

COURSE LOG1010: LOGISTICS

Level: Introductory

Prerequisite: None

Description: Students identify logistics as a sector in Canada's economy, by describing related subsectors, users and providers of logistics services. Students also identify current and emerging career paths in logistics.

Parameters: Access to persons knowledgeable about logistics, logistics subsectors and logistics operations.

Outcomes: The student will:

- 1. create a health and safety plan with special emphasis on conditions and factors related to the specific pathway or series of courses**
 - 1.1 research and identify the following eight common elements of a health and safety management system:
 - 1.1.1 management, leadership and organizational commitment including policies, guidelines and responsibilities
 - 1.1.2 hazard identification and assessment
 - 1.1.3 hazard control
 - 1.1.4 worker competency and training including: technical competence, safe work practices and procedures, personal protective equipment
 - 1.1.5 work site inspection
 - 1.1.6 incident investigation
 - 1.1.7 emergency response
 - 1.1.8 management system administration including: evaluation, records and statistics, maintenance of system
 - 1.2 explain each of the elements reflecting on occupational health and safety implications
 - 1.3 define health and safety elements relevant to the world-of-work
 - 1.4 present a health and safety plan clarifying its relevance to the work world and society in general
- 2. research common processes and methods of hazard identification, assessment and control specific to the pathway or series of courses**
 - 2.1 research and identify common job site hazard identification processes
 - 2.2 research and identify common methods for assessment and control of hazards
 - 2.3 explain and demonstrate appropriate health and safety effective practices
 - 2.4 demonstrate a proactive personal commitment toward improvement of workplace health and safety including concern for others and following instructions, rules and guidelines
- 3. explain the role and significance of logistics in everyday living**
 - 3.1 describe why logistics is seen to be significant in everyday living

- 4. identify and describe subsectors of logistics:**
 - 4.1 define:
 - 4.1.1 logistics
 - 4.1.2 producers
 - 4.1.3 distributors
 - 4.1.4 consumers
- 5. describe logistics subsectors including:**
 - 5.1 warehousing and distribution
 - 5.2 traffic and transportation
 - 5.3 purchasing
 - 5.4 inventory management and control
 - 5.5 production materials movement
- 6. relationships among logistics subsectors**
 - 6.1 identify and distinguish between users and suppliers of logistic services
 - 6.2 list examples of local, provincial, national and international users and suppliers of logistics services
 - 6.3 explain the term third-party logistics and provide an example of third-party logistics users and suppliers
- 7. explain the role of logistics in the production of a simple item with respect to the item's availability and use by a satisfied customer**
 - 7.1 for a selected item, identify and describe how the logistics sector and subsectors affect the production, distribution and eventual availability and use to consumers
 - 7.2 define the terms customer service and customer satisfaction
 - 7.3 explain the importance of customer service and satisfaction in logistics
 - 7.4 list and describe examples of customer service provided within a logistics operation
 - 7.5 describe strategies and instruments used to assess levels of customer service and satisfaction
- 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 LOG1020: WAREHOUSE & DISTRIBUTE 1

Level: Introductory

Prerequisite: LOG1010: Logistics

Description: Students explore warehousing and distribution systems as subsectors of logistics and participate in warehousing, materials handling systems, stock placement and documentation activities.

Parameters: Access to one or more logistics operations.

Outcomes: The student will:

1. identify and describe the roles of warehousing and distribution in logistics

1.1 identify and describe processes involved in:

1.1.1 warehousing operations

1.1.2 distribution operations

1.2 explain the roles of warehousing and distribution in the logistics sector

1.3 distinguish between the purpose of warehousing and the purpose of distribution

1.4 explain the significance between warehousing roles and distribution roles in the logistics process

2. identify, describe and demonstrate materials handling:

• systems/processes

2.1 identify and describe general and specific safety requirements in warehousing and distribution operations

2.2 identify and demonstrate safe work practices associated with:

2.2.1 flow of materials

2.2.2 movement of equipment

2.2.3 Workplace Hazardous Materials Information System (WHMIS) requirements

2.2.4 wearing of protective clothing/personal protective equipment

2.3 identify and interpret signs and symbols used in warehousing and distribution operations

2.4 identify potential hazards within a warehousing and distribution workplace

• stock placement

2.5 describe and explain the concept of materials handling

2.6 identify and describe product movement and placement procedures

2.7 demonstrate safe stock handling and moving procedures

3. read, interpret and complete appropriate documentation

3.1 identify and describe the purpose of documentation used in:

3.1.1 warehousing operations

3.1.2 distribution operations

3.2 distinguish among:

3.2.1 packing slips

3.2.2 bills of lading

3.2.3 advance shipment notices

3.2.4 distribution sheets

3.2.5 other available documents

3.3 explain why accuracy and attention to detail are important when completing, reading and interpreting documents

- 3.4 complete appropriate documentation in:
 - 3.4.1 warehousing situations
 - 3.4.2 distribution situations
- 3.5 identify and explain the role and impact of technology in the generation of documentation in warehousing and distribution operations
- 3.6 explain the concept of electronic data interchange
- 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 LOG1030: TRAFFIC & TRANSPORT 1

Level: Introductory

Prerequisite: LOG1010: Logistics

Description: Students distinguish among modes, vehicles and vessels involved in transportation, identify the advantages and disadvantages of single mode and intermodal usages, and demonstrate basic skills related to map reading, technology, handling equipment and handling dangerous goods.

Parameters: Access to logistics-related traffic and transportation operations. A driver's licence may be required.

Outcomes: The student will:

1. identify modes of transportation and the vehicles and vessels used in each mode

- 1.1 identify and describe the role of traffic and transportation in logistics
- 1.2 distinguish between the concepts of traffic and transportation when used in logistics contexts
- 1.3 explain the advantages and disadvantages of different vehicles and vessels used in the following modes of transportation:
 - 1.3.1 air; e.g., commercial, charter
 - 1.3.2 rail
 - 1.3.3 surface; e.g., commercial, contract, hotshot
 - 1.3.4 sea
 - 1.3.5 pipeline
- 1.4 list and describe product-specific transportation equipment available
- 1.5 for a selection of products, list the:
 - 1.5.1 most appropriate mode of transportation
 - 1.5.2 product-specific requirements; e.g., refrigeration, speed, air ride trailers for delicate equipment
 - 1.5.3 other requirements; e.g., time, temperature, packing

2. differentiate and explain the advantages and disadvantages of single mode usages and intermodal usages

- 2.1 describe the advantages and disadvantages of using each of the following transportation systems:
 - 2.1.1 single mode
 - 2.1.2 intermodal

3. demonstrate:

• map reading skills

- 3.1 demonstrate ability to use a map to:
 - 3.1.1 identify specific locations
 - 3.1.2 trace routes
 - 3.1.3 measure distances
 - 3.1.4 identify key features

• use of technology

- 3.2 define and describe electronic data interchange (EDI)
- 3.3 list examples of information that may be transmitted using EDI and related technology
- 3.4 use available hardware and software

- **handling dangerous goods**
- 3.5 describe the range of goods identified as dangerous goods
- 3.6 describe the methods used to identify and label different dangerous goods
- 3.7 demonstrate safe handling of dangerous goods
- **handling equipment**
- 3.8 identify and describe basic safety procedures, practices and standards that must be followed in each mode and for each vehicle:
 - 3.8.1 on-highway standards
 - 3.8.2 off-highway standards
 - 3.8.3 air/sea freight standards
 - 3.8.4 customer safety standards
- 3.9 use personal protective equipment
- 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 LOG1040: PURCHASING 1

Level: Introductory

Prerequisite: LOG1010: Logistics

Description: Students identify the role of purchasing, distinguish between public and private purchasing activities, perform expediting activities, and provide service to internal and external customers.

Parameters: Access to a purchasing, warehousing and distributing facility.

Outcomes: The student will:

- 1. describe the role of purchasing and work performed by purchasers in logistics**
 - 1.1 identify and describe the processes involved in the purchasing subsector of logistics
 - 1.2 explain how and where purchasing fits in the logistics process
 - 1.3 compare and contrast the purchasing process for goods and the purchasing process for services
 - 1.4 identify and explain, in chart form, the line of authority for the purchase of:
 - 1.4.1 goods
 - 1.4.2 services
 - 1.5 explain how and why purchasing decisions can add value/profitability to the logistics process
- 2. distinguish between public and private purchasing activities**
 - 2.1 identify differences and similarities between public and private purchasing activities
 - 2.2 identify differences and similarities between centralized purchasing procedures and decentralized purchasing procedures
- 3. differentiate between internal and external customers**
 - 3.1 distinguish between internal and external customers from a purchasing perspective
- 4. demonstrate basic competencies in:**
 - **purchasing**
 - 4.1 explain why customer satisfaction is an important factor in purchasing decisions
 - 4.2 explain the concept of necessity and how it relates to the purchasing process
 - **expediting**
 - 4.3 demonstrate basic expediting procedures including:
 - 4.3.1 tracking progress and time of arrival of specific orders
 - 4.3.2 consulting with suppliers
 - 4.3.3 anticipating problems
 - 4.3.4 having a contingency plan
 - 4.3.5 ensuring delivery of goods
 - **data handling**
 - 4.4 for a given item, explain the production process(es)
- 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. make personal connections to the cluster content and processes to inform possible pathway choices**
 - 6.1 complete/update a personal inventory; e.g., interests, values, beliefs, resources, prior learning and experiences
 - 6.2 create a connection between a personal inventory and occupational choices

COURSE LOG1910: LOG 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 LOG2010: WAREHOUSE & DISTRIBUTE 2

Level: Intermediate

Prerequisite: LOG1020: Warehouse & Distribute 1

Description: Students examine types of warehousing and develop basic skills in packaging, packing, documentation and materials handling. Students also explore bonding principles and practices and career opportunities within the warehousing and distribution sector.

Parameters: Access to one or more logistics operations.

Outcomes: The student will:

- 1. demonstrate an understanding of warehousing types, purposes and functions and of operations of warehouses, locations, organizations, processes and stock locator techniques**
 - 1.1 identify various types of warehouses and describe their specific purposes
 - 1.2 identify where different types of warehouses are usually located and explain why
 - 1.3 identify and explain the purpose of and relationship between the following areas:
 - 1.3.1 shipping
 - 1.3.2 receiving
 - 1.3.3 storage
 - 1.4 identify and explain the purpose of different systems of warehousing including:
 - 1.4.1 first in, first out (FIFO)
 - 1.4.2 last in, first out (LIFO)
 - 1.4.3 time-dated systems
 - 1.4.4 non-time dated systems
 - 1.4.5 bulk materials handling systems
 - 1.4.6 general materials handling procedures
 - 1.5 identify and explain the advantages, disadvantages and purposes of using the following stock locator systems:
 - 1.5.1 random
 - 1.5.2 fixed
 - 1.5.3 manual
 - 1.5.4 electronic
 - 1.6 demonstrate basic ability to use stock locator systems
- 2. identify and explain bonding principles and practices**
 - 2.1 explain principles and practices related to bonding including:
 - 2.1.1 purpose
 - 2.1.2 methods
 - 2.1.3 requirements
 - 2.2 list examples of goods that are usually placed in bond
 - 2.3 explain how bonding affects the flow of goods from producers to consumers

3. **demonstrate basic skills in shipment preparation including:**
 - **packaging**
 - 3.1 distinguish between packaging and packing systems
 - 3.2 explain the purpose of packaging
 - 3.3 identify and describe types of packaging; e.g., volatile corrosive inhibiting paper, blister packaging, security packaging, styrofoam, popcorn
 - **packing**
 - 3.4 identify and describe packing standards including:
 - 3.4.1 consumer standards
 - 3.4.2 industrial standards
 - 3.4.3 labelling
 - 3.5 demonstrate ability to pack items to:
 - 3.5.1 minimize damage
 - 3.5.2 meet rigours of shipment
 - 3.5.3 meet regulations and standards
 - 3.5.4 meet modal requirements
 - 3.5.5 meet security needs
 - **document selection and completion**
 - 3.6 prepare and complete shipping documentation; e.g., manifests, packing slips, bills of lading, Material Safety Data Sheets (MSDS) for Workplace Hazardous Materials Information System (WHMIS) products
4. **demonstrate safety, competency and confidence in:**
 - **handling materials**
 - 4.1 demonstrate safe product movement and placement procedures
 - **operating equipment and aids**
 - 4.2 identify and describe equipment and aids used to handle various materials; e.g., forklifts, power lifts, power jacks, rollers
 - 4.3 demonstrate safety, competency and confidence in operating and handling equipment and aids
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 LOG2020: TRAFFIC & TRANSPORT 2

Level: Intermediate

Prerequisite: LOG1030: Traffic & Transport 1

Description: Students develop basic skills in tracking, route planning, scheduling, load planning and other competencies related to handling outgoing shipments, including documentation, customs (import and export), weather and climate conditions, and strategies for preventive maintenance in traffic and transportation.

