COMPUTER SCIENCE INFORMATION SYSTEMS (CSIS)

CSIS-070
Drone Flight School **0 UNITS**
Prerequisite: Students must be at least 18 years or older and must meet eligibility requirements under FAA 107 guidelines.
7.0 hours laboratory
The Drone Flight School course prepares students for the FAA 107 Drone Pilots license examination. Course consists of FAA rules and regulations, safety protocols, drone flight controllers, and drone flight theory. Upon obtaining license, students will receive hands-on flight training where student applies flight theory to hands-on practical flight training and basic aerial photography and cinematography. The course will also provide an introductory training to various other drone industry areas.

CSIS-071
Drone Cinematography **0 UNITS**
Prerequisite: Must have FAA 107 Drone Pilots License.
5.0 hours laboratory
The Drone Cinematography course provides 80 hours of instruction and hands-on flight training. This course covers both basic and advanced cinematography techniques with an emphasis on developing "lifestyle" shots and a creative mindset. The theory and operations of both standard and advanced/precision camera shots is combined with operational scenarios in order to provide students with the ability to match specific and advanced flight profiles for the shots needed.

CSIS-072
Drone Surveying & Mapping **0 UNITS**
Prerequisite: Must have FAA 107 Drone Pilots License.
5.0 hours laboratory
This course presents the theory and operations of common sensors used by the operators of unmanned aircraft systems in different industrial applications. Theory is combined with operational scenarios, and flying actual missions. Ample flight time is provided in order to fully train the student with the ability to match specific sensors with anticipated missions. Operator will be versed in all operations as listed, and will be industry ready upon completion. This course teaches pilots how to do precision mapping missions and data collection for industry.

CSIS-105
Introduction to Computing **3 UNITS**
2.0 hours lecture, 3.0 hours laboratory
This is an introductory small computing course for those desiring beginning computer knowledge and skills. It includes an overview of a typical personal computer system including input and output devices, the processor, and storage devices. Also included is hands-on experience with a computer and popular application software, including Microsoft Word, Excel, Access and PowerPoint. Emphasis will be placed on those skills and knowledge needed to use and maintain a home or small business computer. (CSU)

CSIS-110
Principles of Information Systems **4 UNITS**
3.0 hours lecture, 3.0 hours laboratory
An introductory course in Information Technology with an emphasis on business and business-related applications. Concepts include computer organization, data processing systems, decision support systems, systems analysis and design, as well as ethics, security, e-commerce, global information systems and application software. The laboratory component consists of hands-on problem solving using software applications including spreadsheets and databases. (C-ID BUS 140 and ITIS 120) (CSU/UC)

CSIS-111
Beginning Web Page Design **1.5 UNITS**
1.0 hours lecture, 1.5 hours laboratory
A beginning web site creation course emphasizing creation and implementation using current web authoring software. This course is intended for the beginner at web page creation. This class provides hands-on instruction in the use of one or more state-of-the-art software website builder tools for creating simple business or personal web sites. This class will cover the essential skills involved in developing, modifying and publishing web sites utilizing modern technology. (CSU)

CSIS-112
Windows Operating System **3 UNITS**
3.0 hours lecture
This course introduces the Microsoft Windows family of operating systems concentrating primarily on the most current version. Coverage begins with the desktop graphical user interface and ends with the configuration and maintenance of Windows as might be required of a home or small business user. Topics will include hardware and software installation maintenance, networking, mobile computing, security and file sharing, administrative tools, scripting and batch files, and maintenance and performance tuning. The course will also cover file systems, storage devices, communication devices, command line options, registry repairs, disaster recovery, and troubleshooting. (CSU)

CSIS-113
Introduction to Linux **3 UNITS**
Recommended Preparation: "C" grade or higher or "Pass" in CSIS 110 and 112 or equivalent.
3.0 hours lecture
This course provides a solid framework into the concepts, installation, and configuration of server Operating System (OS). Topics include understanding of the desktop environments used in the server environment. It describes ways of exploring and understanding of the OS. It demonstrates the system administration tasks and how they are used to provide support for multiple users. It describes issues related to security and shows how to automate tasks through shell scripting. (CSU)

