

**BAA "CORE – Construction Orientation and Retention for  
Employment Foundation 11 – Level 1" Framework**

**District Name:** School District #34

**District Number:** 34

**Developed by:** ITA – Industry Training Authority  
Glen Roger –Principal -Yale Secondary School  
Jay Pankratz – Vice-principal – Yale Secondary School  
Larry Colby – Instructor – Yale Secondary School

**Date Developed:** December 2007

**School Name:** Yale Secondary School

**Principal's Name:** Glen Roger

**Board/Authority Approval Date:** April 2007

**Board /Authority Signature:** \_\_\_\_\_  
Board Chair

**Board /Authority Signature:** \_\_\_\_\_  
Superintendent

**Course Name:** CORE 11 Level 1

**Course Code:** YCREF11

**Number of Course Credits:** 4

**Number of Hours of Instruction:** 100

**Prerequisite(s):**

ITA recommendation – Grade 10 – or equivalent including English 10, Mathematics 10 and Science 10. An equivalency assessment can be conducted prior to admission.

### **Special Training, Facilities or Equipment Required:**

This course will be delivered in a classroom and technology education shop setting by a teacher who is knowledgeable in the construction trades and its careers. The classroom desk/table work area should be large enough to accommodate theoretical and practical problem solving for each student. A computer lab must be accessible for certain portions of the program and the lab set up for the Construction Safety Training System network (online safety training)

Certain requirements are outlined by ITA – Industry Training Authority. The shop working area be at least 4000 square feet with a 22 foot high ceiling space to allow for scaffold erecting. The work area must be equipped with enough hand tools for student use suitable for the construction industry. The power tools required are listed as follows:

1-portable table saw 1-stationary tablesaw 1-drill press 4-hand grinders  
2-power mitre saws 10-electric handsaws 10-power drills 4-screw guns  
1-chain saw 2-pneumatic nailers 1-gas nailer 2-jigsaws  
2-staplers 2-routers 1-reciprocating saw  
1-hand power plane 2-electric nailers (brad guns)

### **Shop Equipment Required**

- Ladders - Extension, Folding,
- 4 - Sets of 3 stage scaffolding
- Material handling equipment
- Level Two First Aid Kit
- Eye Wash Station

### **Hand Tools** (enough for class use)

- pliers • screwdrivers • hammers • allen wrenches (keys)
- files • punches and chisels • hack saws • wrenches
- hand saws • measurement, layout and alignment tools • Tool Pouch
- squaring and marking tools • cutting tools (edge and tooth)
- assembly and dismantling tools • clamping tools • block plane
- abrasives and scraping tools • combination square

### **Course Synopsis:**

The course is one of two parts of the in-school ITA **CORE Certification Program**. The ITA Construction Orientation and Retention for Employment Foundation Program is based on equal time of in-school and field experience. This program offers the in-school portion of the program. The field experience portion would be covered through the work experience courses already in existence.

This course is the in-school portion of the ITA CORE Program designed to train students who have an interest for employment as entry level skilled trade workers, helpers, and labourers in the construction industry. The program trains foundation skills required to successfully learn on the job and allows for

opportunities for bridging into a building trades' apprenticeship. The emphasis is in developing safety in work skills and habits based on WCB Regulations and on job site construction projects and experiences. The course covers industry orientation, construction hand and power tools, safety orientation for construction, rigging and material handling, practical construction projects, career opportunities, and employment skills. It provides industry certification for specific construction applications – WHMIS, Level 1 First Aid, Hilti Fastening (powder actuated), Forklift Safety and Operation, Fall Protection, Flag Person and Construction Safety Training System (CSTS) training .

**Rationale:**

This course is part of a program that is designed to prepare student for immediate in-field job site experience. Completion of this course will bridge students into building trades apprenticeships. This course allows individuals to explore many areas of the construction industry. It provides a foundation in knowledge and understanding career options, employment skills, safety training and skills that are transferable to all professions.

