

CARPENTER

NATIONAL OCCUPATIONAL ANALYSIS (2005) Integrated With INDIVIDUAL LEARNING MODULES

Revised May 7, 2009



Apprenticeship and
Industry Training

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DOCUMENT DESCRIPTION

Tasks that are performed by skilled workers in this trade across Canada.

Block: A group of related tasks.

This number indicates the percentage of exam questions on the topic.

A → OCCUPATIONAL SKILLS → 17%

1 → USES TOOLS, EQUIPMENT AND MATERIAL →

	Subtask	Enabling Objective	ILM Module Number	ILM Module Name
1.01	Uses hand tools	<ul style="list-style-type: none"> •→ ability to use measuring and layout tools (tapes, rules, squares, dividers, sliding T bevel, protractor, trammel points, callipers) •→ ability to sharpen and maintain tools •→ ability to use cutting tools (saws, files, rasps) •→ ability to use fastening tools (hammers, wrenches, screwdrivers, staplers) •→ ability to use hand chisels and planes •→ ability to use hand drills •→ ability to use abrading tools (sandpaper) •→ ability to use dismantling tools (nail pullers, wrecking bars) 	020103a	Hand Tools

Subtask Number

Small divisions, when combined, describe the duties constituting a task.

The essential skills and knowledge required to perform the task and subtask.

Module name and number where information is available on the subtask/enabling objective.

A OCCUPATIONAL SKILLS

19%

1 USES TOOLS AND EQUIPMENT

	Subtask	Enabling Objective	ILM Module Number	ILM Module Name
1.01	Uses hand tools	<ul style="list-style-type: none">• knowledge of boring tools• knowledge of hand cutting tools• knowledge of abrading and planning tools• knowledge of assembly and dismantling tools• knowledge of measuring tools• knowledge of layout and alignment tools• knowledge of squaring and marking tools• knowledge of clamping tools• ability to select and operate hand tools• ability to maintain and store hand tools	020103a 020103d	Hand Tools Cutters, Bits and Abrasives

	Subtask	Enabling Objective	ILM Module Number	ILM Module Name
1.02	Uses portable power tools	<ul style="list-style-type: none"> • knowledge of types of portable power tools such as electric, battery powered and gas powered • knowledge of manufacturers' specifications • ability to select and operate portable power tools • ability to maintain and store portable power tools • ability to recognize hazards such as worn power cords and dull blades 	020103b	Portable Power Tools
1.03	Uses stationary power tools	<ul style="list-style-type: none"> • knowledge of types of stationary power tools such as table saws, planers and jointers • knowledge of manufacturers' specifications • ability to recognize hazards • ability to select and operate stationary power tools • ability to maintain stationary power tools 	020103c	Stationary Power Tools

	Subtask	Enabling Objective	ILM Module Number	ILM Module Name
1.04	Uses powder actuated tools	<ul style="list-style-type: none"> • knowledge of types of powder actuated tools • knowledge of types of shots • knowledge of operating procedures • knowledge of manufacturers' specifications • knowledge of licensing and training requirements • ability to select and operate powder actuated tools • ability to select shots • ability to recognize hazards of use • ability to recognize unsafe powder actuated tools • ability to dispose of misfired shots • ability to maintain and store powder actuated tools 	020103e	Explosive Actuated Tools
1.05	Uses pneumatic tools	<ul style="list-style-type: none"> • knowledge of types of pneumatic tools 	020103f	Pneumatic and Fuel-Powered Tools

	Subtask	Enabling Objective	ILM Module Number	ILM Module Name
		<ul style="list-style-type: none"> • knowledge of types of fasteners • knowledge of safety precautions and hazards • knowledge of manufacturers' specifications • ability to select and operate pneumatic tools • ability to select fasteners • ability to recognize unsafe pneumatic tools • ability to maintain and store pneumatic tools 		
1.06	Uses rigging and hoisting equipment	<ul style="list-style-type: none"> • knowledge of types of rigging and hoisting equipment • knowledge of components of rigging and hoisting equipment • knowledge of safe rigging and hoisting practices such as load weight calculations, working load limits and sling angles 	020301aA 020301aB 020301bA 020301bB	Construction Site Safety - Part A Construction Site Safety - Part B Scaffolding - Part A Scaffolding - Part B

	Subtask	Enabling Objective	ILM Module Number	ILM Module Name
		<ul style="list-style-type: none"> • knowledge of knots and hitches • ability to select and operate rigging and hoisting equipment • ability to inspect rigging and hoisting equipment • ability to identify and report unsafe rigging and hoisting equipment • ability to connect rigging equipment • ability to use hand signals and communication devices • ability to maintain and store rigging and hoisting equipment 		
1.07	Uses layout instruments	<ul style="list-style-type: none"> • knowledge of types of layout instruments such as theodolites, transits, laser levels and builder's levels • knowledge of basic survey theory and terminology • ability to select layout instruments • ability to set up and adjust layout instruments and check for level 	020104a 020303a 020303b 020303c	Preliminary Building Operations Survey Equipment Layout Procedures - Part A Layout Procedures - Part B

	Subtask	Enabling Objective	ILM Module Number	ILM Module Name
		accuracy <ul style="list-style-type: none"> • ability to determine elevations and angles • ability to apply calculations • ability to maintain and store layout instruments 		
1.08	Uses tack welding equipment	<ul style="list-style-type: none"> • knowledge of tack welding • knowledge of safe welding practices • knowledge of licensing and training requirements • ability to select and operate tack welding equipment • ability to identify unsafe tack welding equipment • ability to maintain and store tack welding equipment 		Considered on-the-job-training
1.09	Uses torch cutting equipment	<ul style="list-style-type: none"> • knowledge of torch cutting techniques • knowledge of safe torch cutting practices 		Considered on-the-job-training

