

## **Information and Communication Technology (BTT1O, BTT2O) in Business, Grade 9 or 10, Open**

This course introduces students to information and communication technology in a business environment and builds a foundation of digital literacy skills necessary for success in a technologically driven society. Students will develop word processing, spreadsheet, database, desktop publishing, presentation software, and website design skills. Throughout the course, there is an emphasis on digital literacy, effective electronic research and communication skills, and current issues related to the impact of information and communication technology.

# Digital Literacy

## Overall Expectations

By the end of this course, students will:

- demonstrate an understanding of the terminology associated with information and communication technology;
- demonstrate an understanding of the computer workstation environment;
- manage electronic files and folders;
- analyse options for accessing the Internet;
- apply effective techniques when conducting electronic research.

## Specific Expectations

### *Terminology*

By the end of this course, students will:

- identify types of devices and tools used in information and communication technology (e.g., mobile computing devices, e-mail software);
- define key terms associated with information and communication technology (e.g., intranet, URL, hardware, spam, web browser);
- use current information and communication technology terms appropriately.

### *The Computer Workstation*

By the end of this course, students will:

- explain the basic functions of the components of a computer (e.g., bus, CPU, RAM) and its peripheral devices (e.g., printer, scanner, storage devices, video and digital cameras);
- explain the purpose of an operating system;
- identify common user interface elements (e.g., icons, menus, toolbars) and describe their functions;
- compare stand-alone and networked computer environments;
- demonstrate efficient use of a computer workstation (e.g., proper keyboarding technique, correct posture).

### *File Management*

By the end of this course, students will:

- apply appropriate conventions when naming files and folders;
- organize files and folders in a logical manner;
- identify and access appropriate drives to facilitate data storage and retrieval.

### *The Internet*

By the end of this course, students will:

- identify different ways to connect to the Internet (e.g., phone line, cable, satellite, wireless);
- compare the functions of different types of devices that can connect to the Internet (e.g., cell phones, personal digital assistants [PDAs], laptops);
- compare the services provided by a variety of Internet service providers.

### *Electronic Research*

By the end of this course, students will:

- identify the types of electronic tools that can be used for research (e.g., CD-ROMs, databases, search engines);
- use the features of a web browser (e.g., favourites/bookmarks, history, refresh/reload, print preview) to facilitate electronic research;

- use the features (e.g., Boolean logic, advanced search, image search) of a variety of search engines to locate information;
- evaluate websites for usefulness, accuracy, validity, bias, appropriateness, and currency;
- use an accepted citation format (e.g., MLA, APA) to acknowledge electronic sources (e.g., websites, online magazine articles, personal e-mail messages).

# Productivity Software

## Overall Expectations

By the end of this course, students will:

- use word processing software to create common business documents;
- use spreadsheet software to perform a variety of tasks;
- manage information, using database software.

## Specific Expectations

### *Word Processing*

By the end of this course, students will:

- perform word processing tasks (e.g., create, save, update, print), using common software features (e.g., formatting, page setup, editing, language tools, graphic tools, hyperlinks);
- use word processing software to produce properly structured and formatted business documents (e.g., letter, memo, report, résumé);
- use support tools and features (e.g., wizards, manuals, online help features, tutorials) to enhance their ability to use word processing software applications.

### *Spreadsheet*

By the end of this course, students will:

- input, organize, and format data in a spreadsheet;
- use formulas and functions (e.g., sum, average, minimum, maximum) to perform specific spreadsheet tasks;
- produce spreadsheet documents (e.g., budget, inventory, payroll, invoice) to manage data;
- use software to produce charts that visually represent spreadsheet data.

### *Database*

By the end of this course, students will:

- define common database terminology (e.g., field, record, file, query);
- use common database software features (e.g., create, query, sort, add, delete, update records, print) to locate and organize information.

