

COURSE CURRICULUM AND ASSESSMENT STANDARDS:

INTRODUCTORY LEVEL

The following pages define the curriculum and assessment standards for the introductory level of Information Processing.

Introductory level courses help students build daily living skills and form the basis for further learning. Introductory courses are developed for students who have no previous experience in the strand.

General outcomes define the competencies a student must demonstrate to achieve success in a course. Assessment standards define the conditions and criteria to be used for assessing the competencies defined in the course learner expectations.

Specific outcomes provide a detailed framework for instruction to help students build the competencies defined in the general outcomes. Additional information and suggestions for instruction are provided in the Notes column; teachers may wish to use this space to record their ideas for instruction or student projects.

Course INF1020:	Keyboarding 1	D.7
Course INF1030:	Word Processing 1.....	D.11
Course INF1040:	Graphics Tools	D.15
Course INF1050:	Database 1	D.19
Course INF1060:	Spreadsheet 1.....	D.25
Course INF1070:	Hypermedia Tools	D.31
Course INF1080:	Programming 1	D.35
Course INF1210:	Computer Science 1.....	D.45

Note:

*INF1010: Computer Operations
(pages D.3–D.6) has been withdrawn
effective September 2003.*

COURSE INF1020: KEYBOARDING 1

Level: Introductory

Theme: Text/Data Input

Prerequisite: None

Description: Students develop accurate touch keystroking of text and data appropriate to personal use and the application of efficient workstation procedures.

Parameters: Computer workstation, disk, word processing software, support resources.

Curriculum and Assessment Standards

General Outcomes	Assessment Criteria and Conditions	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> • demonstrate keyboarding competence: <ul style="list-style-type: none"> – text entry at 20 words per minute (wpm) – numeric entry at 80 keystrokes per minute (kpm) – technique 	<p><i>Assessment of student achievement should be based on:</i></p> <ul style="list-style-type: none"> • three timed writings, each from different straight copy material, over a period of no more than five consecutive class periods, which demonstrates proper touch keyboarding : <ul style="list-style-type: none"> – on alphabetic keys <ul style="list-style-type: none"> • one-minute duration • maximum one uncorrected error • SI ≤ 1.2 • minimum keystroke rate: 20 words per minute – on numeric keypad: <ul style="list-style-type: none"> • one-minute duration • maximum one uncorrected error • minimum keystroke rate 80 numeric keystrokes per minute on 1 to 3 digit numbers. <p><i>Assessment Tool</i> <i>Reference Chart: Keyboarding and Numberpad Rates (INFKEYNB)</i></p> <ul style="list-style-type: none"> – observations over the last quarter of the learning period, during timing and drill work. <p><i>Assessment Tool</i> <i>Assessment Checklist: Text–Data Entry (INFIDENT)</i></p> <p><i>Standard</i> <i>Rating of:</i> 3 – Eye Focus 2 – Keystroking 1 – Service Keys 2 – Body Position</p>	<p>30</p> <p>10</p> <p>40</p>

COURSE INF1020: KEYBOARDING 1 (continued)

General Outcomes	Assessment Criteria and Conditions	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> • apply, consistently, appropriate workstation routines • demonstrate basic competencies. 	<p><i>Assessment of student achievement should be based on:</i></p> <ul style="list-style-type: none"> • demonstrating appropriate workstation routines. <p><i>Assessment Tool</i> <i>Assessment Checklist: Workstation Routines and Management (INFWRKSTN)</i></p> <p><i>Standard</i> <i>Rating of:</i> <i>1 – Workstation Use</i> <i>2 – File Management</i> <i>1 – Time Management/Organization</i> <i>2 – Professionalism</i></p> <ul style="list-style-type: none"> • observations of individual effort and interpersonal interaction during the learning process. <p><i>Assessment Tool</i> <i>Basic Competencies Reference Guide and any assessment tools noted above</i></p>	<p>20</p> <p>Integrated throughout</p>

Concept	Specific Outcomes	Notes
<p>Text Entry</p>	<p><i>The student should:</i></p> <ul style="list-style-type: none"> • demonstrate increasingly rapid, accurate touch keystroking on straight copy of: <ul style="list-style-type: none"> – alphabetic keys – punctuation keys (.,:;?) – service keys (enter, shift, delete, backspace, tab) • use function and cursor movement keys efficiently • demonstrate correct keystroking technique <ul style="list-style-type: none"> – enter text using designated fingers – maintain home-row position – demonstrate correct posture (hand, arm, body) • demonstrate touch entry of numbers on number pad using correct fingering 	<p>Technique is the major focus emphasizing touch development on easy material.</p> <p>Develop speed and accuracy at the word and phrase level using short, repetitive timings (12 seconds to one minute) with straight copy text of varying SI (1.0–1.3).</p> <p>Introduce only the word processing and computer commands that are required as an instructional tool for developing keyboarding skill.</p>

MODULE INF1020: KEYBOARDING 1 (continued)

Concept	Specific Learner Expectations	Notes
Text Entry (continued)	<p><i>The student should:</i></p> <ul style="list-style-type: none"> • proofread and edit text while on screen to ensure text is without error • analyze errors in keystroking and initiate remediation as appropriate for: <ul style="list-style-type: none"> – spelling, shifting, punctuation and spacing errors – transposed, repeated, omitted letters. 	<p>It is recommended that timings be given from previously unseen material that students have not been allowed to practice on.</p>
Data Entry	<ul style="list-style-type: none"> • demonstrate rapid, accurate data entry on keyboard number pad: <ul style="list-style-type: none"> – using designated fingers – maintaining anchor position. 	
Workstation Management	<ul style="list-style-type: none"> • apply efficient workstation position and routines that encourage: <ul style="list-style-type: none"> – good health and safety (posture, positioning of hardware and furniture) – security for hardware, software, supplies and personal work • demonstrate efficient and appropriate use of time and resources: <ul style="list-style-type: none"> – start-up procedures – organization of work area – closing procedures • apply effective decision-making strategies in production assignments: <ul style="list-style-type: none"> – plan activities – organize data, information, resources – consider alternatives – evaluate activities/results • use related terminology to describe basic processes, procedures and tools. 	

