

CONSTRUCTION TECHNOLOGIES

SECTION H: LINKAGES/TRANSITIONS

This section of the Guide has been designed to provide an overview of linkages and transitions of CTS modules with a number of organizations. The charts and information presented in this section will assist CTS students and teachers in understanding the potential application of CTS modules as students move into the workplace.

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LINKAGES/TRANSITIONS

There are many opportunities for students in Construction Technologies to build linkages among CTS strands and across other subject areas, including core and complementary programs. In addition to making linkages across the curriculum, making connections between what students have already learned in other settings (e.g., home, community and workplace) can also be achieved through this strand.

LINKAGES

With Basic Competencies

The Construction Technologies strand supports the development and integration of the basic competencies related to personal and resource management, problem solving, safe work practices and social interactions throughout the introductory, intermediate and advanced modules. It is important that students develop these competencies because success in the workplace often depends more on these skills than on many of the technical or academic skills they possess.

With Other CTS Strands

Construction Technologies complements modules from a number of other strands, e.g., Agriculture, Communication Technology, Design Studies, Enterprise and Innovation, Fabrication Studies, Forestry and Logistics.

Specific linkages that may be of interest to students in Construction Technologies include:

Strand	Module	Linkage
Agriculture	AGR2050 Agrifoods 1	Construction of structures used in processing and storage of agriculture products, livestock and equipment.

Strand	Module	Linkage
Career Transitions	Project Modules	Provide opportunity and direction for students involved in projects beyond the expectations of a given Construction Technologies module.
	Practicum Modules	Provide opportunity for students to work towards an externally developed and recognized credential related to the strand.
Design Studies	DES1010 Sketch, Draw & Model	Can be offered in conjunction with a student project and design module.
	DES2050 Technical Drawing Applications	Used in the context of house design and residential systems.
Enterprise and Innovation	ENT1020 Planning a Venture	Used in conjunction with manufacturing and production modules.
Fabrication Studies	FAB2010 Structural Engineering	Studied in the context of concrete work and framing techniques.
Forestry	FOR2070 Harvest Practices	Forest products used in construction.
Logistics	LOG1040 Purchasing 1	Used in conjunction with purchasing materials for project work.

It is important to note that project, practicum and safety modules from the Career Transitions strand may be combined with modules from the Construction Technologies strand to provide increased opportunity for students to develop expertise and refine their competencies in a particular area of study, such as:

- acquiring safety skills and credentials
- completing a larger more complex project
- enhancing specific carpenter, cabinetmaking or other trade skills
- expanding a module topic or theme.

Examples of CTR project modules that have been developed as extension to existing modules are shown in this section.

Linkages between Construction Technologies modules and other strands and across the curriculum have also been identified. Refer to “Construction Technologies: Connections With Other CTS Strands” and “Construction Technologies Connections Across the Curriculum.”

In addition, modules may be aligned according to the course emphasis and themes that run between modules and strands as outlined in “Construction Technologies: Junior High School Module Clusters” and “Construction Technologies: Senior High School Module Clusters.”

For a summary of modules that can be combined with Construction Technologies from other strands, refer to “Construction Technologies: Extended Scope and Sequence.”

With Elementary Programs

The development of concepts related to Construction Technologies can begin as early as ECS using hand tool activities and teaching strategies similar to those outlined in the “Integrated Practical Activities for Elementary Grades,” Alberta Education, 1980.

With Other Secondary Programs

To help make learning more authentic and significant, it is important to integrate the core and complementary areas with Construction Technologies whenever possible. By being aware of and supporting the content of other curricula promotes relevance and reinforces core and complementary courses outlined in the following chart.

Subject	Linkage
Language Arts	Technical report writing, task analysis, event scheduling and oral and multimedia presentations.
Mathematics	Measurement, calculation of area and volume, use of fractions, ratios, geometry and trigonometry.
Science	Material properties, structures, chemical safety, use of simple machines and electricity as well as related environmental concerns.
Social Studies	Economics, impact of technology on society, resource development and industrial relationships.
CALM	Career assessment and preparation.
Art	Wood carving, picture framing, inlaying and marquetry.
Drama	Stage prop construction and set design.

With Practical Arts Courses

As of September 1997, modules in the Construction Technologies strand replaced many of the existing practical arts junior and senior high programs. A detailed correlation of the Construction Technologies strand modules to the related practical arts courses can be found in this section (see “Construction Technologies: Correlations to Junior/Senior High School Practical Arts Courses”).

TRANSITIONS

To the Community/Workplace

Competencies developed in Construction Technologies provide students with many of the entry level skills required in the workplace (see “Construction Technologies: Module Relationships to Specific Trades and Occupations.”

The National Occupational Classification (NOC) shown in chart form in this section indicates occupations for which Construction Technologies provides a foundation (see “Construction Technologies: Related Occupations”). According to this chart, high school students could potentially move into nine occupations requiring high school education and 21 trades related to Construction Technologies.

To Related Post-secondary Programs

The themes and modules offered in Construction Technologies are consistent with many of the pre-employment and apprenticeship courses now being offered by post-secondary institutions.

