Missouri
DEPARTMENT OF ELEMENTARY & SECONDARY
EDUCATION™

Information Technology Sequence 4

Code: 8144

MISSOURI INFORMATION TECHNOLOGY
SEQUENCE 4
Test Code: 8144
Version: 01

Computer Applications 50%
Multimedia 25%
Web Design 25%

Specific competencies and skills tested in this assessment:

Computer Applications

Execute Basic Computer Operations
Use program interface (e.g., menu items, ribbons, toolbars, dialog boxes)
Manage and transfer files
Identify file formats and extensions
Perform basic troubleshooting and maintenance
Identify hardware and software specifications to purchase a computer (e.g., RAM, processor, hard
drive, software, and price)
Save files to various storage devices (e.g., CDs, USB, hard drive, DVD)
Determine appropriate software applications for tasks

Construct Business Documents using Word Processing Applications
Create and format business documents (e.g., letters, memos, outlines, newsletters, and reports)
Set printer specifications
Proofread and edit documents
Manipulate the features of word processing software to enhance documents (e.g., headers, footers,
tabs)
Create and format tables
Create mail-merge documents
Insert and manipulate graphics
Create documents using templates
Prepare envelopes and labels
Illustrate the use of enhancement features (e.g., borders, lines, shading, bold, bullets)
Demonstrate use of automatic features (e.g., AutoCorrect, spell-check, thesaurus)

Construct Business Documents using Spreadsheet Applications

Create, design, and edit spreadsheets
Create basic formulas with addition, subtraction, multiplication, and division
Format cell, column, and row contents (e.g., font, color, alignment, shading, decimal)
Format columns and rows
Use basic functions/formulas (e.g., auto sum, average, IF)
Create, format, and edit charts and graphs
Interpret and organize spreadsheet data (e.g., sort and filter)
Set print specifications for formulas, graphs, worksheets, etc.
Use relative and absolute cell references

Construct Business Documents using Database Applications

Create and manipulate a database
Process material using database features (e.g., sort, filter, and merge)
Distinguish between different field types (e.g., text, numeric)

Construct Business Documents using Presentation Applications

Create, format, and edit presentations
Enhance presentations (e.g., sound, animation, graphics, transitions, and video)
Apply design and layout principles to presentations
Set print specifications for outline, slides, handouts, etc.
Utilize proper presentation etiquette (e.g., number of bullets, lines, words, and notes)
Integrate input from various software applications

Explore the Internet and Online Classroom Portals

Demonstrate principal usages of online communication (e.g., upload, download, attaching files)
Identify copyright principles (e.g., public domain, copy protection, licensing)
Evaluate Internet resources

Multimedia

Apply Foundational Concepts

Utilize hardware to manipulate various types of media (e.g., cameras, microphones, graphic
  tablets, etc.)
Use organizational skills to plan multimedia products (e.g., storyboarding, outlining, scripting,
  task delegation)
Create text using typography principles

Manage Media Files

Develop electronic file management systems (project folders, file naming, etc.)
Convert files to various formats (e.g., .flv to .avi, .mov to .wmv, .psd to .jpg)

Manage Images
Acquire and import images from a variety of sources (e.g., scanners, cameras, phones, etc.)
Apply appropriate image mode for intended application (e.g., convert RGB, CMYK, grayscale, etc.)
Compose images using layers and selections
Edit images (e.g., color, filter, tint, contrast, brightness)
Manipulate images (e.g., mask, resize, crop, scale, group/ungroup, zoom, and pan)
Create original artwork using illustrative software

Create Audio Files
Compare and contrast audio formats common size and quality (mp3, .wav, midi)
Rip and import audio from a variety of sources (e.g., CD/DVD, video, Internet)
Create original audio (e.g., voice, instrument)
Mix audio (e.g., layering, trimming, level adjustments)
Apply effects to audio (e.g., noise reduction, amplify, echo, etc.)
Apply editing techniques

Create Animations
Create frame-by-frame animations
Apply motion and shape tweens
Modify bitmaps (trace bitmap, convert to symbol)
Use layers and object modification techniques (e.g., transform, alpha transparency, filters)
Add interactivity to animations with buttons, menus, and scripting

Create Video Files
Develop pre-production documents (e.g., storyboard, shot list, etc.)
Apply basic filming techniques (e.g., camera angles, camera movement, lighting, sound, etc.)
Access, capture, and import a variety of file sources converting file types, if necessary (e.g., audio, video, graphics, etc.)
Arrange video clips, audio clips, titles, and still images on timeline
Manipulate clips (e.g., link/unlink, adjust transparency, set properties, trim, adjust speed/duration, etc.)
Synchronize audio with video

Create and Deliver Electronic Presentations
Identify components of effective electronic presentations
Import files into a presentation (e.g., text, images, audio, video, etc.)
Apply advanced editing techniques (e.g., build, effects, timing, animation, transitions, etc.)

Create and Utilize Emerging Technologies
Utilize and create collaborative electronic tools (e.g., wikis, blogs, forums, etc.)
Utilize web-based technologies to publish media (e.g., screencasts, podcasts, vodcasts, iTunes)

Develop Workplace Readiness Skills
Compare copyright and patent laws for multiple media between educational and workplace settings (e.g., video, text, sound, pictures, etc.)
Identify career/self-employment opportunities in multimedia production

Web Design

Apply Introductory Principles
Explain how resolution affects Web page creation

Design an Effective Website
Define Web page design principles and elements
Evaluate Websites based on design elements and principles (e.g., alignment, color, navigation, user feedback)
Plan an organized layout
Select an appropriate navigational structure
Use Web-safe colors and fonts
Employ proofreading and editing techniques
Apply Web accessibility standards

Demonstrate Image Creation and Manipulation Skills
Recognize the different image types and their extensions (e.g., gif, jpg)
Use layering techniques in image editing program to better manage images (e.g., ordering, arranging, naming)
Optimize an image to improve load time

Demonstrate Page Creation Skills
Use Web authoring software to create Web pages
Identify and apply HTML tags and attributes for basic Web page design (e.g., title, metadata, table, link)
Create and use a template

Apply Effective Web Page Management Techniques
Organize all content files into folder management
Create meta tags to be utilized by a variety of search engines
Apply copyright laws in all Web-related projects

Use Advanced Web Creation Techniques
Create interactive design elements (e.g., rollover, swap image, slideshow)
Use Cascading Style Sheets (CSS) to control page elements (e.g., external, internal, inline)

Written Assessment:

Administration Time: 3 hours
Number of Questions: 151

Areas covered:

50%	Computer Applications
25%	Multimedia
25%	Web Design

Sample Questions:

To navigate to the next cell horizontally and then vertically in a word processing table, press the
_____ key.
   A.   tab
   B.   enter
   C.   alt
   D.   command

Which of the following can be printed using presentation software?
   A.   queries
   B.   CD covers
   C.   forms pages
   D.   notes pages

Which of the following fields would be considered a text data type?
   A.   (231) 555-1212
   B. $137.89
   C.   3/2/2013
   D.   24

A tilt is a motion of the camera head which moves it
   A.   left and right
   B.   up and down
   C.   in and out
   D.   side to side

Two types of hyperlinks are
   A.   internal and external
   B.   inside and outside
   C.   primary and secondary
   D.   private and public