COURSE INF1030: WORD PROCESSING 1**Level:** Introductory**Theme:** Productivity Software**Prerequisite:** None**Description:** Students develop skill in using basic commands and functions in word processing software, including document editing, and the formatting and printing of reports, correspondence and tables suitable for personal use applications.**Parameters:** Computer workstation, disk, word processing software, support resources.**Supporting Course:** INF1020 Keyboarding 1**Curriculum and Assessment Standards**

General Outcomes	Assessment Criteria and Conditions	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> • demonstrate correct use of software functions, by producing mailable, properly formatted: <ul style="list-style-type: none"> – paginated reports with headings and references – letters with basic components – two-column tables with main headings and subheadings 	<p><i>Assessment of student achievement should be based on:</i></p> <ul style="list-style-type: none"> • producing mailable documents, based on formatted and unformatted sources, focusing on the use of basic software functions for personal use applications including a collection of: <ul style="list-style-type: none"> – reports, including applications such as essays, poems, research reports, journal responses, recipes, notices and posters – one-page letters, including applications such as personal and personal business letters – tables, including applications such as calendars, lists, daybooks, agendas and display documents. <p><i>Assessment Tool</i> <i>Assessment Checklist: Word Processing (INFWP)</i></p> <p><i>Standard</i> <i>Rating of 1 in the production of mailable documents (no errors in text and well formatted)</i></p>	<p>30</p> <p>30</p> <p>30</p>

MODULE INF1030: WORD PROCESSING 1 (continued)

Concept	Specific Learner Expectations	Notes
<p>Software Functions and Applications (continued)</p>	<p><i>The student should:</i></p> <ul style="list-style-type: none"> • demonstrate appropriate key commands to: <ul style="list-style-type: none"> – format text <ul style="list-style-type: none"> • rulers/margins • line spacing • text alignment (left, right, centre, full justified) • tabs/indents • tables • borders/shading • text styles • bulleted and numbered lists • font types/sizes • footers/headers • page numbering • page breaks (hard, widow/orphan) • graphics • print/preview in alternate formats) – file, edit, proofread text <ul style="list-style-type: none"> • move (cut, copy and paste) • spell and/or grammar check • thesaurus • search and replace • insert/delete text • move through document(s) efficiently by using appropriate cursor movement tools/commands. 	<p>Arrows, select, undo, go to.</p>
<p>Document Production</p>	<ul style="list-style-type: none"> • demonstrate appropriate key commands to produce the following documents in mailable form: <ul style="list-style-type: none"> – reports such as research papers, essays, position papers, response journals, poems, recipes: <ul style="list-style-type: none"> • headings/subheading • references (footnotes, end notes, bibliography) • headers/footers • title page – personal and business correspondence such as letters to family and friends, customer complaint letter, letters of applications, letter to teacher, etc. 	<p>Mailable form: error-free text and well-formatted.</p> <p>APA and MLA are the two most common report styles—articulate with English/LA teachers and use the same style.</p> <p>Full block style is the easiest style to present at this level.</p>

MODULE INF1030: WORD PROCESSING 1 (continued)

Concept	Specific Learner Expectations	Notes
Document Production (continued)	<p><i>The student should:</i></p> <ul style="list-style-type: none"> • letter parts (date, inside address, salutations, complimentary closing, name/title, references) • letter styles – tables (single/multicolumn) such as calendars, announcements, agendas, programs and other types of display typing: <ul style="list-style-type: none"> • headings • borders • rulers/tabs. 	Use software table functions if available.
Workstation Management	<ul style="list-style-type: none"> • apply efficient workstation position and routines that encourage: <ul style="list-style-type: none"> – good health and safety (posture, positioning of hardware and furniture) – security for hardware, software, supplies and personal work • demonstrate efficient and appropriate use of time and resources: <ul style="list-style-type: none"> – start-up procedures – organization of work area – closing procedures • apply effective decision-making strategies in production assignments: <ul style="list-style-type: none"> – plan activities – organize data, information, resources – consider alternatives – evaluate activities/results • use related terminology to describe basic processes, procedures and tools. 	

