CSCI-230

Process for New Course Offering - All Schools

This form is to be completed for a course that has never been approved by the Curriculum Council.

STEP ONE: Requesting professional (teacher/counselor) completes the written request.	
STEP TWO: Requesting professional takes request to Department Chair for consideration/additional information. The Department Chair presents the course to members of the department.	**Recommended / Not Recommended** Amy Anderson 11-5-24 *Department Chair / Date* 11-4-24 *Date of Department Mtg.*
STEP THREE: Request is sent to the Head Principal for consideration.	**Recommended / Not Recommended** _11-5-24_ *Head Principal Signature / Date*
STEP FOUR: Counselors complete Skyward Course Information on the written request form.	**Skyward Course Information Completed** Jennifer Ming *Department Chair*
STEP FIVE: Request is brought to the Curriculum Council for a final decision by the Department Chair and/or the requesting professional. Presence is expected at the Curriculum Council meeting to answer any questions.*	**Recommended / Not Recommended**** _11-12-24_ *Curriculum Council Chair Signature / Date*
STEP SIX: Final determination, before submission to the BOE, is determined by the Assistant/Deputy Superintendent overseeing the Office of Curriculum & Instruction.	**Recommended / Not Recommended** _11-12-24_ *Asst./Deputy Superintendent Signature / Date*
STEP SEVEN: Request is presented to BOE for approval	**Approved / Not Approved**
STEP EIGHT: If approved by BOE, Request is sent to technology: A Zendesk is written by Chair of the Curriculum Council & paper copies are delivered by administrative assistant.	*Date Zendesk Submitted* *Date Forms Delivered*
STEP NINE: GCHS Registrar/Counselors are notified of completed changes by Technology. Forms are returned to the Office of Curriculum & Instruction.	**Date Changes Complete** ☐ **Forms Returned to Office of Curriculum & Instruction**

**Course Not Approved (Notes from Curriculum Council):

Request for New Course Offering - All Schools

BELOW TO BE COMPLETED BY REQUESTING PROFESSIONAL/DEPARTMENT CHAIR

Professional Submitting Request: Emily Hamm Deloach

Building Submitting Request: GCHS

Department of Submission: Counselors

Date Submitted to Department Chair: 11/4/24

Date Completed by Professional: 11/4/24

Course Name: GCCC CompTIA Security

SKYWARD INFORMATION:
Short description of course (15 characters)
prints on transcripts GCCC CompTIA

Long description of course (30 characters)
GCCC CompTIA Security

Kansas Course Code (KCCMS): 10108

Please attach the following:

☑ Standards/Course Objectives

☑ Syllabus

☑ Description of Course

80% of standards for the course should be addressed in order for approval. Please attach any other pertinent documents you think the Council may wish to evaluate to approve the course.

Does any additional curriculum need to be purchased <u>for</u> additional credit to be offered? ☐YES* ☑NO
*If yes, please attach information regarding curriculum to be purchased that includes cost.
**If approved by building principal, Council will assume that cost of new curriculum is not a concern.

Does this course have the potential or need for a supplemental salary?

☐YES* ☑NO
*If yes, please attach an explanation of the supplemental including cost and hours.

List any pre-requisite courses:

None

Indicate the following:

☐ Required Course ☑ Elective Course

☐ Either (depends on grad reqs)

BELOW TO BE COMPLETED BY COUNSELOR

CompTIA Security+

COURSE INFORMATION
Course Number-Section: CSCI 230
Final Exam:
Start/End Date:

INSTRUCTOR INFORMATION
Instructor:
Phone:
Email:
Office Location: Click here to enter text.

CONTACTING INSTRUCTOR

EMAIL RESPONSE TIME

COURSE DESCRIPTION
DESCRIPTION: This class introduces students to computer network vulnerabilities and threats and how to safeguard computer networks from those vulnerabilities and threats. This course will expose the student to network security planning, network security technology, network security organization and the legal and ethical issues associated with network security. In this course, students will learn the skills necessary for Security+ certification.

