

COURSE CON3010: CONCRETE WORK (STRUCTURES & FINISHES)**Level:** Advanced**Theme:** Building Systems (Processes and Applications)**Prerequisite:** CON1010 Basic Tools & Materials**Description:** Students develop essential skills to form, place and finish a concrete project.**Parameters:** Access to a building site and/or construction facility and to instruction from an individual with specialized training in concrete work.**Supporting Courses:** CON1070 Building Construction
CON2010 Site Preparation
CON2020 Concrete Forming**Curriculum and Assessment Standards**

General Outcomes	Assessment Criteria and Conditions	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> identify and describe concrete forming, placing and finishing techniques 	<p><i>Assessment of student achievement should be based on:</i></p> <ul style="list-style-type: none"> a written report or display that accurately represents accepted forming, placing and finishing trade practices. <p><i>Assessment Tool</i> <i>Research Process: Concrete Forming, Placing and Finishing, CON3010-1</i></p> <p><i>Standard</i> <i>Performance rating of 3 for each applicable task</i></p>	20
<ul style="list-style-type: none"> use the appropriate tools, materials and processes to form, reinforce, place and finish a concrete structure 	<ul style="list-style-type: none"> demonstration of concrete forming, placing and finishing techniques. <p><i>Assessment Tool</i> <i>Assessment Framework: Activity Assessment, CONACT</i></p> <p><i>Standard</i> <i>The project should be free of voids and finished in a manner appropriate to its application</i> <i>Performance rating of 3 for each applicable task</i></p>	65
<ul style="list-style-type: none"> create a profile of a trade or occupation within the field of concrete work 	<ul style="list-style-type: none"> presentation of an occupational profile that includes a description of working conditions, employment and training opportunities related to concrete work. <p><i>Assessment Tool</i> <i>Research Process: Concrete Forming, Placing and Finishing, CON3010-1</i></p> <p><i>Standard</i> <i>Performance rating of 3 for each applicable task</i></p>	15

COURSE CON3010: CONCRETE WORK (STRUCTURES & FINISHES) (continued)

General Outcomes	Assessment Criteria and Conditions	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> demonstrate basic competencies. 	<p><i>Assessment of student achievement should be based on:</i></p> <ul style="list-style-type: none"> observations of individual effort and interpersonal interaction during the learning process. <p><i>Assessment Tool</i> <i>Basic Competencies Reference Guide and any assessment tools noted above</i></p>	<p>Integrated throughout</p>

Concept	Specific Outcomes	Notes
<p>Orientation</p> <ul style="list-style-type: none"> Concrete Mixing and Testing Forming Placement and Finishing Fasteners 	<p><i>The student should:</i></p> <ul style="list-style-type: none"> research the effect aggregate, water and cement ratios have on the workability and quality of a concrete mix list and describe the purpose of different cement types identify the types of tests and reasons for concrete testing describe standard forming and reinforcing practices for a project; e.g.: <ul style="list-style-type: none"> slab on grade retaining wall poured stairs explain the purpose of a control and expansion joint in a concrete structure identify the purpose and describe the process of: <ul style="list-style-type: none"> screeding puddling striking off floating troweling finishing curing describe common methods of installing fasteners in concrete before and after the concrete has set up and cured 	<p>Emphasize the importance of using clean aggregate and water.</p> <p>Demonstrate the slump test and describe compression testing.</p> <p>Explain why rebar should be free of loose rust, scale grease and other foreign matter.</p> <p>Identify required protection of rebar exposed to the weather or ground.</p>

MODULE CON3010: CONCRETE WORK (STRUCTURES & FINISHES) (continued)

Concept	Specific Learner Expectations	Notes
<ul style="list-style-type: none"> • Tool Safety 	<p><i>The student should:</i></p> <ul style="list-style-type: none"> • describe the safe use and storage of explosive actuated tools and supplies • identify power loads and strengths for a given application • describe prefiring and firing routines. 	<p>Students need to recognize the training requirements and the hazards associated with explosive actuated tools.</p>
<p>Planning and Management</p> <ul style="list-style-type: none"> • Material and Work Scheduling 	<ul style="list-style-type: none"> • select a concrete project that requires: <ul style="list-style-type: none"> – forming – reinforcement – consolidation and finishing • produce a list of materials and schedule of events for an on-site project. 	<p>A typical shop project may include sidewalk blocks, truck weights, sundial or birdbath.</p> <p>On-site projects could include slab on grade, steps or retaining wall.</p>
<p>Implementation</p> <ul style="list-style-type: none"> • Material Processing 	<ul style="list-style-type: none"> • use the appropriate tools, materials and processes to: <ul style="list-style-type: none"> – prepare the grade and base – assemble/build and condition a form – install damp-proof member – fabricate and install the required reinforcement – mix/order, place and consolidate – impart desired finish/colour – provide proper curing conditions – remove forms. 	<p>Discuss the type of finishes and colours that can be obtained on a concrete surface.</p>
<p>Assessment</p> <ul style="list-style-type: none"> • Career Information • Career Preparation 	<ul style="list-style-type: none"> • identify the employment and training opportunities related to: <ul style="list-style-type: none"> – product distribution – concrete testing – engineering – concrete placing and finishing • assess personal interests and abilities related to making realistic career choices • maintain a record of completed work within a portfolio. 	<p>Students need to be aware that because concrete is used extensively in residential, commercial and civil construction, it provides a large number of career opportunities.</p>

