

INFORMATION AND COMMUNICATIONS TECHNOLOGY 11

MR. HOLOWKA

Course Overview

TERM 1					TERM 2				
September	October	November	December	January	February	March	April	May	June
Introductory Unit		Core Skills			Advanced Skills			Application and Presentation	

Rationale

The intention of Information Technology is to provide students with employable and relevant technology and business skills as outlined in the Ministry of Education's Prescribed Learning Outcomes.

Two key challenges in the delivery of this course are the learning abilities of the students, as well as their experience with technology. Whereas this first challenge of varying learning abilities is common in education across any discipline, the second challenge of a student's prior exposure to the subject matter is perhaps most apparent in Information Technology courses.

In response to this challenge, the course is structured into four units. These four units: Introductory Unit, Core Skills, Advanced Skills, and Application and Presentation, are designed to engage students at whatever level they are at. The Introductory Unit and the Core Skills Unit are intended to respectively assess and further the students' knowledge in preparation for the Advanced Skills and Application and Presentation Units. At the beginning of the second term, the students should have a common level of knowledge upon which they can work collaboratively to complete assigned tasks and further their skills. The Application and Presentation Unit is intended to challenge students to push beyond their current level of knowledge and apply what they have learned.

INTRODUCTORY UNIT

Instructional and Learning Activities

This unit is intended to serve as a period of adjustment for both the students and the teacher. During this period, the teacher is given the opportunity to assess the current level of knowledge of the students, as well as to determine if there are any special considerations which need to be made in order to benefit the students (i.e. learning disabilities, such as moving students with visual impairments to the front of the room).

This unit is also intended to provide students with an overview of the course structure. Students are presented here with the course syllabus, as well as introduced to the assessment strategies and assignment expectations. The students are also given an overview of the network layout and informed of their logon procedures. This introductory unit also provides an opportunity to discuss Internet safety and the school's policies on appropriate use of technology.

This unit thereby serves the dual function of informing students of how to logon to their own accounts, as well as provides them with a basic understanding of how information flows through the network. This discussion of the school's network serves as a foundation which is then expanded upon in the Application and Presentation unit where they will more thoroughly examine global communication networks and new technology issues.

Prescribed Learning Outcomes

- use touch keyboarding techniques for personal use
- use electronic tools such as the spell checker, dictionary, and thesaurus to correct common language and style errors and enhance the quality of their work
- assess sources for reliability, bias, and context (e.g., differences between print and electronic sources)
- identify search strategies, including unique keywords and phrases, to locate information using Internet search tools
- create and manage different types of files
- use a variety of file transfer procedures
- explain school policies associated with appropriate use of the Internet
- explain the implications to personal and business environments of computer viruses and the use of virus protection and firewall software
- explain how Internet technologies such as cookies allow servers to track personal use of the Internet
- identify the threats to global communication networks, including computer viruses and denial-of-service attacks
- explore various products created to protect personal information on computers, including anti-virus software and firewalls

Assessment and Evaluation

- observe the students as they type to ensure that they use proper touch keyboarding techniques
- orally discuss school policies of appropriate use of the Internet and observe that students follow these policies
- have students identify the different parts of a network, either orally or by creating a simple network diagram
- formally quiz students on their understanding of network structure

CORE SKILLS

Instructional and Learning Activities

The aim of the Core Skills unit is to provide all students in the class with a common platform from which more advanced topics can be explored. Because of the diverse background of the students, this unit is designed to challenge some students, while, at the same time, provide a review for others.

A central element of this unit is the introduction to the year-long activity of updating a hockey pool with a partner. The students work in teams of two or three to collect and update the statistics of hockey players that they choose. The purpose is to provide an enjoyable way for students to learn about technology. The beginning of this unit has students create a basic spreadsheet and provides students who have never worked in a spreadsheet program the opportunity to learn at a comfortable pace. For students experienced with spreadsheets, this unit provides a review, as well as an opportunity to help their peers.

Another aspect of the core skills unit is the introduction to and review of graphic and word processing software. The intention here is to provide students with basic skills which they can carry with them into their other academic programs, as well as into their working lives.

Prescribed Learning Outcomes

- use touch keyboarding techniques for personal use
- use electronic tools such as the spell checker, dictionary, and thesaurus to correct common language and style errors and enhance the quality of their work
- construct personal and business documents that use:
 - headers and footers
 - page numbering
 - graphics
- create spreadsheet documents containing various cell layouts, formats, alignment, and formulas with relative and absolute cell references
- assess sources for reliability, bias, and context (e.g., differences between print and electronic sources)
- identify search strategies, including unique keywords and phrases, to locate information using Internet search tools
- cite sources from the Internet and other resources
- show respect for the opinions, contributions, and roles of team members
- create and manage different types of files
- use a variety of file transfer procedures
- design and produce electronic and print publications for specific purposes and audiences
- use software features such as shortcuts, macros, function keys, menus, and buttons
- provide clarity to information within spreadsheet documents using:
 - headers and footers
 - fills and borders
 - charts and graphs

- act as a leader and follower in group projects and team activities
- select appropriate application software for a given task

Assessment and Evaluation

- observe the students and assist them individually when the need arises
- quiz students on core knowledge items such as using formulas in excel
- have students gather their data in a portfolio-style in their student folder on the school network.
This will then be reviewed at the end of term as a major part of their evaluation.