PREREQUISITES: No prerequisite.

GCCC'S ESSENTIAL SKILLS OUTCOMES
Students will develop skills in written communication, oral communication, and critical thinking while advancing their knowledge in cultural diversity and social responsibility as part of their educational experiences at the college. These outcomes align with the college's commitment to engaging students in the collection, analysis, and communication of information.

TEXTBOOK INFORMATION
Security+ Guide to Network Security Fundamentals (2018), 6th Edition by Mark Ciampa
ISBN9781337685856

STUDENT LEARNER OUTCOMES
Students will be able to

1. Explain the challenges of securing information
2. Define information security and explain why it is important
3. Define malware
4. Define cryptography
5. Explain how to implement cryptography
6. Describe the different types of networking-based attacks
7. List the different types of network security devices and how they can be used

8. List and describe the functions of secure network protocols
9. Describe the different types of wireless network attacks
10. List the steps for securing a client device
11. List and compare the different types of mobile devices and how they are deployed
12. Describe the different types of authentication credentials
13. Describe how to manage access through account management
14. Explain how to assess the security posture of an enterprise
15. Define business continuity
16. Explain how to manage risk

COURSE TYPE

ACCELERATED COURSE: An accelerated course allows students to complete an academic course in less time than a full semester. This is an intensive course, covering a full semester's work in considerably less time. Therefore, regular, consistent attendance is vital for success, and students are required to do substantially more work outside of class.

HYBRID COURSE: A hybrid course is a blend of online or independent work and campus-based instruction. A hybrid course offers the benefit of face-to-face instruction and the flexibility and convenience of online or independent work. Each individual course provides specific classroom dates and times while online or independent instruction uses any combination of various methods: video, audio, document files, discussion boards, and written assignments.

FACE TO FACE COURSE: Face-to-face courses are campus-based classes that meet in-person at an established time and place. While instructional technologies (like Canvas) may be used to support he course, instruction takes place fully in-person. Students will still be expected to use campus technologies like email and Canvas.

ONLINE COURSE: An online course uses computer-based technologies (i.e. Canvas) to create an online "classroom." Students are instructed in course content through online learning: tutorials, testing exercises, group collaborations, independent assignments, and long-range projects. Each individual course provides a schedule of assignments and deadlines. Students need to have adequate computer skills as they will be communicating with the instructor and classmates online. This course is an online course, and you are responsible for ensuring that you can access all course material on a regular basis either from the GCCC campus or from home. Additionally, certain technical abilities will be required, such as installing necessary plug-ins and uploading files. If you have a problem with a personal computer or interrupted network connection, know that you are still responsible for submitting your work on time. If there is a problem with the Canvas system, notify your instructor and Canvas support (877) 259-3991 (or email distancelearning@gcccks.edu).

TIME COMMITMENT
A course is measured in credit hours. Each credit hour requires about 45 hours of work.

CLASSROOM DECORUM

Netiquette is online etiquette. It is important that all participants in online courses be aware of the proper online behavior and respect each other.

Use appropriate language for an educational environment:

- Use complete sentences
- Use proper spelling and grammar
- Avoid slang and uncommon abbreviations
- Do not use obscene or threatening language

Remember that the College values diversity and encourages discourse. Be respectful of differences while engaging in online discussions. For more information about Netiquette, see *The Core Rules for Netiquette* (http://www.albion.com/netiquette/corerules.html (Links to an external site.)Links to an external site.) by Virginia Shea.

CELL PHONE POLICY
Use of cellular phones or any other electronic communication devices for any purpose during a class or exam session is prohibited by Garden City Community College, unless expressly permitted by the instructor.

ATTENDANCE
GUIDELINES:
1. Attendance at GCCC is highly recommended.
2. The student is responsible for contacting each instructor regarding an absence.

