

## **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