**Organizational Structure:**

<b>Unit/Topic</b>	<b>Title</b>	<b>Time</b>
Unit 1	Describe the Construction Industry	6 hours
Unit 2	Comply with Safe Procedures	25 hours
Unit 3	Use Construction Tools	10 hours
Unit 4	Use Ladders and Scaffolds	4 hours
Unit 5	Move and Place Materials	10 hours
Unit 6	Complete Building Projects	35 hours
Unit 7	Practice Career Planning	10 hours
	<b>Total Hours</b>	<b>100</b>

**Unit/Topic/Module Descriptions:**

**Unit 1: Line A – Describe the Construction Industry                      6 hours**

**Overview**

In this unit, students will be introduced to the course content and the construction industry. They will demonstrate their knowledge about the construction industry, its terminology and culture, the Core Program and its organization, and communication skills required to be successful in the course and while working in the industry.

**Curriculum Organizers and Learning Outcomes**

The unit is organized into six sections. A-1, A-2, A-3, A-4, A-5 is covered in this course.

- **A-1 Explain Core Training Requirements**

In this section the student will be able to identify the key elements of the CORE Training Program in terms of how the training will assist them employment in the construction industry.

Learning Outcomes:

1. Explain the purpose and direction of Core Training in terms of the construction industry participants.
2. Explain why safety is such a critical factor in achieving success in the construction industry.
3. Describe the rigorous demands of the construction industry.
4. Describe the employment options and career paths available upon successful completion of CORE Training for the construction industry.

- **A-2 Describe Construction Industry Terminology**

In this section students will be introduced to common words and terms used in the construction industry.

Learning Outcomes:

1. Describe the most common terms as used by the various trades on construction sites. These terms will relate to: tools and equipment, building materials, sketches and drawings, temporary structures, building parts.
2. Describe the specific terms as used by various trades on construction sites. These terms will include: building concrete forms, installing rebar, layout and framing systems, exterior finishing, interior finishing, veneers and laminates, assembling cabinets, cement finishing, plumbing and sprinkler systems and electrical systems.

- **A-3 Explain the Construction Industry Culture (incl. attitudes)**

In this section students will be able to explain the construction industry culture in terms of attitudes, job-site language, dealing with stress, anger management and other life skills.

Learning Outcomes:

1. Describe how each industry – forestry, mining, construction - has its own unique culture.
2. Describe considerations of the construction industry such as physical demands, stress, language, multicultural and community issues.
3. Explain attitude requirements for the industry – conscientious, innovative, self- motivated, cooperative, team player.

- **A-4 Explain Course Content as per Occupational Analysis Chart**

In this section the student will be introduced to course units (competencies) as per the occupational analysis chart in the CORE Program outline.

Learning Outcomes:

1. Describe the trainee's responsibilities and duties as a participant in CORE Training.
2. Describe the general areas of competencies (units) and their related competencies for each line (section). Line A through G
3. Explain the course assessments and expected learning outcomes – written tests, shop evaluations, field assessments, requirements of a CORE certificate, attendance policies.

• **A-5 Describe Communication Skills Required**

In this section, student will be introduced to various communication skills appropriate to employment and the construction industry.

Learning Outcomes:

1. Describe why communication is important and explain the communication process.
2. Identify some causes of ineffective communication.
3. Identify forms of nonverbal communication.

Achievement Criteria:

It is expected that students will:

- be able to write a short essay (50 to 75 words) to explain the CORE Training requirements and employment opportunities in the Construction industry.
- be able to identify with accuracy the tools, materials, building structure components and systems on a test designated for entry level trainees. The test will consist of multiple choice, matching and identification (illustration) type questions. (70% minimum test mark required for CORE completion)
- be able to list and describe five aspects of the construction industry culture that new workers must be aware of prior to employment. (70% minimum test mark required for CORE completion)
- be able to correctly identify various aspects of communication in relation the construction industry. (70% minimum test mark required for CORE completion)

**Unit 2: Line B - Comply with Safety Procedures**

**25 hours**

**Overview**

In this unit students are introduced to safety procedures as found in the construction industry. The construction industry is regulated through safety practices and procedures. One major partner in this is WorkSafeBC and the WCB Act, which enforces its regulations. These regulations are in place for the protection of the employee. This unit consists of introducing the students to WorkSafeBC Occupational Health and Safety Regulations, construction site safety training, first aid training, flag person training, WHMIS training, Fall Protection Training, and fire extinguishers types and uses.

### Curriculum Organizers and Learning Outcomes

This unit is organized into eight sections. B-1, B-2, B-3, B-4, and B-8 are covered in this course.