State Course Codes

High School

Subject Area 10: Computer and Information Sciences (secondary)

Management Information Systems

10099 - Management Information Systems—Other

Other Management Information Systems courses.

Network Systems

10101 - Network Technology

Network Technology courses address the technology involved in the transmission of data between and among computers through data lines, telephone lines, or other transmission media (such as hard wiring, cable television networks, radio waves, and so on). These courses may emphasize the capabilities of networks, network technology itself, or both. Students typically learn about network capabilities—including electronic mail, public networks, and electronic bulletin boards—and network technology—including network software, hardware, and peripherals involved in setting up and maintaining a computer network.

10102 - Networking Systems

Networking Systems courses are designed to provide students with the opportunity to understand and work with hubs, switches, and routers. Students develop an understanding of LAN (local area network), WAN (wide area network), wireless connectivity, and Internet-based communications with a strong emphasis on network function, design, and installation practices. Students acquire skills in the design, installation, maintenance, and management of network systems that may help them obtain network certification.

10103 - Area Network Design and Protocols

Area Network Design and Protocols courses address the role of computers in a network system, the Open Systems Interconnection (OSI) model, structured wiring systems, and simple LAN (local area network) and WAN (wide area network) designs.

10104 - Router Basics

Router Basics courses teach students about router components, start-up, and configuration using CISCO routers, switches, and the IOS (Internetwork Operation System). These courses also cover such topics as TCP/IP protocol, IP addressing, subnet masks, and network trouble-shooting.

10105 - NetWare Routing

NetWare Routing courses introduce students to such topics as Virtual LANs (VLAN) and switched internetworking, comparing traditional shared local area network (LAN) configurations with switched LAN configurations, and they also discuss the benefits of using a switched VLAN architecture. These courses also may cover routing protocols like RIP, IGRP, Novell IPX, and Access Control Lists (ACLs).

State Course Codes

High School

Subject Area 10: Computer and Information Sciences (secondary)

Management Information Systems

10052 - Information and Support Services I

This course is designed for students who have chosen to pursue an Information Support and Services program of study to introduce the basic conceptual and practical skills necessary to identify, install, and manage relevant hardware and software in a server/client environment. **Prerequisite Information Support & Services I or demonstration of all competencies therein.

10053 - Database Applications

Database Application courses provide students with an understanding of database development, modeling, design, and normalization. These courses typically cover such topics as SELECT statements, data definition, manipulation, control languages, records, and tables. In these courses, students may use Oracle WebDB, SQL, PL/SQL, SPSS, and SAS and may prepare for certification.

10054 - Data Systems/Processing

Data Systems/Processing courses introduce students to the uses and operation of computer hardware and software and to the programming languages used in business applications. Students typically use BASIC, COBOL, and/or RPL languages as they write flowcharts or computer programs and may also learn data-processing skills.

10055 - Particular Topics in Management Information Systems

These courses examine particular topics in management information systems other than those already described.

10097 - Information Support and Services II

: This is a course designed for students who have chosen to pursue an Information Support and Services program of study to emphasize more advanced conceptual and practical skills necessary to identify, install, and manage relevant hardware and software in information systems. This should be a dual enrollment course with the student completing post-secondary credit hours in the Computer Support Specialist certification track (KBOR). Students should be completing preparatory competencies toward successful completion of the CompTIA Server+ or CompTIA A+ exams and attainment of certification. **Prerequisites Information Support & Services I and Information Support & Services II or demonstration of all competencies therein

10098 - Work-Based Learning in Information Support and Services

a capstone course intended to provide students with opportunities to apply the skills and knowledge learned in previous CTE and general education courses within a professional work environment. The course allows students to earn high school credit for select models of work-based learning, which allow students to interact with industry professionals in order to extend and deepen classroom work and support the development of postsecondary and career readiness knowledge and skills. Competencies during the experience, verified by the WBL coordinator or district representative, should continue to align with attainment of appropriate CompTIA certification(s).