CSIS-119
Introduction to Computer Programming **3 UNITS**
Recommended Preparation: "C" grade or higher or "Pass" in CSIS 110 and 112 or equivalent.
3.0 hours lecture
An introductory course in computer programming as a foundation for more advanced programming, computer science, computer networking, or software engineering courses. Emphasis is on the development of problem solving skills as it introduces students to computer programming principles and best practices using modular and Object Oriented programming concepts. Attention is given to development of effective software engineering practices emphasizing such principles as analysis and design decomposition, encapsulation, procedural abstraction, testing and software reuse. Students learn and apply standard programming constructs, problem-solving strategies, the concept of an algorithm, fundamental data structures, and the machine representation of data. (CSU/UC)

CSIS-120
Computer Maintenance and A+ Certification **3 UNITS**
2.0 hours lecture, 3.0 hours laboratory
Preparation for the A+ Certification exam, an industry-sponsored test that establishes a benchmark level of knowledge and competence expected of computer service technicians in entry-level positions. A+ Certification also serves as the foundation for computer service professionals who are pursuing other valuable industry certifications such as the Cisco Certified Networking Associate (CCNA), Network+, and Microsoft Certified Professional (MCP). Students will gain a comprehensive knowledge base in computer hardware, DOS and Windows operating system, networking basics, printers, and customer service. Hands-on labs using the latest computer components and operating systems provide an opportunity for students to enhance their skills in assembing, disassembling, servicing, troubleshooting, and upgrading advanced computer and networking systems. (CSU)

CSIS-121
Introduction to Cybersecurity **3 UNITS**
2.0 hours lecture, 3.0 hours laboratory
Practical introductory course intended for those interested in learning about cybersecurity. Lectures, laboratories, and practical assignments will emphasize skills to work effectively in the area of cybersecurity. Some topics include: Internet security basics, hackers, spyware, phishing, spam, zombies, Trojan horses, worms, viruses, wi-fi security, denial-of-service, web-blocking, firewalls, proxy servers, operating system security, browser and web security, and cryptography. Includes installation and configuration of security tools and utilities. (CSU)

CSIS-125
Network + Certification **3 UNITS**
Recommended Preparation: "C" grade or higher or "Pass" in CSIS 110 or CSIS 120 or equivalent.
2.0 hours lecture, 3.0 hours laboratory
Practical course intended for those interested in learning computer networking with an emphasis on earning the Computing Technology Industry Association's (CompTIA) Network+ certification, a foundation-level, vendor-nuetral international industry credential that validates the knowledge of networking professionals. Earning this certification demonstrates that a candidate can describe the features and functions of networking components, and possesses the knowledge and skills needed to install, configure and troubleshoot basic networking hardware, protocols and services. It also indicates technical ability in the areas of media and topologies, protocols and standards, network implementation, and network support. Throughout the course, theory will be demonstrated and practiced in laboratory exercises. Lectures, laboratories, and practical assignments will emphasize skills needed to work effectively in the networking environment and to earn the Network+ certification. (CSU)

CSIS-130
Windows Server: Installing and Configuring **2 UNITS**
Prerequisite: "C" grade or higher or "Pass" in CSIS 112 or equivalent.
1.0 hours lecture, 3.0 hours laboratory
Comprehensive hands-on system administration course focusing on the installation, initial implementation, and configuration of Windows server software core services, including: Active Directory (AD) Domain Services, local storage, file and print services, group policy and server virtualization technologies. (CSU)

CSIS-132
Introduction to Web Development **3 UNITS**
Recommended Preparation: "C" grade or higher or "Pass" in CSIS 105 or 110 or equivalent.
2.0 hours lecture, 3.0 hours laboratory
This course surveys and introduces web design and development fundamentals, involving key technologies and skills used in website construction alongside hands-on coding experience. Best practices in coding and debugging HTML and CSS will be emphasized along with the use of modern CMS systems such as WordPress. Other topics will include web terminology, technology and careers, website development platform options, code editors, and web graphics. (CSU)

CSIS-133
Intermediate Web Development **3 UNITS**
Recommended Preparation: "C" grade or higher or "Pass" in CSIS 132 or equivalent.
2.0 hours lecture, 3.0 hours laboratory
This course builds on the skills introduced in Introduction to Web Development with hands-on projects that reinforce and further develop HTML5 and CSS3 expertise. Mobile development is addressed in detail. Also covered are content management systems (CMS), Search Engine Optimization (SEO), and usability issues. (CSU)

CSIS-135
JavaScript Programming **3 UNITS**
Recommended Preparation: "C" grade or higher or "Pass" in CSIS 133 or equivalent.
2.0 hours lecture, 3.0 hours laboratory
An introductory course in JavaScript programming focusing on creating dynamic web pages. The course will include embedding JavaScript in HTML, event-handling, writing, and calling JavaScript functions, as well as exploring jQuery and its relationship to JavaScript. (CSU)

