COURSE INF1030: WORD PROCESSING 1

Level: Introductory

Prerequisite: None

Description: Students are introduced to the proper use of word processing software, including document creation, editing and printing of properly formatted documents.

Parameters: Access to a computer work station and word processing software.

Outcomes: The student will:

1. create and customize documents
1.1 create and format simple documents; e.g., letter, memorandum, report, correspondence and tables suitable for personal use applications by:
1.1.1 creating/opening a document
1.1.2 accessing help and online references
1.1.3 navigating a document
1.1.4 entering text in a document
1.1.5 selecting, replacing and deleting text
1.1.6 saving and editing a document
1.1.7 printing a document
1.1.8 closing a document
1.2 lay out documents by:
1.2.1 using and changing margins and tabs
1.2.2 aligning text
1.2.3 inserting and modifying headers and footers

2. format content
2.1 format text and paragraphs by:
2.1.1 modifying font, style, size and colour
2.1.2 modifying paragraph spacing
2.1.3 creating numbered and bulleted list
2.1.4 setting indentations; e.g., first line, hanging indent, negative, both sides
2.2 manipulate text; e.g., cut, copy, paste
2.3 control pagination by:
2.3.1 numbering pages
2.3.2 inserting page breaks

3. work with visual content
3.1 insert illustration; e.g., pictures, clip art
3.2 format text graphically; e.g., word art
3.3 insert and modify text boxes

4. organize content
4.1 insert tables and lists to organize content
4.2 modify tables; e.g., merge/split cells, use shading, insert rows/columns

5. **review documents**
   - 5.1 preview documents using:
     - 5.1.1 scroll
     - 5.1.2 zoom
   - 5.2 use spell and grammar check
   - 5.3 print preview documents
6. **apply consistent and appropriate work station routines**
   - 6.1 demonstrate good health and safety; e.g., posture, positioning of hardware and furniture
   - 6.2 employ practices that provide security for hardware, software, supplies and personal work
7. **demonstrate basic competencies**
   - 7.1 demonstrate fundamental skills to:
     - 7.1.1 communicate
     - 7.1.2 manage information
     - 7.1.3 use numbers
     - 7.1.4 think and solve problems
   - 7.2 demonstrate personal management skills to:
     - 7.2.1 demonstrate positive attitudes and behaviours
     - 7.2.2 be responsible
     - 7.2.3 be adaptable
     - 7.2.4 learn continuously
     - 7.2.5 work safely
   - 7.3 demonstrate teamwork skills to:
     - 7.3.1 work with others
     - 7.3.2 participate in projects and tasks
8. **make personal connections to the cluster content and processes to inform possible pathway choices**
   - 8.1 complete/update a personal inventory; e.g., interests, values, beliefs, resources, prior learning and experiences
   - 8.2 create a connection between a personal inventory and occupational choices

COURSE INF1050:   DATABASE 1

Level:	Introductory
Prerequisite:	None
Description:	Students develop skills in the proper use of a database management system by developing flat-file databases and demonstrating their use in personal and business applications.
Parameters:	Access to appropriate computer equipment and a database management system with support materials.
Outcomes:	The student will:

1. **create and structure flat-file databases**
    1.1   create databases using a predefined template
    1.2   define data needs and types by planning a database and identifying the key features needed for later entry; e.g., records, fields, layout
    1.3   create a blank database
    1.4   define and create a primary key
    1.5   use help functions and references as appropriate
2. **create and format database elements**
    2.1   identify the key features of a database system needed to create a simple table
    2.2   create and modify tables
    2.3   create fields and modify field properties using different methods of editing; e.g., design view, datasheet view, wizards
    2.4   create forms from the fields identified
    2.5   modify the form layout
    2.6   create reports to meet different audiences
    2.7   modify the report layout and page setup for presentation and printing
3. **enter and modify data**
    3.1   enter, edit and delete records
    3.2   navigate among records and fields
    3.3   find and replace data
    3.4   import data from other sources; e.g., spreadsheets
    3.5   access data and define problems; e.g., manage information, make decisions
4. **present and share data**
    4.1   create and modify queries
    4.2   sort data in a variety of elements; e.g., tables, forms, queries
    4.3   filter data
    4.4   export data
    4.5   split databases
    4.6   save database objects as other file types
    4.7   print database objects, including reports and queries
    4.8   back up a database
5. **apply consistent and appropriate work station routines**
    5.1   demonstrate good health and safety; e.g., posture, positioning of hardware and furniture
    5.2   employ practices that provide security for hardware, software, supplies and personal work

6. demonstrate basic competencies
  6.1 demonstrate fundamental skills to:
    6.1.1 communicate
    6.1.2 manage information
    6.1.3 use numbers
    6.1.4 think and solve problems
  6.2 demonstrate personal management skills to:
    6.2.1 demonstrate positive attitudes and behaviours
    6.2.2 be responsible
    6.2.3 be adaptable
    6.2.4 learn continuously
    6.2.5 work safely
  6.3 demonstrate teamwork skills to:
    6.3.1 work with others
    6.3.2 participate in projects and tasks
7. make personal connections to the cluster content and processes to inform possible pathway choices
  7.1 complete/update a personal inventory; e.g., interests, values, beliefs, resources, prior learning and experiences
  7.2 create a connection between a personal inventory and occupational choices

COURSE INF1060:   SPREADSHEET 1

Level: Introductory

Prerequisite: None

Description: Students develop skills in the proper use of spreadsheet software through general data manipulation and personal recordkeeping.

Parameters: Access to an appropriate computer work station and spreadsheet software.

Outcomes: The student will:

1. demonstrate basic electronic spreadsheet software competence
  1.1 describe key features of the spreadsheet software
  1.2 use help functions and references as appropriate
2. create and manipulate data
  2.1 insert data using fill such as:
      2.1.1 cut, copy and paste cells
  2.2 modify cell contents and formulas by:
      2.2.1 changing font, font size and style
      2.2.2 applying borders and copying cell contents
  2.3 change worksheet views
  2.4 manage worksheets including:
      2.4.1 rename a worksheet
      2.4.2 hide and unhide a worksheet
3. format data and content
  3.1   format worksheets including:
      3.1.1 hide and show gridlines
      3.1.2 create, rename and duplicate worksheets
      3.1.3 add backgrounds
  3.2 insert and modify rows and columns by:
      3.2.1 deleting and inserting rows and columns
      3.2.2 inserting and deleting cells
  3.3 format cells and cell content including:
      3.3.1 edit, move and clear cell contents
      3.3.2 find and replace cell contents
      3.3.3 insert and edit hyperlinks
      3.3.4 convert text to columns
  3.4 format data and tables by:
      3.4.1 applying table styles
      3.4.2 modifying and editing tables
4. create and modify formulas
  4.1 reference data in formulas including:
      4.1.1 key and edit basic formulas
      4.1.2 use functions to create formulas
      4.1.3 copy and move formulas
      4.1.4 use relative, absolute and mixed references
      4.1.5 enter a range into a formula by dragging
  4.2 summarize data using subtotals with various techniques; e.g., autosum, cell referencing
  4.3 display and print formulas