COURSE INF1040: GRAPHICS TOOLS**Level:** Introductory**Theme:** Productivity Software**Prerequisite:** None**Description:** Students learn the basic commands and functions of computer graphics software, including bitmapped graphics (paint program) and vector graphics (draw program). Students also develop basic skills in manipulating existing graphics, as well as in producing their own graphics.**Parameters:** Computer workstation, disk, a selection of graphics software, support resources.**Curriculum and Assessment Standards**

General Outcomes	Assessment Criteria and Conditions	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> • demonstrate the basic elements and principles of design, by using computer software graphics tools to: <ul style="list-style-type: none"> – duplicate graphics designs – create graphics layouts 	<p><i>Assessment of student achievement should be based on:</i></p> <ul style="list-style-type: none"> • reproduction of documents using paint/draw software programs consisting of: <ul style="list-style-type: none"> – text – graphics (paint, draw and/or imported) – use of design principles. <p><i>Assessment Tool</i> <i>Assessment Checklist: Electronic Publishing Document Production (INFEPDOC)</i> <i>Standard</i> <i>Rating of 1 in the reproduction of well-designed graphic layouts</i></p> • creation of original documents using paint/draw software programs consisting of: <ul style="list-style-type: none"> – text – graphics (paint, draw and/or imported) – use of design principles. <p><i>Assessment Tool</i> <i>Assessment Checklist: Electronic Publishing Document Production (INFEPDOC)</i> <i>Standard</i> <i>Rating of 1 in the production of well-designed graphic layouts</i></p> 	<p>30</p> <p>30</p>

COURSE INF1040: GRAPHICS TOOLS (continued)

General Outcomes	Assessment Criteria and Conditions	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> • demonstrate use of software functions • apply, consistently, appropriate workstation routines • demonstrate basic competencies. 	<p><i>Assessment of student achievement should be based on:</i></p> <ul style="list-style-type: none"> • using the appropriate commands, functions and graphic tools including: <ul style="list-style-type: none"> – file functions—create/save/load files – editing functions (cut/copy/move/paste/delete) – import graphic (clip art and/or scan) – text tools including style palette – paint tool (colour, fill, texture) – draw tools (line, rectangle, oval, cropping) – output functions (preview and print). <p><i>Assessment Tool</i> <i>Assessment Checklist: Electronic Publishing Software Functions (INFEPSF)</i></p> <p><i>Standard</i> <i>Rating of 1 in the demonstration of appropriate software functions</i></p> <ul style="list-style-type: none"> • demonstrating appropriate workstation routines. <p><i>Assessment Tool</i> <i>Assessment Checklist: Workstation Routines and Management (INFWRKSTN)</i></p> <p><i>Standard</i> <i>Rating of:</i> <i>1 – Workstation Use</i> <i>2 – File Management</i> <i>1 – Time Management/Organization</i> <i>2 – Professionalism</i></p> <ul style="list-style-type: none"> • observations of individual effort and interpersonal interaction during the learning process. <p><i>Assessment Tool</i> <i>Basic Competencies Reference Guide and any assessment tools noted above</i></p>	<p>30</p> <p>10</p> <p>Integrated throughout</p>

MODULE INF1040: GRAPHICS TOOLS (continued)

Concept	Specific Learner Expectations	Notes
<p>Software Functions and Applications</p>	<p><i>The student should:</i></p> <ul style="list-style-type: none"> • describe key features of the graphic software packages available: <ul style="list-style-type: none"> – capabilities – system requirements – platform options – command structure • use help functions and references as appropriate • demonstrate use of appropriate commands, functions and tools, such as: <ul style="list-style-type: none"> – copy, paste, cut – ovals, rectangles, line and polygons – marquee, lasso – eraser – fills – line options; e.g., arrows, patterns – inserting (placing) – resizing – repositioning – rulers – column guides – alignment – letter spacing – leading – kerning – typefaces (font, style) – indent – tabs – cropping • create/load/merge/import/save graphic elements/objects/files: <ul style="list-style-type: none"> – presentation graphics (charting/diagramming/drawing) paint – resident functions (clip art) • demonstrate use of tools such as: <ul style="list-style-type: none"> – pixel bit-mapped object-oriented images – line/geometric object-oriented images using vector graphics • demonstrate use of computer-aided design, if available: <ul style="list-style-type: none"> – create computer graphics for design, drafting, documentation purposes • demonstrate use of screen capture/graphics conversion: <ul style="list-style-type: none"> – integrate all forms of graphic elements including clip art design/merge/format/edit page (text/data/graphics). 	<p>Pixel and vector graphics are two basic software approaches to the production of images and range from free drawing screen activities to computer generated/controlled graphic designed elements. Graphics software includes toolboxes and palettes, presentations, desktop publishing, artistic creations, space exploration, weather forecasting, computer animation and computer-aided design.</p>

MODULE INF1040: GRAPHICS TOOLS (continued)

Concept	Specific Learner Expectations	Notes
Document Production	<p><i>The student should:</i></p> <ul style="list-style-type: none"> • practise reproducing a variety of documents from a variety of sources using paint/draw software • apply basic design elements and principles when creating documents • use three-dimensional effects to create depth in documents • design and create various documents using paint/draw programs • use clip art to enhance document production • create own graphics using available paint and draw tools to enhance document • preview and print documents. 	<p>For example: line, shape, texture, colour, balance, proportion, contrast, harmony, unity.</p> <p>For example: use of overlapping, perspective, light and dark images, small and large images.</p> <p>For example: letterheads, business cards, advertisement, posters, title pages, logos, packaging, front view of home, floor plan, map to your home.</p>
Workstation Management	<ul style="list-style-type: none"> • apply efficient workstation position and routines that encourage: <ul style="list-style-type: none"> – good health and safety (posture, positioning of hardware and furniture) – security for hardware, software, supplies and personal work • demonstrate efficient and appropriate use of time and resources: <ul style="list-style-type: none"> – start-up procedures – organization of work area – closing procedures • apply effective decision-making strategies in production assignments: <ul style="list-style-type: none"> – plan activities – organize data, information, resources – consider alternatives – evaluate activities/results • use related terminology to describe basic processes, procedures and tools. 	