#### • **B-1 Comply with WorkSafeBC Occupational Health & Safety (OH&S) Regulations**

In this section students will be introduced to WorkSafeBC OH&S Regulations and work through work site safety modules in order to understand safety on the job site and be able to comply with regulations.

Learning Outcomes:

1. Interpret Occupational Health and Safety regulations.
2. Describe requirements related to personal protective equipment and safety measures.
3. Describe the emergency procedures for dealing with injured workers.
4. Describe potential health hazards.

#### • **B-2 Describe Types of Fire Extinguishers**

In this section students will be introduced to fire types, hazards, and the proper and effective use of using fire extinguishers.

Learning Outcomes:

1. Describe the fire classes, and the appropriate extinguishers for each class of fire.
2. Describe procedures and equipment related to preventing, detecting, and warning of fires.

#### • **B-3 Complete the Construction Safety Training System**

In this section the students will be introduced to construction site safety by completing a computer based interactive Construction Safety Training System (CSTS) program. The program is self-paced (approximately six hours) and must be completed entirely to achieve a certificate.

Learning Outcomes:

1. List and describe the Construction Safety Training topics.
2. Complete the Construction Safety Training System training.

#### • **B-4 Complete the WHMIS Training**

In this section students will be introduced the Workplace Hazardous Materials Information System. They will learn about their responsibilities for Material Safety Data Sheets (MSDS), supplier and importer requirements, classifications, labels, and employer requirements. They will be able to complete WHMIS training as per WCB standards.

Learning Outcomes:

1. Describe the Workplace Hazardous Materials Information System (WHMIS) as per federal legislation that affects all workplaces in Canada.
2. Explain the topics legislated to be covered in a WHMIS training program.

• **B-8 Describe Safety Precautions and Procedures**

In this section, student will receive a presentation from a WorkSafe representative. They will cover safety precautions and procedures as found in sections Part 2 – Application and Part 3 – Contents

Learning Outcomes:

1. Explain WorkSafe Part 2 – Applications
2. Explain WorkSafe Part 3 – Contents

Achievement Criteria:

It is expected that students will:

- demonstrate an understanding of safety procedures and comprehension of the WorkSafeBC OH&S regulations by writing a quiz on the regulations (70% minimum test mark required for CORE completion).
- demonstrate the proper use of Personal Protective Equipment (PPE) in classroom and shop activities.
- demonstrate an understanding of fire prevention precautions and procedures by writing a quiz. (70% minimum test mark required for CORE completion)
- complete the CSTS health and safety training and then be tested for 100% mastery of content.
- demonstrate a knowledge and understanding of Part 2 and Part 3 of the WCB regulation with a written and practical assessment. (70% minimum test mark required for CORE completion)

**Unit 3: Line C - Use Construction Tools**

**10 hours**

**Overview**

In this unit, student will be introduced to tools and equipment used in the construction industry. The effective and safe use of these is valuable both to the employee and employer. Tools and equipment covered in this unit are measuring and layout tools, hand and power tools, and leveling tools.

Curriculum Organizers and Learning Outcomes

This unit is organized into four sections. C-1 and C-2 are covered in this course.

• **C-1 Use Measuring Tools**

In this section students are introduced the use of measuring tools in order that they will be able to effectively layout projects found in other unit in the CORE program.

Learning outcomes:

1. Identify common measurement, layout, and alignment tools.
2. Demonstrate how to read a tape measure.
3. Demonstrate how to run a chalk line.
4. Demonstrate how to use a plumb bob.
5. Describe how to work from elevation points (benchmarks).

### • C-2 Use of hand and power tools

In this section, students will be introduced to the proper and safe use of hand and power tools common to the construction industry. The hand tools will include the using for cutting, boring, drilling, assembling, dismantling, clamping, and scraping. The power tools and equipment will include table saws, radial arm saws, jointer, band saw, drill press, grinders, sanders – stationary and portable, power mitre saws, hand electric saws, routers, drills and screw guns, spline cutters, chain saws, hand power planes, nailers and staplers, and wood and abrasive cutting blades.

Learning Outcomes:

1. Identify common hand tools and power tools for the building trades and describe their application.
2. Demonstrate the care and use of hand and power tool for the building trades in the construction industry.