5. **present data visually**
   5.1 create and format charts and diagrams
   5.2 modify and position chart elements
   5.3 insert and modify illustrations by:
      5.3.1 inserting, moving and sizing graphics
   5.4 sort and filter data using:
      5.4.1 simple sorts and filter sorts
6. **collaborate and secure data**
   6.1 save and print workbooks including:
      6.1.1 use print preview
      6.1.2 change page orientation
      6.1.3 set print area
      6.1.4 create headers and footers
      6.1.5 set print options
      6.1.6 print workbook and selections
7. **apply consistent and appropriate work station routines**
   7.1 demonstrate good health and safety; e.g., posture, positioning of hardware and furniture
   7.2 employ practices that provide security for hardware, software, supplies and personal work
8. **demonstrate basic competencies**
   8.1 demonstrate fundamental skills to:
      8.1.1 communicate
      8.1.2 manage information
      8.1.3 use numbers
      8.1.4 think and solve problems
   8.2 demonstrate personal management skills to:
      8.2.1 demonstrate positive attitudes and behaviours
      8.2.2 be responsible
      8.2.3 be adaptable
      8.2.4 learn continuously
      8.2.5 work safely
   8.3 demonstrate teamwork skills to:
      8.3.1 work with others
      8.3.2 participate in projects and tasks
9. **make personal connections to the cluster content and processes to inform possible pathway choices**
   9.1 complete/update a personal inventory; e.g., interests, values, beliefs, resources, prior learning and experiences
   9.2 create a connection between a personal inventory and occupational choices

COURSE INF1070: DIGITAL PRESENTATION

Level: Introductory

Prerequisite: None

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

Parameters: Access to appropriate computer equipment, presentation software and support
                       materials.

Outcomes: The student will:

1.   design, create and format digital presentations
1.1   create new presentations including:
    1.1.1   create new presentations from templates
    1.1.2   create and edit a new custom presentation/show
1.2   customize slides by:
    1.2.1   using a slide master
    1.2.2   customizing backgrounds
1.3   add elements to slides including:
    1.3.1   graphics
    1.3.2   footers and headers
1.4   create and change presentation elements by:
    1.4.1   applying transition effects
    1.4.2   selecting slides on a show
    1.4.3   setting up and running a slide show
1.5   arrange slides to improve flow by:
    1.5.1   using normal and slide view to arrange slides
    1.5.2   adding, deleting and rearranging slides

2.   create and format slide content
2.1   insert and format text and text boxes including:
    2.1.1   add and delete text on a slide
    2.1.2   edit text on a slide
    2.1.3   size and format text boxes
    2.1.4   insert text from another source
2.2   manipulate text in the following ways:
    2.2.1   copy, cut and paste text
    2.2.2   promote and demote text
    2.2.3   add and modify text art on a slide; e.g., word art
    2.2.4   modify fonts and font styles
    2.2.5   modify font size and colour
    2.2.6   align text and change line spacing
    2.2.7   format text using an alternative source; e.g., painter
    2.2.8   add and modify bulleted lists
    2.2.9   add and modify numbered lists
2.3   add and link existing content to a presentation by:
    2.3.1   copying and pasting elements from one slide to another
    2.3.2   copying and pasting elements between presentations
    2.3.3   copying and pasting slides between presentations

  2.3.4 adding hyperlinks to a presentation
  2.3.5 inserting media clips into slides
 2.4 apply, customize, modify and remove animations including:
  2.4.1 add animation and effects to a graphic, text box or photo
  2.4.2 create and modify custom animations

3. work with visual content
 3.1 insert illustrations and shapes by:
  3.1.1 adding clip art to a slide
  3.1.2 creating a diagram; e.g., SmartArt
  3.1.3 applying styles to diagram
  3.1.4 adding a picture to a slide
  3.1.5 adding shapes to slides
 3.2 modify illustrations including:
  3.2.1 change the size and colour of a graphic
  3.2.2 format and add an effect to a shape
  3.2.3 rotate, resize and recolour a photo
 3.3 arrange illustrations and other content including:
  3.3.1 place illustrations in order
  3.3.2 align and connect pictures
  3.3.3 rotate and align shapes and graphics
  3.3.4 display grids and guides
 3.4 insert and modify charts including:
  3.4.1 create and apply styles to a chart
 3.5 insert and modify tables including:
  3.5.1 create and apply styles to a table

4. collaborate on and deliver presentations
 4.1 review presentations including:
  4.1.1 add, edit and delete comments
 4.2 secure and share presentations by:
  4.2.1 using document inspector to remove information
  4.2.2 saving presentations and slide shows
 4.3 prepare printed materials including:
  4.3.1 print outlines and speaker notes
  4.3.2 use pens, highlighters and arrows
  4.3.3 rehearse and save timings
 4.4 prepare for and rehearse presentation delivery by:
  4.4.1 adding action buttons
  4.4.2 hiding slides
  4.4.3 navigating through the slide show
  4.4.4 rehearsing timings
  4.4.5 packaging and storing presentations
  4.4.6 exporting a presentation to another program

5. apply consistent and appropriate work station routines
 5.1 demonstrate good health and safety; e.g., posture, positioning of hardware and furniture
 5.2 employ practices that provide security for hardware, software, supplies and personal work

6. demonstrate basic competencies
 6.1 demonstrate fundamental skills to:
  6.1.1 communicate
  6.1.2 manage information
  6.1.3 use numbers
  6.1.4 think and solve problems

      6.2   demonstrate personal management skills to:
          6.2.1   demonstrate positive attitudes and behaviours
          6.2.2   be responsible
          6.2.3   be adaptable
          6.2.4   learn continuously
          6.2.5   work safely
      6.3   demonstrate teamwork skills to:
          6.3.1   work with others
          6.3.2   participate in projects and tasks

7.   make personal connections to the cluster content and processes to inform possible pathway choices

      7.1   complete/update a personal inventory; e.g., interests, values, beliefs, resources, prior learning and experiences

      7.2   create a connection between a personal inventory and occupational choices

COURSE INF1910:   INF PROJECT A

Level: Introductory

Prerequisite: None

Description: Students develop project design and management skills to extend and enhance competencies and skills in other CTS courses through contexts that are personally relevant.

Parameters: Introductory project courses must connect with a minimum of two CTS courses, one of which must be at the introductory level and be in the same occupational area as the project course. The other CTS course(s) can be either at the same level or at the intermediate level from any occupational area.

Project courses cannot be connected to other project courses or practicum courses.

All projects and/or performances, whether teacher- or student-led, must include a course outline or student proposal.

Outcomes:

The teacher/student will:

1. **identify the connection between this project course and two or more CTS courses**
    1.1   identify the outcome(s) from each identified CTS course that support the project and/or performance deliverables
    1.2   explain how these outcomes are being connected to the project and/or performance deliverables
2. **propose the project and/or performance**
    2.1   identify the project and/or performance by:
        2.1.1   preparing a plan
        2.1.2   clarifying the purposes
        2.1.3   defining the deliverables
        2.1.4   specifying time lines
        2.1.5   explaining terminology, tools and processes
        2.1.6   defining resources; e.g., materials, costs, staffing
    2.2   identify and comply with all related health and safety standards
    2.3   define assessment standards (indicators for success)
    2.4   present the proposal and obtain necessary approvals

The student will:

3. **meet goals as defined within the plan**
    3.1   complete the project and/or performance as outlined
    3.2   monitor the project and/or performance and make necessary adjustments
    3.3   present the project and/or performance, indicating the:
        3.3.1   outcomes attained
        3.3.2   relationship of outcomes to goals originally set

3.4 evaluate the project and/or performance, indicating the:
    3.4.1 processes and strategies used
    3.4.2 recommendations on how the project and/or performance could have been improved

4. demonstrate basic competencies
4.1 demonstrate fundamental skills to:
    4.1.1 communicate
    4.1.2 manage information
    4.1.3 use numbers
    4.1.4 think and solve problems
4.2 demonstrate personal management skills to:
    4.2.1 demonstrate positive attitudes and behaviours
    4.2.2 be responsible
    4.2.3 be adaptable
    4.2.4 learn continuously
    4.2.5 work safely
4.3 demonstrate teamwork skills to:
    4.3.1 work with others
    4.3.2 participate in projects and tasks

5. make personal connections to the cluster content and processes to inform possible pathway choices
5.1 complete/update a personal inventory; e.g., interests, values, beliefs, resources, prior learning and experiences
5.2 create a connection between a personal inventory and occupational choices

COURSE INF2020: KEYBOARDING

Level: Intermediate

Prerequisite: None

Description: Students enhance their occupational level keyboarding competence of all keystroke functions, using unedited, edited and straight copy material.