COURSE INF1050: DATABASE 1**Level:** Introductory**Theme:** Productivity Software**Prerequisite:** None**Description:** Students are introduced to the basic commands and functions of database software, and demonstrate how this software can be used as a personal tool in data and information management.**Parameters:** Computer workstation, disk, database software, support resources.**Curriculum and Assessment Standards**

General Outcomes	Assessment Criteria and Conditions	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> • demonstrate basic electronic database software competence, by: <ul style="list-style-type: none"> – creating databases 	<p><i>Assessment of student achievement should be based on:</i></p> <ul style="list-style-type: none"> • creating database files/records to solve problems using basic database software functions: <ul style="list-style-type: none"> – define problem (e.g., manage information, make decisions) – plan, design and create databases to solve problems – enter data into database files – display and print files – use of appropriate software commands and functions to create database files, enter data and print. <p><i>Assessment Tool</i> <i>Assessment Checklist: Databases (INFDB)</i></p> <p><i>Standard</i> <i>Rating of 1 in the creation of error-free, well-designed database files</i></p>	45

COURSE INF1050: DATABASE 1 (continued)

General Outcomes	Assessment Criteria and Conditions	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> – manipulating data and preparing reports • apply, consistently, appropriate workstation routines • demonstrate basic competencies. 	<p><i>Assessment of student achievement should be based on:</i></p> <ul style="list-style-type: none"> • manipulating database files in the preparation of reports: <ul style="list-style-type: none"> – search/query database files to retrieve selected information – plan and present selected data visually through the creation of reports – use appropriate software commands and functions to query/search database files and create reports. – analyze data to make recommendations and conclusions. <p><i>Assessment Tool</i> <i>Assessment Checklist: Databases (INFDB)</i></p> <p><i>Standard</i> <i>Rating of 1 in the creation of error-free, well-designed reports</i></p> <ul style="list-style-type: none"> • demonstrating appropriate workstation routines. <p><i>Assessment Tool</i> <i>Assessment Checklist: Workstation Routines and Management (INFWRKSTN)</i></p> <p><i>Standard</i> <i>Rating of:</i> <i>1 – Workstation Use</i> <i>2 – File Management</i> <i>1 – Time Management/Organization</i> <i>2 – Professionalism</i></p> <ul style="list-style-type: none"> • observations of individual effort and interpersonal interaction during the learning process. <p><i>Assessment Tool</i> <i>Basic Competencies Reference Guide and any assessment tools noted above</i></p>	<p>45</p> <p>10</p> <p>Integrated throughout</p>

MODULE INF1050: DATABASE 1 (continued)

Concept	Specific Learner Expectations	Notes
<p>Software Commands and Functions</p>	<p><i>The student should:</i></p> <ul style="list-style-type: none"> • describe key features of the database software: <ul style="list-style-type: none"> – capabilities/applications – system requirements – platform options – command structure • use help functions and references as appropriate • demonstrate appropriate commands and functions to organize information in fields • demonstrate appropriate commands and functions to input and process data: <ul style="list-style-type: none"> – open, create and save database files – enter text and values – enter formulas to calculate and recalculate – use number pad to enter values – use keyboard to enter labels • demonstrate appropriate commands and functions to format fields: <ul style="list-style-type: none"> – alignment – number format (\$, %, decimals) – text styles – font type and size – field length – borders and shading – formulas • demonstrate appropriate commands and functions to edit and manipulate data: <ul style="list-style-type: none"> – proofread, edit (cut, copy, paste, clear) – search – calculate – change sequence • demonstrate appropriate commands and functions to sort data (ascending and descending): <ul style="list-style-type: none"> – alphabetic – numeric – subject 	<p>Check data input for accuracy.</p> <p>Highlighting to change. Changing size. Update files/records. View files/split screen.</p>

MODULE INF1050: DATABASE 1 (continued)

Concept	Specific Learner Expectations	Notes
Software Commands and Functions (continued)	<p><i>The student should:</i></p> <ul style="list-style-type: none"> • move through a database efficiently by using appropriate cursor movement tools and commands • demonstrate appropriate commands and functions to create well-formatted reports: <ul style="list-style-type: none"> – select and sort files for reports – title reports – calculate statistics in a reports – select text style, font type and size – determine column sequence and size – modify data for specific reports • demonstrate appropriate commands and functions to retrieve, display and print information: <ul style="list-style-type: none"> – form view – list view – query view – report view – print files and reports in portrait and landscape. 	<p>Move through record(s) efficiently:</p> <ul style="list-style-type: none"> – cursor movement/status line/mouse – split screen/move between planes/remove split.
Document Production	<ul style="list-style-type: none"> • access data and define problems (e.g., manage information, make decisions) • plan and design database files to solve problems: <ul style="list-style-type: none"> – identify fields (location, name and size) • input and process data: <ul style="list-style-type: none"> – create template file – enter data into files – update and edit data in files • output reports: <ul style="list-style-type: none"> – save files – manipulate data – preview records – print records • demonstrate appropriate format specifications and layout to create appropriate reports • analyze data to draw conclusions and make recommendations • cite references of data where appropriate. 	<p>Update files as required to add, delete and edit records.</p> <p>Topic suggestions. Personal information. Student demographics. Collections:</p> <ul style="list-style-type: none"> – sports pools – music/tapes – books. <p>Identify/collect/organize information/ resources.</p>