	Subtask	Enabling Objective	ILM Module Number	ILM Module Name
		<ul style="list-style-type: none"> • knowledge of licensing and training requirements • ability to select and operate torch cutting equipment • ability to identify unsafe torch cutting equipment • ability to maintain and store torch cutting equipment 		
1.10	Uses personal protective equipment (PPE)	<ul style="list-style-type: none"> • knowledge of types of PPE such as hard hats, eye protection, respiratory protection and hearing protection • knowledge of manufacturers' specifications • knowledge of PPE operations • knowledge of training requirements • ability to select, wear and adjust PPE • ability to select and use fall protection equipment • ability to inspect, maintain and store PPE 	020401aA 020401aB	Construction Site Safety - Part A Construction Site Safety - Part B

2 USES BUILDING MATERIALS

	Subtask	Enabling Objective	ILM Module Number	ILM Module Name
2.01	Selects materials	<ul style="list-style-type: none"> • knowledge of material properties such as composition, moisture content, sizing, strength and grain • knowledge of building codes • knowledge of material applications • ability to assess condition, quality or grade of materials 	020102a 020102b	Solid Wood Products and Wood Joinery Manufactured Construction Products
2.02	Handles materials	<ul style="list-style-type: none"> • knowledge of handling and storage procedures • knowledge of acclimatization requirements of materials • knowledge of WHMIS and MSDS • ability to store building materials • ability to store hazardous materials such as glues and solvents 	020101d 020401d	Workplace Hazardous Materials Information System (WHMIS) Material Management
2.03	Installs fasteners, adhesives and connectors	<ul style="list-style-type: none"> • knowledge of types of fasteners, adhesives and connectors • knowledge of structural materials such 	020102c 020305c	Fasteners, Adhesives and Sealants Commercial Fasteners and Anchors

	Subtask	Enabling Objective	ILM Module Number	ILM Module Name
		<p>as wood, concrete, metals and masonry</p> <ul style="list-style-type: none"> • knowledge of non-structural materials such as insulation, plastic and gypsum • ability to select and place fasteners, adhesives and connectors • ability to determine location of installation such as anchors in masonry blocks 		
2.04	Installs membranes and sealants	<ul style="list-style-type: none"> • knowledge of types of membranes such as air/weather barriers, vapour barriers, waterproofing barriers and damp-proofing barriers • knowledge of types of sealants such as acoustic, silicone and expanding foam • knowledge of air and vapour flow • knowledge of moisture-related problems • knowledge of building science principles • ability to select and place air/weather barriers, vapour barriers, gas and 	<p>020102c</p> <p>020202d</p> <p>020406d</p>	<p>Fasteners, Adhesives and Sealants</p> <p>The Building Envelope</p> <p>Insulation and Air Barriers</p>

	Subtask	Enabling Objective	ILM Module Number	ILM Module Name
		smoke barriers and fire stops <ul style="list-style-type: none"> • ability to select and apply damp-proofing and drainage • ability to select and place gaskets 		
2.05	Installs foundation protection	<ul style="list-style-type: none"> • knowledge of various types of foundation protection • knowledge of soils and backfill procedures • knowledge of drainage principles • knowledge of insect damage prevention • knowledge of parging • ability to install foundation drainage systems • ability to install foundation damp-proofing • ability to install backfill protection • ability to install construction joints • ability to install foundation insulation 	020105c 020105d	Conventional Concrete Foundations Alternate Foundation Systems

	Subtask	Enabling Objective	ILM Module Number	ILM Module Name
2.06	Installs insulating materials	<ul style="list-style-type: none"> • knowledge of types of insulating materials • knowledge of energy codes • knowledge of building science principles • knowledge of safety procedures when installing insulating materials • ability to select and install thermal and acoustical insulation 	020202b 020202d 020406d	Wall and Partition Framing The Building Envelope Insulation and Air Barriers

3 INTERPRETS DOCUMENTATION

	Subtask	Enabling Objective	ILM Module Number	ILM Module Name
3.01	Interprets blueprints	<ul style="list-style-type: none"> • knowledge of types of drawings such as site, architectural, structural and mechanical • knowledge of drawing components such as lines, symbols, legends and schedules • knowledge of specifications 	020107aA 020107aB 020107f 020107g	Drafting Basics - Part A Drafting Basics - Part B Drawing Standards Blueprint Reading Principles 1 - Paper Language Blueprint Reading Principles 2 -

	Subtask	Enabling Objective	ILM Module Number	ILM Module Name
		<ul style="list-style-type: none"> • ability to use drawing instruments such as protractors and scale rulers • ability to scale imperial and metric measurements 	<p>020107h</p> <p>020107i</p> <p>020107j</p> <p>020107k</p> <p>020206b</p> <p>020206c</p> <p>020206d</p> <p>020206e</p>	<p>Views and Groups of Drawings - Part A</p> <p>Blueprint Reading Principles 2 - Views and Groups of Drawings - Part B</p> <p>Blueprint Reading Principles 3 - Specifications, Discrepancies and Path</p> <p>Basic Blueprint Reading</p> <p>Blueprint Reading Principles</p> <p>Residential Blueprint Reading</p> <p>Light Commercial Blueprint</p> <p>Reading Engineered Floor and Truss Shop Drawings</p>
3.02	Interprets specifications	<ul style="list-style-type: none"> • knowledge of types of specification tables • knowledge of sections of specification tables • ability to use manufacturers' documentation 	020107j	Blueprint Reading Principles 3 - Specifications, Discrepancies and Path