Parameters: Access to a computer work station and software.

Outcomes: The student will:

1. demonstrate proficient keyboarding competence
    1.1 use text entry between 30–50 words per minute using a keyboard
        1.1.1 with a syllabic index between 1.2 to 1.35
        1.1.2 with a maximum of one uncorrected error
    1.2 use numeric entry between 100–150 keystrokes per minute using a numeric keypad, with a maximum of one uncorrected error
    1.3 use touch-keystroke alphabetic, numeric, punctuation and service keys
    1.4 proofread and edit
    1.5 minimize errors; e.g., spelling, keystroking, punctuation, spacing, transposition, repetition, omissions
    1.6 use appropriate commands and functions
    1.7 use correct finger and key placement
2. apply consistent and appropriate work station routines
    2.1 demonstrate good health and safety; e.g., posture, positioning of hardware and furniture
    2.2 employ practices that provide security for hardware, software, supplies and personal work
3. demonstrate basic competencies
    3.1 demonstrate fundamental skills to:
        3.1.1 communicate
        3.1.2 manage information
        3.1.3 use numbers
        3.1.4 think and solve problems
    3.2 demonstrate personal management skills to:
        3.2.1 demonstrate positive attitudes and behaviours
        3.2.2 be responsible
        3.2.3 be adaptable
        3.2.4 learn continuously
        3.2.5 work safely
    3.3 demonstrate teamwork skills to:
        3.3.1 work with others
        3.3.2 participate in projects and tasks
4. identify possible life roles related to the skills and content of this cluster
    4.1 recognize and then analyze the opportunities and barriers in the immediate environment
    4.2 identify potential resources to minimize barriers and maximize opportunities

COURSE INF2050:   WORD PROCESSING 2

Level: Intermediate

Prerequisite: None

Description: Students develop their skills in the proper use of word processing software,
                             including document creation, editing and printing of properly formatted
                             documents.

Parameters: Access to a computer work station, word processing software and support
                             materials.

Supporting Course: INF1030: Word Processing 1

Outcomes: The student will:

1. **create and customize documents**
   1.1 create, format and edit documents; e.g., single or multiple page letter, multiple page report,
        tables suitable for personal and business use applications, new document setup, templates
   1.2 lay out documents including:
        1.2.1   adjust margins and tabs
        1.2.2   modify header and footer setting, including page numbering
        1.2.3   create and modify columns
        1.2.4   change page orientation and paper size
        1.2.5   add a watermark and background
   1.3 make documents and content easier to find by:
        1.3.1   setting standard properties; e.g., keywords, author, title
        1.3.2   inserting a hyperlink
        1.3.3   using "find, replace and go to"
        1.3.4   customizing using autocorrect
2. **format content**
   2.1 format text and paragraphs including:
        2.1.1   apply, create and edit format; e.g., styles, lists, bullets
        2.1.2   modify character spacing and scale
        2.1.3   manage content flow; e.g., controlling widows and orphans
   2.2 manipulate text by:
        2.2.1   using advanced cut and paste skills; e.g., use the mouse and or clipboard to copy and
                move text
        2.2.2   inserting symbols and characters
        2.2.3   modifying bullet characters
   2.3 control pagination including:
        2.3.1   format different sections in a document
        2.3.2   work with breaks; e.g., page, section, column
3. **work with visual content**
   3.1 insert and format illustrations by:
        3.1.1   creating and modifying graphics and shapes; e.g., SmartArt graphics, drawing toolbar
        3.1.2   adjusting image properties
        3.1.3   cropping, resizing, scaling and rotating a picture

3.2 insert and modify text boxes
3.3 text wrap and position visual content
4. **organize content**
  4.1 structure content by:
    4.1.1 creating and using macros; e.g., repetitive text, building blocks
    4.1.2 working with bookmarks
  4.2 use tables and lists to organize content including:
    4.2.1 create a table of contents and index
    4.2.2 update a table of contents and index
    4.2.3 create an outline/document map
    4.2.4 convert a table to text and text to a table
  4.3 modify tables by:
    4.3.1 resizing cells and the table; e.g., dragging, setting height, width
    4.3.2 creating a header row
    4.3.3 sorting a tables of contents
    4.3.4 changing the position of text in a cell
    4.3.5 changing the direction of text in a cell
  4.4 insert and format references and captions by using:
    4.4.1 footnotes and endnotes
    4.4.2 notes; e.g., bibliography, citations
  4.5 merge documents and data sources by:
    4.5.1 preparing and performing a mail merge
    4.5.2 creating envelopes and labels for group mailing
5. **review documents**
  5.1 manage tracked changes
  5.2 insert, modify and delete comments
  5.3 reveal source codes
6. **share and secure content**
  6.1 convert documents to different file formats; e.g., PDF, Web page
7. **apply consistent and appropriate work station routines**
  7.1 demonstrate good health and safety; e.g., posture, positioning of hardware and furniture
  7.2 employ practices that provide security for hardware, software, supplies and personal work
8. **demonstrate basic competencies**
  8.1 demonstrate fundamental skills to:
    8.1.1 communicate
    8.1.2 manage information
    8.1.3 use numbers
    8.1.4 think and solve problems
  8.2 demonstrate personal management skills to:
    8.2.1 demonstrate positive attitudes and behaviours
    8.2.2 be responsible
    8.2.3 be adaptable
    8.2.4 learn continuously
    8.2.5 work safely
  8.3 demonstrate teamwork skills to:
    8.3.1 work with others
    8.3.2 participate in projects and tasks
9. **identify possible life roles related to the skills and content of this cluster**
  9.1 recognize and then analyze the opportunities and barriers in the immediate environment
  9.2 identify potential resources to minimize barriers and maximize opportunities

COURSE INF2070:   DATABASE 2

Level: Intermediate

Prerequisite: None

Description: Students expand their skills in the proper use of a database management system
                       by developing relational databases and demonstrating their use in personal and
                       business applications.

Parameters: Access to appropriate computer equipment, a database management system
                       that supports relational databases and support materials. Students should have
                       prior understanding of using a flat-file database.

