Tennessee CTE

Computer Applications

Communication Networks, the Internet, and Technology Operations

1. **Research recent developments in information technology affecting the supply/demand characteristics of the job market, including career pathways and occupational outlooks for occupations in business and finance that require information technology expertise. Synthesize findings into a presentation highlighting the typical roles and responsibilities of professionals in high-growth occupations.** 1
2. **Identify, connect, and demonstrate the correct usage of elements of a typical home computer, including a monitor, keyboard, mouse, network cable, and USB devices (such as camera, memory, or scanner). Perform basic troubleshooting as needed for situations involving these components (e.g., if the computer does not recognize a device).** 2
3. **Correctly and safely execute basic file management operations on a typical personal computer and shared storage media, including the opening, creating, copying, moving, deleting, and renaming of files and folders, as well as searching for a specified file or folder on local or networked storage media.** 3
4. **Research effective use of cloud storage, online digital collaboration platform, and file sharing applications. Recommend and effectively employ the appropriate file storage and sharing solution for a given project.** 4
5. **Describe and demonstrate the correct connections and setup for a new wireless router in a home computing environment. Discuss the impact of network speeds, wireless communication, firewalls, and gateways on individual and societal productivity.** 5
6. **Describe the steps necessary to retrieve, download, and safely install new applications, updates, and plug-ins from the Internet.** 6
7. **Compare and contrast the accessibility of the Internet through a home router versus through a public wi-fi access point. Discuss the risks and advantages of using secure home networks versus publicly accessible networks.** 7
8. **While preparing materials and assignments in this course, use a browser to access and download Internet resources by uniform resource locator (URL), hyperlink, or favorite/bookmark.** 8

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Use a word processing program to create and format documents with academic and business styles (e.g., memos, letters, agendas, reports, tabular lists) to

communicate the results of research, meetings, lab reports, and relevant assignments in this course. 9

10 **Craft documents using word processing program features and methods such as:** 10

- a Paragraph formatting (line spacing, justification, indentations) 10.A
- b Bulleted and numbered lists 10.B
- c Tables of multiple columns, with and without borders 10.C
- d Margins, headers, footers, page numbers, and footnotes 10.D
- e Typeface fonts and weights, including hyperlinks 10.E
- f Capitalization, punctuation, number expression, grammar 10.F
- g Printing orientation, one- or two-sided, to a selected printer 10.G
- h Bibliographies and tables of contents 10.H
- i Saving to a file that can be shared and/or transported, including saving to cloudbased or external sources 10.I

11 **Enhance documents by including graphic arts components such as borders and shaded elements, graphs and charts from other programs, watermarks, and imagery imported from technology devices and drives as well as sources retrieved from the Internet, including adding citations and/or captions for each element when appropriate.** 11

12 **Create, format, and edit documents suitable for print or electronic distribution, both fourcolor and two-color (black and white).** 12

13 **Critique and edit existing documents with standard proofreading and editing marks to conform to a standard business style guide (e.g., fonts, colors, line spacing). Practice the use of electronic revision marks and comments, where supported.** 13

14 **Complete a comprehensive word-processing project with instructor approval that applies the skills acquired in this section. For example, prepare a contract, MLA-style report, business proposal, or budget report from a student organization.** 14

Spreadsheet Applications

15 **Use a spreadsheet program to create and format academic and business documents for the purposes of tabulating and calculating numerical and/or textual data (e.g., statistics, historical data, measurements), such as budget calculations, sales reports, lab data, and related analyses.** 15

16 **Craft documents using a spreadsheet program using features and methods such as:** 16

- a Cells, columns, and rows 16.A
- b Formulas and functions 16.B

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c Copy, move, delete, and fill 16.C

d Cell-value formats (numerical and text) and alignment 16.D

e Column and row width/height, insert/delete, move 16.E

f Printing to a selected printer 16.F

g Saving with a file format that can be shared and/or transported 16.G

17 Create new formulas to analyze data by calculating with, extracting from, presenting, and/or summarizing, including: 17

a Basic arithmetic calculations 17.A

b Basic mathematic (e.g., SUM, AVG, MIN, MAX) and text (e.g., LEN, LEFT, RIGHT, MID) functions 17.B

c Copying formulas that include both relative and absolute cell references 17.C

d Sorting in ascending/descending order 17.D

e Filtering data to retrieve specific values 17.E

f Basic conditional formatting (e.g., red for negative values) 17.F

18 Create and format for optimal clarity a variety of types of graphs and charts, including bar charts, line charts, pie charts, and X-Y graphs, based on tabulated data. 18

19 Retrieve a spreadsheet template (from those installed with the program or from the Internet) and customize it for a particular assignment approved by the instructor. For example, prepare a "timecard" of one's daily hours spent on a month-long job assignment. 19

Database Applications

20 Use a database program to interpret the structure of an existing database (found in teaching resources or teacher-created), identifying tables, fields, key fields, queries, forms, and reports. 20

21 Using an existing database (found in teaching resources or teacher-created), create and run a database report based on basic queries. For example, retrieve the relevant information to answer a customer product inquiry during a mock customer service phone call. 21

22 Using an existing database (found in teaching resources or teacher-created), create, modify, and perform basic queries through a form to create a new table/view in a database. 22

Presentation Software

23 Design, create, and deliver an oral presentation for a selected audience on a topic approved by the instructor. Using a specified slide number and duration, include the following elements: 23

a A selected theme (colors, background, fonts, etc.) 23.A

b Bulleted text based on a chosen style 23.B

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c Photographs and other imagery 23.C

d Charts and graphs 23.D

e Video and animated graphics 23.E

f Animated transitions of slides and components within a slide 23.F

24 **Design, create, and deliver a self-running electronic slideshow for a selected audience on a topic approved by the instructor. Using a specified slide number and duration, include the following elements:** 24

a A selected theme (colors, background, fonts, etc.) 24.A

b Photographs and other imagery 24.B

c Video and animated graphics 24.C

d Animated transitions of slides Save the file in a format that can be tran 24.D

Digital Citizenship

25 **Research, summarize, and deliver (via presentation, document, spreadsheet data/chart, or other format) a summary of the various perspectives and ramifications surrounding an ethical issue related to modern-day electronic communications, as approved by the instructor. Develop and strengthen claim(s) and counterclaim(s) about the issue, citing supportive evidence. Potential issues include spam, flaming, cyberbullying, libel, slandering, and mining of personal data for profit.** 25

26 **Research, summarize, and deliver (via presentation, document, spreadsheet data/chart, or other format) a summary of the various perspectives and ramifications surrounding an ethical issue related to intellectual property rights, as approved by the instructor. Develop and strengthen claim(s) and counterclaim(s) about the issue, citing supportive evidence. Potential issues include copyright infringement, piracy, plagiarism, art licensing, creative commons, and the state/federal laws that govern them.** 26

27 **Explain, furnish examples, and demonstrate technical literacy with the following terms:** 27

a The Internet, World Wide Web, and various browsers 27.A

b Network speeds, wireless communication, firewalls, and gateways 27.B

c Domains, hyperlinks, homepages, favorites/bookmarks, plugins, tabs, and downloads/uploads 27.C

Electronic Communication and Collaboration

28 **Employ skills covered in this course (document processing, spreadsheet applications, electronic presentations, databases, Internet fluency) to complete a cross curricular project approved by the instructor.** 28