	Subtask	Enabling Objective	ILM Module Number	ILM Module Name
		<ul style="list-style-type: none"> • ability to use shop drawings • ability to read schedules, lists and plans 		
3.03	Applies building codes	<ul style="list-style-type: none"> • knowledge of National Building Code • knowledge of provincial, territorial and municipal codes • ability to remain current with codes • ability to search and identify topics within building codes 	020206f	Reading Building Codes
3.04	Interprets safety and workplace documentation	<ul style="list-style-type: none"> • knowledge of safety documentation such as MSDS, WHMIS symbols and safety manuals • knowledge of health and safety regulations • knowledge of workplace documentation such as site instructions, change orders and building permits • ability to remain current with safety and workplace documentation • ability to locate and identify safety and workplace documentation 	020101d 020401aA 020401aB	Workplace Hazardous Materials Information System (WHMIS) Construction Site Safety - Part A Construction Site Safety – Part B

4 ORGANIZES WORK

	Subtask	Enabling Objective	ILM Module Number	ILM Module Name
4.01	Performs site layout	<ul style="list-style-type: none"> • knowledge of basic geometry • • knowledge of basic survey theory • knowledge of local regulations such as property line setbacks and height restrictions • ability to interpret blueprints • ability to operate layout instruments such as levels, theodolites, plumb bobs and laser equipment • ability to use layout structures such as batter boards and string lines • ability to locate survey markers • ability to determine elevations • ability to determine offsets and angles 	<p>020104a</p> <p>020303a</p> <p>020303b</p> <p>020303c</p>	<p>Preliminary Building Operations</p> <p>Survey Equipment</p> <p>Layout Procedures - Part A</p> <p>Layout Procedures - Part B</p>
4.02	Estimates materials	<ul style="list-style-type: none"> • knowledge of types of materials 	020405aA	Renovations - Part A

	Subtask	Enabling Objective	ILM Module Number	ILM Module Name
		<ul style="list-style-type: none"> • ability to interpret blueprints • ability to perform calculations such as area and volume • ability to perform quantity calculations 	020405aB 020408c	Renovations - Part B Project Costing
4.03	Communicates with others	<ul style="list-style-type: none"> • knowledge of methods of communication such as verbal, written and electronic • ability to translate technical information into common language • ability to complete work-related records • ability to communicate with clients and consultants • ability to communicate with supervisors • ability to communicate with other tradespersons • ability to consult with authorities having jurisdiction such as building inspectors and safety officers 	020107c 020301aA 020301aB 020401b 020401c	Pictorial Drawing and Sketching Construction Site Safety - Part A Construction Site Safety - Part B Job Roles and Coaching Job Scheduling

	Subtask	Enabling Objective	ILM Module Number	ILM Module Name
		<ul style="list-style-type: none"> • ability to coach apprentices • ability to operate communication equipment such as cell phones, two-way radios and computers • ability to use hand signals • ability to draw a sketch 		
4.04	Schedules work sequence	<ul style="list-style-type: none"> • knowledge of task requirements • knowledge of requirements of other trades • knowledge of project material delivery sequence • ability to record sequence of project • ability to coordinate delivery of materials • ability to coordinate with other tradespersons • ability to estimate time to complete tasks 	020401c	Job Scheduling
4.05	Maintains safe work	<ul style="list-style-type: none"> • knowledge of federal, provincial and 	020401aA	Construction Site Safety - Part A

	Subtask	Enabling Objective	ILM Module Number	ILM Module Name
	environment	<p>municipal health and safety acts and regulations</p> <ul style="list-style-type: none"> • knowledge of safety manuals and procedures • knowledge of training requirements • knowledge of location of first aid supplies • knowledge of confined space practices • ability to use safety equipment and structures such as barriers • ability to install temporary safety protection • ability to install temporary heating, environmental protection and safety hoarding • ability to construct and install temporary shelters • ability to install temporary lighting • ability to employ safety procedures applicable to roof access and fall 	020401aB	Construction Site Safety – Part B

	Subtask	Enabling Objective	ILM Module Number	ILM Module Name
		<p>protection</p> <ul style="list-style-type: none"> • ability to identify and report hazards • ability to apply WHMIS procedures • ability to access regulations • ability to remain current with regulations 		
4.06	Performs site preparation	<ul style="list-style-type: none"> • knowledge of how site work impacts environment • knowledge of health and safety acts and regulations • knowledge of methods of locating underground utilities • knowledge of excavation techniques • knowledge of site conditions such as soil types, water problems and shoring requirements • ability to install temporary structures such as signage, furniture, guard rails and construction shack • ability to plan access and egress on job 	<p>020104b</p> <p>020401aA</p> <p>020401aB</p>	<p>Construction Equipment</p> <p>Construction Site Safety - Part A</p> <p>Construction Site Safety – Part B</p>

	Subtask	Enabling Objective	ILM Module Number	ILM Module Name
		site <ul style="list-style-type: none"> • ability to coordinate delivery of materials • ability to plan for storage of building materials 		

5 CONSTRUCTS TEMPORARY ACCESS STRUCTURES

	Subtask	Enabling Objective	ILM Module Number	ILM Module Name
5.01	Installs scaffolding	<ul style="list-style-type: none"> • knowledge of types of scaffold systems • knowledge of applicable standards, regulations and specifications • knowledge of effects of site conditions on scaffold such as uneven and soft ground • ability to select types of scaffold systems and components • ability to erect and dismantle stationary scaffolding • ability to erect and dismantle rolling 	020101c 020301bA 020301bB	Ladders and Scaffolds Scaffolding - Part A Scaffolding - Part B

