CYBERSECURITY

SUGGESTED COURSE PATHWAY

LEVEL 1
Computer Science I

LEVEL 2
AP Computer Science Principles
Principles of Information Technology

LEVEL 3
AP Computer Science A
Internetworking Technologies I (Cisco CCNA I & II)

LEVEL 4
Internetworking Technologies II (Cisco CCNA III & IV)

Above courses are not tied to grade levels.

COURSE INFORMATION

COURSE NO.	COURSE NAME	GRADE	PREREQUISITES	CERTIFICATIONS
401001	Computer Science I	9 - 10	Algebra I	N/A
403701	AP Computer Science Principles	9 - 10	None	N/A
403401	Principles of Information Technology	9 - 12	None	Internet and Computing Core (IC3)
401051	AP Computer Science A	11 - 12	Algebra II or concurrent enrollment in Algebra II	N/A
556601	Internetworking Technologies I (Cisco CCNA I & II)	11 - 12	Algebra II	N/A
556651	Internetworking Technologies II (Cisco CCNA III & IV)	12	Internetworking Technologies I (Cisco CCNA I & II)	N/A

The Cybersecurity program of study includes the occupations and educational opportunities related to planning, implementing, upgrading, or monitoring security measure for the protection of computer networks and information. This program of study may also include exploration into responding to computer security breaches and viruses, and administering network security measures.

The Science, Technology, Engineering, and Mathematics (STEM) Career Cluster® focuses on planning, managing, and providing, scientific research and professional and technical services, including laboratory and testing services, and research and development services.

Meets the requirements of the Business and Industry or STEM Endorsement.

CYBERSECURITY

401001
FULL YEAR

Computer Science I

Grades: 9 - 10

Prerequisite: Algebra I

Credit: 1.0

BPA

Computer Science I is an introduction to the automated processing of information, including computer programming. Students will apply their mathematical and logical reasoning to solve problems in the field of computer science. Through data analysis, students will identify task requirements, plan search strategies, and use computer science concepts to access, analyze, and evaluate information needed to solve problems. Students will also explore various aspects of digital citizenship, including those affecting both users and programmers. The learning in this course equips students to read and write small programs using Java programming language in response to a given problem or scenario. Successful completion of this course will prepare students for a cohesive course sequence in computer science. No previous coding/programming experience is required.

403701
FULL YEAR

AP Computer Science Principles

Grades: 9 - 10

Prerequisite: None

Credit: 1.0

BPA

AP Computer Science Principles is an introduction to the complete field of computer science. Studies include exploring the technology's impact on society, analyzing and visualizing trends in data, and developing computational artifacts related to their interests. Students will broaden their understanding of computer science for use in a diversity of interests, majors and careers. Programming is only one component of this course and taught at an introductory level using JavaScript. No previous coding/programming experience is required. This course prepares students to take the Advanced Placement (AP) Computer Science Principles exam to possibly earn college credit.

403401
FULL YEAR

Principles of Information Technology

Grades: 9 - 12

Prerequisite: None

Credit: 1.0

BPA

Principles of Information Technology (PIT) develops computer literacy skills utilized in emerging technologies and the global marketplace. Students apply word processing, spreadsheet, database, presentation, and web publishing technologies using Microsoft Office and Google Tools. This course provides instruction and training necessary for the globally recognized Internet and Computing Core (IC3) certification.

401051
FULL YEAR

AP Computer Science A

Grades: 11 - 12

Prerequisite: Algebra II or concurrent enrollment in Algebra II

Credit: 2.0 (math credit)

BPA

This course serves as an introduction to computers and the study of managing and processing information. Students apply algebraic and logical reasoning acquired in mathematics to develop robust programming solutions. The emphasis is on solving real world problems by means of computer programming (software engineering). Students will thoroughly learn the Java programming language and apply those skills in exploring how computers work. Some topics covered include object-oriented techniques, file management, data structures, classes, objects, graphics, debugging, hardware components, and social implications. This course prepares students to take the Advanced Placement Computer Science A exam to possibly earn college credit. Note: One of two credits counts toward GPA.

556601
FULL YEAR
Internetworking Technologies I (Cisco CCNA I & II)

Grades: 11 - 12

Prerequisite: Algebra II

Credit: 1.0

BPA

This course teaches networking through the PISD Cisco Networking Academy Program and prepares students for industry standard certifications. Topics include LANs, the OSI model, addressing, and routing. Students may continue this training at any Cisco Academy. This is a Distinguished Level course (beginning with the graduating class of 2023).

556651
FULL YEAR
Internetworking Technologies II (Cisco CCNA III & IV)

Grades: 12

Prerequisite: Internetworking Technologies I (Cisco CCNA I & II)

Credit: 1.0

BPA

This course teaches networking through the PISD Cisco Networking Academy Program and prepares students for industry standard certifications. Topics include WANs, routers, TCP/IP addressing, routing protocols, and network troubleshooting. This is a Distinguished Level course (beginning with the graduating class of 2023).

CYBERSECURITY

POSTSECONDARY OPTIONS

CERTIFICATE/ LICENSE	ASSOCIATE'S DEGREE	BACHELOR'S DEGREE	MASTER'S/ DOCTORAL PROFESSIONAL DEGREE
GIAC Reverse Engineering Malware	System Networking, and LAN/WAN Management	Computer Systems Networking and Telecommunications	Computer Systems Analysis/Analyst
Certified Advanced Windows Forensic Examiner	Information Technology	Computer Systems Networking and Telecommunications	Information Technology
SAP Certified Technology Professional System Security Architect	Computer and Information Sciences, General		
SAP Certified Technology Professional System Security Architect	Computer Science		

WORKFORCE/CAREER OPTIONS

OCCUPATIONS	MEDIAN WAGE	ANNUAL OPENINGS	% GROWTH
Information Security Analysts	$91,915	814	29%
Network and Computer System Administrators	$82,597	2,814	19%
Computer Systems Analyst	$87,568	5,937	29%

Postsecondary, workforce, and career options data provided by Texas Education Agency (TEA).