryptocurrency plays in society.

COSA 641   0 units
Cryptocurrency Financial Software
18 hours lecture
Grading: non graded.
This course covers the software applications and platforms currently used in the field of Cryptocurrency. Topics will include the types of software commonly used to research, analyze, invest, and manage Cryptocurrency assets. This course is designed for anyone considering entering into Cryptocurrency financial services and investing.

COSA 650   0 units
Intro to IT Concepts & Applications
72 hours lecture
Recommended Preparation: COSA 601.
Grading: non graded.
This course is an introduction to information systems and the common use of office applications. Internet, Word processing, spreadsheets, databases, presentation software, and basic internet use will be covered. Spreadsheet use for business will be emphasized. Upon successful completion of this course, students will be given a voucher to sit for the Microsoft Office Specialist (MOS) industry certification exam. This course satisfies the technology portion of the Information Competency graduation requirement.

COSA 651   0 units
Data Analytics with Power BI
54 hours lecture
Grading: non graded.
This course is designed to provide a comprehensive understanding of Power BI, a powerful data visualization and business analytics tool developed by Microsoft. This course equips students with the skills to transform raw data into meaningful insights, create interactive visualizations, and effectively communicate findings to stakeholders. Through hands-on exercises, real-world examples, and engaging discussions, students will learn how to leverage Power BI's capabilities to make data-driven decisions and enhance overall business performance.

COSA 652   0 units
Data Analytics with Tableau
54 hours lecture
Grading: non graded.
This course provides a comprehensive understanding of Tableau, a leading data visualization tool. This course is suitable for beginners with little to no experience in data visualization or Tableau, as well as intermediate users looking to deepen their knowledge. Students will master the art of creating captivating visualizations, interactive dashboards, and informative reports, all while uncovering valuable insights from data.

COSA 653   0 units
Introduction to Google Analytics
54 hours lecture
Grading: non graded.
This course provides an introduction to the field of data analytics using Google Analytics as a primary tool for data collection and analysis. It covers fundamental concepts and techniques of data analytics, data visualization, and data-driven decision-making. Students will gain hands-on experience in data collection, data cleaning, data analysis, and data visualization using Google Analytics and other relevant tools. The course also explores real-world applications of data analytics in various fields.

COSA 660   0 units
Fundamentals of Generative AI
54 hours lecture
Grading: non graded.
This course provides students with theoretical knowledge and practical artificial intelligence (AI) skills tailored to meet industry demands. The curriculum encompasses a broad spectrum of AI, from foundational concepts to practical applications, including advanced prompt engineering techniques. It addresses ethical considerations and the broader societal impacts of AI. The pedagogical approach integrates weekly lectures with hands-on activities and projects, fostering an interactive learning environment emphasizing real-world applicability.

Computer & Office Studies, Networking

COSN 5 (C-ID ITIS 110)   4 units
Computer Hardware Fundamentals
72 hours lecture
Recommended Preparation: COSA 50.
Grading: letter grade or pass/no pass.
Formerly CBIS 200. This course provides an introduction to the computer hardware and software skills needed to help meet the growing demand for entry-level ICT professionals. The fundamentals of computer hardware and software as well as advanced concepts such as security, networking, and the responsibilities of an ICT professional will be introduced. Preparation for the CompTIA A+ certification exams.
Transferable to CSU Only

COSN 10 (C-ID ITIS 150)   3 units
Networking Fundamentals
54 hours lecture
Grading: letter grade or pass/no pass.
Materials Fee: $10.
Formerly CBIS 41. In this class, the student will learn to install, configure, upgrade and troubleshoot a computer network. There will be discussions regarding local area networks, wide area networks, wireless networks, communications protocols, network topologies, transmission media, security, and assessment of career opportunities in networking. This class maps to the CompTIA Network+ certification. In addition, upon successful completion of this course, students will be given a voucher to sit for the Microsoft Technology Associate (MTA) industry certification exam.
Transferable to CSU Only

COSN 200   3 units
Wireless and Mobile Devices
54 hours lecture
Corequisite: COSN 10.
Grading: letter grade or pass/no pass.
Formerly CBIS 212. In this class the student will learn how to install, use, and manage popular wireless technologies such as WiFi, WiMax, and Bluetooth. They will build on the knowledge from COSN 10 to understand how mobile devices connect to the larger network infrastructure through various wireless technologies. Students will have hands on experience installing, trouble shooting, managing, securing, backing up and upgrading Android, IOS, Windows and other mobile devices.

COSN 205   4 units
UNIX/LINUX Fundamentals
72 hours lecture
Recommended Preparation: COSA 50.
Grading: letter grade or pass/no pass.
Formerly CBIS 223. This course trains students to use the Linux operating system as an alternative to other operating systems for managing files, running applications, and developing application procedures. Course topics include an overview of basic operating system concepts, a history of UNIX and its influence on modern operating systems, basic internal operating system structure, details of UNIX/Linus file system structures, pipes, filters and redirection, scripts, processes, shells, and UNIX/Linux utilities. Completion of this course qualifies students for COSN 210, Linux System Administration.