MODULE INF1050: DATABASE 1 (continued)

Concept	Specific Learner Expectations	Notes
Workstation Management	<p><i>The student should:</i></p> <ul style="list-style-type: none"> • apply efficient workstation position and routines that encourage: <ul style="list-style-type: none"> – good health and safety (posture, positioning of hardware and furniture) – security for hardware, software, supplies and personal work • demonstrate efficient and appropriate use of time and resources: <ul style="list-style-type: none"> – start-up procedures – organization of work area – closing procedures • apply effective decision-making strategies in production assignments: <ul style="list-style-type: none"> – plan activities – organize data, information, resources – consider alternatives – evaluate activities/results • use related terminology to describe basic processes, procedures and tools. 	

COURSE INF1060: SPREADSHEET 1 (continued)

General Outcomes	Assessment Criteria and Conditions	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> • apply, consistently, appropriate workstation routines • demonstrate basic competencies. 	<p><i>Assessment of student achievement should be based on:</i></p> <p><i>Assessment Tool</i> <i>Assessment Checklist: Spreadsheets (INFSS)</i></p> <p><i>Standard</i> <i>Rating of 1 in the creation of error-free, well-designed chart graphs</i></p> <ul style="list-style-type: none"> • demonstrating appropriate workstation routines. <p><i>Assessment Tool</i> <i>Assessment Checklist: Workstation Routines and Management (INFWRKSTN)</i></p> <p><i>Standard</i> <i>Rating of:</i> <i>1 – Workstation Use</i> <i>2 – File Management</i> <i>1 – Time Management/Organization</i> <i>2 – Professionalism</i></p> <ul style="list-style-type: none"> • observations of individual effort and interpersonal interaction during the learning process. <p><i>Assessment Tool</i> <i>Basic Competencies Reference Guide and any assessment tools noted above</i></p>	<p>10</p> <p>Integrated throughout</p>

MODULE INF1060: SPREADSHEET 1 (continued)

Concept	Specific Learner Expectations	Notes
<p>Software Commands and Functions</p>	<p><i>The student should:</i></p> <ul style="list-style-type: none"> • describe key features of the spreadsheet software: <ul style="list-style-type: none"> – capabilities/applications – system requirements – platform options – command structure • uses help functions and references as appropriate • demonstrate appropriate commands and functions to input and process data: <ul style="list-style-type: none"> – open/create/save files – enter text (headings and labels) – enter values (numbers, dates, time) – enter formulas to calculate and recalculate data – replicate cells/formulas – use number pad—values – use keyboard—labels • demonstrate appropriate commands and functions to format cells, rows, columns: <ul style="list-style-type: none"> – alignment – number format (\$, %, decimals) – text styles – font types/sizes – column widths/row heights – borders/shading • demonstrate appropriate commands and functions to enter basic formulas using: <ul style="list-style-type: none"> – operators (+, -, * and /) – number, constant values (e.g., 1, 10, 12.5, -16) – cell and range references (e.g., A10, A1:A25) – functions (e.g. sum, avg., min/max) – copy/paste or fill functions • demonstrate appropriate commands and functions to edit cells, rows, columns, data: <ul style="list-style-type: none"> – moving data and formulas – copying – clearing – replacing • demonstrate appropriate commands and functions to sort data (ascending, descending): <ul style="list-style-type: none"> – numeric – alphabetic 	<p>Create a spreadsheet by:</p> <ul style="list-style-type: none"> – identifying an application – designing the format. <p>Potential projects:</p> <ul style="list-style-type: none"> – personal worksheets – budgets – recipes – grades records – inventories – financial problem solving – table comparisons.

MODULE INF1060: SPREADSHEET 1 (continued)

Concept	Specific Learner Expectations	Notes
<p>Software Commands and Functions (continued)</p>	<p><i>The student should:</i></p> <ul style="list-style-type: none"> • move through worksheet(s) efficiently by using appropriate cursor movement tools/commands: <ul style="list-style-type: none"> – split screen – freeze • use appropriate software commands and functions to create visually pleasing detailed graphs: <ul style="list-style-type: none"> – name/update/open charts – label axes – select colours and patterns – label legends, titles and subtitles – select fonts (types and sizes) – use gridlines and borders – change page and margin settings • demonstrate appropriate commands and functions to output results: <ul style="list-style-type: none"> – display worksheets and graphs: – print worksheet and chart graphs: <ul style="list-style-type: none"> • portrait • landscape • use appropriate headers/footers/references. 	
<p>Document Production</p>	<ul style="list-style-type: none"> • access data and define problems (manage information and make decisions) • plan and design spreadsheets to solve problems: <ul style="list-style-type: none"> – identify columns and rows (location, name, size) • input and process data: <ul style="list-style-type: none"> – create worksheet template – enter data into spreadsheet – update and edit data on worksheet • output data: <ul style="list-style-type: none"> – print worksheets in alternate formats (portrait and landscape) – create visual presentations of data through chart graphs: <ul style="list-style-type: none"> • select data from spreadsheets to present in graphic format • select appropriate chart graphs • plan and present data in chart graphs 	

MODULE INF1060: SPREADSHEET 1 (continued)

Concept	Specific Learner Expectations	Notes
Document Production (continued)	<p><i>The student should:</i></p> <ul style="list-style-type: none"> • analyze data to draw conclusions and recommendations • print chart graphs in alternative formats • cite references of data where appropriate. 	
Workstation Management	<ul style="list-style-type: none"> • apply efficient workstation position and routines that encourage: <ul style="list-style-type: none"> – good health and safety (posture, positioning of hardware and furniture) – security for hardware, software, supplies and personal work • demonstrate efficient and appropriate use of time and resources: <ul style="list-style-type: none"> – start-up procedures – organization of work area – closing procedures • apply effective decision-making strategies in production assignments: <ul style="list-style-type: none"> – plan activities – organize data, information, resources – consider alternatives – evaluate activities/results • use related terminology to describe basic processes, procedures and tools. 	