Supporting Course: INF1050: Database 1

Outcomes: The student will:

1. **create and structure relational databases**
    1.1 define data needs and types for multiple tables within a database
    1.2 plan and design the structure of the database and the necessary relationships
    1.3 define and print table relationships
    1.4 add, set, change and remove primary keys
    1.5 define and modify multifield primary keys
2. **create and format database elements**
    2.1 create several tables within a database
    2.2 identify fields and modify their properties; e.g., location, name, type, size, format
    2.3 link tables and fields
    2.4 apply data normalization rules
    2.5 create forms using several methods, e.g., layout and design view, including:
        2.5.1   multi-item forms
        2.5.2   split forms
        2.5.3   subforms
        2.5.4   PivotTable forms
    2.6 demonstrate appropriate format specifications and layout to create appropriate reports
    2.7 add and modify controls and properties to reports and forms
    2.8 import data from other files or sources
3. **enter, modify and organize data**
    3.1 access data and define problems; e.g., manage information, make decisions
    3.2 input and process data including:
        3.2.1   create template files
        3.2.2   enter data into files
        3.2.3   update and edit data in files
    3.3 link one or more databases
    3.4 sort and filter data within several database elements; e.g., tables, queries, forms, reports
    3.5 create and modify calculated fields and aggregate functions
4. **create and modify queries**
    4.1 create a query from single and multiple tables
    4.2 save a filter as a query

4.3   modify a query by:
-     4.3.1   adding and removing tables
-     4.3.2   creating a calculated query field
-     4.3.3   adding an alias to a query field
-     4.3.4   creating aggregated queries
-     4.3.5   adding criteria to find:
  -       4.3.5.1   selected records that meet several conditions
  -       4.3.5.2   selected records that do not match a specific condition

5.   manage, present and share data
- 5.1   identify object dependencies
- 5.2   view objects and object data in other views
- 5.3   create and modify charts
- 5.4   save database objects as another file type
- 5.5   print database objects
- 5.6   export data to another source from database elements
- 5.7   present a database in another format; e.g., Web page, data access page
- 5.8   compact and repair a database
- 5.9   analyze data to draw conclusions and make recommendations

6.   apply consistent and appropriate work station routines
- 6.1   demonstrate good health and safety; e.g., posture, positioning of hardware and furniture
- 6.2   employ practices that provide security for hardware, software, supplies and personal work

7.   demonstrate basic competencies
- 7.1   demonstrate fundamental skills to:
  -     7.1.1   communicate
  -     7.1.2   manage information
  -     7.1.3   use numbers
  -     7.1.4   think and solve problems
- 7.2   demonstrate personal management skills to:
  -     7.2.1   demonstrate positive attitudes and behaviours
  -     7.2.2   be responsible
  -     7.2.3   be adaptable
  -     7.2.4   learn continuously
  -     7.2.5   work safely
- 7.3   demonstrate teamwork skills to:
  -     7.3.1   work with others
  -     7.3.2   participate in projects and tasks

8.   identify possible life roles related to the skills and content of this cluster
- 8.1   recognize and then analyze the opportunities and barriers in the immediate environment
- 8.2   identify potential resources to minimize barriers and maximize opportunities

COURSE INF2080: SPREADSHEET 2

Level: Intermediate

Prerequisite: None

Description: Students develop skills in the proper use of spreadsheet software through advanced data manipulation and preparation of appropriate reports and printouts in text and graphic format.

Parameters: Access to an appropriate computer work station and spreadsheet software.

Outcomes: The student will:

Supporting Course: INF1060: Spreadsheet 1

1. **create and manipulate data**
   1.1 insert data using fill including:
       1.1.1 change font colour
   1.2 change worksheet views including:
       1.2.1 split, freeze and unfreeze workbooks
       1.2.2 hide, unhide and arrange workbooks
       1.2.3 insert and modify page breaks
   1.3 manage worksheets by:
       1.3.1 inserting, deleting and rearranging worksheets
       1.3.2 creating a workbook from a template
2. **format data and content**
   2.1 insert and modify rows and columns including:
       2.1.1 use text to create columns
       2.1.2 change row and column width and height
       2.1.3 hide and unhide columns and rows
       2.1.4 apply changes to horizontal and vertical alignment
       2.1.5 centre titles across a series of cells
       2.1.6 use a function to display current date and time
   2.2 format data and table including:
       2.2.1 apply styles to cells
3. **create and modify formulas**
   3.1 use functions to create average, minimum and maximum; e.g., AVERAGE, MIN, MAX
   3.2 use functions to count numbers, and count both text and numbers; e.g., COUNT, COUNTA
   3.3 use functions to calculate interest rates, monthly payments and present value; e.g., PMT
   3.4 use conditional logic in a formula; e.g., IF
   3.5 summarize data using subtotals
   3.6 format and modify text using formulas
   3.7 look up data using a formula
   3.8 protect formulas using lock and unlock

4. **present data visually**
    4.1 create and format charts including:
        4.1.1 insert various chart types; e.g., 2-D column, pie, scatter
        4.1.2 use chart tools to create a clustered column graph
    4.2 modify and position chart elements in a clustered graph
    4.3 insert and modify illustrations by:
        4.3.1 inserting, moving and sizing graphics from an outside source; e.g., the Internet
    4.4 sort and filter data including:
        4.4.1 two component simple sort
        4.4.2 two component filter sort
        4.4.3 outline data
5. **collaborate and secure data**
    5.1 manage all changes to workbooks including:
        5.1.1 save and publish workbooks and worksheets as Web pages
        5.1.2 convert files to different formats
    5.2 protect and share workbooks
    5.3 prepare workbooks for distribution
6. **apply consistent and appropriate work station routines**
    6.1 demonstrate good health and safety; e.g., posture, positioning of hardware and furniture
    6.2 employ practices that provide security for hardware, software, supplies and personal work
7. **demonstrate basic competencies**
    7.1 demonstrate fundamental skills to:
        7.1.1 communicate
        7.1.2 manage information
        7.1.3 use numbers
        7.1.4 think and solve problems
    7.2 demonstrate personal management skills to:
        7.2.1 demonstrate positive attitudes and behaviours
        7.2.2 be responsible
        7.2.3 be adaptable
        7.2.4 learn continuously
        7.2.5 work safely
    7.3 demonstrate teamwork skills to:
        7.3.1 work with others
        7.3.2 participate in projects and tasks
8. **make personal connections to the cluster content and processes to inform possible pathway choices**
    8.1 complete/update a personal inventory; e.g., interests, values, beliefs, resources, prior learning and experiences
    8.2 create a connection between a personal inventory and occupational choices

COURSE INF2090:   CORRESPONDENCE

Level: Intermediate

Prerequisite: None

Description: Students enhance their skills in document production as they prepare various forms of correspondence in publishable form, using word processing and e-mail software.

Parameters: Access to appropriate computer equipment, storage medium, software, the Internet and support materials.

Supporting Courses: INF1030: Word Processing 1
                        MAM1030: Communication Strategies 1
                        INF2020: Keyboarding

Outcomes: The student will:

1. **demonstrate efficient word processing skills to produce publishable documents for the purpose of correspondence**
   1.1 enter text from formatted copy in which text is:
        1.1.1   unedited
        1.1.2   draft
        1.1.3   final copy
   1.2 plan layout and enter text from unformatted copy in which text is:
        1.2.1   unedited
        1.2.2   draft
        1.2.3   final copy
2. **create error-free, well-formatted correspondence**
   2.1 determine the intent and audience of the correspondence
   2.2 determine the method of delivery of the correspondence; e.g., mail, e-mail, fax, Web posting
   2.3 demonstrate skill in producing and editing a properly formatted letter and memorandum, using the following features:
        2.3.1   templates, macros and/or autotext
        2.3.2   letter parts; e.g., date, inside/return addresses, salutations, complimentary closing, name/title, references
        2.3.3   letter styles
        2.3.4   punctuation styles
        2.3.5   placement
        2.3.6   letterhead
        2.3.7   mailing notations
        2.3.8   address; e.g., labels, envelopes
        2.3.9   second page headings
        2.3.10 displaying paragraphs; e.g., enumerations
        2.3.11 using form letters and mail merge
        2.3.12 printing and saving documents using alternative formats