CSIS-145
Introduction to TCP/IP **2 UNITS**
Recommended Preparation: "C" grade or higher or "Pass" in CSIS 125 or equivalent.
2.0 hours lecture
This course introduces the student to the operation of the Transmission Control Protocol/Internet Protocol (TCP/IP) standard and related protocols. The course will cover the underlying components and protocols that make up the Internet. Tools used to navigate and access information on the Internet will be studied. (CSU)

CSIS-147
Social Media and Internet Marketing **3 UNITS**
Recommended Preparation: "C" grade or higher or "Pass" in BUS 146 and CSIS 132 or equivalent.
3.0 hours lecture
This course will provide students with skills to achieve online marketing success in social media and integrate their Web presence with offline traditional marketing methods. The course will provide students with a basic working knowledge of methods used to help drive traffic to a web site, attract visitors and turn them into customers. Students will develop search engine optimization skills as well as explore search engine marketing, social media marketing, affiliate marketing, directory submission, and email marketing. Students will learn how to compete in new internet marketing channels, employ market research, acquire traffic, and track visitor trends. (CSU)

CSIS-151
Introduction to Photoshop **3 UNITS**
3.0 hours lecture
This course provides the student with step-by-step instructions on how to create cutting-edge graphics and special effects with Photoshop. Using hands-on real world projects, the student will learn the optimal use of layers, layer effects, photo retouching, color adjustments, working with masks and layers, and composites. The student will learn how to create images of different formats for different applications and how to create files for the array of digital devices available today. This is not an artistic design course, but emphasizes tools used by the Photoshop software application. (CSU/UC)

CSIS-160
Introduction to Video Game Development **3 UNITS**
Recommended Preparation: "C" grade or higher or "Pass" in CSIS 110 or 105 or equivalent.
3.0 hours lecture
This course provides an introduction to the theory and practice of video game design and development. Students will survey the historical, technological, business, social and psychological aspects of the video gaming industry; analyze popular PC, handheld, and console games; understand the roles of the development team members; and design and create their own game using an existing game engine. (CSU)

CSIS-161
Intermediate Video Game Development **3 UNITS**
Recommended Preparation: A "C" grade or higher or "Pass" in CSIS 160 or equivalent.
3.0 hours lecture
This course will provide students with the theory and practice of computer game design and development. Students will build on their knowledge of PC and console game theory, designing and creating their own games. This course will emphasize game story development and game character development as it pertains to designing a viable video game project. Sprite animation, input controls and sound programming will be covered. Students will be introduced to 3D animation software. This course is intended for non-computer programmers. (CSU)

CSIS-165
Assembly Language and Machine Architecture **4 UNITS**
Prerequisite: "C" grade or higher or "Pass" in CSIS 293 or CSIS 296 or equivalent.
3.0 hours lecture, 3.0 hours laboratory
This is an introductory course in assembly language programming and machine architecture for small computers. Topics covered include number theory, registers, memory, CPU, linkers, debuggers, basic language syntax and high-level language/operating system interface. This course is intended for persons with a prior background in any other programming language and will emphasize those applications not easily performed using higher-level languages. (C-ID COMP 142) (CSU/UC)

CSIS-180
Fundamentals of Database Design **3 UNITS**
Recommended Preparation: "C" grade or higher or "Pass" in CSIS 110 or equivalent.
3.0 hours lecture
This course introduces the student to fundamental design strategies of relational data models for organizations. Concepts will include assessing organizational needs, logical design and application generating tools, normalization strategies, database architectures, data models, integrity rules, and query formulation skills. Students will formulate, design, implement, and manipulate databases using a commercial software package. (CSU)

CSIS-195
Video Editing on the PC **3 UNITS**
Recommended Preparation: A "C" grade or higher or "Pass" in CSIS 105 or 110 or equivalent.
3.0 hours lecture, 1.0 hours laboratory
This course introduces the fundamentals of a non-linear video editing software application using a personal computer. This is a hands-on course in which students will gain practical experience in editing digital footage. Students will learn how to import, edit, and output high quality professional video with titles and effects. Editing techniques such as re-cutting scenes, mixing audio, adding labels and animation, editing the timing and flow of the video and more will be covered. (CSU)