State Course Codes

High School

Subject Area 10: Computer and Information Sciences (secondary)

Network Systems

10106 - Telecommunications

This course delves into the intricacies of modern telecommunications, exploring principles, technologies, and networks that underpin our interconnected world. Students will investigate the evolution of communication systems, from historical advancements to the latest innovations. Topics covered include signal transmission, modulation techniques, multiplexing, network architectures, and the protocols shaping the internet and mobile communications.

10107 - Wireless Networks

Wireless Networks courses focus on the design, planning, implementation, operation, and trouble-shooting of wireless computer networks. These courses typically include a comprehensive overview of best practices in technology, security, and design, with particular emphasis on hands-on skills in (1) wireless LAN set-up and trouble-shooting; (2) 802.11a & 802.11b technologies, products, and solutions;
(3) site surveys; (4) resilient WLAN design, installation, and configuration; (5) vendor interoperability strategies; and (6) wireless bridging.

10108 - Network Security

Network Security courses teach students how to design and implement security measures in order to reduce the risk of data vulnerability and loss. Course content usually includes typical security policies; firewall design, installation, and management; secure router design, configuration, and maintenance; and security-specific technologies, products, and solutions.

10109 - Essentials of Network Operating Systems

Essentials of Network Operating Systems courses provide a study of multi-user, multi-tasking network operating systems. In these courses, students learn the characteristics of the Linux, Windows 2000, NT, and XP network operating systems and explore a variety of topics including installation procedures, security issues, back-up procedures, and remote access.

10110 - Microsoft Certified Professional (MCP)

Microsoft Certified Professional courses provide students with the knowledge and skills necessary to be employed as a network administrator in the latest Windows server-networking environment. Topics include installing, configuring, and trouble-shooting the Windows server. These courses prepare students to set up network connections; manage security issues and shares; and develop policies. Students are typically encouraged to take the MCP exam.

10111 - Particular Topics in Networking Systems

These courses examine particular topics in networking systems other than those already described.

High School

Subject Area 10: Computer and Information Sciences (secondary)

Network Systems

10147 - Network Systems II

XX

10148 - Networking Systems—Workplace Experience

Networking Systems—Workplace Experience courses provide students with work experience in fields related to networking systems. Goals are typically set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses may include classroom activities as well, involving further study of the field or discussion regarding experiences that students encounter in the workplace.

10149 - Networking Systems—Other

Other Networking Systems courses.

Computer Science/Programming

10151 - Business Programming

Business Programming courses provide students with experience in using previously written software packages as well as designing and writing programs of their own. The word-processing, spreadsheet, graphics, and database exercises in these courses contain a business industry focus, and the original programs are written in languages typical of this industry (Visual Basic (VB), C++, Java, BASIC, COBOL, and/or RPL).

10152 - Computer Programming

Computer Programming courses provide students with the knowledge and skills necessary to construct computer programs in one or more languages. Computer coding and program structure are often introduced with the BASIC language, but other computer languages, such as Visual Basic (VB), Java, Pascal, C++, and COBOL, may be used instead. Initially, students learn to structure, create, document, and debug computer programs, and as they progress, more emphasis is placed on design, style, clarity, and efficiency. Students may apply the skills they learn to relevant applications such as modeling, data management, graphics, and text-processing.

10153 - Visual Basic (VB) Programming

Visual Basic (VB) Programming courses provide an opportunity for students to gain expertise in computer programs using the Visual Basic (VB) language. As with more general computer programming courses, the emphasis is on how to structure and document computer programs and how to use problem-solving techniques. These courses cover such topics as the use of text boxes, scroll bars, menus, buttons, and Windows applications. More advanced topics may include mathematical and business functions and graphics.