## Design Software

### Overall Expectations

By the end of this course, students will:

- use presentation software to create and deliver effective presentations;
- use desktop publishing software to create publications;<sup>4</sup>
- demonstrate an understanding of the uses and design of effective websites, and develop their own web pages.

### Specific Expectations

#### *Presentations*

By the end of this course, students will:

- identify guidelines for designing an effective electronic presentation (e.g., colour schemes, font size, slide content);
- create electronic presentations for specific purposes and audiences;
- use software features (e.g., slide transitions, slide layouts, design templates, animation, sound) to enhance presentations;
- use effective presentation skills when delivering an electronic presentation (e.g., plan for room dynamics; verbally emphasize important points and support them with screen images).

#### *Desktop Publishing*

By the end of this course, students will:

- use desktop publishing features (e.g., templates, importing text and graphics, font, layout, styles) to enhance publications;
- use desktop publishing software to design and create a variety of publications (e.g., card, invitation, flyer, newsletter) for specific purposes and audiences.

#### *Web Page Development*

By the end of this course, students will:

- compare the purposes (e.g., to promote a business, to market products, to provide information) and target audiences of a variety of websites;
- identify guidelines for developing effective websites (e.g., guidelines on design, technical requirements, appropriate language, and inclusive images);
- design and create web pages for specific purposes and audiences.

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4. If desktop publishing software is not available, students may use the desktop publishing features of word processing software programs to meet the requirements of this expectation.

# Business Communications

## Overall Expectations

By the end of this course, students will:

- demonstrate an understanding of the characteristics of effective business documents and communications;
- use appropriate technology to facilitate effective communication;
- maintain a portfolio of exemplary work that illustrates their skills in information and communication technology, including the ability to create effective business communications.

## Specific Expectations

### *Business Communications Standards*

By the end of this course, students will:

- identify characteristics of effective business documents and communications (e.g., clarity, conciseness, completeness, timeliness, proper etiquette, appropriate formatting);
- compose effective business documents and communications;
- edit, revise, and proofread to produce well-organized and grammatically correct business documents and communications;
- collaborate with peers to develop and enhance business communications, and recognize how collaboration can improve productivity;
- use presentation skills when communicating business-related information for specific purposes and audiences (e.g., oral communication skills, appropriate body language, use of a variety of techniques to engage the audience).

### *Electronic Communication*

By the end of this course, students will:

- describe the tools used to communicate electronically in business (e.g., online conferencing, e-mail, voice mail, instant messaging);

- demonstrate effective use of e-mail software;

- use etiquette appropriate to the audience and purpose when communicating electronically.

### *Portfolio*

By the end of this course, students will:

- identify the skills and competencies (e.g., keyboarding skills, software knowledge and skills) needed to work effectively in an information and communication technology environment;
- assess their personal competencies and skills in information and communication technology;
- create and maintain a portfolio by selecting samples of their work, including business communications, that illustrate their skills and competencies in information and communication technology.

## Ethics and Issues in Information and Communication Technology

### Overall Expectations

By the end of this course, students will:

- demonstrate an understanding of legal, social, and ethical issues relating to information and communication technology;
- analyse privacy and security issues relating to information and communication technology;
- assess the impact of information and communication technology on personal health and the environment.

### Specific Expectations

#### *Legal, Social, and Ethical Issues*

By the end of this course, students will:

- describe legal issues related to information and communication technology (e.g., freedom of information, piracy, copyright);
- analyse ethical issues related to information and communication technology (e.g., spam, plagiarism, unauthorized downloading, inappropriate or dangerous sites or usage, power to promote hatred and discriminatory attitudes);
- describe the impact of access and equity issues relating to information and communication technology (e.g., the availability of software to assist people with disabilities, access to equipment at home, the effect of technology on northern and Aboriginal communities);
- explain the purpose and content of an acceptable use agreement.

