Texas CTE

Information Technology (2010): Grade 9

Adopted 2010

Principles of Information Technology

(1) The student demonstrates the necessary skills for career development, employability, and successful completion of course outcomes. The student is expected to:

(A) identify and demonstrate positive work behaviors that enhance employability and job advancement such as regular attendance, promptness, attention to proper attire, maintenance of a clean and safe work environment, appropriate voice, and pride in work;

(B) identify and demonstrate positive personal qualities such as flexibility, open-mindedness, initiative, listening attentively to speakers, and willingness to learn new knowledge and skills;

(C) employ effective reading and writing skills;

(D) employ effective verbal and nonverbal communication skills;

(E) solve problems and think critically;

(F) demonstrate leadership skills and function effectively as a team member;

(G) identify and implement proper safety procedures;

(H) demonstrate an understanding of legal and ethical responsibilities in relation to the field of information technology; and

(I) demonstrate planning and time-management skills such as project management and storyboarding.

(2) The student identifies various employment opportunities in the information technology field. The student is expected to:

(A) identify job opportunities and accompanying job duties and tasks;

(B) research careers of personal interest along with the education, job skills, and experience required to achieve personal career goals; and

(C) describe understanding of the functions of resumés and portfolios.

(3) The student uses emerging technologies to exchange information. The student is expected to:

(A) identify and describe functions of various new and emerging technologies;

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(B) send and receive text information and file attachments using electronic methods such as email, electronic bulletin boards, and instant message services;

(C) demonstrate effective Internet search strategies, including keywords and Boolean logic using various available search engines;

(D) dissect and identify the various components of a Uniform Resource Locator;

(E) demonstrate ability to effectively test acquired information from the Internet for accuracy, relevance, and validity;

(F) explain issues concerning Internet security protocols such as computer viruses, online predators, hacking, and identity theft;

(G) define and identify unethical practices such as hacking, phone fraud, online piracy, and data vandalism; and

(H) demonstrate ethical use of Internet and online resources, including citation of source.

(4) The student demonstrates knowledge of the hardware components associated with information systems. The student is expected to:

(A) identify the different computer classifications such as minicomputer, mainframe, and microcomputer;

(B) identify major hardware components and their functions such as the central processor unit, input and output peripherals, and storage systems and devices;

(C) use available reference tools such as user manuals, both online and written, as appropriate;

(D) demonstrate understanding of the process of connecting peripheral devices; and

(E) demonstrate proficiency in the use of a variety of input devices such as mouse, keyboard, microphone, digital camera, printer, scanner, and optical disk reader.

(5) The student demonstrates knowledge of the different software associated with information systems. The student is expected to:

(A) differentiate between systems and application software;

(B) identify and understand major operating system fundamentals and components;

(C) identify the function and operation of compilers and interpreters;

(D) identify various computer languages and how the languages are used in software development;

(E) recognize data representation in software development such as string, numeric, character, integer, and date;

(F) demonstrate understanding of file extensions and the purpose of file types across software products;

(G) recognize computer numbering systems and internal data representation;

(H) identify appropriate use of application software;

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(I) identify new and emerging classes of software;

(J) identify open source and proprietary licenses;

(K) demonstrate proper use of system management tools; and

(L) demonstrate proper file management techniques such as creating, naming, organizing, copying, moving, and deleting files.

(6) The student analyzes network systems. The student is expected to:

(A) identify hardware associated with telecommunications and data networking such as servers, routers, switches, hubs, and network connectors;

(B) identify and describe various types of networks such as peer-to-peer, local area networks, wide area networks, wireless token ring, and Ethernet;

(C) identify and describe functions of network operating systems; and

(D) explain troubleshooting techniques for various network connection issues.

(7) The student applies word-processing technology. The student is expected to:

(A) identify the terminology associated with word-processing software and its functions;

(B) improve the touch-system skill using the keyboard and keypad to input data;

(C) edit a variety of text documents using functions such as pagination, appropriate white space, tab settings, and font style, size, and color;

(D) create professional letters using advanced word-processing features;

(E) apply formatting techniques to a multipage research paper using approved publication standards such as American Psychological Association and Modern Language Association;

(F) produce desktop publishing documents incorporating both text and graphics such as business cards, newsletters with mastheads, and advertisement flyers; and

(G) demonstrate file protection and security.

(8) The student applies spreadsheet technology. The student is expected to:

(A) identify the terminology associated with spreadsheet software and its functions;

(B) format and organize numerical content to perform mathematical processes such as addition, subtraction, multiplication, and division; percentages and decimals; and order of operations principle;

(C) employ both student-created formulas and preprogrammed functions to produce documents such as budget, payroll, statistical tables, and personal checkbook register;

(D) create and analyze spreadsheets incorporating advanced features such as lookup tables, nested IF statements, subtotals, cell protection conditional formatting, charts, and graphs; and

(E) edit a variety of spreadsheets by performing data management procedures using simple and multiple search parameters to locate, sort, search, and filter data.

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(9) The student applies database technology. The student is expected to:

- (A) identify the terminology associated with database software and its functions;
- (B) create, populate, edit, maintain, and save database files;
- (C) differentiate the nature and interrelationships of fields and records;
- (D) perform data management procedures such as locating, sorting, searching, querying, organizing, and outputting data;
- (E) use data management procedures using multiple search parameters; and
- (F) produce organized reports with calculated figures.

(10) The student applies presentation management technology. The student is expected to:

- (A) identify the terminology associated with presentation software and its functions;
- (B) create, save, edit, and produce presentations with appropriate handouts and speaker notes; and
- (C) create a non-linear presentation incorporating links, hyperlinks, audio, and graphics.

(11) The student applies design and web publishing techniques. The student is expected to:

- (A) identify the terminology associated with web page editing software and its functions;
- (B) identify the terminology associated with interactive media;
- (C) identify and describe design principles such as contrast, repetition, alignment, and proximity;
- (D) identify and describe types and styles of typeface used for publications such as serif and sans serif; and
- (E) create a web page containing links, graphics, and text.

(12) The student understands and demonstrates legal and ethical procedures as they apply to the use of information technology. The student is expected to:

- (A) demonstrate ethical use of online resources;
- (B) adhere to copyright rules and regulations;
- (C) differentiate between copyright and trademarks;
- (D) explain the concept of intellectual property;
- (E) examine the consequences of plagiarism; and
- (F) describe the function of a non-disclosure agreement.