COURSE INF1070: HYPERMEDIA TOOLS

Level: Introductory

Theme: Productivity Software

Prerequisite: None

Description: Students develop basic skills with tools used for computerized presentations involving text, data, graphics, sound and animation.

Parameters: Computer workstation, disk, hypermedia software, support resources.

Curriculum and Assessment Standards

General Outcomes	Assessment Criteria and Conditions	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> • demonstrate basic hypermedia software competence, by: <ul style="list-style-type: none"> – accessing hypermedia tools – applying hypermedia tools to produce a short presentation – using hypermedia tools to edit a short presentation 	<p><i>Assessment of student achievement should be based on:</i></p> <ul style="list-style-type: none"> • production of a short presentation consisting of the following: <ul style="list-style-type: none"> – planning: <ul style="list-style-type: none"> • demonstrate ability to use software commands and functions of selected hypermedia software program • make decisions regarding text, sound, graphics, video and animation • prepare a storyboard – producing the presentation by using appropriate software commands and functions to: <ul style="list-style-type: none"> • select, enhance and manipulate text • select and manipulate graphics • select and manipulate sound • insert premade video clip • create a frame, object or cell-based animation clip – editing the presentation by: <ul style="list-style-type: none"> • proofreading for spelling and accuracy of facts • check graphics • test program links to make sure they work appropriately • edit to enhance the quality of the presentation. <p><i>Assessment Tool</i> <i>Assessment Checklist: Multimedia Software Functions (INFMMSF) and Multimedia Productions and Presentations (INFMMDOC)</i></p> <p><i>Standard</i> <i>Rating of 1 in the production of presentation</i></p>	<p>20</p> <p>50</p> <p>20</p>

MODULE INF1070: HYPERMEDIA TOOLS (continued)

Concept	Specific Learner Expectations	Notes
Multimedia Application	<p><i>The student should:</i></p> <ul style="list-style-type: none"> • produce a short presentation using the following process: <ul style="list-style-type: none"> – identify project – design storyboard – determine components (text, sound, graphics, video, animation) – collect required support resources – produce presentation – present presentation. 	<p>Students should be able to produce a simple presentation with limited assistance. Teachers will need to determine the minimum skill requirements.</p>
Multimedia Software Commands	<ul style="list-style-type: none"> • apply hypermedia software commands to: <ul style="list-style-type: none"> – load/create/customize/modify multimedia presentation • enter data: <ul style="list-style-type: none"> – key load data – create/import graphics – access/manipulate presentation components – create background – edit/modify/update buttons, cards, fields – use resident commands/scripting to link pages – incorporate text (alphabetic, numeric), graphics, motion, sound • display/print/export: <ul style="list-style-type: none"> – pages/components – report on stored information. 	
Workstation Management	<ul style="list-style-type: none"> • apply efficient workstation position and routines that encourage: <ul style="list-style-type: none"> – good health and safety (posture, positioning of hardware and furniture) – security for hardware, software, supplies and personal work • demonstrate efficient and appropriate use of time and resources: <ul style="list-style-type: none"> – start-up procedures – organization of work area – closing procedures 	

MODULE INF1070: HYPERMEDIA TOOLS (continued)

Concept	Specific Learner Expectations	Notes
Workstation Management (continued)	<p><i>The student should:</i></p> <ul style="list-style-type: none">• apply effective decision-making strategies in production assignments:<ul style="list-style-type: none">– plan activities– organize data, information, resources– consider alternatives– evaluate activities/results• use related terminology to describe basic processes, procedures and tools.	

COURSE INF1080: PROGRAMMING 1**Level:** Introductory**Theme:** Programming**Prerequisite:** None**Description:** Students are introduced to computer programming languages and a structured programming environment, and they construct algorithms and code instructions to solve identified problems.**Parameters:** Workstation, programming language, language code manual, support resources.**Curriculum and Assessment Standards**

General Outcomes	Assessment Criteria and Conditions	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> • demonstrate basic computer programming skills, by: <ul style="list-style-type: none"> – creating algorithms to solve problems – applying introductory, structured computer coding programming skills 	<p><i>Assessment of student achievement should be based on:</i></p> <ul style="list-style-type: none"> • developing programs that demonstrate the ability to solve problems through the efficient use of algorithms and language syntax. Demonstrate ability to: <ul style="list-style-type: none"> – use a linear algorithm to provide a solution to a problem – arrange the components of the problem in the categories of input, process and output – interpret the output required – use language-specific techniques to assign values to variables and constants – employ language-specific mathematical operators for addition, subtraction, multiplication, division – illustrate language-specific structures for output formatting – test specific data to verify the validity of the program – document program internally and externally. <p><i>Assessment Tools</i> <i>Assessment Checklist: Introductory and Intermediate Programming (INFPRGM1)</i> <i>Programming: Sample Assignment 1A (INFPSAM1)</i></p> <p><i>Standard</i> <i>Rating of 1 in all phases of program development</i></p>	90