	Subtask	Enabling Objective	ILM Module Number	ILM Module Name
		scaffolding <ul style="list-style-type: none"> • ability to erect and dismantle stages and bleachers • ability to erect and dismantle suspended scaffold systems • ability to use fall protection when working with scaffolding equipment • ability to identify tagging systems such as red, yellow and green • ability to inspect and maintain scaffold systems 		
5.02	Builds ladders, ramps and temporary stairs	<ul style="list-style-type: none"> • knowledge of types of ladders, ramps and temporary stairs • knowledge of applicable standards, regulations and specifications • ability to construct, install and secure site ladders, ramps and temporary stairs • ability to inspect and maintain ladders, ramps and temporary stairs 	020205a 020401aA 020401aB	Single-Flight Straight Stairs Construction Site Safety - Part A Construction Site Safety – Part B

B CONCRETE**21%****6 CONSTRUCTS FORMWORK**

	Subtask	Enabling Objective	ILM Module Number	ILM Module Name
6.01	Erects shoring	<ul style="list-style-type: none">• knowledge of types and components of shoring• knowledge of shoring techniques• ability to determine shoring requirements• ability to select and place shoring• ability to construct and install shoring formwork for suspended slab• ability to re-shore	020301aA 020301aB 020304d	Construction Site Safety - Part A Construction Site Safety - Part B Suspended Concrete Slabs
6.02	Constructs footing forms	<ul style="list-style-type: none">• knowledge of types of footing forms• knowledge of scribing techniques• ability to place, align and brace formwork• ability to establish finish elevation	020105a 020304a	Foundation Supports Footings, Grade Beams and Piles

	Subtask	Enabling Objective	ILM Module Number	ILM Module Name
		<ul style="list-style-type: none"> • ability to install required components such as keyways, water stops, bulkheads and miscellaneous inserts 		
6.03	Constructs wall and grade beam formwork	<ul style="list-style-type: none"> • knowledge of types of piles such as steel, wood and concrete • knowledge of formwork material such as wood, steel, aluminium and foam • knowledge of wall form systems such as slip forms, gang forms, insulated concrete foundations (ICF) and tilt-up formwork • knowledge of form release agents • knowledge of tie systems • knowledge of voids under grade beams • ability to install pre-fabricated wall panels • ability to install built-in-place formwork • ability to align, plumb and brace formwork 	<p>020105c</p> <p>020105d</p> <p>020304a</p> <p>020304b</p> <p>020304c</p> <p>020304d</p>	<p>Conventional Concrete Foundations</p> <p>Alternate Foundation Systems</p> <p>Footing, Grade Beams and Piles</p> <p>Wall Forming</p> <p>Curved Wall, Column and Specialty Forming</p> <p>Suspended Concrete Slabs</p>

	Subtask	Enabling Objective	ILM Module Number	ILM Module Name
		<ul style="list-style-type: none"> • ability to establish finish elevation • ability to install block outs such as sleeves, bucks and chases • ability to install components such as keyways, bulkheads, water stops and chamfer strips 		
6.04	Constructs slab formwork	<ul style="list-style-type: none"> • knowledge of types of slab formwork • knowledge of nailing requirements • knowledge of manufacturers' specifications • ability to establish elevation • ability to install slab formwork • ability to brace, plumb and align formwork • ability to establish finish elevation • ability to install components such as keyways, bulkheads, water stops and miscellaneous inserts • ability to align and install falsework 	<p>020105b</p> <p>020302d</p> <p>020304d</p>	<p>Concrete Flatwork</p> <p>Joints and Reinforcement for Concrete</p> <p>Suspended Concrete Slabs</p>

	Subtask	Enabling Objective	ILM Module Number	ILM Module Name
6.05	Constructs column formwork	<ul style="list-style-type: none"> • knowledge of types of forms such as fibre tube, steel, composite and wood • knowledge of capitals, piers and corbels • knowledge of tie systems • knowledge of yoking (collaring) • ability to establish location • ability to install column formwork • ability to align, plumb and brace formwork • ability to establish finish elevation • ability to install components such as chamfer strips and miscellaneous inserts 	020304c	Curved Wall, Column and Specialty Forming
6.06	Constructs stair formwork	<ul style="list-style-type: none"> • knowledge of types of stair and landing forms • knowledge of forming techniques such as using inverted stringer • knowledge of building code 	020304e	Concrete Stairs

	Subtask	Enabling Objective	ILM Module Number	ILM Module Name
		requirements <ul style="list-style-type: none"> • ability to establish location • ability to install stair formwork • ability to calculate rise, run and headroom • ability to brace, plumb and align stair forms • ability to shore stair formwork • ability to install components such as chamfer strips and miscellaneous inserts 		
6.07	Installs embedded steel	<ul style="list-style-type: none"> • knowledge of placing procedures • knowledge of accessories such as chairs, stirrups and sleeves • knowledge of grouting and epoxies • ability to install anchor bolts • ability to cut and bend reinforcing steel • ability to place welded wired mesh (WWM) 	020302d	Joints and Reinforcement for Concrete

	Subtask	Enabling Objective	ILM Module Number	ILM Module Name
		<ul style="list-style-type: none"> • ability to place reinforcing steel • ability to place inserts such as angle iron and structural plates 		
6.08	Dismantles/maintains formwork	<ul style="list-style-type: none"> • knowledge of stripping techniques • knowledge of concrete strengths • knowledge of rigging equipment • knowledge of hazards associated with dismantling of formwork • ability to apply form release agents • ability to strip forms • ability to clean forms • ability to re-shore • ability to store formwork 	020304a 020304b 020304c 020304d 020304e	Footing, Grade Beams and Piles Wall Forming Curved Wall, Column and Specialty Forming Suspended Concrete Slabs Concrete Stairs