ADVANCED SKILLS

Instructional and Learning Activities

The advanced skills unit is intended to further students' knowledge of spreadsheets and databases. The students will explore more complex features of the software packages they are working with. The students will also work on refining the presentation of their data from the hockey pools they are working on. The effort to improve the presentation of their statistics will lead to more complex ways of managing the data and thereby serve as a natural progression into more technical topics. The efficient presentation of a vast amount of data serves as a natural problem which students must develop a multimedia solution for. Moreover, the use of formulas and shortcuts will also aid students in bringing meaning to the data they are working.

Additional advanced skills which will be developed in this unit include the use of graphics and word processing software to further improve their hockey pool data's presentation. The integration of data across software applications is a major part of this unit. Similarly, the publishing of their data for the Internet is another aspect of the Advanced Skills unit.

Prescribed Learning Outcomes

- use touch keyboarding techniques for personal use
- use electronic tools such as the spell checker, dictionary, and thesaurus to correct common language and style errors and enhance the quality of their work
- construct personal and business documents that use:
 - headers and footers
 - page numbering
 - graphics
- create spreadsheet documents containing various cell layouts, formats, alignment, and formulas with relative and absolute cell references
- assess sources for reliability, bias, and context (e.g., differences between print and electronic sources)
- identify search strategies, including unique keywords and phrases, to locate information using Internet search tools
- cite sources from the Internet and other resources
- show respect for the opinions, contributions, and roles of team members
- create and manage different types of files
- use a variety of file transfer procedures
- design and produce electronic and print publications for specific purposes and audiences
- use software features such as shortcuts, macros, function keys, menus, and buttons
- provide clarity to information within spreadsheet documents using:
 - headers and footers
 - fills and borders
 - charts and graphs
 - title rows and columns with cell and document protection
- use database software to create a flat file database
- design and create a multimedia solution to an identified problem

- prepare and deliver a presentation using presentation graphics software that incorporates:
 - slide formatting
 - graphics
 - sound
- create and manage a personal web site
- use collaborative problem-solving and decision-making skills to complete business and school tasks
- act as a leader and follower in group projects and team activities
- use the tools associated with distributed learning
- merge data between software applications
- evaluate and use record management procedures for maintaining shared documents and templates

Assessment and Evaluation

- observe the students and assist them individually when the need arises
- quiz students on core knowledge items such as using formulas in excel
- have students gather their data in a portfolio-style in their student folder on the school network.
This will then be reviewed at the end of term as a major part of their evaluation.

APPLICATION AND PRESENTATION

Instructional and Learning Activities

This unit is intended as an enjoyable reward following a year's worth of learning. The intention of this unit is to allow students to apply their new skills in tasks which emphasize presentation of information. The hope is that the technology and the skills taught throughout the year become transparent in their effort to present information. In other words, the difficult becomes the information itself, while the skills used to present the information become automatic and invisible.

In this unit students will be asked to research and present topics on computer and network hardware. They will be asked to present on global communication issues, as well as personal information protection topics such as firewalls and cookies. The students will also develop content for the internet in this unit.

Prescribed Learning Outcomes

- explain school policies associated with appropriate use of the Internet
- select appropriate application software for a given task
- merge data between software applications
- evaluate and use record management procedures for maintaining shared documents and templates
- explain the implications to personal and business environments of computer viruses and the use of virus protection and firewall software
- explain how Internet technologies such as cookies allow servers to track personal use of the Internet
- identify the threats to global communication networks, including computer viruses and denial-of-service attacks
- explore various products created to protect personal information on computers, including anti-virus software and firewalls
- design and create a multimedia solution to an identified problem
- prepare and deliver a presentation using presentation graphics software that incorporates:
 - slide formatting
 - graphics
 - sound
- create and manage a personal web site
- use collaborative problem-solving and decision-making skills to complete business and school tasks
- act as a leader and follower in group projects and team activities
- use the tools associated with distributed learning
- use touch keyboarding techniques for personal use
- use electronic tools such as the spell checker, dictionary, and thesaurus to correct common language and style errors and enhance the quality of their work
- construct personal and business documents that use:
 - headers and footers

- page numbering
- graphics
- create spreadsheet documents containing various cell layouts, formats, alignment, and formulas with relative and absolute cell references
- assess sources for reliability, bias, and context (e.g., differences between print and electronic sources)
- identify search strategies, including unique keywords and phrases, to locate information using Internet search tools
- cite sources from the Internet and other resources
- show respect for the opinions, contributions, and roles of team members

Assessment and Evaluation

- observe the students and assist them individually when the need arises
- have students gather their data in a portfolio-style in their student folder on the school network. This will then be reviewed at the end of term as a major part of their evaluation.