MODULE INF1080: PROGRAMMING 1 (continued)

Concept	Specific Learner Expectations	Notes
Computer Software (continued)	<p><i>The student should:</i></p> <ul style="list-style-type: none"> • research sources of software availability: <ul style="list-style-type: none"> – externally – internally (in-house development/organizational processing) • research software resource support: <ul style="list-style-type: none"> – user’s manual – operating instructions – copyright contract • describe the purpose of a computer programming language • describe computer programming language categories: <ul style="list-style-type: none"> – machine-oriented – procedure-oriented – object-oriented • identify several computer languages/structures and their focus • compare several computer language instructions • identify data types/strings • describe constants, variables • describe methods of program data input: <ul style="list-style-type: none"> – embed data in program – read a data file – enter interactively • explain data manipulation/processing: <ul style="list-style-type: none"> – operators – decision control – branching – looping • illustrate various formats for data/information output: <ul style="list-style-type: none"> – text reports – data tables – graphics • explain the differences between programming and code cutting. 	Buy lease, shareware, network/electronic bulletin board, retail outlets, computer manufacturers, magazines, professional association, user groups.

MODULE INF1080: PROGRAMMING 1 (continued)

Concept	Specific Learner Expectations	Notes
Algorithms	<p><i>The student should:</i></p> <ul style="list-style-type: none"> • describe the purpose of an algorithm • describe flowchart symbols • analyze a structured design • identify/describe the problem • describe each step required to solve the problem • describe the appropriate logic to achieve the solution • create a structured schematic/flowchart or pseudocode indicating how the solution will be achieved. 	
Structured Programming	<ul style="list-style-type: none"> • differentiate between syntax and logic • describe/illustrate examples of structured programming and indicate why it is important: <ul style="list-style-type: none"> – top-down programming • explain structured programming constructs: <ul style="list-style-type: none"> – sequence, selection – repetition. 	
Structured Computer Programming Applications	<ul style="list-style-type: none"> • access appropriate computer language resource support • code simple programming tasks (i.e., I/P/O program following predefined format) • prepare simple displays of text/data/font graphics • key/code simple computer program(s) to solve simple problem(s): <ul style="list-style-type: none"> – identify logical solution – flowchart the algorithms – design output format – code the instructions – test run program – debug/edit – execute program – assess activities/results. 	

MODULE INF1080: PROGRAMMING 1 (continued)

Concept	Specific Learner Expectations	Notes
Workstation Management	<p><i>The student should:</i></p> <ul style="list-style-type: none">• apply efficient workstation position and routines that encourage:<ul style="list-style-type: none">– good health and safety (posture, positioning of hardware and furniture)– security for hardware, software, supplies and personal work• demonstrate efficient and appropriate use of time and resources:<ul style="list-style-type: none">– start-up procedures– organization of work area– closing procedures• apply effective decision-making strategies in production assignments:<ul style="list-style-type: none">– plan activities– organize data, information, resources– consider alternatives– evaluate activities/results• use related terminology to describe basic processes, procedures and tools.	

Note:

*INF1090: Information Highway 1 (pages
D.41–D.44) has been withdrawn effective
September 2003.*

COURSE INF1210: COMPUTER SCIENCE 1**Level:** Introductory**Theme:** Computer Science**Prerequisite:** None**Description:** Students are introduced to the nature, approaches and areas of interest of computer science and its relationship to areas, such as computer engineering and information technology. Students explore concepts associated with hardware, software and processes at an introductory level. There is an emphasis on sequential and structured programming approaches.**Parameters:** Designed to be taught in conjunction with INF1080 Programming 1, INF2150 Programming 2, INF1090 Information Highway 1 and INF1070 Hypermedia Tools as a Grade 10 course in Computer Science.**Curriculum and Assessment Standards**

General Outcomes	Assessment Criteria and Conditions	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> identify and describe the nature, approaches and areas of interest of computer science explain and demonstrate the nature, developmental process, use of basic algorithms associated with input processing output (IPO) and structured approaches, and application of these idioms to create complex algorithms 	<p><i>Assessment of student achievement should be based on:</i></p> <ul style="list-style-type: none"> a test, presentation or project designed to address the following topics: <ul style="list-style-type: none"> computer science’s central focus on the nature and techniques of problem solving the role of the algorithm as a foundation of the discipline of computer science the general areas of interest of computer science the relationship among computer science, computer engineering and information technology common misconceptions about computer science a presentation or project designed to demonstrate: <ul style="list-style-type: none"> the basic nature of algorithms the ability to design, develop and explain IPO (sequential) and structured algorithms proficient use of key basic algorithms (idioms) and the ability to use these idioms to create other, complex algorithms 	<p>10</p> <p>20</p>

COURSE INF1210: COMPUTER SCIENCE 1 (continued)