CSIS-213
Linux System Administration **3 UNITS**
Prerequisite: "C" grade or higher or "Pass" in CSIS 113 or equivalent.
2.0 hours lecture, 3.0 hours laboratory
Comprehensive hands-on application and instruction in multi-user, multi-tasking operating systems and networked operating systems. Topics include: operating system installation and configuration, storage configuration and management, server security configuration, user and group management, configuration and management of various server roles (such as: LDAP, DNS, DHCP, Print, Mail, Samba, Apache), troubleshooting, and disaster recovery. Course maps to the Linux Professional Institute (LPI) Certification Level 2 exam. (CSU)

CSIS-230
Windows Server: Administering **2 UNITS**
Prerequisite: "C" grade or higher or "Pass" in CSIS 130 or equivalent.
1.0 hours lecture, 3.0 hours laboratory
Comprehensive hands-on system administration course focusing on the administration tasks essential to administering a Window server infrastructure, including user and group management, network access, and data security. (CSU)

CSIS-240
Discrete Structures **3 UNITS**
Prerequisite: "C" grade or higher or "Pass" in CSIS 293 or equivalent.
3.0 hours lecture
This course is an introduction to the discrete structures 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. (C-ID COMP 152) (CSU/UC) (CSU-B4)

CSIS-250
Introduction to Python Programming **4 UNITS**
Recommended Preparation: "C" grade or higher or "Pass" in CSIS 119 or equivalent.
3.0 hours lecture, 3.0 hours laboratory
This is an introductory course in Python programming. Topics covered include basic language syntax, functions, control flow, looping, data types, strings, lists, dictionaries, exception handling, software tools and libraries, and functional vs object oriented programming concepts. This course is intended for persons with a prior background in any programming language. (CSU/UC)

CSIS-251
Intermediate Python Programming and Fundamental Data Structures **4 UNITS**
Prerequisite: "C" grade or higher or "Pass" in CSIS 250 or equivalent.
3.0 hours lecture, 3.0 hours laboratory
This course is the continuation of CSIS 250. Topics covered include: Multithreading, Recursion, Network Programming, Client/Server Programming, Searching, Sorting, Big-O Notation, Complexity Analysis, Collections, Arrays and Linked Structures, Interfaces, Implementations, Polymorphism, Inheritance and Abstract Classes, Stacks, Queues, Lists, Hash Tables, Trees, Sets, Dictionaries, and Graphs. Applications in Business Intelligence, Machine Learning, Cybersecurity, Autonomous Systems, Big Data, and Data Science. (CSU/UC)

CSIS-255
Introduction to Programmable Logic Controllers **4 UNITS**
Recommended Preparation: "C" grade or higher or "Pass" in CSIS 250 or equivalent.
3.0 hours lecture, 3.0 hours laboratory
An introductory course in Programmable Logic Controller with an emphasis on industrial automation and related applications. Concepts include automation processing systems, input/output decision support systems; basic electronic circuits, ladder logic, basic analog circuit, Boolean logic, digital circuit; introduction to Raspberry Pi as the automation computer and Arduino as open source Programmable Automation Controller (PAC); typical examples of automation using Python to build Human Machine Interface HMI. The laboratory hands-on component consists of hands-on familiarization, diagnostics and solving automation setup and operational problems. (CSU/UC)

CSIS-263
Security + Certification **3 UNITS**
Recommended Preparation: "C" grade or higher or "Pass" in CSIS 125 or equivalent.
2.0 hours lecture, 3.0 hours laboratory
Entry-level course in network security that addresses the various aspects of designing and implementing a secure network. Designed for students interested in understanding the field of network security and how it relates to other areas of Information Technology (IT). Covers materials included in the CompTIA (Computing Technology Industry Association) Security+ exam. (CSU)

CSIS-264
Ethical Cybersecurity Hacking **3 UNITS**
Prerequisite: "C" grade or higher or "Pass" in CSIS 263 or equivalent.
2.0 hours lecture, 3.0 hours laboratory
This course immerses IT professionals in hands-on intensive environments, 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. (CSU)

CSIS-265
Computer Forensics Fundamentals **3 UNITS**
Prerequisite: "C" grade or higher or "Pass" in CSIS 264 or equivalent.
2.0 hours lecture, 3.0 hours laboratory
This course introduces the methods used to properly conduct a computer forensics investigation. Topics include ethics, computer forensics as a profession, the computer investigation process, operating systems boot processes and disk structures, data acquisition and analysis, technical writing, and a review of familiar computer forensics tools. (CSU)

