COURSE CON2020:	**CONCRETE FORMING**
Level:	Intermediate
Theme:	Building Systems (Processes and Applications)
Prerequisite:	CON1010 Basic Tools & Materials
Description:	Students develop knowledge and skills related to the preparation and construction of a concrete foundation.
Parameters:	Access to a building site and/or construction facility and to instruction from an individual with specialized training in carpentry.
Supporting Courses:	CON2010 Site Preparation; CON1070 Building Construction

Curriculum and Assessment Standards

General Outcomes	Assessment Criteria and Conditions	Suggested Emphasis
The student will: • list and describe factors that affect footing and wall design • identify and describe common forming materials and processes	*Assessment of student achievement should be based on:* • a written or oral response that correctly identifies factors that affect footing and wall design, types of forms, form materials, ties and release agents. *Assessment Tool* *Response Assessment: Concrete Forming, CON2020–1* *Standard* *Terminology should be consistent with that used in* Canadian Wood-Frame House Construction *Response rating of 2*	25
• apply concrete forming skills to assist in forming and placing a concrete foundation	• the completion of a project that incorporates full-size formwork or development of a scale model. *Assessment Tool* *Activity Assessment: Concrete Forming and Placing, CON2020–2* *Standard* *Installation of forms is consistent with accepted trade practice. Components are assembled to meet overall specifications to a tolerance of ± 3 mm over 6 metres. Forms are reinforced to maintain their position during placement. The concrete is consolidated to prevent honeycombing and is finished appropriate to the floor system. The concrete is allowed to cure properly before stripping in a manner the preserves the integrity of the footing and wall section* *Performance rating of 2 for each applicable task*	75

COURSE CON2020: CONCRETE FORMING (continued)

General Outcomes	Assessment Criteria and Conditions	Suggested Emphasis
The student will: • demonstrate basic competencies.	*Assessment of student achievement should be based on:* • observations of individual effort and interpersonal interaction during the learning process. *Assessment Tool* *Basic Competencies Reference Guide and any assessment tools noted above*	Integrated throughout

Concept	Specific Outcomes	Notes
	The student should:	
Orientation		
• Soil Condition	• describe how soils are tested for: – resistance to penetration – shear resistance – moisture content	Discuss the load-bearing strengths of different soil types and explain how the strengths affect the footing design.
	• explain how soil, water and frost conditions affect the design and construction of a foundation as well as excavation and safety procedures	
• Footing and Wall Forming	• explain the purpose of a footing	Explain why footings must be monoliths and be located below the frost line whenever possible.
	• describe one or more common techniques to form footings, walls and piers	Investigate the use of built-in-place and prefabricated forming systems.
	• describe methods of reinforcing a footing and wall section	
	• identify the parts of a typical concrete wall form	Examine methods used to create corner assemblies and to secure the kickplate.
	• explain the difference between box-sill and cast-in-place construction	
	• identify release agents and coatings used on forms	

MODULE CON2020: CONCRETE FORMING (continued)

Concept	Specific Learner Expectations	Notes
• Concrete Mixer	*The student should:* • describe types of cement and concrete mixers used in footing and wall systems.	
Planning and Management • Print Reading • Estimating	 • describe factors that determine the size and strength of a footing and wall components • prepare a detailed list of materials and supplies to form a footing and wall • calculate the volume of concrete required for a footing and wall component.	
Implementation • Form Work, Concrete Placement and Finishing	• use the appropriate tools and materials to: – construct a set of forms for a rectangular footing and wall section – square level, align and brace – place, consolidate and finish a concrete footing and wall section – make provisions to attach a sill plate if necessary – seal walls below ground level and install weeping tile – back file taking account lateral pressure.	Note the importance of wearing personal protective equipment while on the work site.
Assessment • Career Information • Career Preparation	 • identify opportunities for training and business ventures related to concrete forming, placing and finishing • maintain a record of completed activities within a portfolio.	Discuss alternative methods of building a concrete foundation using unit masonry, precast and polystyrene blocks.