State Course Codes

High School

Subject Area 10: Computer and Information Sciences (secondary)

Computer Science/Programming

10154 - C++ Programming

C++ Programming courses provide an opportunity for students to gain expertise in computer programs using the C++ language. As with more general computer programming courses, the emphasis is on how to write logically structured programs, include appropriate documentation, and use problemsolving techniques. More advanced topics may include multi-dimensional arrays, functions, and records.

10155 - Java Programming

Java Programming courses provide students with the opportunity to gain expertise in computer programs using the Java language. As with more general computer programming courses, the emphasis is on how to structure and document computer programs, using problem-solving techniques. Topics covered in the course include syntax, I/O classes, string manipulation, and recursion.

10156 - Computer Programming—Other Language

Computer Programming—Other Language courses provide students with the opportunity to gain expertise in computer programs using languages other than those specified (such as Pascal, FORTRAN, or emerging languages). As with other computer programming courses, the emphasis is on how to structure and document computer programs, using problem-solving techniques. As students advance, they learn to capitalize on the features and strengths of the language being used.

10157 - AP Computer Science A

Following the College Board's suggested curriculum designed to mirror college-level computer science courses, AP Computer Science A courses provide students with the logical, mathematical, and problem-solving skills needed to design structured, well-documented computer programs that provide solutions to real-world problems. These courses cover such topics as programming methodology, features, and procedures; algorithms; data structures; computer systems; and programmer responsibilities.

10159 - IB Computing Studies

IB Computer Studies courses prepare students to take the International Baccalaureate Computing Studies exam at either the Subsidiary or Higher level. The courses emphasize problem analysis, efficient use of data structures and manipulation procedures, and logical decision-making. IB Computing Studies courses also cover the applications and effects of the computer on modern society as well as the limitations of computer technology.

10160 - Particular Topics in Computer Programming

These courses examine particular topics in computer programming other than those already described.

State Course Codes

High School

Subject Area 10: Computer and Information Sciences (secondary)

Computer Science/Programming

10165 - Applied Game Design

Game technologies represent the culmination of logic, sequence, tool utilization, and extension of skill. Programming process for this course will utilize all previously learned factors of programming logic, artistry, and interactivity.

10197 - Computer Programming—Independent Study

Computer Programming—Independent Study courses, often conducted with instructors as mentors, enable students to explore topics related to computer programming. Independent Study courses may serve as an opportunity for students to expand their expertise in a particular specialization, to explore a topic in greater detail, or to develop more advanced skills.

10198 - Work-Based Learning in Programming and Software Development

A capstone course intended to provide students with opportunities to apply the skills and knowledge learned in previous CTE and general education courses within a professional work environment. The course allows students to earn high school credit for select models of work-based learning, which allow students to interact with industry professionals in order to extend and deepen classroom work and support the development of postsecondary and career readiness knowledge and skills.

10199 - Computer Programming—Other

Other Computer Programming courses.

Media Technology

10201 - Web Design

Web Design courses teach students how to design web sites by introducing them to and refining their knowledge of site planning, page layout, graphic design, and the use of markup languages-such as Extensible Hypertext Markup, JavaScript, Dynamic HTML, and Document Object Model - to develop and maintain a web page. These courses may also cover security and privacy issues, copyright infringement, trademarks, and other legal issues relating to the use of the Internet. Advanced topics may include the use of forms and scripts for database access, transfer methods, and networking fundamentals.

10202 - 2D Animation

Course provides students with the opportunity to explore and produce visual imagery and graphics to communicate information and ideas to multiple audiences. This course uses a variety of media and formats for various fields, such as advertising, TV/Video, and the web.

State Course Codes

High School

Subject Area 10: Computer and Information Sciences (secondary)

Media Technology

10203 - Interactive Media

Interactive Media courses provide students with the knowledge and skills to create, design, and produce interactive media products and services. The courses may emphasize the development of digitally generated and/or computer-enhanced media. Course topics may include 3D animation, graphic media, web development, and virtual reality. Upon completion of these courses, students may be prepared for industry certification.

10204 - Particular Topics in Media Technology

These courses examine particular topics in internet design and applications other than those already described.