COSN 206   3 units
Scripting Fundamentals
54 hours lecture
Recommended Preparation: COSN 205.
Grading: letter grade or pass/no pass.
This course offers an in-depth introduction to scripting languages including basic data types, control structures, regular expressions, input/output, and textual analysis. Students will use popular scripting languages in a Windows and Linux environment.

COSN 210   4 units
LINUX Server Administration
72 hours lecture
Recommended Preparation: COSN 205.
Grading: letter grade or pass/no pass.
Formerly CBIS 235A and COSN 210AD. This course is an in-depth study of the Linux operating system. The focus is on Linux installation and administration. The course will also examine the theoretical concepts common to all Linux systems that have increased its popularity. The course will also take the form of a practical hands-on approach to Linux to prepare students for the CompTIA Linux+ or LPI certifications. Students should have already completed a foundation course in Linux.

COSN 215   4 units
LINUX Networking and Security
72 hours lecture
Recommended Preparation: COSN 205 or COSN 210.
Grading: letter grade or pass/no pass.
Formerly COSN 215AD. This is an advanced Linux operating system course. The focus is on Linux networking and security. The course covers networking technologies and protocols, network configuration and the use of command-line and graphical utilities. Network security issues such as firewalls, VPNs, and utilities such as nmap, ethereal, and the SAINT profiling tool will be presented.

COSN 225   3 units
Microsoft Windows Client
54 hours lecture
Recommended Preparation: COSN 10.
Grading: letter grade or pass/no pass.
Materials Fee: $10.
Formerly CBIS 226. In this class, students will install, configure and administer Windows OS. They will install and upgrade client systems, manage file systems and devices and perform system maintenance. The class will prepare the student to take the corresponding MTA Certification Exam.

COSN 230   4 units
Microsoft Windows Server
72 hours lecture
Recommended Preparation: COSN 225.
Grading: letter grade or pass/no pass.
Materials Fee: $10.
Formerly CBIS 227. In this class, students will install, configure and administer Windows Server Operating System. The class will prepare the student to take the corresponding MTA Certification Exam.

COSN 250   3 units
Cloud Computing in Amazon Web Services
54 hours lecture
Recommended Preparation: COSA 50, COSN 10, or COSN 205.
Grading: letter grade or pass/no pass.
This course introduces cloud computing which shifts information systems from on-premises computing infrastructure to highly scalable internet architectures. The course provides a solid foundation of cloud computing technologies and provides students with the understanding required to effectively evaluate and assess the business and technical benefits of cloud computing and cloud applications. Students analyze a variety of cloud services (storage, servers and software applications) and cloud providers. Case studies will be used to examine various industry cloud practices and applications. The course also surveys cloud careers and discusses industry demand for cloud skills.

COSN 251   3 units
Database Essentials in Amazon Web Svcs
54 hours lecture
Recommended Preparation: COSN 250.
Grading: letter grade or pass/no pass.
This course addresses cloud database management which supports a number of different approaches for storing data. In the course, students define, operate and scale both SQL and noSQL data storage solutions. This course considers factors that should be balanced during the design of a storage solution. Principles are applied by performing exercises using Amazon RDS and SQL to create and fill tables, retrieve and manipulate data. Object-based APIs are used to serialize objects to Amazon DynamoDB for noSQL solutions. Topics include automated backups, transaction logs, restoration and retention.

COSN 252   3 units
App Development in Amazon Web Services
54 hours lecture
Recommended Preparation: COSN 250.
Grading: letter grade or pass/no pass.
In this course, students explore 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.

COSN 253   3 units
Security in Amazon Web Services
54 hours lecture
Recommended Preparation: COSN 250.
Grading: letter grade or pass/no pass.
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.

COSN 299   4 units
Security and Networking Capstone
72 hours lecture
Prerequisite: COSS 71 or COSN 225 or COSN 205.
Grading: letter grade or pass/no pass.
This capstone course focuses on tying together the skills, knowledge and abilities students have developed throughout the Associate of Science in Computer Security and Networking or IT Cybersecurity degree program. Students will build, configure, manage and secure a mock IT infrastructure including routers, switches, desktop computers, mobile devices, directory services, web services, database services, VPN services, and virtualization. Students will use Microsoft, UNIX-based and mobile operating systems to complete their project.

COSN 605   0 units
Computer Hardware Fundamentals
72 hours lecture
Recommended Preparation: COSA 650.
Grading: non graded.
This course provides an introduction to the computer hardware and software skills needed to help meet the growing demand for entry-level ICT professionals. The fundamentals of computer hardware and software as well as advanced concepts such as security, networking, and the responsibilities of an ICT professional will be introduced. Preparation for the CompTIA A+ certification exams.

COSN 610   0 units
Networking Fundamentals
54 hours lecture
Grading: non graded.
Materials Fee: $10.
In this class, the student will learn to install, configure, upgrade and troubleshoot a computer network. There will be discussions regarding local area networks, wide area networks, wireless networks, communications protocols, network topologies, transmission media, security, and assessment of career opportunities in networking. This class maps to the CompTIA Network+ certification. In addition, upon successful completion of this course, students will be given a voucher to sit for the Microsoft Technology Associate (MTA) industry certification exam.