Middle School Information Technology Education Courses

Information Support and Services Pathway (N0)

Course Number	Course Title	Course Length	Course Sequence
145005	Information Technology	60-120 Hours	7, 8
145010	Web Design	60-120 Hours	7,8
145020	Computer and Mobile Applications	60-120 Hours	7, 8
145025	Computer Hardware	60-120 Hours	7, 8
145030	Computer Software	60-120 Hours	7, 8
145035	Networking	60-120 Hours	7, 8
145060	Programming	60-120 Hours	7, 8
145110	Video and Sound	60-120 Hours	7, 8

Interactive Media Pathway(N1)

Course Number	Course Title	Course Length	Course Sequence
145005	Information Technology	60-120 Hours	7, 8
145010	Web Design	60-120 Hours	7,8
145020	Computer and Mobile Applications	60-120 Hours	7, 8
145060	Programming	60-120 Hours	7, 8
145095	Design Techniques	60-120 Hours	7, 8
145100	Creating and Editing Digital Graphics	60-120 Hours	7, 8
145105	Multimedia and Image Management Techniques	60-120 Hours	7, 8
145110	Video and Sound	60-120 Hours	7, 8
145115	Animation	60-120 Hours	7, 8

Networking Pathway(N2)

Course Number	Course Title	Course Length	Course Sequence
145005	Information Technology	60-120 Hours	7, 8
145010	Web Design	60-120 Hours	7,8
145020	Computer and Mobile Applications	60-120 Hours	7, 8
145025	Computer Hardware	60-120 Hours	7, 8
145030	Computer Software	60-120 Hours	7, 8
145035	Networking	60-120 Hours	7, 8
145060	Programming	60-120 Hours	7, 8
145110	Video and Sound	60-120 Hours	7, 8

Programming and Software development Pathway(N3)

Course Number	Course Title	Course Length	Course Sequence
145005	Information Technology	60-120 Hours	7, 8
145010	Web Design	60-120 Hours	7,8
145020	Computer and Mobile Applications	60-120 Hours	7, 8
145060	Programming	60-120 Hours	7, 8
145105	Multimedia and Image Management Techniques	60-120 Hours	7, 8
145110	Video and Sound	60-120 Hours	7, 8
145115	Animation	60-120 Hours	7, 8

Note: To receive funding for Middle Information Technology Education Courses, students must be offered continuous courses for Grades 7 through 12. Middle school courses offered in buildings other than the high school must complete a CTE-26 identifing the building of instruction and Program of Study. State licensure rules apply.

Information Technology

Career Field Pathways and Course Structure

Information Technology
Subject Code: 145005

This first course in the IT career field is designed to provide students with a working knowledge of computer concepts and essential skills necessary for work and communication in today's society. Students will learn safety, security, and ethical issues in computing and social networking. Students will also learn about input/output systems, computer hardware and operating systems, and office applications.

Web Design
Subject Code: 145010

Students will learn the dynamics of the Web environment while pursuing an in-depth study of both Hypertext Markup Language (HTML) and Cascading Style Sheets (CSS). Web based protocols such as FTP, TCP/IP, and HTTP will be addressed. Students will create a website with tag text elements, special characters, lines, graphics, hypertext links, and graphical tables.

Computer and Mobile Applications
Subject Code: 145020

Students will learn to create applications for mobile devices using a variety of commercial and open source software. They will install these applications, modify them, and develop customer service skills to handle user issues. Knowledge and skills related to customer service in professional offices, small businesses, departments, work groups, and corporate information services will be addressed.

Computer Hardware
Subject Code: 145025

Students will learn to install, repair, and troubleshoot computer hardware systems. They will perform preventative maintenance practices and learn techniques for maintaining computer hardware security. Communication skills and professionalism in troubleshooting situations will be emphasized.

Computer Software
Subject Code: 145030

Students will apply knowledge and skills of commercial and open source operating systems in portable, stand alone, and networked devices. Students will install a variety of operating systems manually and using remote assistance. They will learn to configure, modify, and troubleshoot operating systems. Desktop virtualization, system

security, and operating system history will be addressed.

Networking
Subject Code: 145035

Students will install, configure, and troubleshoot network hardware and peripherals. Students will learn networking by exploring the OSI model, network topologies, and cabling. Students will design simple networks, know how to select physical devices, and be able to configure the equipment. Knowledge and skills relating to the operation and usage of network protocols will be developed.

Programming
Subject Code: 145060

In this course, students will learn the basics of building simple interactive applications. Students will learn the basic units of logic: sequence, selection, and loop. Students will apply algorithmic solutions to problem-domain scenarios. Students will gain experience in using commercial and open source languages, programs, and applications.

Design Techniques
Subject Code: 145095

Students will learn techniques for transforming photographic images, through use of digital cameras, computers, and mobile devices. To accomplish this, they will learn software photo editing techniques including layering, color correction, masking, and special effects using current commercial and open source programs and applications.

Creating and Editing Digital Graphics
Subject Code: 145100

Students will learn to design, develop, and produce interactive media projects, web sites, and social media contexts. Students will demonstrate methods of creating professional quality media using commercial and open source software.

Multimedia and Image Management Techniques
Subject Code: 145105
Students will apply principles of image creation, management procedures, and multimedia techniques as they create, revise, optimize, and export graphics for video, print, and web publishing. The course will address issues related to web based publishing, social media, and security. Students will utilize current commercial and open source languages, programs, and applications.

Video and Sound
Subject Code: 145110

Students will create professional video and audio productions for distribution in traditional and new media channels. Students will plan, produce, edit, and launch media products. Students will develop scripts and storyboards, compose shots and operate cameras, capture sounds using microphone hardware, apply special effect techniques, and edit to achieve the final product. Students will be able to use animation and graphic design for video.

Animation
Subject Code: 145115

Students will use animation and storyboarding techniques to plan the production of an animation project. Students will design from script and storyboard actions in the pre-production planning process. Students will use commercial and open source digital animation software to create finished animations, cartoons, and other short movies. They will accomplish this using animated text, character movements, voice, background sound, sound effects, camera movements, and multiple scenes.