10210 - 3D Animation

The 3D Animation course explores the creative and conceptual aspects or designing and producing animated images for storytelling and multimedia presentations including dramatic narratives; artistic and experimental presentations and installations; and ambient, interactive, immersive and performance media. Topics may include motion graphics; compositing and visual effects; 2D and 3D animation; timing and spacing; aspect ratio; video editing; animation physics and expressions; pre- and post-production methods, tools, and processes; animation presentation, transmission, distribution, and marketing; and contextual, cultural, and historical aspects and considerations.

10247 - Media Technology—Independent Study

Media Technology—Independent Study courses, often conducted with instructors as mentors, enable students to explore topics related to media technology. Independent Study courses may serve as an opportunity for students to expand their expertise in a particular specialization, to explore a topic in greater detail, or to develop more advanced skills.

10248 - Graphic Design Workplace Experience

Graphic Design—Workplace Experience courses provide students with work experience in fields related to graphic design. Experience can be an internship, apprenticeship, or simulated work experience. Goals are typically set cooperatively by the student, teacher, and work site supervisor. These courses may include classroom activities as well, involving further study of the field or discussion regarding experiences that students encounter in the workplace. Comprehensive - Students can take Graphic Design Workplace Experience as a full credit course for a more in-depth study of the graphic design industry.

10249 - Media Technology—Other

Other Media Technology courses.

State Course Codes

High School

Subject Area 10: Computer and Information Sciences (secondary)

Information Support and Services

10251 - Computer Technology

Computer Technology courses introduce students to the features, functions, and design of computer hardware and provide instruction in the maintenance and repair of computer components and peripheral devices.

10252 - Computer Maintenance

Computer Maintenance courses prepare students to apply basic electronic theory and principles in diagnosing and repairing personal computers and input/output devices. Topics may include operating, installing, maintaining, and repairing computers, network systems, digital control instruments, programmable controllers, and related robotics.

10253 - Information Support and Services

Information Support and Services courses prepare students to assist users of personal computers by diagnosing their problems in using application software packages and maintaining security requirements.

10254 - IT Essentials: PC Hardware and Software

IT Essentials: PC Hardware and Software courses provide students with in-depth exposure to computer hardware and operating systems. Course topics include the functionality of hardware and software components as well as suggested best practices in maintenance and safety issues. Students learn to assemble and configure a computer, install operating systems and software, and troubleshoot hardware and software problems. In addition, these courses introduce students to networking and often prepare them for industry certification.

10255 - CISCO—The Panduit Network Infrastructure Essentials (PNIE)

CISCO—PNIE courses provide students with the knowledge to create innovative network infrastructure solutions. These courses offer students basic cable installer information and help them acquire the skills to build and use the physical layer of network infrastructure and develop a deeper understanding of networking devices.

10256 - Particular Topics in Information Support and Services

These courses examine particular topics in computer support, maintenance, and repair other than those already described.

10260 - Educational Trainer

Educational Trainer course provides instruction and practice for students who can train teachers, peers, and community in the effective integration of technology. Training on various technology tools, professional demeanor, customer service, and troubleshooting.

State Course Codes

High School

Subject Area 10: Computer and Information Sciences (secondary)

Information Support and Services

10297 - Information Support and Services—Independent Study

Information Support and Services—Independent Study courses, often conducted with instructors as mentors, enable students to explore topics related to computer information support and services. Independent Study courses may serve as an opportunity for students to expand their expertise in a particular specialization, to explore a topic in greater detail, or to develop more advanced skills.

10298 - Information Support and Services—Workplace Experience

Information Support and Services—Workplace Experience courses provide students with work experience in fields related to information support and/or service. Goals are typically set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses may include classroom activities as well, involving further study of the field or discussion regarding experiences that students encounter in the workplace.

10299 - Information Support and Services—Other

Other Information Support and Services courses.

