TExES® Technology Applications EC–12
Curriculum Crosswalk

Test Content Categories	Required Course Numbers											
Domain I — Technology Applications Core												
Competency 001: *The Technology Applications teacher knows technology terminology and concepts; the appropriate use of hardware, software and digital files; and how to acquire, analyze and evaluate digital information*.												
A. Knows and uses technology terminology and concepts appropriate to the task.												
B. Knows the appropriate use of software and hardware components.												
C. Demonstrates knowledge of various types of networks (e.g., LAN, WAN, intranets and the Internet).												
D. Knows how to select, connect and use a variety of local and remote peripheral devices.												
E. Knows how to manage compatibility issues for a variety of media, file formats (e.g., text, graphics, image, video, audio), file naming conventions, file management structures and digital organization strategies.												
F. Knows how to evaluate software for quality, appropriateness, effectiveness, efficiency, support and licensing to make decisions regarding its proper acquisition and use.												

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Test Content Categories										
G. Knows how to access, manage and manipulate information from secondary storage devices.										
H. Knows strategies for searching, acquiring and accessing information from electronic resources.										
I. Knows how to assess the accuracy and validity of acquired information and how to resolve information conflicts through research and comparison of data from multiple sources.										
J. Demonstrates knowledge of intellectual property rights (e.g., copyright, Creative Commons, free and open source licensing) when accessing, using, manipulating and editing electronic data.										
K. Demonstrates knowledge of issues of unacceptable use of computer resources including, but not limited to, cyberbullying and harassment, computer hacking, computer piracy, plagiarism, vandalism, intentional virus setting and invasion of privacy.										
L. Demonstrates ethical and lawful acquisition of digital information, including the use of established methods to cite sources.										
M. Understands digital safety, privacy rules, digital etiquette, acceptable use of technology and the ethical and legal responsibilities of using social media.										
N. Knows how to use online help and other support documentation to troubleshoot minor technical problems with hardware and software.										

	Required Course Numbers									
Test Content Categories										
O. Knows how to develop documentation for a variety of products.										
P. Demonstrates knowledge of technology's historical and future impact on society.										
Competency 002: *The Technology Applications teacher knows how to use technology tools to solve problems, evaluate results and communicate information in a variety of formats for various audiences.*										
A. Knows how to plan, create, edit, analyze and represent data in documents using general productivity software.										
B. Knows how to explore complex concepts using simulations, models, interactive virtual environments and new technologies to develop hypotheses, modify input and analyze results.										
C. Demonstrates knowledge of how to design and implement procedures to track trends, set timelines and evaluate the progress of products using project management tools for continual improvement in process and product development.										
D. Knows how to evaluate projects for design, purpose, audience and content delivery using various criteria (e.g., project specifications, rubrics).										
E. Knows how to select representative products to be collected and stored in an electronic evaluation tool and to evaluate products for relevance to the assignment or task.										

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Test Content Categories											
F. Knows how to plan and design products that are accessible to learners with various needs and abilities.											
Competency 003: *The Technology Applications teacher knows how to plan, organize, deliver and evaluate instruction that effectively utilizes current technology for teaching the Technology Applications Texas Essential Knowledge and Skills (TEKS) to all students*.											
G. Knows how to implement grade-level appropriate instructional practices, activities and materials to improve student learning.											
H. Knows how to implement lessons using various instructional strategies.											
I. Demonstrates knowledge of issues related to the balanced use of technology for various populations.											
J. Knows how to implement instruction that allows students to solve problems by posing questions, collecting data and interpreting results.											
K. Knows how to develop and facilitate collaborative tasks among group members, incorporating various perspectives while exploring alternative solutions.											
L. Knows strategies to help students learn how to locate, retrieve, analyze, evaluate, communicate and retain content-related information from a variety of texts and digital sources.											