7 PLACES AND CURES CONCRETE

	Subtask	Enabling Objective	ILM Module Number	ILM Module Name
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	Subtask	Enabling Objective	ILM Module Number	ILM Module Name
7.01	Places concrete	<ul style="list-style-type: none"> • knowledge of types of concrete • knowledge of rate of pour • knowledge of testing procedures for slump and compression • knowledge of additives • knowledge of types of finishes such as broom, stamped and exposed aggregate • knowledge of lateral pressures • knowledge of compressive strength • ability to position pump trucks and conveyors • ability to inspect formwork prior to placement of concrete • ability to consolidate concrete • ability to mix/batch concrete • ability to pour concrete • ability to recognize signs of form failure 	<p>020102d</p> <p>020302a</p> <p>020302b</p> <p>020302d</p>	<p>Introduction to Concrete</p> <p>Concrete Design</p> <p>Transport and Placement of Concrete</p> <p>Joints and Reinforcement for Concrete</p>

	Subtask	Enabling Objective	ILM Module Number	ILM Module Name
		<ul style="list-style-type: none"> • ability to construct and install joints such as expansion, isolation and control joints • ability to finish concrete by screeding and floating 		
7.02	Cures concrete	<ul style="list-style-type: none"> • knowledge of hot and cold weather curing techniques such as ponding and insulating • knowledge of climate protection techniques such as hoarding and heating • knowledge of effects of climatic conditions • ability to control rate of cure • ability to apply curing compound, sealers and release agents 	020302c	Finishing and Curing of Concrete
7.03	Installs pre-cast components	<ul style="list-style-type: none"> • knowledge of types of pre-cast systems • knowledge of pre-stress concrete • knowledge of layout procedures • ability to organize sequence of work 	020302e	Pre-Stressed and Precast Concrete

	Subtask	Enabling Objective	ILM Module Number	ILM Module Name
		<ul style="list-style-type: none"> • ability to align and brace components • ability to install isolation joints • ability to establish elevations • ability to secure components 		
7.04	Installs grout	<ul style="list-style-type: none"> • knowledge of types of grout such as drypack and liquid grout • knowledge of types of grouting procedures • knowledge of grout additives • ability to construct and install grout forms • ability to place grout 	020302a 020304c	Concrete Design Curved Wall, Column and Specialty Forming

C FRAMING**26%****8 PERFORMS LAYOUT**

	Subtask	Enabling Objective	ILM Module Number	ILM Module Name
8.01	Lays out floor systems	<ul style="list-style-type: none">• knowledge of types of floor systems• knowledge of manufacturers' specifications• knowledge of beam supports such as steel and wood• knowledge of types of beams such as steel, built-up and engineered• knowledge of load bearing requirements• knowledge of special connectors and supports such as joist hangers• knowledge of components such as blocking, backing and bridging• ability to lay out joist locations and floor openings such as stairwells and chases	020106a 020106b 020106c	Building Loads and Forces Floor Frame Support Systems Residential Floor Frames

	Subtask	Enabling Objective	ILM Module Number	ILM Module Name
		<ul style="list-style-type: none"> • ability to perform calculations to determine measurements such as area and span requirements for joists and beams • ability to select materials 		
8.02	Lays out wall systems	<ul style="list-style-type: none"> • knowledge of types of wall systems such as strapped and double-wall • knowledge of materials used in wall systems • knowledge of door and window clearances • knowledge of marking techniques • knowledge of blocking, backing and back framing requirements • ability to perform calculations to determine measurements such as lintel sizes, length of wall, height of wall and location of openings • knowledge of energy efficient construction • ability to lay out stud locations and 	<p>020202a</p> <p>020202b</p> <p>020202d</p> <p>020406a</p> <p>020406bA</p> <p>020406bB</p> <p>020406c</p>	<p>Framing Systems</p> <p>Wall and Partition Framing</p> <p>The Building Envelope</p> <p>Energy-Efficient Construction</p> <p>Energy-Efficient Framing - Part A</p> <p>Energy-Efficient Framing - Part B</p> <p>Energy Efficient Housing Design</p>

	Subtask	Enabling Objective	ILM Module Number	ILM Module Name
		wall openings <ul style="list-style-type: none"> • ability to select materials • ability to sequence layout of walls 		
8.03	Lays out roof and ceiling systems	<ul style="list-style-type: none"> • knowledge of types of roof and ceiling systems • knowledge of types of roof members such as trusses and valley rafters • knowledge of types of ceiling members such as flush beams and ceiling joists • knowledge of framing requirements for openings • ability to perform calculations to determine measurements such as slope and rafter length • ability to select materials • ability to lay out rafters, trusses and roof openings 	020202c 020203a 020203bA 020203bB 020203cA 020203cB 020203dA 020203dB 020203eA 020203eB 020404aA 020404aB 020408d	Ceiling Framing Roof Framing Systems Gable Roofs - Part A Gable Roofs - Part B Hip Roofs - Part A Hip Roofs - Part B Intersecting Roofs - Part A Intersecting Roofs - Part B Residential Truss Systems - Part A Residential Truss Systems - Part B Advanced Roof Framing - Part A Advanced Roof Framing - Part B Roof Calculations

9 CONSTRUCTS FRAMING SYSTEMS

	Subtask	Enabling Objective	ILM Module Number	ILM Module Name
9.01	Constructs floor systems	<ul style="list-style-type: none"> • knowledge of types of beams and joists • knowledge of notching and drilling requirements • ability to select material • ability to place material such as crown up • ability to install fastening devices such as joist hangers, anchor bolts and connectors • ability to install joists, beams and headers • ability to square floor system • ability to install components such as blocking, backing and bridging • ability to install floor sheathing 	020106a 020106b 020106c	Building Loads and Forces Floor Frame Support Systems Residential Floor Frames
9.02	Constructs wall	<ul style="list-style-type: none"> • knowledge of types of wall systems such as platform, balloon, timber, steel 	020202a	Framing Systems