All Others

10995 - Computer and Information Sciences—Aide

Computer and Information Sciences—Aide courses offer students the opportunity to assist instructors in preparing, organizing, or delivering course curricula. Students may provide tutorial or instructional assistance to other students.

10997 - Computer and Information Sciences—Independent Study

Computer and Information Sciences—Independent Study courses, often conducted with instructors as mentors, enable students to explore computer-related topics of interest. Independent Study courses may serve as an opportunity for students to expand their expertise in a particular specialization, to explore a topic in greater detail, or to develop more advanced skills.

10998 - Computer and Information Sciences—Workplace Experience

Computer and Information Sciences—Workplace Experience courses provide students with work experience in fields related to computer and/or information sciences. Goals are typically set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses may include classroom activities as well, involving further study of the field or discussion regarding experiences that students encounter in the workplace.

State Course Codes

High School

Subject Area 10: Computer and Information Sciences (secondary)

All Others

10999 - Computer and Information Sciences—Other

Other Computer and Information Sciences courses.

Subject Area 11: Communications and Audio/Visual Technology (secondary)

Communication

11001 - Introduction to Communication

Introduction to Communication courses enable students to understand and critically evaluate the role of media in society. Course content typically includes investigation of visual images, printed material, and audio segments as tools of information, entertainment, and propaganda; improvement of presentation and evaluative skills in relation to mass media; recognition of various techniques for delivery of a particular message; and, in some cases, creation of a media product. The course may concentrate on a particular medium.

11002 - Communication Technology

Communication Technology courses enable students to effectively communicate ideas and information through experiences dealing with drafting, design, electronic communication, graphic arts, printing process, photography, telecommunications, and computers. Additional topics covered in the course include information storage and retrieval. Drafting equipment may be used to make scale drawings, including multi-view drawing, photographs, and poster mock-ups.

11003 - Particular Topics in Communication

These courses examine specific topics in communication other than those already described.

11047 - Communication—Independent Study

Communication—Independent Study courses, often conducted with instructors as mentors, enable students to explore topics of interest related to mass communications. Independent Study courses may serve as an opportunity for students to expand their expertise in a particular application, to explore a topic in greater detail, or to develop more advanced skills.

State Course Codes

High School

Subject Area 31: Information Technology Cluster

31002 - Introduction to Physical Computing

Students develop an understanding of programming for the physical world, including but not limited to the Internet of Things (IoT), microcontrollers, robotics, and other physical computing devices that are in use in our world.

31090 - Applied Graphic Design

The goal of this course is to provide the student with work-based learning opportunities in graphic design. It will be focused on applying technical skills to solve real-world graphic design problems. This course will also provide graphic design instruction in the organization and presentation of his or her work in a portfolio format of professional quality. A portfolio, digital portfolio archive, self-promo, resume and business ensemble will be produced. Instruction in interviewing techniques and employment searches will also be provided.

31091 - Advanced Media Design and Production

In addition to listed technical competencies Local Education Agencies are encouraged to develop Personalized Learning coursework representative of explicit objectives measured against specific target employment skills that are not available in other courses. These should be enumerated in addition to those listed below. Additional competencies may reflect the work environment, workplace experience and/or the essential skills addressed reflective of previous coursework.

31094 - AP Computer Science Principles

AP Computer Science Principles offers a multidisciplinary approach to teaching the underlying principles of computation. The course will introduce students to the creative aspects of programming, abstractions, algorithms, large data sets, the Internet, cybersecurity concerns, and computing impacts. AP Computer Science Principles will give students the opportunity to use technology to address real-world problems and build relevant solutions. Together, these aspects of the course make up a rigorous and rich curriculum that aims to broaden participation in computer science.

31095 - Applied Concepts of Network Systems

Students acquire personalized learning representing explicit objectives measured against specific target employment skills that are not available in other courses. The personalization of learning will be based on a particular work environment, workplace experience and/or the essential skills addressed from previous coursework.