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M. Knows how to evaluate student projects and portfolios using various assessment methods (e.g., formal, informal).											
N. Knows how to promote effective self-evaluation and use of feedback from peers.											
O. Knows the relationship between instruction and assessment.											
P. Knows how to adjust instruction based on assessment results.											
Q. Demonstrates knowledge of emerging technology and its role in education.											
R. Knows the importance of self-assessment and planning for professional growth.											
Domain II — Digital Art and Animation											
Competency 004: *The Technology Applications teacher demonstrates knowledge of the principles and elements of design and their application to digital art and animation.*											
A. Knows concepts and terminology related to digital art and animation applications.											
B. Knows how to differentiate among and demonstrate the appropriate use of a variety of tools found in graphic and photo editing software applications.											
C. Demonstrates knowledge of the rules of visual composition (e.g., rule of thirds and golden section) and how they relate to harmony and balance as well as discord and drama.											

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D. Knows how to apply basic pictorial qualities using elements and principles of design (e.g., proportion, balance, variety, emphasis, harmony, symmetry and unity) in type, color, size, line thickness, shape and space.											
E. Knows how to critique projects implementing the fundamental concepts of graphic design using rubrics for problem-solving tasks.											
F. Demonstrates knowledge of perspective (e.g., background, light, shade/shadow and scale) to capture a focal point and create depth.											
G. Knows how to create three-dimensional effects using depth of field (e.g., fore-ground, middle distance and background).											
H. Knows how to identify, select and appropriately use various color formats (RGB, CMYK, Hexadecimal and Pantone) and processes such as spot color and black and white.											
I. Demonstrates knowledge of color theory and knows how it is applied to create new colors in digital format.											
J. Knows how to apply a variety of color schemes (e.g. tertiary, monochromatic, analogous, complementary and cool and warm colors; primary/secondary triads; and split complements) to digital designs.											
K. Knows how to define and use the twelve principles of animation to meet the requirements of an animation project.											

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L. Knows how to distinguish between and use different modeling techniques such as box modeling and polygon primitives that use extrusion and rotation.											
Competency 005: *The Technology Applications teacher demonstrates knowledge of principles of typography, modeling and page layout using appropriate graphic tools to create a variety of products*.											
A. Knows how to integrate information using productivity tools (e.g., text, database, spreadsheet and graphic files).											
B. Demonstrates the appropriate use of typography (e.g., serif, sans serif, drop cap, decorative letters and embedded-text frames) as graphic elements.											
C. Demonstrates the proper usage among the categories of typefaces while recognizing and resolving conflicts that occur from combined usage.											
D. Knows how to use styles, including a variety of type specifications and formatting.											
E. Knows how to critique the fundamental concepts of 3-D modeling and design, such as composition, perspective, angles, lighting, repetition, proximity, white space, balance and contrast.											
F. Knows how to examine 3-D model objects to interpret the point of interest, the prominence of the subject and visual parallels between the structures of natural and human-made environments.											

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Competency 006: *The Technology Applications teacher knows how to use graphics, animation and page design to produce products that convey a specified message to an intended audience.*											
A. Knows how to apply the appropriate vocabulary related to digital art and animation software.											
B. Knows how to implement the basic concepts of color and design theory working with bitmap and vector images in order to create a complete graphic design (e.g., backgrounds, characters and other objects).											
C. Knows concepts and terminology related to computer animation (e.g., rendering, storyboarding, timeline, materials/ textures, layers, GIFs, framerate, keyframes, tweening and rigging).											
D. Knows how to distinguish between and use the animation techniques of path- and cel- animation and utilize basic animation tools such as onion-skinning and tweening.											
E. Demonstrates appropriate use of scripting languages in order to create an animation.											
F. Identifies and defines the design attributes and requirements of products created for a variety of print and digital purposes (e.g., posters, billboards, e-publications, Web pages and multimedia format).											
G. Knows how to implement and evaluate design and printing requirements as they relate to purpose, audience and final output specifications.											