	Subtask	Enabling Objective	ILM Module Number	ILM Module Name
	systems	<p>and panel</p> <ul style="list-style-type: none"> • knowledge of preserved wood foundations • knowledge of notching and drilling requirements • ability to select material • ability to determine rough openings • ability to place material such as crown up • ability to install fastening devices • ability to use rigging and hoisting equipment • ability to sequence erection of walls • ability to erect walls • ability to square walls • ability to install components such as studs, lintels, blocking, backing, back framing and fire stops as required • ability to install wall sheathing 	<p>020202b</p> <p>020202d</p> <p>020406a</p> <p>020406bA</p> <p>020406bB</p> <p>020406c</p>	<p>Wall and Partition Framing</p> <p>The Building Envelope</p> <p>Energy-Efficient Construction</p> <p>Energy-Efficient Framing - Part A</p> <p>Energy-Efficient Framing - Part B</p> <p>Energy Efficient Housing Design</p>

	Subtask	Enabling Objective	ILM Module Number	ILM Module Name
		<ul style="list-style-type: none"> ability to align, plumb and brace walls 		
9.03	Constructs roof and ceiling systems	<ul style="list-style-type: none"> knowledge of types of roof systems such as truss and rafter roofs ability to select material ability to place material such as crown up ability to install fastening devices ability to cut compound angles ability to install roof components such as rafters, trusses, ridge blocking, strapping and bracing ability to install ceiling components such as ceiling joists and strapping ability to align, plumb and brace roofing members ability to install roof sheathing ability to install temporary bracing during erection of roof trusses ability to install gable, hip, intersecting 	<p>020203a</p> <p>020203bA</p> <p>020203bB</p> <p>020203cA</p> <p>020203cB</p> <p>020203dA</p> <p>020203dB</p> <p>020203eA</p> <p>020203eB</p>	<p>Roof Framing Systems</p> <p>Gable Roofs - Part A</p> <p>Gable Roofs - Part B</p> <p>Hip Roofs - Part A</p> <p>Hip Roofs - Part B</p> <p>Intersecting Roofs - Part A</p> <p>Intersecting Roofs - Part B</p> <p>Residential Truss Systems - Part A</p> <p>Residential Truss Systems - Part B</p>

	Subtask	Enabling Objective	ILM Module Number	ILM Module Name
		and unequal slope roof components		

D EXTERIOR FINISH**16%****10 INSTALLS EXTERIOR DOORS AND WINDOWS**

	Subtask	Enabling Objective	ILM Module Number	ILM Module Name
10.01	Installs exterior jambs/frames	<ul style="list-style-type: none">• knowledge of types of window and door jambs/frames• ability to construct jambs/frames• ability to install blocking and backing• ability to interpret window and door schedule• ability to verify rough openings• ability to fasten jambs/frames plumb, level and square• ability to insulate cavities around jambs/frames	020204a 020204b 020204c 020206e	Windows and Window Installation Doors Door Installation Reading Engineered Floor and Truss Shop Drawings
10.02	Installs exterior doors	<ul style="list-style-type: none">• knowledge of types of doors• knowledge of door components• knowledge of weather protection	020204a 020204b 020204c	Windows and Window Installation Doors Door Installation

	Subtask	Enabling Objective	ILM Module Number	ILM Module Name
		techniques <ul style="list-style-type: none"> • ability to interpret door schedule • ability to determine door swing • ability to prepare doors for installation • ability to select and place exterior doors • ability to install overhead doors • ability to adjust exterior doors 	020403a	Commercial Windows and Doors
10.03	Installs exterior windows	<ul style="list-style-type: none"> • knowledge of types of windows • knowledge of window components • knowledge of weather protection techniques • ability to interpret window schedule • ability to select, place and fasten windows • ability to adjust windows 	020204a 020403a	Windows and Window Installation Commercial Windows and Doors
10.04	Installs exterior door and window	<ul style="list-style-type: none"> • knowledge of types and styles of hardware 	020204a	Windows and Window Installation

	Subtask	Enabling Objective	ILM Module Number	ILM Module Name
	hardware	<ul style="list-style-type: none"> • ability to interpret hardware schedule • ability to select hardware • ability to use templates • ability to use specialized tools such as mortising jigs, hinge gain templates and taps • ability to prepare door to receive hardware such as steel doors and fire rated doors • ability to position and fasten door and window hardware • ability to adjust hardware 	020204b 020204c 020403a	Doors Door Installation Commercial Windows and Doors

11 INSTALLS ROOFING

	Subtask	Enabling Objective	ILM Module Number	ILM Module Name
11.01	Installs roof coverings	<ul style="list-style-type: none"> • knowledge of types of roofing materials such as asphalt, wood and metal 	020204e 020403c	Roof Coverings Commercial Roofs

	Subtask	Enabling Objective	ILM Module Number	ILM Module Name
		<ul style="list-style-type: none"> • knowledge of roofing installation procedures • ability to place and fasten roof coverings • ability to inspect and repair roof coverings • ability to use temporary roof platforms 		
11.02	Installs roofing components	<ul style="list-style-type: none"> • knowledge of types of components such as vents, flashing and underlayments • knowledge of roof venting requirements • knowledge of components' application • knowledge of sequence of installation • ability to prepare roof surface • ability to select and install flashing • ability to select and install auxiliary materials such as caulking and bitumen 	020204e 020403c	Roof Coverings Commercial Roofs