### Achievement Criteria:

It is expected that students will:

- be observed on the use of measuring tools as part of the practical shop project assessment to a standard of 100%.
- achieve a 70% mark on the in class evaluation of the use of the measuring tools through various assignments.
- be observed on the ability to use hand and power tools for the carpenter trades as part of a practical shop project assessment to a standard of 70% accuracy.

### Unit 4: Line D -Use Ladders and Scaffolds

4 hours

#### Overview

In this unit students will be introduced to the safety and use of ladders and scaffolds. They will be introduced to the WorkSafeBC OH&S regulations regarding the setup and use of scaffold, ladders, and work platforms. Student will also erect steel scaffolding, use portable and fixed ladders, and learn about work platforms as per WorkSafeBC standards practices.

#### Curriculum Organizers and Learning Outcomes

This unit is organized into four sections. D-1 and D-3 are covered in this course.

- **D-1 Explain General Regulations for Ladders, Scaffolds, and Temporary Work Platforms as per WorkSafeBC**

In this section, students will be introduced to general regulations for ladders, scaffolds, and temporary work platforms.

Learning Outcomes:

1. Explain WorkSafeBC criteria for ladders.
2. Explain WorkSafeBC criteria for scaffolds.
3. Explain WorkSafeBC criteria for work platforms.



- **D-3 Use Portable and Fixed Ladders as per WorkSafeBC Standard Practices**

In this section students will be introduced to fixed and portable ladders. The students will be instructed in the safe and effective use of the ladders as per WorkSafeBC standards.

Learning Outcomes:

1. Describe WorkSafeBC standards for ladders.
2. Describe the general WorkSafeBC requirements for ladders and their use.

Achievement Criteria:

It is expected that students will:

- achieve a minimum 70% mark on a test with question related to WorkSafeBC regulations for ladders and scaffolds.
- be observed on erection procedures for ladders as part of a practical shop project assessment to a standard of 70% accuracy.
- achieve a minimum 70% mark on a test assessing ladders safety regulations and construction safety.

### **Unit 5: Line E - Move and Place Materials**

**10 hours**

#### **Overview**

In this unit, students will be introduced safety and training regarding the movement and placement of materials typically found in working environment in the construction industry. They will be introduced to theory and practical components considering using ropes, tying knots, bends and hitches, using rigging equipment, using signals for crane and hoisting operations, moving and storing materials and equipment, and job-site clean-up and housekeeping.

#### **Curriculum Organizers and Learning Outcomes**

This unit is organized into five sections. E-1 and E-5 are covered in this course.

- **E-1 Use Fibre Ropes & Tie Knots, Bends, and Hitches**

In this section, student will be introduced to the theory and application of using fibre ropes to tie knots, bends and hitches. They will learn about proper care and maintenance, types of knots, applications of knots, and the use of knots for lifting, tying down, and safety harnesses.

Learning Outcomes:

1. Describe the proper care and maintenance of fibre ropes.
2. Recognize and name common knots and hitches used with fibre ropes.
3. State applications of popular knots and hitches used on fibre ropes.
4. Use knots and hitches in correct applications for lifting and tie down situations, and for use as a safety harness.

- **E-5 Demonstrate Job-Site Clean-up and Housekeeping Procedures**

In this section, student will be introduced to safe and effective application of

housekeeping and clean-up procedures as found in the construction industry. They will learn about the safety application in clean-up and housekeeping procedures, safe movement of materials, combustible scraps and materials, and hazardous material disposal requirements.

Learning Outcomes:

1. Demonstrate job-site clean-up and housekeeping procedures.

Achievement Criteria:

It is expected that students will:

- be observed on the ability to tie knots and hitches using fibre ropes as part of a practical shop project assessment to the standard of 70% accuracy.
- be observed on the ability to demonstrate housekeeping and clean-up procedures of a practical shop project assessment to a 70% standard.

### **Unit 6: Line F -Complete Building Projects**

**35 hours**

#### **Overview**

In this unit, student will be introduced to various projects associated with the construction industry. They will be introduced to various projects involving the electrical, carpentry, rebar, formwork, framework, and interior finishing trades. They will also attend job-site visits to see and understand what the various trades offers.

#### **Curriculum Organizers and Learning Outcomes**

This unit is organized into six sections. F-1, F-2, and F-3 are covered in this course.

##### **• F-1 Assemble an Electrical Extension Cord**

In this section, students will be introduced to the electrical trades field through project work. They will learn about safety requirements and the selection of correct tools in order to complete the project.