Parameters: Access to logistics-related traffic and transportation operations. A driver's licence may be required.

Outcomes: The student will:

1. demonstrate basic skills in:

- **tracking, route planning and scheduling**

1.1 explain the purpose of tracking systems

1.2 demonstrate basic ability to use:

1.2.1 tracking systems

1.2.2 two-way communication devices

1.3 demonstrate ability to use a map to plan a route; e.g., traditional format, computerized format

1.4 assist in planning a route

1.5 assist in planning a schedule to meet customer needs and requirements

- **completing and maintaining documentation**

1.6 explain the purpose of and the difference between a shipping manifest and a transportation manifest

1.7 describe the purpose of a logbook

1.8 assist in maintaining a logbook

1.9 initiate tracing action on delayed shipments

1.10 initiate claim action on damaged goods

- **load planning, measuring and calculating**

1.11 list and explain the procedure for load planning

1.12 describe key factors in load planning; e.g., weight restrictions, product specific needs

1.13 assist in developing a load plan

1.14 assist in identifying potential carriers with respect to service, reliability and rates

1.15 measure and calculate available space in various transportation vehicles or vessels; e.g., cubic capacity, displacement, density

1.16 explain the relationship of the above measurements to load planning

1.17 apply measurement and calculation skills in load planning

- **handling equipment**

1.18 demonstrate basic ability to handle, operate and/or use various equipment and aids relating to traffic and transportation

- **preparing outgoing shipments**

1.19 demonstrate ability to:

1.19.1 package goods to meet customer requirements and industry standards

1.19.2 pack items to meet shipping standards

- 1.19.3 label goods and shipments appropriately
 - 1.19.4 complete outgoing documentation
 - 1.19.5 assist in loading outgoing shipments
- 2. identify and describe the role of:**
- **customs, import and export**
 - 2.1 identify and explain the purpose of import and export customs documentation
 - 2.2 assist, where appropriate, in the preparation of import and export customs documentation by:
 - 2.2.1 initiating the clearance of incoming shipments
 - 2.2.2 maintaining a register
 - 2.3 assist in maintaining an efficient filing system for all customs documentation
 - **safety standards**
 - 2.4 demonstrate application of appropriate safety standards including the use of:
 - 2.4.1 wheel checks
 - 2.4.2 reflector kits
 - 2.4.3 fire extinguishers
 - 2.4.4 personal protective equipment
 - 2.5 describe special procedures required to transport dangerous goods in each mode and for each vehicle or vessel
 - 2.6 demonstrate special procedures and safe handling of dangerous goods
 - **weather and climate conditions**
 - 2.7 explain the potential impact of weather and climate conditions on:
 - 2.7.1 modes of transportation
 - 2.7.2 vehicles and vessels
 - 2.7.3 road closures, bridge/ferry usage, seasonal road bans and weight restrictions
 - 2.8 describe how a logistics operation deals with:
 - 2.8.1 annually occurring conditions
 - 2.8.2 emergency conditions; e.g., contingency planning
 - **preventive maintenance**
 - 2.9 explain the purpose of preventive maintenance
 - 2.10 identify, describe and demonstrate appropriate types of maintenance activities
 - 2.11 describe defects and initiate corrective procedures
- 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 LOG2030: PURCHASING 2

Level: Intermediate

Prerequisite: LOG1040: Purchasing 1

Description: Students develop an understanding of the principles of locus of control, economies of scale, risk management, surface and hidden costs, tendering and procurement. Students also perform purchasing activities and address related factors, including budgets and inflation, within an organization's decision-making structure.

Parameters: Access to a purchasing, warehousing and distributing facility.

