

The Bachelor of Science (BS) degree in Computer Information Systems (CIS) Cyber Security Emphasis

<https://www.csupueblo.edu/hasan-school-of-business/doc/ccser/cyber-security-program-of-study.pdf>

Bachelor of Science (B.S.): Computer Information Systems

Bachelor of Science (BS) in **Computer Information Systems (CIS)** candidates must complete a total of 120 credits. These credits include 36 credit hours of general education, 52 credits in CIS major courses, 10 credits of quantitative analysis, 9 credits of required related non CIS courses and 13 credits of electives as per this catalog link:

<https://catalog.csupueblo.edu/the-hasan-school-of-business/computer-information-systems-bs/#curriculumtext>

B.S. in Computer Information Systems: Cyber Security "Emphasis"

BS-CIS candidates are encouraged to complete a minor in Business Administration or another Business-related **emphasis** area. The minor or emphasis area may be completed within the 13 elective credits. BS-CIS students may select Cyber Security as an "**emphasis**" area. However, students will not qualify for the *Certificate in Computer Security* unless they complete the 24 credits Program of Study (PoS) required for *Cyber Security Emphasis Program of Study* (in addition to the CIS Major Core Courses).

Cyber Security Emphasis Program of Study Courses

Required Core CIS Courses:

CIS 289	Networking Concepts	3	
CIS 315	Linux Fundamentals	3	
CIS 350	Database Management	3	9

CIS Programming Courses:

CIS 271	Advanced Programming Design-JAVA	3	3
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Core CIS Cyber Security Courses:

CIS 401	Network Systems Administration	3	
CIS 460	Cyber Security and Defense	3	
CIS 461	IT Security Risk Management	3	
CIS 462	Computer Forensics	3	12

Total Program Required Credits			24 credits
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CSU-Pueblo Catalog Course Descriptions for Cyber Security Emphasis Courses

CIS 271 Advanced Programming Design with JAVA 4(3-2): Continuation of CIS 171, includes advanced Java programming constructs such as data structures, multi-threading, collections, database connectivity, remote objects and GUI's. Prerequisite: CIS 171. (S)

CIS 289 Network Concepts 3(2-2): Fundamental hardware, software, and data communication concepts necessary to understand computer networks. (F)

CIS 315 Linux Fundamentals 3(3-0): Explore Linux features, covering command language, file system, mail, and editing. Shell language tools include pipes, filters and I/O redirection. Prerequisite: CIS 171. (S)

CIS 350 Database Management 3(3-0): Design, implementation and use of database management systems; comparison of available software packages; concepts of query languages and security considerations. Lab assignments utilize a relational data base system. Prerequisite: CIS 240 or permission of instructor. (F)

CIS 401 Network Systems Administration 3(2-2): Introduces the necessary knowledge and skills to install, configure, and manage network operating systems, preparing students to be system administrators in a networking environment. Prerequisite: CIS 289. (F)

CIS 460 Cyber Security & Defense 3(2-2): Students will understand the impact of cyber threats and attacks to organizations and critical IT resources. Topics include defense-in-depth safeguards and threat vulnerability asset (TVA) analysis. Prerequisite: CIS 289 or permission of instructor. (S)

CIS 461 IT Security Risk Management 3(3-0): Overview of cyber security, cyber threats, information assurance (IA), assessment of information security risk, security risk strategies and mitigation, disaster recovery planning, cyber security law. (S)

CIS 462 Computer Forensics 3(2-2): Focus on detection, isolation and response to information security breaches and attacks. Provides a detailed examination of entire computer forensic process. Prerequisite: CIS 289. (F)

Notations: S = Taught in Spring Semester; F = Taught in Fall Semester; SS Taught in Summer Session
3(2-2) = 3 credit hours, 2 clock hours lecture, 2 clock hours lab

Certificate in Cyber Security Defense

The 2016 designation of CSU-Pueblo as a *National Security Agency, Center for Academic Excellence in Cyber Defense Education* (NSA-CAE-CDE) allows CSU-Pueblo to offer a **hard** copy of the *NSA-CAE Designated Institution Certificate in Cyber Security* for CSU-P students who complete the *Cyber Security Emphasis Program of Study* (after all required lower and upper division General Business and CIS courses are completed).