#### *Privacy and Security Issues*

By the end of this course, students will:

- describe privacy and security issues related to information and communication technology (e.g., protection of credit card information; cookies; identity theft; spyware; cyber stalking);
- explain the importance of keeping information secure and confidential (e.g., through the use of passwords, encryption, biometric authentication, firewalls);

- analyse the form and potential impact of computer viruses;
- explain how anti-virus software applications in a business environment enhance system security.

#### *Health and Environmental Issues*

By the end of this course, students will:

- describe an ergonomically correct work environment;
- assess the personal health risks associated with the use of information and communication technology (e.g., musculoskeletal injuries, eye strain);
- explain the impact of information and communication technology on the environment (e.g., disposal of hardware, recycling of paper and toner cartridges).

# Glossary

The following definitions of terms are intended to help teachers and parents/guardians use this document.

**Aboriginal person.** A person who is a descendant of the original inhabitants of North America. The Canadian Constitution (1982) recognizes three primary groups as Aboriginal peoples: Indians, Inuit, and Métis.

**biometric authentication.** The use of unique human physical characteristics to provide unambiguous identification. Examples of biometrics-based authentication include electronic fingerprint reading, facial recognition, voice recognition, and retina scanning.

**blog.** An abbreviation for “Web log”, a blog is a type of website on which the author posts entries in a journal format.

**Boolean logic.** A form of algebra in which all values are reduced to either True or False. Boolean logic can be applied to search criteria specified in a search engine to narrow the number of website matches.

**business cooperative.** A form of business organization in which each “member” has one vote, regardless of that member’s level of investment. A cooperative is often set up by members to address their needs, but many cooperatives also provide goods and/or services for general sale to the public.

**business sector.** The major sectors in the economy are the government sector, the voluntary sector, the not-for-profit sector, and the business sector. The business sector consists of privately owned, for-profit companies involved in the production and sale of goods and services.

**computer acceptable use agreement.** A set of rules and conditions governing the appropriate use of technology while using the computer and/or accessing the Internet.

**cookies.** A text file created by the server computer when a user enters information into a website. The main purpose of cookies is to identify users and customize web pages for them.

**CPU (central processing system).** The “brains” of the computer, where most calculations take place. Often referred to as the processor or central processor.

**Crown corporation.** Corporations that are operated either by provincial governments or the federal government as a means to pursue economic and social objectives.

**digital literacy.** The ability to understand, evaluate, and integrate information in multiple formats via the computer and the Internet.

**directory.** A hierarchical structure created on a device for storing and retrieving computer files. In a graphical environment, directories are represented as folders.

**discretionary income.** Individual income that is not allocated for necessary items such as food and shelter.

**diversity.** In reference to a society, the variety of groups of people who share a range of commonly recognized physical, cultural, or social characteristics. Categories of groups may be based on various factors or characteristics, such as gender, race, culture, ethnicity, sexual orientation, ability/disability, age, religion, and socioeconomic level.

**encryption.** The translation of data into a secret code.

**entrepreneur.** A person who recognizes opportunities (others’ needs, wants, and problems), takes initiative, accepts associated risks, assumes leadership and responsibility, and uses resources to implement innovative ideas for new, thoughtfully planned ventures; someone who pursues opportunity beyond the resources he or she currently controls.



**ergonomically correct work environment.** The physical arrangement of the components of the computer work environment that results in a comfortable and safe environment for the user. Another term for ergonomics is “human engineering”.

**extranet.** An intranet that is partially accessible, with authorization, to users outside of an organization.

**feature.** A notable property of a software application. Basic features include properties that are common to software regardless of manufacturer (e.g., text formatting, fonts, margins, alignment, tabs, spell check, grammar check, tables, help, sort, query, built-in calculations, and page numbering). Advanced features include properties that are specific to the application software being used (e.g., animation, macros, templates, wizards, and document review).

**firewall.** A system used to prevent access to or from a private network. Firewalls are often used by companies to prevent individuals outside the company from accessing private networks that are connected to the Internet.