3. **identify and demonstrate formatting and etiquette for different forms of correspondence; e.g., e-mail, text messages**
4. **apply consistent and appropriate work station routines**
    4.1 demonstrate good health and safety; e.g., posture, positioning of hardware and furniture
    4.2 employ practices that provide security for hardware, software, supplies and personal work
5. **demonstrate basic competencies**
    5.1 demonstrate fundamental skills to:
        5.1.1   communicate
        5.1.2   manage information
        5.1.3   use numbers
        5.1.4   think and solve problems
    5.2 demonstrate personal management skills to:
        5.2.1   demonstrate positive attitudes and behaviours
        5.2.2   be responsible
        5.2.3   be adaptable
        5.2.4   learn continuously
        5.2.5   work safely
    5.3 demonstrate teamwork skills to:
        5.3.1   work with others
        5.3.2   participate in projects and tasks
6. **identify possible life roles related to the skills and content of this cluster**
    6.1 recognize and then analyze the opportunities and barriers in the immediate environment
    6.2 identify potential resources to minimize barriers and maximize opportunities

COURSE INF2100:   REPORTS

Level: Intermediate

Prerequisite: None

Description: Students demonstrate efficient word processing skills to produce publishable
                      reports in a variety of formats from formatted and unformatted copy under
                      time constraints.

Parameters: Access to appropriate computer equipment, word processing software, the
                      Internet and support materials.

Supporting Courses: INF2050: Word Processing 2
                          INF2020: Keyboarding
                          MAM2060: Communication Strategies 2

Outcomes: The student will:

1. **prepare material for publication**
    1.1   edit and manipulate text proficiently
    1.2   replicate, convert and append files proficiently
    1.3   prepare templates, macros and autotext
    1.4   determine the intent of the report
2. **produce publishable reports, including the following features:**
    2.1   title page
    2.2   titles, headings and subheadings
    2.3   table of contents
    2.4   outlines
    2.5   bound and unbound formats
    2.6   columns
    2.7   displayed paragraphs and quotes
    2.8   headers and footers
    2.9   citations; e.g., footnotes, reference list, bibliography
    2.10 appendices and indexes
    2.11 pagination
    2.12 a variety of embedded tables and charts
3. **publish documents**
    3.1   print and save documents using alternative formats
    3.2   use electronic mail to send reports
4. **apply consistent and appropriate work station routines**
    4.1   demonstrate good health and safety; e.g., posture, positioning of hardware and furniture
    4.2   employ practices that provide security for hardware, software, supplies and personal work
5. **demonstrate basic competencies**
    5.1   demonstrate fundamental skills to:
        5.1.1   communicate
        5.1.2   manage information
        5.1.3   use numbers
        5.1.4   think and solve problems

5.2 demonstrate personal management skills to:
    5.2.1   demonstrate positive attitudes and behaviours
    5.2.2   be responsible
    5.2.3   be adaptable
    5.2.4   learn continuously
    5.2.5   work safely

5.3 demonstrate teamwork skills to:
    5.3.1   work with others
    5.3.2   participate in projects and tasks

6. identify possible life roles related to the skills and content of this cluster

6.1 recognize and then analyze the opportunities and barriers in the immediate environment

6.2 identify potential resources to minimize barriers and maximize opportunities

COURSE INF2910: INF PROJECT B

Level: Intermediate

Prerequisite: None

Description: Students develop project design and management skills to extend and enhance competencies and skills in other CTS courses through contexts that are personally relevant.

Parameters: Intermediate project courses must connect with a minimum of two CTS courses, one of which must be at the intermediate level and be in the same occupational area as the project course. The other CTS course(s) can be at any level from any occupational area.

Project courses cannot be connected to other project courses or practicum courses.

All projects and/or performances, whether teacher- or student-led, must include a course outline or student proposal.

Outcomes:

The teacher/student will:

1. **identify the connection between this project course and two or more CTS courses**
    1.1 identify the outcome(s) from each identified CTS course that support the project and/or performance deliverables
    1.2 explain how these outcomes are being connected to the project and/or performance deliverables
2. **propose the project and/or performance**
    2.1 identify the project and/or performance by:
        2.1.1 preparing a plan
        2.1.2 clarifying the purposes
        2.1.3 defining the deliverables
        2.1.4 specifying time lines
        2.1.5 explaining terminology, tools and processes
        2.1.6 defining resources; e.g., materials, costs, staffing
    2.2 identify and comply with all related health and safety standards
    2.3 define assessment standards (indicators for success)
    2.4 present the proposal and obtain necessary approvals

The student will:

3. **meet goals as defined within the plan**
    3.1 complete the project and/or performance as outlined
    3.2 monitor the project and/or performance and make necessary adjustments
    3.3 present the project and/or performance, indicating the:
        3.3.1 outcomes attained
        3.3.2 relationship of outcomes to goals originally set

    3.4 evaluate the project and/or performance, indicating the:
        3.4.1 processes and strategies used
        3.4.2 recommendations on how the project and/or performance could have been improved

4. demonstrate basic competencies
    4.1 demonstrate fundamental skills to:
        4.1.1 communicate
        4.1.2 manage information
        4.1.3 use numbers
        4.1.4 think and solve problems
    4.2 demonstrate personal management skills to:
        4.2.1 demonstrate positive attitudes and behaviours
        4.2.2 be responsible
        4.2.3 be adaptable
        4.2.4 learn continuously
        4.2.5 work safely
    4.3 demonstrate teamwork skills to:
        4.3.1 work with others
        4.3.2 participate in projects and tasks

5. identify possible life roles related to the skills and content of this cluster
    5.1 recognize and then analyze the opportunities and barriers in the immediate environment
    5.2 identify potential resources to minimize barriers and maximize opportunities

COURSE INF2920:   INF PROJECT C

Level: Intermediate

Prerequisite: None

Description: Students develop project design and management skills to extend and enhance
                     competencies and skills in other CTS courses through contexts that are
                     personally relevant.

Parameters: Intermediate project courses must connect with a minimum of two CTS courses,
                     one of which must be at the intermediate level and be in the same occupational
                     area as the project course. The other CTS course(s) can be at any level from any
                     occupational area.

                     Project courses cannot be connected to other project courses or practicum
                     courses.