Outcomes: The student will:

1. demonstrate functional knowledge of key principles of:

- **lines of authority**

- 1.1 define the term locus of control
- 1.2 explain how the locus of control affects purchasing decisions
- 1.3 identify and describe the lines of authority for the purchasing section of the organization
- 1.4 operate efficiently and effectively within the identified lines of authority when assisting with purchasing activities

- **economies of scale**

- 1.5 define the term economy of scale
- 1.6 explain how the use of the economy of scale principle adds value to a company
- 1.7 list examples of an economy of scale in one or more purchasing activities

- **risk management**

- 1.8 define the term risk management including:
 - 1.8.1 expense items
 - 1.8.2 capital equipment
 - 1.8.3 production materials
- 1.9 identify and describe the risks associated with purchasing decisions; e.g., company liability, personal liability or Workers' Compensation Board (WCB) coverage
- 1.10 identify and chart lines of authority, responsibility and accountability in the risk management process
- 1.11 identify and describe basic strategies used to manage and minimize risk when purchasing decisions are made

- **budgeting**

- 1.12 explain the purpose or function of savings, capital and operational accounts
- 1.13 identify individuals responsible for:
 - 1.13.1 savings
 - 1.13.2 budget centre usage
 - 1.13.3 capital accounts
 - 1.13.4 operational accounts
- 1.14 demonstrate a basic understanding of cost accounting principles
- 1.15 explain the effect of inflation on the budget
- 1.16 explain the effect of the budget on inflation
- 1.17 identify and describe the process by which spending decisions are made

- 2. distinguish between surface and hidden costs**
 - 2.1 define and provide examples of:
 - 2.1.1 surface and hidden costs
 - 2.1.2 initial and lifetime costs
 - 2.2 explain how total ownership costs and other costs affect purchasing decisions; e.g., insurance, gas, mileage, maintenance
- 3. demonstrate basic abilities relating to:**
 - **purchasing**
 - 3.1 explain the concept of best buy; e.g., size, quantity, quality, cost
 - **decision making**
 - 3.2 explain the necessity to balance quality, cost and time in making purchasing decisions
 - **tendering**
 - 3.3 define the term tendering
 - 3.4 identify and describe the tendering process
 - **procurement**
 - 3.5 define the term procurement
 - 3.6 explain the purpose of specification writing in purchasing activities
- 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 LOG2040: INVENTORY MANAGEMENT 1

Level: Intermediate

Prerequisite: LOG1010: Logistics

Description: Students identify the role of inventory management and control, and participate in and demonstrate basic abilities to manage and control inventory.

Parameters: Access to inventory management and control operations.

Outcomes: The student will:

1. describe the roles of inventory management and control in logistics

- 1.1 explain the role of inventory management and control in the logistics process
- 1.2 explain the purpose of and need for inventory management and control in the following contexts:
 - 1.2.1 security
 - 1.2.2 control
 - 1.2.3 reordering

2. describe and distinguish among methods to classify and categorize materials

- 2.1 list and describe systems available to manage and control inventory including:
 - 2.1.1 manual
 - 2.1.2 electronic
 - 2.1.3 other
- 2.2 identify and describe commonly used classification systems such as:
 - 2.2.1 Standard Industrial Classification Code
 - 2.2.2 harmonized system
 - 2.2.3 North Atlantic Treaty Organization
 - 2.2.4 military
 - 2.2.5 federal stock number
- 2.3 describe the purpose of:
 - 2.3.1 warehouse keeper's records
 - 2.3.2 cycle count sheets
- 2.4 demonstrate basic ability to use one or more classification systems

3. identify and describe the purpose of key principles of inventory management and control

- 3.1 list and describe inventory control principles including:
 - 3.1.1 ABC analysis
 - 3.1.2 minimum/maximum systems
 - 3.1.3 economic order quantity
 - 3.1.4 materials requirements planning
 - 3.1.5 consignment inventory
 - 3.1.6 just-in-time
- 3.2 explain the purpose of quality control systems
- 3.3 describe quality control systems and procedures used in inventory management and control operations

- 4. use basic technology, spreadsheets and databases to input, read and interpret inventory management and control**
 - 4.1 demonstrate basic ability to:
 - 4.1.1 access inventory information
 - 4.1.2 input inventory information
 - 4.1.3 interpret information from various databases
- 5. describe and demonstrate product movement and replenishment strategies**
 - 5.1 demonstrate basic inventory management and control procedures; e.g., picking, reordering
- 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. identify possible life roles related to the skills and content of this cluster**
 - 7.1 recognize and then analyze the opportunities and barriers in the immediate environment
 - 7.2 identify potential resources to minimize barriers and maximize opportunities

COURSE LOG2910: LOG 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 LOG2920: LOG 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 LOG2950: LOG 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 LOG3010: WAREHOUSE & DISTRIBUTE 3

Level: Advanced

Prerequisite: LOG2010: Warehouse & Distribute 2

Description: Students develop an understanding and competencies related to stock movement and placement procedures, product tracking and the use of automated warehouse systems. Students also develop competencies in labelling, containerizing and palletizing items.