CSIS-276
Introduction to SQL **3 UNITS**
Recommended Preparation: "C" grade or higher or "Pass" in CSIS 110 or equivalent.
3.0 hours lecture
This is an introductory course in Structured Query Language (SQL) programming intended for persons with basic computer literacy skills. The course is designed to teach students the fundamentals of good relational database design and how to use and maintain a database using the industry-standard data query and manipulation language SQL. Students will use SQL to create tables, keys and indexes, handle security in the database; and perform simple and complex queries. (CSU)

CSIS-290
Introduction to C# Programming **4 UNITS**
Recommended Preparation: "C" grade or higher or "Pass" in CSIS 119 or equivalent.
3.0 hours lecture, 3.0 hours laboratory
This course is designed to provide students with an introduction to C# programming in the Visual Studio integrated development environment. Emphasis will be on learning the fundamentals including sequence, decision and repetition. The course will also focus on object-oriented design, testing and debugging on a Windows .NET platform. (CSU/UC)

CSIS-291
Intermediate C# Programming **4 UNITS**
Prerequisite: "C" grade or higher or "Pass" in CSIS 290 or equivalent.
Recommended Preparation: A "C" grade or higher or "Pass" in CSIS 132 or equivalent.
3.0 hours lecture, 3.0 hours laboratory
This course is designed to provide students with intermediate problem-solving and computer design, primarily in a web-based environment using Microsoft C# and ASPX. (CSU/UC)

CSIS-293
Introduction to Java Programming **4 UNITS**
Recommended Preparation: "C" grade or higher or "Pass" in CSIS 110 and 119 or equivalent.
3.0 hours lecture, 3.0 hours laboratory
An introductory course in Java programming focusing on object-oriented methodology. The course will include developing fundamental programming constructs, using objects from the standard Java Class Library, writing and using new objects, developing inheritance hierarchies of classes, using polymorphism to build extendible systems, and performing the subsequent testing and debugging of these programs. (C-ID COMP 112 and COMP 122) (CSU/UC)

CSIS-294
Intermediate Java Programming and Fundamental Data Structures **4 UNITS**
Prerequisite: "C" grade or higher or "Pass" in CSIS 293 or equivalent.
3.0 hours lecture, 3.0 hours laboratory
This course is the continuation of CSIS 293. Students will concentrate more on the Java techniques available for the development of large, complex systems. Students will utilize the concepts of Abstract Data Type to analyze real world requirements and design class structures to meet those requirements. In particular, students will apply these skills to the understanding and use of Data Structures. The course will progress from arrays, to linear lists, to stacks, queues, deques, and trees. Big-Oh notation will be introduced and used for the analysis and comparison of algorithms to perform sorting and searching of the structures. Students will become familiar with design techniques and tools (such as UML) necessary to develop larger programs. Instruction will also focus on object oriented programming and its principles of polymorphism, encapsulation, inheritance, collection classes and iteration protocals. Recursion and recursive data searching techniques will also be utilized in the creation of efficient, optimized algorithms. (C-ID COMP 132) (CSU/UC)

CSIS-295
Android Application Development with Java **3 UNITS**
Recommended Preparation: "C" grade or higher or "Pass" in CSIS 293 or equivalent.
2.0 hours lecture, 3.0 hours laboratory
This course is intended to give the student basic and intermediate skills in the development of applications for any Android powered smart phone. Students will utilize the Java programming language and a modern Integrated Development Environment (IDE) to analyze and design real world applications. They will become skilled in use of the Android Application Programming Interfaces (API's) to develop applications that exhibit and/or utilize desirable attributes such as: 1) retrieving Internet data via REST web services; 2) use of Google Maps; 3) location awareness with the ability to utilize/the phone's GPS APIs; 4) complex Graphic User Interfaces (GUI) based on and using Android widgets; 5) development of and/or integration with telephony and networking applications; 6) sprite animation; 7) open GL graphics; 8) game development using existing game engines. (CSU)

CSIS-296
Introduction to C++ Programming **4 UNITS**
Recommended Preparation: "C" grade or higher or "Pass" in CSIS 119 or equivalent.
3.0 hours lecture, 3.0 hours laboratory
This is an introductory course in C++ programming. Topics covered include basic language syntax, functions, data types, pointers, strings, structures, software tools, and an introduction to classes. This course is intended for persons with a prior background in any programming language. (CSU/UC)

CSIS-297
Intermediate C++ Programming **4 UNITS**
Prerequisite: "C" grade or higher or "Pass" in CSIS 296 or equivalent.
3.0 hours lecture, 3.0 hours laboratory
This second course in C++ programming explores some of the more advanced concepts of the language including object oriented programming, error handling, and data structures. (CSU/UC)