                     **All projects and/or performances, whether teacher- or student-led, must
                     include a course outline or student proposal.**

Outcomes:

The teacher/student will:

1. **identify the connection between this project course and two or more CTS courses**
   1.1 identify the outcome(s) from each identified CTS course that support the project and/or
        performance deliverables
   1.2 explain how these outcomes are being connected to the project and/or performance deliverables
2. **propose the project and/or performance**
   2.1 identify the project and/or performance by:
        2.1.1 preparing a plan
        2.1.2 clarifying the purposes
        2.1.3 defining the deliverables
        2.1.4 specifying time lines
        2.1.5 explaining terminology, tools and processes
        2.1.6 defining resources; e.g., materials, costs, staffing
   2.2 identify and comply with all related health and safety standards
   2.3 define assessment standards (indicators for success)
   2.4 present the proposal and obtain necessary approvals

The student will:

3. **meet goals as defined within the plan**
   3.1 complete the project and/or performance as outlined
   3.2 monitor the project and/or performance and make necessary adjustments
   3.3 present the project and/or performance, indicating the:
        3.3.1 outcomes attained
        3.3.2 relationship of outcomes to goals originally set

3.4 evaluate the project and/or performance, indicating the:
    3.4.1 processes and strategies used
    3.4.2 recommendations on how the project and/or performance could have been improved

4. demonstrate basic competencies
4.1 demonstrate fundamental skills to:
    4.1.1 communicate
    4.1.2 manage information
    4.1.3 use numbers
    4.1.4 think and solve problems
4.2 demonstrate personal management skills to:
    4.2.1 demonstrate positive attitudes and behaviours
    4.2.2 be responsible
    4.2.3 be adaptable
    4.2.4 learn continuously
    4.2.5 work safely
4.3 demonstrate teamwork skills to:
    4.3.1 work with others
    4.3.2 participate in projects and tasks

5. identify possible life roles related to the skills and content of this cluster
5.1 recognize and then analyze the opportunities and barriers in the immediate environment
5.2 identify potential resources to minimize barriers and maximize opportunities

COURSE INF2950: INF INTERMEDIATE PRACTICUM

Level: Intermediate

Prerequisite: None

Description: Students apply prior learning and demonstrate the attitudes, skills and knowledge required by an external organization to achieve a credential/credentials or an articulation.

Parameters: This practicum course, which may be delivered on- or off-campus, should be accessed only by students continuing to work toward attaining a recognized credential/credentials or an articulation offered by an external organization. This course must be connected to at least one CTS course from the same occupational area and cannot be used in conjunction with any advanced (3XXX) level course. A practicum course cannot be delivered as a stand-alone course, cannot be combined with a CTS project course and cannot be used in conjunction with the Registered Apprenticeship Program or the Green Certificate Program.

Outcomes: The student will:

1. **perform assigned tasks and responsibilities, as required by the organization granting the credential(s) or articulation**
   1.1 identify regulations and regulatory bodies related to the credential(s) or articulation
   1.2 describe personal roles and responsibilities, including:
      1.2.1 key responsibilities
      1.2.2 support functions/responsibilities/expectations
      1.2.3 code of ethics and/or conduct
   1.3 describe personal work responsibilities and categorize them as:
      1.3.1 routine tasks; e.g., daily, weekly, monthly, yearly
      1.3.2 non-routine tasks; e.g., emergencies
      1.3.3 tasks requiring personal judgement
      1.3.4 tasks requiring approval of a supervisor
   1.4 demonstrate basic employability skills and perform assigned tasks and responsibilities related to the credential(s) or articulation
2. **analyze personal performance in relation to established standards**
   2.1 evaluate application of the attitudes, skills and knowledge developed in related CTS courses
   2.2 evaluate standards of performance in terms of:
      2.2.1 quality of work
      2.2.2 quantity of work
   2.3 evaluate adherence to workplace legislation related to health and safety
   2.4 evaluate the performance requirements of an individual who is trained, experienced and employed in a related occupation in terms of:
      2.4.1 training and certification
      2.4.2 interpersonal skills
      2.4.3 technical skills
      2.4.4 ethics

3. demonstrate basic competencies
    3.1 demonstrate fundamental skills to:
        3.1.1 communicate
        3.1.2 manage information
        3.1.3 use numbers
        3.1.4 think and solve problems
    3.2 demonstrate personal management skills to:
        3.2.1 demonstrate positive attitudes and behaviours
        3.2.2 be responsible
        3.2.3 be adaptable
        3.2.4 learn continuously
        3.2.5 work safely
    3.3 demonstrate teamwork skills to:
        3.3.1 work with others
        3.3.2 participate in projects and tasks

4. identify possible life roles related to the skills and content of this cluster
    4.1 recognize and then analyze the opportunities and barriers in the immediate environment
    4.2 identify potential resources to minimize barriers and maximize opportunities

COURSE INF3010: HARDWARE & SOFTWARE ANALYSIS

Level: Advanced

Prerequisite: None

Description: Students analyze, compare and evaluate hardware and software based on user requirements.

Parameters: Access to computer equipment, appropriate software, the Internet and support materials.

Supporting Course: NET2020: Workstation Technology & Operations

Outcomes: The student will:

1. **analyze and compare computer hardware and operating systems**
   1.1 demonstrate an advanced knowledge of the components that make up a computer system; e.g., central processing unit, memory, graphics card, expandability, input, output, ports
   1.2 collect and compare information regarding operating systems; e.g., speed, cost, size, capabilities, warranties, restrictions
   1.3 assess and compare system software and firmware
   1.4 collect and compare information on computing hardware formats; e.g., desktop, laptop, tablet, personal digital assistant
   1.5 assess and compare application software; e.g., data, text, graphics
   1.6 discuss compatibility issues between computers and peripherals
   1.7 access support manuals, documentation and resources
2. **present research on emerging computing technologies; e.g., voice input, syncing, Bluetooth, touch screen, cloud computing**
3. **prepare and present a report recommending hardware and software configurations that meet specified criteria**
   3.1 identify computer user needs and variables
   3.2 research potential alternatives and identify sources of information
   3.3 compare and evaluate hardware and software compatibility with identified user needs
   3.4 provide recommendations and rationale for particular hardware and software components based on a needs assessment that addresses:
      3.4.1 client needs
      3.4.2 information base
      3.4.3 implementation time lines
      3.4.4 financial costs
      3.4.5 work station requirements
      3.4.6 in-service training
      3.4.7 support services
      3.4.8 warranties
      3.4.9 legal restrictions
   3.5 make and support recommendations using:
      3.5.1 appropriate industry standard format
      3.5.2 acceptable content and description
      3.5.3 appropriate terminology

4. **apply consistent and appropriate work station routines**
   4.1 demonstrate good health and safety; e.g., posture, positioning of hardware and furniture
   4.2 employ practices that provide security for hardware, software, supplies and personal work
5. **demonstrate basic competencies**
   5.1 demonstrate fundamental skills to:
      5.1.1 communicate
      5.1.2 manage information
      5.1.3 use numbers
      5.1.4 think and solve problems
   5.2 demonstrate personal management skills to:
      5.2.1 demonstrate positive attitudes and behaviours
      5.2.2 be responsible
      5.2.3 be adaptable
      5.2.4 learn continuously
      5.2.5 work safely
   5.3 demonstrate teamwork skills to:
      5.3.1 work with others
      5.3.2 participate in projects and tasks
6. **create a transitional strategy to accommodate personal changes and build personal values**
   6.1 identify short-term and long-term goals
   6.2 identify steps to achieve goals

COURSE INF3060:   WORD PROCESSING 3

Level: Advanced

Prerequisite: INF2050: Word Processing 2

Description: Students master their skills in the proper use of word processing software, including document creation, editing and printing of properly formatted documents.

Parameters: Access to a computer work station and word processing software.

> **Note:** This course is listed within a credentialed pathway. Please refer to the CTS Credentialed Pathways document on the Alberta Education website for more information.