Parameters: Access to one or more logistics operations.

Outcomes: The student will:

1. demonstrate an understanding of:

- **stock movement and placement procedures and practices**
 - 1.1 identify and describe stock movement and placement procedures and practices
 - 1.2 identify and correct errors in documentation
 - 1.3 regularly review stocks and flow
 - 1.4 anticipate product movement issues, develop contingency plans and implement solutions, where appropriate
 - 1.5 demonstrate safe product movement and placement procedures and practices
- **product tracking**
 - 1.6 identify and describe product tracking services
 - 1.7 identify and describe various tracking procedures
 - 1.8 demonstrate ability to use tracking technology; e.g., bar codes/reader/scanner, microfiche, CD-ROM, monitors, visual readers, locator systems
- **equipment operations standards**
 - 1.9 identify and describe warehouse equipment operations standards; e.g., internal standards (department, company), external standards (governmental, national)
- **automated warehouse systems**
 - 1.10 explain the advantages and disadvantages of using automated warehouse systems
 - 1.11 demonstrate ability to safely use automated systems; e.g., conveyor systems, pickers, scaling/weighing devices, storage and retrieval systems

2. demonstrate competencies in:

- **labelling**
 - 2.1 identify product and/or shipment labelling needs
 - 2.2 demonstrate ability to read, interpret, select and affix appropriate labels; e.g., shipping instructions, content identification, Workplace Hazardous Materials Information System (WHMIS) needs, quantity, mass, handling instructions; e.g., fragile, this side up
- **containerization**
 - 2.3 explain the purpose of containerization
 - 2.4 demonstrate ability to safely operate wrapping equipment and materials; e.g., shrink-wrap, nets, nylons
 - 2.5 demonstrate ability to prepare containers for shipment; e.g., label, wrap
- **palletizing**
 - 2.6 explain the purpose of palletizing items; e.g., warehouse storage, ease of handling (manual, automated), outgoing and incoming shipments

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

COURSE LOG3020: TRAFFIC & TRANSPORT 3

Level: Advanced

Prerequisite: LOG2020: Traffic & Transport 2

Description: Students explore transport regulations and licensing and develop competency in planning a route and developing contingency plans.

Parameters: Access to logistics-related traffic and transportation operations. A driver's license may be required.

Outcomes: The student will:

1. demonstrate competency in planning a route and developing contingency plans

- 1.1 plan a route using a:
 - 1.1.1 traditional map
 - 1.1.2 computerized format
- 1.2 develop contingency plans, where appropriate

2. demonstrate a basic understanding of:

• equipment handling certification requirements

- 2.1 identify licensing or certification requirements for each item of transportation equipment or aid
- 2.2 initiate procedures to obtain a license or certificate, where appropriate and necessary
- 2.3 demonstrate consistent ability to safely handle, operate and use various equipment aids relating to traffic and transportation

• vendor and carrier licensing and training for dangerous goods

- 2.4 identify and list key:
 - 2.4.1 transportation regulations and licensing requirements
 - 2.4.2 weight restrictions
 - 2.4.3 seasonal restrictions
 - 2.4.4 jurisdictional restrictions and requirements
- 2.5 list licensing required to operate different vehicles and vessels
- 2.6 identify and ensure that the vendor and carrier has the necessary licensing and training to handle and transport dangerous goods
- 2.7 demonstrate consistently the safe handling, storage and transportation of dangerous goods

• rates and tariffs

- 2.8 identify and describe transportation rates and tariffs
- 2.9 demonstrate ability to compare present proposed rates to the previous contract rate
- 2.10 assist in determining the contracted rate taking into account:
 - 2.10.1 market prices
 - 2.10.2 costs of the supplier
 - 2.10.3 customer needs

• liabilities

- 2.11 identify liability assumed by different modes of carriers
- 2.12 identify and describe:
 - 2.12.1 Workers' Compensation Board requirements
 - 2.12.2 insurance requirements

- 2.13 identify damage claimable:
 - 2.13.1 items
 - 2.13.2 procedures
 - 2.13.3 documents
- 2.14 assist in completing damage claim documents
- 2.15 identify and report shipment over/shorts
- 2.16 explain the use of bill of lading and liabilities, and freight on board
- 2.17 describe applications of freight on board statements; e.g., payment for carriage, selection of courier, limits of liability
- 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

COURSE LOG3030: PURCHASING 3

Level: Advanced

Prerequisite: LOG2030: Purchasing 2

Description: Students develop knowledge about contract and business law, supplier quality assurance and performance management. Students also develop negotiation skills and an appreciation for the importance of professional ethics.