General Outcomes	Assessment Criteria and Conditions	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> explain and demonstrate the nature, evolution, types and role of programming languages 	<p><i>Assessment of student achievement should be based on:</i></p> <ul style="list-style-type: none"> a presentation or project designed to explain and demonstrate: <ul style="list-style-type: none"> the basic nature, evolution, types and role of programming languages 	20
<ul style="list-style-type: none"> explain and demonstrate the rationale, three fundamental control structures and representation of data in sequential and structured programs 	<ul style="list-style-type: none"> a presentation or project demonstrating: <ul style="list-style-type: none"> the translation of algorithms into structured programs the basic nature, approach and representation of data in sequential and structured programs 	30
<ul style="list-style-type: none"> explain the nature, evolution and basic architecture of the von Neumann computer system 	<ul style="list-style-type: none"> a presentation or project addressing the evolution and nature of the von Neumann computer architecture under the direction of a simple program to explain: <ul style="list-style-type: none"> the nature of the five main hardware “blocks” of the computer a number of typical devices that make up each block the flow of data through each block of the computer the relationship with the basic data-processing paradigm. <p><i>Assessment Tool</i> <i>Assessment Checklist: Computer Science 1 Concepts (Introductory), INF1210–1</i> <i>Sample Assignments: Computer Science 1 Concepts (Introductory), INF1210–2</i></p> <p><i>Standard</i> <i>Rating of 2 for the Problem-solving Phase and a rating of 3 for the Implementation Phase</i></p>	20
<ul style="list-style-type: none"> demonstrate basic competencies. 	<ul style="list-style-type: none"> observations of individual effort and interpersonal interaction during the learning process. <p><i>Assessment Tool</i> <i>Basic Competencies Reference Guide and any assessment tools noted above</i></p>	Integrated throughout

COURSE INF1210: COMPUTER SCIENCE 1 (continued)

Concept	Specific Outcomes	Notes
Nature of Computer Science	<p><i>The student should:</i></p> <ul style="list-style-type: none"> • discuss the following topics: <ul style="list-style-type: none"> – computer science’s central focus is the study of the nature and techniques of problem solving with a particular interest in problems that are solvable by computation – the algorithmic approach is used to solve problems – computer systems are used to test/implement algorithmic solutions to problems – algorithms are used to develop generalized applications useful for solving classes of problems • describe the general areas of interest of computer science. They include: <ul style="list-style-type: none"> – development and analysis of algorithms – computing systems and their components – communication—both human/machine and machine/machine – formal languages—natural and artificial – automata – artificial intelligence – general development of IT applications • compare and explain computer science versus computer engineering and information technology <ul style="list-style-type: none"> – theoretical versus applied – general versus specific – exploratory versus applicatory • describe some of the misconceptions associated with computer science: <ul style="list-style-type: none"> – is the study of computer systems – is synonymous with programming – is the learning of various computer applications 	

COURSE INF1210: COMPUTER SCIENCE 1 (continued)

Concept	Specific Outcomes	Notes
Algorithmic Problem Solving	<p><i>The student should:</i></p> <ul style="list-style-type: none"> • describe how an algorithm: <ul style="list-style-type: none"> – is a step-by-step set of instructions that results in a solution to a problem – becomes a computer program when expressed in a programming language • demonstrate iterative and incremental approaches in the analysis and design stages of the software development process • carry out the first two steps of the Systems Development Life Cycle (Analysis and Design) using: <ul style="list-style-type: none"> – flowcharts – pseudocode – IPO charting • demonstrate a number of core algorithms, such as: <ul style="list-style-type: none"> – accumulation (keeping a running total) – determining the mean – determining minimums and maximums 	
Implementing the Algorithm (Software and Software Development)	<ul style="list-style-type: none"> • demonstrate the third step of the Systems Development Life Cycle (Development or Coding) using iterative and incremental approaches • demonstrate the nature of programming language; specifically, that these languages: <ul style="list-style-type: none"> – reflected a simplified version of natural language <ul style="list-style-type: none"> • grammar • syntax • semantics • imperative vocabulary • statements • blocks • evolved in tandem with algorithms and hardware • through 5 “generations” • a continuum from machine language to natural language programming 	

COURSE INF1210: COMPUTER SCIENCE 1 (continued)

Concept	Specific Outcomes	Notes
	<p><i>The student should:</i></p> <ul style="list-style-type: none"> • each successive generation closer to natural or human language • each generation requires more sophisticated translation into a machine understandable form (assemblers, compilers, interpreters) • “higher” generation languages easier for humans to use but slower and less machine efficient • first generation: machine language • second generation: assembly language • third generation: high-level languages • fourth generation: computer-assisted programming languages • fifth generation: natural language programming – reflected IPO or the data processing paradigm <ul style="list-style-type: none"> • initialization • input statements • processing statements • output statements • termination/linking • demonstrate how programming languages dealt with data representation: <ul style="list-style-type: none"> – binary and hexadecimal systems – standard data types – data storage • demonstrate structured programming concepts: <ul style="list-style-type: none"> – rationale for structured programming – goto-less programming – three fundamental control structures (sequential, decision and iterative) • demonstrate iterative and incremental approaches in the Implementation and Maintenance stages of the Systems Development Life Cycle 	

COURSE INF1210: COMPUTER SCIENCE 1 (continued)

Concept	Specific Outcomes	Notes
Executing the Algorithm (Computer Systems)	<p><i>The student should:</i></p> <ul style="list-style-type: none">• demonstrate computer architecture by producing/explaining/describing:<ul style="list-style-type: none">– a block diagram of a stereotypical von Neumann machine<ul style="list-style-type: none">• input block or stage• processing block or stage• output block or stage• internal storage block or stage (memory)• external storage block or stage (memory)– a number of typical devices associated with each “block”<ul style="list-style-type: none">• i.e., keyboard or mouse with the input block– a flow of data through the computer under the direction of a program.	