12 FINISHES EXTERIOR WALLS AND CORNICES

	Subtask	Enabling Objective	ILM Module Number	ILM Module Name
12.01	Installs exterior wall coverings	<ul style="list-style-type: none"> • knowledge of types of cladding such as siding and shingles • knowledge of effects of weather on exterior walls • ability to place and attach exterior wall coverings • ability to install exterior wall flashing • ability to install stucco wire, expanded metal lath and accessories • ability to strap/furr walls 	020204d 020403b	Exterior Finishes Commercial Exteriors
12.02	Installs exterior wall trims	<ul style="list-style-type: none"> • knowledge of types of exterior trims • knowledge of sequence of installation • knowledge of installation procedures for exterior claddings • ability to construct different types of cornices • ability to install fascia, soffits and 	020204d 020403b	Exterior Finishes Commercial Exteriors

	Subtask	Enabling Objective	ILM Module Number	ILM Module Name
		continuous venting <ul style="list-style-type: none">• ability to install gutters and downspouts		

E INTERIOR FINISH**18%****13 APPLIES WALL/CEILING FINISHES**

	Subtask	Enabling Objective	ILM Module Number	ILM Module Name
13.01	Installs gypsum coverings	<ul style="list-style-type: none">• knowledge of types of gypsum coverings• knowledge of types of wall systems such as shaft wall, fire rated wall and sound wall• knowledge of sequence of installation• knowledge of fire stopping and fire proofing requirements such as 1 hour and 2 hour rating• knowledge of blocking requirements• knowledge of sound proofing methods such as resilient channels, sound batts and baffles• ability to install fasteners• ability to install strapping and furring• ability to cut, place and fasten gypsum	020305aA 020305aB 020305b 020402c	Interior Systems and Door Frames - Part A Interior Systems and Door Frames - Part B Fire Protection, Acoustics and Commercial Insulation Walls and Storage

	Subtask	Enabling Objective	ILM Module Number	ILM Module Name
		board		
13.02	Installs panels and tiles	<ul style="list-style-type: none"> • knowledge of types of panels and tiles • knowledge of types of wall/ceiling systems • ability to prepare surfaces • ability to select and install fasteners • ability to lay out wall and ceiling for installation of panels and tiles • ability to install materials in sequence • ability to cut, place and fasten material 	020305aA 020305aB 020305c 020307f	Interior Systems and Door Frames - Part A Interior Systems and Door Frames - Part B Commercial Fasteners and Anchors Interior Systems Calculations
13.03	Installs solid wood finishes	<ul style="list-style-type: none"> • knowledge of types of wall/ceiling systems • knowledge of solid wood finishes • knowledge of requirements of other trades • ability to prepare surfaces • ability to select and install fasteners • ability to lay out wall and ceiling for 	020402c 020402d	Walls and Storage Wood Finishing

	Subtask	Enabling Objective	ILM Module Number	ILM Module Name
		installation of solid wood finishes <ul style="list-style-type: none"> • ability to install material in sequence • ability to cut, place and fasten material 		
13.04	Installs suspended ceilings	<ul style="list-style-type: none"> • knowledge of types of suspended ceilings • knowledge of fire rating of types of suspended ceilings • knowledge of bulkheads • ability to use fastening techniques and devices such as anchors and wire • ability to lay out ceiling • ability to use levelling techniques • ability to install material in sequence • ability to cut and fit components 	020307f	Interior System Calculations
13.05	Installs demountable wall systems	<ul style="list-style-type: none"> • knowledge of types of demountable wall systems • knowledge of uses of demountable wall systems 	020305aA 020305aB	Interior Systems and Door Frames - Part A Interior Systems and Door Frames - Part B

	Subtask	Enabling Objective	ILM Module Number	ILM Module Name
		<ul style="list-style-type: none"> • knowledge of manufacturers' specifications • ability to use fastening devices and techniques • ability to install components in sequence • ability to cut, fit and fasten material • ability to align and plumb wall system 		

14 INSTALLS FLOORING

	Subtask	Enabling Objective	ILM Module Number	ILM Module Name
14.01	Installs underlayment	<ul style="list-style-type: none"> • knowledge of types of underlayment • knowledge of types of floor finishes to be applied on underlayment • knowledge of fastening devices • ability to use fastening devices and adhesives 	020402e	Flooring

	Subtask	Enabling Objective	ILM Module Number	ILM Module Name
		<ul style="list-style-type: none"> • ability to perform layout • ability to prepare floor surfaces by levelling, sanding and cleaning • ability to cut, fit and fasten materials 		
14.02	Installs floor coverings	<ul style="list-style-type: none"> • knowledge of types of floor coverings such as tile, sheet goods, hardwood and laminate • knowledge of surfaces onto which coverings are being installed • ability to use fastening devices and adhesives • ability to perform layout • ability to prepare floor surfaces by levelling, sanding and cleaning • ability to cut, fit and fasten materials • ability to install trims such as caps, transition strips and nosings 	020402e	Flooring
14.03	Installs access flooring	<ul style="list-style-type: none"> • knowledge of types of access flooring • knowledge of access flooring 		Considered on-the-job-training

	Subtask	Enabling Objective	ILM Module Number	ILM Module Name
		components <ul style="list-style-type: none"> • knowledge of sequence of installation • knowledge of requirements of other trades • ability to use fastening techniques • ability to perform layout • ability to cut, fit and fasten materials • ability to level access flooring 		

15 INSTALLS INTERIOR DOORS AND WINDOWS

	Subtask	Enabling Objective	ILM Module Number	ILM Module Name
15.01	Installs interior jambs/frames	<ul style="list-style-type: none"> • knowledge of types of window and door jambs/frames • knowledge of installation procedures • ability to install blocking and backing • ability to construct jambs/frames 	020204a 020204b 020204c	Windows and Window Installation Doors Door Installation