Parameters: Access to inventory management and control operations.

Outcomes: The student will:

1. identify and explain key principles of:

• contract and business law

- 1.1 identify key principles of contract and business law; e.g., liens, waivers, liability, negligence
- 1.2 explain the impact of contract and business law on purchasing activities
- 1.3 identify and describe legislation that affects purchasing activities; e.g., *Sales of Goods Act*
- 1.4 identify purchasing activities that are in alignment with contract and business law and relevant legislation

• supplier quality assurance

- 1.5 explain the principles of Supplier Quality Assurance (SQA)
- 1.6 identify and describe the impact of SQA on:
 - 1.6.1 delivery
 - 1.6.2 equality
 - 1.6.3 invoicing
 - 1.6.4 damaged goods
 - 1.6.5 customer service

• performance management

- 1.7 explain the principle of performance management
- 1.8 identify and describe the purpose of performance management in purchasing activities
- 1.9 identify and describe performance management models; e.g., total quality management, quality teams
- 1.10 evaluate performance management models employed using appropriate assessment tools and instruments

2. demonstrate basic understanding and skills in professional ethics

- 2.1 define the term professional ethics
- 2.2 identify and explain the role of professional ethics in the purchasing process
- 2.3 define and give examples of conflict of interest
- 2.4 explain the role of the:
 - 2.4.1 Purchasing Management Association of Canada
 - 2.4.2 National Institute of Governmental Purchasing
 - 2.4.3 International Federation of Purchasing and Materials Management
- 2.5 identify and describe the requirements for designation as a:
 - 2.5.1 Certified Professional Purchaser
 - 2.5.2 Certified Professional Public Buyer
 - 2.5.3 Certified Professional Purchasing Officer

- 3. demonstrate negotiation skills**
 - 3.1 define the term negotiate
 - 3.2 explain the purpose of negotiating in purchasing activities
 - 3.3 demonstrate negotiating skills in purchasing activities
- 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 LOG3040: INVENTORY MANAGEMENT 2

Level: Advanced

Prerequisite: LOG2040: Inventory Management 1

Description: Students demonstrate competencies related to product movement and replenishment strategies, budgeting, internal controls and asset recovery.

Parameters: Access to inventory management and control operations.

Outcomes: The student will:

1. identify, describe and apply key principles of:

- **product movement and replenishment strategies**

- 1.1 explain the purpose of product movement and replenishment strategies
- 1.2 identify and describe product movement and replenishment strategies; e.g., degree, level, complexity
- 1.3 demonstrate basic product movement and replenishment strategies in inventory management and control activities

- **budget procedures**

- 1.4 explain the impact of inventory management on the budget procedure
- 1.5 identify key budget procedures
- 1.6 explain how inventory management affects:
 - 1.6.1 product quality
 - 1.6.2 cost control

- **internal controls**

- 1.7 explain the purpose of internal inventory controls; e.g., security
- 1.8 identify and describe the internal inventory controls in effect; e.g., managerial practices, inventory flow, paper trail
- 1.9 demonstrate basic ability to use and maintain internal inventory controls

- **asset recovery**

- 1.10 explain the concept of asset recovery
- 1.11 identify and describe strategies for asset recovery; e.g., asset disposition, recycling, reuse, recovery
- 1.12 assist in asset recovery activities

2. use basic technology to affect inventory management and control

- 2.1 demonstrate ability to manage and control inventory using:
 - 2.1.1 manual records
 - 2.1.2 microfiche
 - 2.1.3 spreadsheets
 - 2.1.4 database systems
 - 2.1.5 word processors
- 2.2 demonstrate ability to:
 - 2.2.1 access inventory information
 - 2.2.2 input inventory information
 - 2.2.3 interpret information from various databases

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

COURSE LOG3910: LOG 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 LOG3920: LOG 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 LOG3950: LOG 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