Learning Outcomes:

1. Describe general electrical extension cord safety requirements.
2. Select the correct tools and material components to assemble an extension cord.

##### **• F-2 Build a Saw Horse and Tool Box**

In this section, students will be introduced to the construction of a saw horse and a tool box typically found on the job-site. They will learn that the safe and effective use of tools, equipment, materials, and time are all important to the construction industry.

Learning Outcomes:

1. Describe safety considerations for projects.
2. Explain the importance of reading drawings and making accurate measurements.

3. Build a saw horse and tool box.

• **F-3 Complete Rebar Training Pre-Assessment**

In this section, students will be introduced to the rebar industry. They will learn about safety procedures, the rebar installer occupation, and perform the Rebar installer pre-assessment.

Learning Outcomes:

1. Describe safety procedures to prevent back injuries.
2. Describe the Rebar Installer occupation
3. Describe and perform the Rebar Installer pre-assessment.

Achievement Criteria:

It is expected that students will:

- be able to construct a 5 metre extension cord in compliance with the ULC standards given the assigned tools and materials.
- build a sawhorse and toolbox that will be assessed by observation based on appearance, accuracy, workmanship, and time required to complete the projects. (70% minimum)
- safely use all tools and equipment to a 100% standard as dictated by set safety procedures.
- upon completion of an orientation session, carry specified weight across a pre-built rebar grid to determine if the student has sufficient strength, balance and ability to move and place rebar.

**Unit 7 Line G - Search for Careers & Employment Opportunities 10 hours**  
**Overview**

In this unit student will be introduced to the careers and employment opportunities available in the construction industry. They will attend field trips to construction sites and report on observations. They will be introduced to how apprenticeship works and what other possible training options are. Careers in the construction industry and related fields will be explored. They will learn how to prepare a resume directed towards the construction industry as well as other professional fields. They will learn how to search for a job and how to go through the application process with a potential employer.

Curriculum Organizers and Learning Outcomes

This unit is organized into five sections. G-1 and G-2 are covered in this course.

• **G-1 Attend Field trips to construction sites**

In this section, student will visit various types of construction sites in order to gain an understanding of what the various career opportunities available in the construction industry are. They will also report on their observations.

Learning Outcomes:

1. Explain the purpose of attending field trips to construction site and reporting on observations.
2. Explain the logistic planning for field trips, including safety considerations.
3. Prepare a report on the field trip(s).

• **G-2 Explain Apprenticeship and Construction Industry Careers**

In this section, students will be introduced to apprenticeships within the construction industry. They will learn about the process involved in becoming an apprentice, what type of commitment is involved, and other possible options there are in training. The concept of life beyond apprenticeship will be explored.

Learning Outcomes:

1. Describe the information available from the Industry Training Authority on career choices.
2. Describe Apprenticeship options for "Red Seal"
3. Describe other training options in the construction trades and industry.
4. Describe the different ways to search for a job in the construction industry.
5. Describe and demonstrate how to apply for a job with a potential employer.

**Instructional Components:**

- Direct Instruction
- Demonstrations
- Practical Experience
- Brainstorming
- Group/Team Learning
- Hand-outs
- Self-Evaluation Projects
- Guest Speakers

**Assessment Component:**

Formative:

- Assignments 10%

Summative:

- Tests/Quizzes 30%
- Skills, demonstration of competencies 30%
- Practical projects 30%

## **Learning Resources:**

### **Alberta Carpenter Apprenticeship self-teaching packages available from the Queens Printers in Victoria:**

- "Orthographic Drawings" # 785 0001923
- "Fire Prevention and Control" # 7850001151
- "Work Site Safety " # 020101b
- "Hand Tools" # 7850001158
- "Portable Power Tools" # 7850001159
- "Pneumatic and Fuel-Powered Tools" # 7850001163
- "Fasteners, Adhesives and Sealants" #7850001156
- "Preliminary Building Operations" #7850001164
- "Ladders and Scaffolds "module # 020101d.
- "Construction Equipment" # 7850001165

**"Traffic Control Person Training – Instructor Guide"- #MN2060 – Province of British Columbia Ministry of Transportation Web-Site: Doing Business with WorkSafeBC - <http://www.worksafebc.com/default.asp>  
(This Site has all WCB's current Occupational Health and Safety Regulations)**