	Required Course Numbers										
Test Content Categories											
H. Knows how to make decisions regarding the selection, acquisition and use of graphics and animation software, taking into consideration its quality, appropriateness, effectiveness and efficiency.											
I. Knows how to synthesize information using data gathered from interview, print and multi-media resources.											
J. Demonstrates appropriate use of lighting techniques.											
K. Knows how to publish information in a variety of formats.											
L. Knows how to delineate and make necessary adjustments regarding compatibility issues, including but not limited to digital file formats and cross-platform connectivity.											
M. Demonstrates the impact of graphics, animation, typography and page design on society, including concepts related to persuasiveness, marketing and point of view.											
N. Knows how to research the history and future of digital art and animation career opportunities.											

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Test Content Categories											
Domain III — Digital Communications and Multimedia											
Competency 007: *The Technology Applications teacher knows how to produce and distribute digital video and multimedia products.*											
A. Knows the roles and responsibilities of a production crew for digital video and multimedia projects.											
B. Knows how to address issues related to the stages of production for projects (preproduction, production and postproduction).											
C. Knows critical elements, issues and concepts of the preproduction stage (e.g., design procedures, timeline, scripting, equipment and casting).											
D. Demonstrates knowledge of postproduction strategies for audio, video and multimedia publications.											
E. Demonstrates knowledge of issues related to creating multimedia products for a variety of purposes and audiences.											
F. Demonstrates proper strategies for script writing.											
G. Knows how to use camera perspective, content selection and framing (e.g., color and white space) in multimedia products for a defined audience and purpose.											
H. Knows how to import/export audio, video and multimedia files from a variety of sources.											

	Required Course Numbers									
Test Content Categories										
I. Knows how to publish using a variety of platforms.										
Competency 008: *The Technology Applications teacher demonstrates knowledge of current practice, future trends and procedural protocols in the use of audio/video and digital publications*.										
A. Understands how to identify/define problems and questions for multimedia publications.										
B. Knows how to design and implement procedures to track trends, set timelines and review and evaluate progress for project completion.										
C. Knows how to use current industry standards to plan and examine document, script and storyboard development processes.										
D. Knows how to use and implement audio techniques in order to create, edit and integrate digital sounds.										
E. Knows how to determine the most appropriate file type based on universally recognized file formats for audio, video and digital publications, such as WAV, MP3, OGG, MP4, AVI, MOV, PDF, PNG, JPG, IBA, WebM and EPUB.										
F. Knows how to select the appropriate compression codec for documents, images, audio and video files with consideration for audience and final platform.										

	Required Course Numbers									
Test Content Categories										
G. Demonstrates knowledge of various videography techniques (including lighting, composition, audio, resolution, voice-over editing and delivery) in completion of a final product.										
H. Knows how to select the appropriate evaluation tools and delivery methods for digital publications, as well as audio (e.g., sound rates, channels and frequency) and video files.										
Competency 009: *The Technology Applications teacher knows how to design, produce and distribute multimedia products*.										
A. Demonstrates an understanding of the impact that digital publications have on current and emerging media environments.										
B. Knows how to apply copyright laws, licenses, and fair use (including Creative Commons and public domain) as well as use digital information such as attributing ideas and citing sources.										
C. Demonstrates appropriate respect for intellectual property when manipulating, morphing and editing graphics, video, text and sound.										
D. Knows how to explain the ethical impact that digital publishing and audio and video production have on society.										
E. Knows how to create pre-planning designs such as rough sketches, storyboards and brainstorming.										

Test Content Categories	Required Course Numbers										
F. Knows how to design and implement procedures to track trends, set timelines and review and evaluate progress for project completion.											
G. Knows how to create a portfolio to document work experiences and samples.											
H. Knows how to format digital information for effective communication for a defined audience.											
I. Knows how to select the appropriate evaluation tools and delivery methods for digital publications as well as audio and video files.											
J. Knows how to deliver the product in a variety of media formats.											
Domain IV — Web Design											
Competency 010: *The Technology Applications teacher demonstrates knowledge of strategies and techniques for website administration*.											
A. Knows concepts and terminology related to Web administration (e.g., URL, IP addresses, HTML, CSS and FTP).											
B. Knows how to obtain, assess and use various Web standards such as those of the World Wide Web Consortium (W3C), Ecma International and the Internet Corporation for Assigned Names and Numbers (ICANN) to make informed decisions and implement standards in original work.											
C. Knows the differences between Internet and intranet.											