Supporting Courses: INF1030: Word Processing 1

Outcomes: The student will:

1. **create and customize documents**
    1.1 create, format and edit documents; e.g., multiple page letter, multiple page report, tables suitable for personal and business use applications, new document setup, common templates and forms such as purchase order, expense reports, travel requests, medical forms, Web page, e-mail
    1.2 lay out documents including:
        1.2.1   modify fields in template form
        1.2.2   manipulate layout
        1.2.3   use objects and text boxes
        1.2.4   create and manage documents and subdocuments
        1.2.5   create and use a theme
    1.3 make documents and content easier to find including:
        1.3.1   insert and edit hyperlinks to Web pages
2. **format content**
    2.1 format text and paragraphs including:
        2.1.1   reveal source codes to edit and format
        2.1.2   use language features; e.g., thesaurus, dictionary, research
        2.1.3   clear formats from a paragraph
    2.2 manipulate text by:
        2.2.1   controlling paragraph behaviour
        2.2.2   manipulating columns
        2.2.3   adding text to a shape
    2.3 control pagination by:
        2.3.1   manipulating advanced page settings; e.g., odd/even page numbers, formats
3. **work with visual content**
    3.1 insert and format illustrations including:
        3.1.1   borders and shading
        3.1.2   flowcharts
        3.1.3   pictures

4. **organize content**
   4.1 use tables and lists to organize content including:
       4.1.1 perform calculations in table cells
       4.1.2 sort contents in a list
       4.1.3 change formatting of a list
       4.1.4 insert and update a table of figures
   4.2 insert and format captions by:
       4.2.1 adding captions to a document; e.g., figure, equation, table
       4.2.2 editing and deleting captions
   4.3 merge documents and data sources including:
       4.3.1 compare and merge two versions of a document
       4.3.2 combine changes made by different authors
5. **review documents**
   5.1 manage tracked changes
   5.2 insert, modify and delete comments
   5.3 reveal source codes
6. **share and secure content**
   6.1 prepare documents for sharing
   6.2 restrict and protect document access
   6.3 make sure a document is safe to share
7. **apply consistent and appropriate work station routines**
   7.1 demonstrate good health and safety; e.g., posture, positioning of hardware and furniture
   7.2 employ practices that provide security for hardware, software, supplies and personal work
8. **demonstrate basic competencies**
   8.1 demonstrate fundamental skills to:
       8.1.1 communicate
       8.1.2 manage information
       8.1.3 use numbers
       8.1.4 think and solve problems
   8.2 demonstrate personal management skills to:
       8.2.1 demonstrate positive attitudes and behaviours
       8.2.2 be responsible
       8.2.3 be adaptable
       8.2.4 learn continuously
       8.2.5 work safely
   8.3 demonstrate teamwork skills to:
       8.3.1 work with others
       8.3.2 participate in projects and tasks
9. **create a transitional strategy to accommodate personal changes and build personal values**
   9.1 identify short-term and long-term goals
   9.2 identify steps to achieve goals

COURSE INF3080:   PROJECT MANAGEMENT TOOLS

Level: Advanced

Prerequisite: None

Description: Students develop competence in using information management systems
                      software, such as project management, schedules and planners for either
                      personal or workplace applications.

Parameters: Access to an appropriate computer work station, a storage medium, information
                      management software and support materials.

Outcomes: The student will:

1. demonstrate the ability to use information management software
    1.1 plan projects, including setting goals, time lines and determining resource needs by:
        1.1.1 organizing relevant data; e.g., building a house, putting on a play, building a multimedia
              presentation
        1.1.2 defining basic project information including identifying all key tasks, linking tasks
              (where appropriate) and assigning task duration
        1.1.3 organizing tasks into an outline and detailing each subtask including viewing different
              levels of task detail (e.g., expanding/collapsing), setting milestones and creating a base
              calendar
        1.1.4 creating resource lists including entering cost information, assigning resources and
              applying appropriate constraints
    1.2 monitor projects, including time and resource management by:
        1.2.1 identifying critical issues
        1.2.2 resolving time restrictions
        1.2.3 resolving resource constraints
    1.3 adjust project files, as appropriate, including;
        1.3.1 sort and filter data
    1.4 prepare project reports
2. describe the features of the information management software used
    2.1 demonstrate the information management tool to others
    2.2 describe the capabilities of the tool
    2.3 describe how a person or business can benefit from the use of the management tool
3. apply consistent and appropriate work station routines
    3.1 demonstrate good health and safety; e.g., posture, positioning of hardware and furniture
    3.2 employ practices that provide security for hardware, software, supplies and personal work
4. demonstrate basic competencies
    4.1 demonstrate fundamental skills to:
        4.1.1 communicate
        4.1.2 manage information
        4.1.3 use numbers
        4.1.4 think and solve problems

4.2 demonstrate personal management skills to:
    4.2.1 demonstrate positive attitudes and behaviours
    4.2.2 be responsible
    4.2.3 be adaptable
    4.2.4 learn continuously
    4.2.5 work safely
4.3 demonstrate teamwork skills to:
    4.3.1 work with others
    4.3.2 participate in projects and tasks

5. create a transitional strategy to accommodate personal changes and build personal values
5.1 identify short-term and long-term goals
5.2 identify steps to achieve goals

COURSE INF3095:   PRODUCTIVITY SOFTWARE INTEGRATION

Level: Advanced

Prerequisites: INF3060: Word Processing 3
                      INF2070: Database 2
                      INF2080: Spreadsheet 2
                      INF1070: Digital Presentation

Description: Students enhance production skills by integrating data from a variety of sources
                      into a finished product.

Parameters: Access to appropriate computer equipment, software and support materials.

Outcomes: The student will:

1. **demonstrate competencies in word processing, spreadsheet, database and presentation software by creating integrated products**
   1.1   integrate data from a spreadsheet into a text document
   1.2   integrate text from a document into a spreadsheet
   1.3   create a linked object in a spreadsheet
   1.4   import data and formatting from a variety of source files into a spreadsheet
   1.5   import spreadsheet data into a database
   1.6   link a spreadsheet to a database table
   1.7   export database data to a spreadsheet
   1.8   export database data to a text document
   1.9   import data from a text document into a database
   1.10 import an outline from a text document into a presentation
   1.11 insert formatted text into a presentation
   1.12 import linked objects into a presentation
2. **demonstrate competence in producing integrated documents, spreadsheets, databases and presentations**
   2.1   describe the purpose of the product including:
         2.1.1   target audience
         2.1.2   single/multiple/presentation copy
   2.2   apply word processing, spreadsheet, database and presentation commands, as appropriate, to import, export and link word processing, spreadsheet, database and presentation files
   2.3   manipulate word processing, spreadsheet, database and presentation files from drafts including:
         2.3.1   edited, unedited and unformatted
         2.3.2   edited and formatted
   2.4   follow instructions to customize/personalize existing text and data files including:
         2.4.1   load, redesign, reformat or modify existing templates and files containing information from spreadsheet, presentation, Web or graphics files
         2.4.2   revise documents to be aesthetically pleasing and well-formatted
         2.4.3   save file for print or display in audience-appropriate format
3. **apply consistent and appropriate work station routines**
   3.1   demonstrate good health and safety; e.g., posture, positioning of hardware and furniture
   3.2   employ practices that provide security for hardware, software, supplies and personal work

4. demonstrate basic competencies
    4.1   demonstrate fundamental skills to:
        4.1.1   communicate
        4.1.2   manage information
        4.1.3   use numbers
        4.1.4   think and solve problems
    4.2   demonstrate personal management skills to:
        4.2.1   demonstrate positive attitudes and behaviours
        4.2.2   be responsible
        4.2.3   be adaptable
        4.2.4   learn continuously
        4.2.5   work safely
    4.3   demonstrate teamwork skills to:
        4.3.1   work with others
        4.3.2   participate in projects and tasks

5. create a transitional strategy to accommodate personal changes and build personal values
    5.1   identify short-term and long-term goals
    5.2   identify steps to achieve goals

COURSE INF3910:   INF PROJECT D

Level:	Advanced
Prerequisite:	None
Description:	Students develop project design and management skills to extend and enhance competencies and skills in other CTS courses through contexts that are personally relevant.
Parameters:	Advanced project courses must connect with a minimum of two CTS courses, one of which must be at the advanced level and be in the same occupational area as the project course. The other CTS course(s) must be at least at the intermediate level from any occupational area.
	Project courses cannot be connected to other project courses or practicum courses.
	All projects and/or performances, whether teacher- or student-led, must include a course outline or student proposal.