31096 - Web and Design Workplace Experience

High School

Subject Area 31: Information Technology Cluster

The Web & Design Workplace Experience course provides students work experiences in the fields related to web and digital interface design. Experience can be an internship, apprenticeship, or simulated work experience where students navigate the complexities of web and digital interface design. Students will develop skills to test layouts, interfaces, functionality, and navigation menus to ensure compatibility and usability across browsers and devices, as well as design and develop graphics, websites, and software. Goals are typically set cooperatively by student, teacher, and work site supervisor. These courses may include classroom activities as well, involving further study of the field or discussion regarding experiences that students encounter in the workplace.

31097 - Information Support Project Management & Resource Scheduling

Course gives students who are not able to find an internship or a cooperative work environment the ability to apply what they learned from the Technical level course. The course will be administered by a teacher in the school with the goal of providing a project base curriculum for the student to solve real world problems. (Example: Analyze existing and planned business environments and develop a strategy for the implementation of information support and services that address the business needs.) Ways to implement would include having student enter CTSO competitions (e.g. Business Professional of America, Network Design Team competition or Cisco Networking Academy NetRiders). Instructor must be able to create a curriculum based on the requirements of the competition.

31098 - Programming and Software Development Project Management

The Programming and Software Development Project Management course provides students with the information and skills necessary for success in managing projects and operating logistical ventures in technology, business, and industry. This course covers scheduling of resources (including personnel, budget, timelines, and equipment), utilization of Gantt charts, economic principles within the workplace, and risk management. Other possible topics include developing a business plan, finance, business law, marketing and promotion strategies, insurance employee/employer relations, problem-solving and decision-making, and building leadership skills. These courses may also incorporate a survey of the careers within technology and engineering industries.

31099 - Network Systems Project Management and Resource Scheduling

Course gives students who are not able to find an internship or cooperative work environment the ability to apply what they learned from the Technical level course. The course will be administered by a teacher in the school with the goal of providing a project base curriculum for the student to solve real world problems. (Example Analyze existing and planned business environments and develop a strategy for the implementation of a network infrastructure that addresses the business needs.) Ways to implement would having student enter CTSO competitions (e.g. Business Professional of America: Network Design Team competition or Cisco Networking Academy NetRiders. Instructor must be able to create a curriculum based on the requirements of the competition.

High School

Subject Area 41: Science, Technology, Engineering, and Mathematics Cluster

41030 - Simulation and Modeling (SAM)

In (SAM), students create models and simulate social, physical, and biological systems. Students apply statistics and data analysis to understand systems and predict behavior, and they compare models to complex, real data. Students create simulations to communicate central ideas in the physical, biological, and social sciences and deepen their understanding of concepts in discrete math and computer science. This course emphasizes collaboration, professional writing, and the scientific method.

41034 - Artificial Intelligence (AI)

AI students will develop artificially intelligent systems that create solutions to real problems found in science and industry. Students analyze problems for computational difficulty and analyze solutions for computational efficiency. Students engage in a wide array of applications, including automated vehicles and computer vision.

41036 - Cyber Security

This course introduces the tools and concepts of cybersecurity and encourages students to create solutions that allow people to share computing resources while protecting privacy. Nationally, computational resources are vulnerable and frequently attacked; in this course, students solve problems by understanding and closing these vulnerabilities. This course raises students' knowledge of and commitment to ethical computing behavior. It also aims to develop students' skills as consumers, friends citizens, and employees who can effectively contribute to communities with a dependable cyber-infrastructure that moves and processes information safely.

41037 - Computational Problem Solving (CPS)

Computational Problem Solving offers students the opportunity to work in a team to deliver a software solution to a real-world design problem. Teams start by defining problems, which might originate from CPS students, community, or industry clients, or students in other problem-based courses, and use the Agile design process to develop a software solution. Effective practices in problem solving, documentation, software development, presentation, and collaboration are central to the course.