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D. Demonstrates knowledge of the top-level domains (e.g., gov, net, com, mil, org and edu) and is familiar with new domain implementation.											
E. Knows the technical needs and functionality/use of Web servers.											
F. Demonstrates knowledge of the requirements for a Web server and resolves issues relating to compatibility (e.g., file formats and cross-platform connectivity).											
G. Knows the historical development and characteristics of a variety of network protocols and knows methods of accessing information on the Internet (e.g., HTTP, FTP, TCP/IP, Telnet, Gopher and WAIS).											
H. Knows issues related to network security and knows how to select and implement methods to protect a Web server from unauthorized use.											
I. Understands bandwidth issues as related to audience, server, connectivity and cost.											
J. Knows how to establish a folder/directory hierarchy for storage of Web pages and their related files.											
K. Knows how to control access to a Web site via password controls and global access/deny controls.											

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Test Content Categories											
L. Knows how to make decisions regarding the selection, acquisition and use of software related to Web mastering, Web gaming and Web communications, taking into consideration its quality, appropriateness, effectiveness and efficiency.											
Competency 011: *The Technology Applications teacher knows principles of Web design and implements a variety of tools and techniques to create and troubleshoot Web pages for a various audience.*											
A. Knows how to use specific tools such as text editors and Web authoring programs to create a Web site.											
B. Knows how to discuss, analyze, compare and contrast game types such as action, action adventure, adventure, construction and management simulation, life simulation, massively multiplayer online role-playing game (MMORPG), music, party, puzzle, role-playing, sports, strategy, trivia and vehicle simulation.											
C. Demonstrates knowledge of issues related to incorporating graphics, video, audio and multimedia sequences into a Web page.											
D. Demonstrates knowledge of design principles (e.g., size of graphics, font size and color, backgrounds, ratio of text to white space, proximity, unity, balance, alignment, repetition and contrast).											
E. Knows how to analyze and determine the appropriate use of dynamic, static and interactive Web sites and open/closed file formats and software.											

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Test Content Categories										
F. Demonstrates knowledge of issues related to displaying Web pages on a variety of browsers and monitors (e.g., color, page size, browser version, plug-ins) with cross-browser compatibility.										
G. Knows how to plan and design Web pages that are accessible to various audiences (e.g., visually impaired, learning disabled, physically disabled).										
H. Knows how to work collaboratively to create Web-based programs and gaming products.										
I. Knows how to validate HTML code to current industry standards using available online diagnostic tools.										
J. Knows how to use hypertext markup language (HTML), cascading style sheets (CSS), Hypertext PreProcessor (PHP) and JavaScript through hard coding using a text editor, and Web authoring programs utilizing interactive databases and server-side processing.										
Competency 012: *The Technology Applications teacher knows how to use Web pages to communicate and interact effectively with others*.										
A. Knows how to format information for appropriate and effective communication (e.g., appropriate use of hyperlinks, designing content for a specific audience).										
B. Understands, analyzes and determines the appropriate use of dynamic, static and interactive Web sites.										

	Required Course Numbers										
Test Content Categories											
C. Knows how to implement methods for creating interactivity in Web pages.											
D. Knows how to effectively create a Web site that communicates intended information to the target audience.											
E. Knows how to engage in online activities that follow appropriate behavioral, communication and privacy guidelines (e.g., ethics, personal security, verbiage) determined by the intended audience, including the ethical use of files and file sharing.											
F. Knows how to examine the impact of internet technologies on society through research, interviews and personal observations.											
G. Knows how to comprehend the impact of Internet history and structure on current use.											
H. Knows how to examine and apply the proper and acceptable use of digital/virtual communications technologies.											
I. Knows how to work collaboratively to create functioning Web-based programs and gaming products.											