

# 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.

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- (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.

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**(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;
- (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.

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**(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.

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**(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;
- (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.

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**(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.

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**(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.

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**(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.

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**(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.

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**(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.

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**(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.