Outcomes:

The teacher/student will:

1. identify the connection between this project course and two or more CTS courses
    1.1 identify the outcome(s) from each identified CTS course that support the project and/or performance deliverables
    1.2 explain how these outcomes are being connected to the project and/or performance deliverables

2. propose the project and/or performance
    2.1 identify the project and/or performance by:
        2.1.1 preparing a plan
        2.1.2 clarifying the purposes
        2.1.3 defining the deliverables
        2.1.4 specifying time lines
        2.1.5 explaining terminology, tools and processes
        2.1.6 defining resources; e.g., materials, costs, staffing
    2.2 identify and comply with all related health and safety standards
    2.3 define assessment standards (indicators for success)
    2.4 present the proposal and obtain necessary approvals

The student will:

3. meet goals as defined within the plan
    3.1 complete the project and/or performance as outlined
    3.2 monitor the project and/or performance and make necessary adjustments
    3.3 present the project and/or performance, indicating the:
        3.3.1 outcomes attained
        3.3.2 relationship of outcomes to goals originally set

3.4   evaluate the project and/or performance, indicating the:
     3.4.1   processes and strategies used
     3.4.2   recommendations on how the project and/or performance could have been improved

4. demonstrate basic competencies
   4.1   demonstrate fundamental skills to:
     4.1.1   communicate
     4.1.2   manage information
     4.1.3   use numbers
     4.1.4   think and solve problems
   4.2   demonstrate personal management skills to:
     4.2.1   demonstrate positive attitudes and behaviours
     4.2.2   be responsible
     4.2.3   be adaptable
     4.2.4   learn continuously
     4.2.5   work safely
   4.3   demonstrate teamwork skills to:
     4.3.1   work with others
     4.3.2   participate in projects and tasks

5. create a transitional strategy to accommodate personal changes and build personal values
   5.1   identify short-term and long-term goals
   5.2   identify steps to achieve goals

COURSE INF3920:   INF PROJECT E

Level: Advanced

Prerequisite: None

Description: Students develop project design and management skills to extend and enhance competencies and skills in other CTS courses through contexts that are personally relevant.

Parameters: Advanced project courses must connect with a minimum of two CTS courses, one of which must be at the advanced level and be in the same occupational area as the project course. The other CTS course(s) must be at least at the intermediate level from any occupational area.

Project courses cannot be connected to other project courses or practicum courses.

All projects and/or performances, whether teacher- or student-led, must include a course outline or student proposal.

Outcomes:

The teacher/student will:

1. identify the connection between this project course and two or more CTS courses
    1.1 identify the outcome(s) from each identified CTS course that support the project and/or performance deliverables
    1.2 explain how these outcomes are being connected to the project and/or performance deliverables
2. propose the project and/or performance
    2.1 identify the project and/or performance by:
        2.1.1 preparing a plan
        2.1.2 clarifying the purposes
        2.1.3 defining the deliverables
        2.1.4 specifying time lines
        2.1.5 explaining terminology, tools and processes
        2.1.6 defining resources; e.g., materials, costs, staffing
    2.2 identify and comply with all related health and safety standards
    2.3 define assessment standards (indicators for success)
    2.4 present the proposal and obtain necessary approvals

The student will:

3. meet goals as defined within the plan
    3.1 complete the project and/or performance as outlined
    3.2 monitor the project and/or performance and make necessary adjustments
    3.3 present the project and/or performance, indicating the:
        3.3.1 outcomes attained
        3.3.2 relationship of outcomes to goals originally set

3.4 evaluate the project and/or performance, indicating the:
    3.4.1 processes and strategies used
    3.4.2 recommendations on how the project and/or performance could have been improved

4. demonstrate basic competencies
  4.1 demonstrate fundamental skills to:
    4.1.1 communicate
    4.1.2 manage information
    4.1.3 use numbers
    4.1.4 think and solve problems
  4.2 demonstrate personal management skills to:
    4.2.1 demonstrate positive attitudes and behaviours
    4.2.2 be responsible
    4.2.3 be adaptable
    4.2.4 learn continuously
    4.2.5 work safely
  4.3 demonstrate teamwork skills to:
    4.3.1 work with others
    4.3.2 participate in projects and tasks

5. create a transitional strategy to accommodate personal changes and build personal values
  5.1 identify short-term and long-term goals
  5.2 identify steps to achieve goals

COURSE INF3950:   INF ADVANCED PRACTICUM

Level: Advanced

Prerequisite: None

Description: Students apply prior learning and demonstrate the attitudes, skills and knowledge required by an external organization to achieve a credential/credentials or an articulation.

Parameters: This practicum course, which may be delivered on- or off-campus, should be accessed only by students continuing to work toward attaining a recognized credential/credentials or an articulation offered by an external organization. This course must be connected to at least one CTS course from the same occupational area and cannot be used in conjunction with any introductory (1XXX) level course. A practicum course cannot be delivered as a stand-alone course, cannot be combined with a CTS project course and cannot be used in conjunction with the Registered Apprenticeship Program or the Green Certificate Program.

Outcomes: The student will:

1. **perform assigned tasks and responsibilities, as required by the organization granting the credential(s) or articulation**
   1.1   identify regulations and regulatory bodies related to the credential(s) or articulation
   1.2   describe personal roles and responsibilities, including:
        1.2.1   key responsibilities
        1.2.2   support functions/responsibilities/expectations
        1.2.3   code of ethics and/or conduct
   1.3   describe personal work responsibilities and categorize them as:
        1.3.1   routine tasks; e.g., daily, weekly, monthly, yearly
        1.3.2   non-routine tasks; e.g., emergencies
        1.3.3   tasks requiring personal judgement
        1.3.4   tasks requiring approval of a supervisor
   1.4   demonstrate basic employability skills and perform assigned tasks and responsibilities related to the credential(s) or articulation
2. **analyze personal performance in relation to established standards**
   2.1   evaluate application of the attitudes, skills and knowledge developed in related CTS courses
   2.2   evaluate standards of performance in terms of:
        2.2.1   quality of work
        2.2.2   quantity of work
   2.3   evaluate adherence to workplace legislation related to health and safety
   2.4   evaluate the performance requirements of an individual who is trained, experienced and employed in a related occupation in terms of:
        2.4.1   training and certification
        2.4.2   interpersonal skills
        2.4.3   technical skills
        2.4.4   ethics

3. demonstrate basic competencies
    3.1 demonstrate fundamental skills to:
        3.1.1 communicate
        3.1.2 manage information
        3.1.3 use numbers
        3.1.4 think and solve problems
    3.2 demonstrate personal management skills to:
        3.2.1 demonstrate positive attitudes and behaviours
        3.2.2 be responsible
        3.2.3 be adaptable
        3.2.4 learn continuously
        3.2.5 work safely
    3.3 demonstrate teamwork skills to:
        3.3.1 work with others
        3.3.2 participate in projects and tasks

4. create a transitional strategy to accommodate personal changes and build personal values
    4.1 identify short-term and long-term goals
    4.2 identify steps to achieve goals