**function.** An operation that can be performed by software. Basic functions include operations that are common to most software packages (e.g., highlighting a word and pressing the delete key to delete the word). Advanced functions include operations that are specific to application software (e.g., performing a series of specific keystrokes to complete specific operations).

**hyperlink.** An element in an electronic document that links to another location in the same document or to a location on the Internet. Typically, one clicks on the hyperlink to follow the link. Hyperlinks can be text or graphics. Text hyperlinks are typically underlined blue text.

**information and communication technology.** Commonly known as “ICT”, information and communication technology refers to the electronic accessing, processing, managing, and communicating of information.

**innovation.** The use of a new technology, item, or process to change the nature of the goods and services currently provided, the way they are produced, or the way they are distributed.

**Internet.** A global network that connects millions of computers. The Internet is decentralized by design. Each computer connected to the Internet is called a host. Hosts are independent in that their operators can choose which Internet services (e.g., online shopping, blogs) to use and which services to make available to the global Internet community (e.g., by publishing a website).

**Internet service provider (ISP).** A company that provides users with access to the Internet, usually for a fee. ISPs may also provide e-mail services.

**intranet.** A network that is similar in design to the Internet but is accessible only to individuals within an organization or with authorization. A firewall is used to protect the intranet from unauthorized access.

**ISO certification.** Certification by the International Organization for Standardization, a network of national standards bodies that facilitates the international coordination and unification of industrial standards.

**LAN (local area network).** A computer network that connects computers in a small area, usually a single building. In a LAN environment, users at individual computer workstations can share data and peripheral devices.

**musculoskeletal injuries.** Injuries of muscles, ligaments, and tendons caused by overexertion, repetitive movements, and awkward postures associated with keyboard work.

**networked environment.** Two or more computer systems connected together to allow the sharing of software, data, and peripheral devices.

**newsgroups.** An online discussion group of people who share similar interests.

**operating system.** Software that manages the operations of a computer and peripheral devices.

**PDA (personal digital assistant).** A handheld device that combines computing, telephone/fax, Internet, and networking features.

**peripheral devices.** External devices that are attached to the computer (e.g., printers, scanners, digitizers, and digital cameras).

**phishing.** The act of sending an e-mail to a user while falsely claiming to be a legitimate business in an attempt to trick the user into revealing personal information that could be used for crimes such as identity theft.

**plagiarism.** The act of copying someone else's work (e.g., a piece of writing, a graphic, a chart) and presenting it as one's own.

**RAM (random access memory).** Memory that temporarily stores data and instructions. Also called primary or main memory.

**search engine.** A program that enables users to search the World Wide Web for information contained in websites, using keywords.

**social responsibility.** The principle that companies should contribute to the welfare of society and not be devoted solely to maximizing profits.

**spam.** Unsolicited e-mail.

**spyware.** Any software that gathers user information through the user's Internet connection without his or her knowledge, usually for advertising purposes.

**stand-alone environment.** An environment in which computer systems are not linked to each other via a network.

**trade agreement.** An agreement between nations regarding issues of commerce, including quotas or tariffs.

**URL (uniform resource locator).** A global address of documents and other resources on the World Wide Web.

**USB (universal serial bus).** An external peripheral interface standard for communication between a computer and external peripherals (e.g., digital camera, mouse, printers) over a cable using biserial transmission.

**venture.** Any initiative that mobilizes resources to produce a good or establish a service that will address needs, wants, problems, and challenges.

**venture plan.** A comprehensive written summary drawn up to test the feasibility of a proposed venture. It includes an indication of how the entrepreneur intends to organize resources to attain his or her goals and serves as a "road map" for operating the venture and for measuring its progress.

**WAN (wide area network).** A computer network that connects computers over a large geographical area.

**web browser.** A software application used to locate and display web pages on the Internet.

**website.** A site on the World Wide Web. Each website contains a home page, which is the first document displayed when a user enters a site.

**World Wide Web (WWW).** A collection of linked electronic documents. A user may move from one location on the World Wide Web to another by clicking on a link on a web page.

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