CYBER SECURITY PROGRAM OF STUDY (POs)
COURSE LEARNING OUTCOMES / OBJECTIVES
https://www.csupueblo.edu/hasan-school-of-usiness/centers/ccser/index.html

Required Core CIS Courses:
CIS 289 Networking Concepts

Course Learning Objectives: The CIS 289 is designed to provide you with the following foundation concepts and outcomes: network and telecommunications fundamentals; network architecture, infrastructures and NW topologies; knowledge of the OSI and TCP/IP Network and Internet models and protocols; knowledge of LANs, WANs and Wireless technology and protocols; the ability to analyze and understand a range of wired and wireless network technologies; working knowledge of Wireshark for wired and wireless Network Traffic Analysis; analysis of "optimal location" of network devices (switches, routers, load balancers, etc.).

CIS 315 Linux Fundamentals

Course Learning Objectives/Instructional Methods: The following learning objectives are the desired outcome for this course and will be evaluated at the completion of this class. After completing this class you should be able *To Describe Linux directory structures. * Manage users, groups, and file systems in Linux based environments.* Assign file ownership, permissions, and disk quotas *Manage and monitor system configurations and system processes.*Program in Shell Script for system administration tasks.

CIS 350 Database Management

Course Learning Objectives:* Database analysis using conceptual data modeling with ER (Entity-Relationship) diagram * Database design including logical design with relationship tables and normalization * Database implementation using SQL (Structured Query Language) including both basic and advanced grammar and functions* Advanced topics in Data Scient such as Cloud computing, Non-Sql, AI/DL, and Data Analytics (time allowing).

CIS Programming Courses:
CIS 271 Advanced Programming Design-JAVA

Course Learning Objectives: CIS 289 is designed to provide you with the following foundation concepts and outcomes :network and telecommunications fundamentals; network architecture, infrastructures and NW topologies; knowledge of the OSI and TCP/IP Network and Internet models and protocols; knowledge of LANs, WANs and Wireless technology and protocols; the ability to analyze and understand a range of wired and wireless network

technologies; working knowledge of Wireshark for wired and wireless Network Traffic Analysis; analysis of "optimal location" of network devices (switches, routers, load balancers, etc.)

Core CIS Cyber Security Courses:

CIS 401 Network Systems Administration

Course Learning Objectives/Instructional Methods: The following learning objectives are the desired outcome for this course and will be evaluated at the completion of this class. After completing this class you should be able to: -Describe the role of a server operating system, the need for different versions of a server operating system, and the core technologies and new added features of Windows Server 2016. -Install and configure the first server on the network. -Explain the role of a directory service in a network and how a group policy works. -Set up user accounts and group accounts based on organization structures and security practices. -Secure file and printer in a network environment. -Configure powerful company group policy architecture by using group policy replication and inheritance.

CIS 460 Cyber Security and Defense

CIS 460 COURSE LEARNING OBJECTIVES (LOs) will demonstrate the following: ability to analyze, integrate and synthesize information security concepts; the ability to understand and utilize Info Security methodologies and frameworks; to identify cyber-security threats and exploits for analysis and resolution; the ability to understand appropriate application of Cyber Security defense (CD) tools, CD techniques, hardware/ software and I.T. safeguards to defend information systems from cyber exploits and attacks; the ability to develop team skills and work effectively on our TVA team project.

CIS 461 IT Security Risk Management

CIS 460 COURSE LEARNING OBJECTIVES (LOs) will demonstrate the following: ability to analyze, integrate and synthesize information security concepts; the ability to understand and utilize Info Security methodologies and frameworks; to identify cyber-security threats and exploits for analysis and resolution; the ability to understand appropriate application of Cyber Security defense (CD) tools, CD techniques, hardware/ software and I.T. safeguards to defend information systems from cyber exploits and attacks; the ability to develop team skills and work effectively on our TVA team project

CIS 462 Computer Forensics

Student Learning Objectives (SLOs): *(Analytical and Critical Thinking) Analyze, identify and document security breaches of digital data that indicates violations of legal, ethical, moral, policy and/or societal laws; *(Communication) Work collaboratively with team members, clients, management, and law enforcement to advance digital investigations or protect the security of digital resources; *(Methodology) Understand the basic level of conducting a digital investigation using an accepted industry methodology: planning, security the environment, documentation, securing, transport and imaging of evidence, evaluation, reporting, explain/defend the process used; *(Ethics) Abide to the highest professional and ethical standards of conduct, including impartiality and the protection of personal privacy;

*Technology) *Apply a solid foundational grounding in networks, operating systems, file systems, hardware and mobile devices to digital investigations and to the protection of computer and network resources from unauthorized activity; *(Communication) Communicate effectively the results of a digital forensic analysis verbally, in writing, and in presentations to both technical and lay audiences.

Roberto Mejias, Ph.D.   *7/2/2021*
Dr. Roberto Mejias, Ph.D.,   NSA-CAE **PoC** for CSU-Pueblo
Computer Information Systems (CIS)
Director, Center for Cyber Security Education and Research (CCSER)

Kuang-Yuan Huang
_____ 7/3/2021
Dr. Kuang-Yuan Huang , Ph.D.
Computer Information Systems (CIS) Faculty Coordinator
Colorado State University-Pueblo