	Subtask	Enabling Objective	ILM Module Number	ILM Module Name
		<ul style="list-style-type: none"> • ability to interpret door and window schedule • ability to verify rough openings • ability to fasten jambs/frames plumb, level and square • ability to insulate cavities around jambs/frames 		
15.02	Installs interior doors	<ul style="list-style-type: none"> • knowledge of types of doors such as fire, hollow and louvered doors • knowledge of door components • ability to interpret door schedule • ability to determine door swing • ability to prepare doors for installation • ability to select and place interior doors • ability to adjust interior doors 	020204b 020204c 020403a	Doors Door Installation Commercial Windows and Doors
15.03	Installs interior windows	<ul style="list-style-type: none"> • knowledge of glazing systems • knowledge of types of windows 	020204a 020403a	Windows and Window Installation Commercial Windows and Doors

	Subtask	Enabling Objective	ILM Module Number	ILM Module Name
		<ul style="list-style-type: none"> • knowledge of window components • ability to interpret window schedule • ability to select, place and fasten windows • ability to adjust windows 		
15.04	Installs interior door and window hardware	<ul style="list-style-type: none"> • knowledge of types and styles of hardware • ability to interpret hardware schedule • ability to select hardware • ability to use templates • ability to use specialized tools such as mortising jigs, hinge gain templates and taps • ability to prepare door to receive hardware such as steel doors and fire rated doors • ability to position and fasten door and window hardware • ability to adjust hardware 	020204a 020204b 020204c 020403a	Windows and Window Installation Doors Door Installation Commercial Windows and Doors

16 CONSTRUCTS STAIRS

	Subtask	Enabling Objective	ILM Module Number	ILM Module Name
16.01	Lays out stairs	<ul style="list-style-type: none"> • knowledge of types of stairs • knowledge of marking techniques • ability to perform calculations to determine measurements such as rise, run and allowable headroom • ability to select materials for stringers 	020205a 020205b 020304e 020307e	Single-Flight Straight Stairs Multi-Flight Stairs Concrete Stairs Concrete Stair Calculations
16.02	Constructs straight stairs	<ul style="list-style-type: none"> • knowledge of stair geometry • knowledge of stair components such as glue blocks, wedges and handrails • knowledge of building code requirements • ability to select and install material • ability to select and install fasteners • ability to select and use adhesives • ability to assemble components such as stringers, treads, risers and skirt boards 	020205a 020205b 020304e 020404b 020408e	Single-Flight Straight Stairs Multi-Flight Stairs Concrete Stairs Housed Stairs Straight-Flight Stair and Multi-Flight Stair Calculations

	Subtask	Enabling Objective	ILM Module Number	ILM Module Name
		<ul style="list-style-type: none"> • ability to install finished components 		
16.03	Constructs geometric stairs	<ul style="list-style-type: none"> • knowledge of types of geometric stairs such as winders, spiral and circular • ability to select and install material • ability to select and install fasteners • ability to select and use adhesives • ability to assemble components of geometric stairs such as handrails, newel posts and spindles • ability to install assembled components 	020404c 020404d 020408f	Winder Stairs Curved Stairs Winder and Curved Stair Calculations

17 CONSTRUCTS FINISH COMPONENTS

	Subtask	Enabling Objective	ILM Module Number	ILM Module Name
17.01	Fabricates finish components	<ul style="list-style-type: none"> • knowledge of boring techniques • knowledge of abrasives and adhesives • knowledge of wood finish requirements such as paint, stain or 	020102a 020102c 020103d	Solid Wood Products and Wood Joinery Fasteners, Adhesives and Sealants Cutters, Bits and Abrasives

	Subtask	Enabling Objective	ILM Module Number	ILM Module Name
		<ul style="list-style-type: none"> clear • ability to construct cabinets and millwork • ability to clamp material • ability to construct joints • ability to apply adhesives • ability to construct jigs • ability to select hardware • ability to select fasteners • ability to select materials • ability to assemble pre-fabricated components • ability to prepare for shipping 	<p>020402aA</p> <p>020402aB</p> <p>020402b</p> <p>020402c</p> <p>020402d</p>	<p>Cabinet Installation – Part A</p> <p>Cabinet Installation – Part B</p> <p>Trim Installation</p> <p>Walls and Storage</p> <p>Wood Finishing</p>
17.02	Installs finish components/accessories	<ul style="list-style-type: none"> • knowledge of types of components/accessories such as casing, baseboards and balustrades • knowledge of wood finish requirements such as paint, stain or clear 	<p>020102a</p> <p>020102c</p> <p>020103d</p>	<p>Solid Wood Products and Wood Joinery</p> <p>Fasteners, Adhesives and Sealants</p> <p>Cutters, Bits and Abrasives</p>

	Subtask	Enabling Objective	ILM Module Number	ILM Module Name
		<ul style="list-style-type: none"> • ability to interpret drawings and specifications • ability to scribe • ability to use layout tools and instruments • ability to apply adhesives • ability to apply fillers • ability to align, plumb and level components • ability to select fasteners • ability to cope joints • ability to adjust hardware • ability to install trim such as casing, crown mouldings and chair rails 	<p>020402aA</p> <p>020402aB</p> <p>020402b</p> <p>020402c</p> <p>020402d</p> <p>020404b</p>	<p>Cabinet Installation – Part A</p> <p>Cabinet Installation – Part B</p> <p>Trim Installation</p> <p>Walls and Storage</p> <p>Wood Finishing</p> <p>Housed Stairs</p>