A number of articulation agreements have been established with post-secondary institutions in Alberta. These agreements provide preferred entrance and/or advanced standing/credit for CTS students who have successfully completed designated modules. A current summary of articulation agreements in place that involve CTS modules is available through Alberta Education’s web site at <<http://ednet.edc.gov.ab.ca>>. For further information regarding particular articulation agreements, contact the post-secondary institution and/or review its calendar.

CTS courses in Construction Technologies may also link with one or more of Alberta’s Apprenticeship Training Programs; e.g., Carpenter, Cabinetmaker. Students who are employed as an apprentice in one of these trade areas and have successfully completed designated CTS modules may also qualify, upon the recommendation of their employer, for a portion of the in-school training component. A summary of articulation agreements established for specific apprenticeship trades (including a correlation to CTS modules) is available through Alberta Education’s web site. Further information regarding apprenticeship linkages can be obtained by contacting Alberta Advanced Education and Career Development, Apprenticeship and Industry Training Division.

An outline of post-secondary institutions in Alberta currently offering programs related to Construction Technologies is in “Construction Technologies: Summary of Related Post-secondary Programs.”

CREDENTIALLING

Students may earn partial or complete credentials recognized in the workplace and/or post-secondary institutions by demonstrating specified competencies within the CTS curriculum. The Construction Technologies strand, in conjunction with modules from the Career Transitions strand, provides opportunities for students to develop competencies related to:

- Explosive Actuated Tools
- Construction Safety Training
- Emergency First Aid
- Workplace Hazardous Materials Information System
- Transportation of Dangerous Goods.

Further information regarding credentialling in Construction Technologies is provided in “Credentialling Opportunities in Construction Technologies” and the *Career & Technology Studies Manual for Administrators, Counsellors and Teachers*, Appendix 14.

LINKAGES – Construction Technologies: Sample CTR Project Modules

MODULE CTR2110: PROJECT 2A – CONCRETE FORMING

Level: Intermediate

Theme: Career Extensions

Prerequisite: CON2020 Concrete Forming

Module Parameters: Access to a building site and instruction from an individual with specialized training in concrete forming and placing

Students extend and enhance competencies related to form construction and concrete placement.

Curriculum and Assessment Standards

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> propose, manage and assess a project meet goals as defined within the project plan 	<p><i>Assessment of student achievement should be based on:</i></p> <ul style="list-style-type: none"> successful completion of project, including project: <ul style="list-style-type: none"> proposal management completion assessment presentation. <p><i>Assessment Tool</i> <i>CTR Project: Career Extensions Modules</i></p>	<p>20</p> <p>20</p> <p>20</p> <p>20</p> <p>20</p>
<ul style="list-style-type: none"> demonstrate basic competencies. 	<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>

LINKAGES – Construction Technologies: Sample CTR Project Modules

MODULE CTR2110: PROJECT 2A: CONCRETE FORMING (continued)

Concept	Specific Learner Expectations	Notes★
Project Definition	<p><i>The student should:</i></p> <ul style="list-style-type: none"> • identify a project • outline related issues and implications • prepare a project plan: <ul style="list-style-type: none"> – clarify the purposes of the project – define project deliverables – specify project timelines; e.g., key decision points, consultation points – define resource needs; e.g., materials, costs, support network • identify and comply with all related health and safety standards • define assessment standards (indicators for success) • present project proposal and obtain necessary approvals. 	<p>Have student identify the type and amount of form work to be completed.</p> <p>Discuss the need for an event sequence and cost estimate for the form work and concrete placement being undertaken.</p> <p>Standards should be consistent with those held by the trades.</p>
Project Management	<ul style="list-style-type: none"> • proceed with the project as outlined by the project plan • monitor project and make necessary adjustments to project plan. 	<p>Project monitoring should include regular progress checks and consultation with teacher and others.</p>
Project Presentation and Assessment	<ul style="list-style-type: none"> • present the project: <ul style="list-style-type: none"> – outcomes attained – relationship to goals set originally • assess the project: <ul style="list-style-type: none"> – processes and strategies used – recommendations for how the project could have been improved. 	<p>Project presentation could be in print, a display of the project or a description of the processes undertaken.</p> <p>Student assessment could be print, verbal and/or audio-visual.</p>

★Refer to the Guide to Standards and Implementation for a particular strand for suggestions about how project modules could be used to complement and enhance the learning.

LINKAGES – Construction Technologies: Sample CTR Project Modules

MODULE CTR2120: PROJECT 2B – EXTERIOR WALL AND EAVE FINISHING

Level: Intermediate

Theme: Career Extensions

Prerequisite: CON2060 Exterior Finishing

Module Parameters: Access to a building site and instruction from an individual with specialized training in exterior finishing.

Students extend and enhance competencies related to the installation of finishing materials on exterior walls and roof projections.

Curriculum and Assessment Standards

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> propose, manage and assess a project meet goals as defined within the project plan 	<p><i>Assessment of student achievement should be based on:</i></p> <ul style="list-style-type: none"> successful completion of the project including project: <ul style="list-style-type: none"> proposal management completion assessment presentation. <p><i>Assessment Tool</i> <i>Career Extension (Project)</i> <i>Modular Assessment Tool (CTR Project)</i></p>	<p>20</p> <p>20</p> <p>20</p> <p>20</p> <p>20</p>
<ul style="list-style-type: none"> demonstrate effort to develop basic competencies. 	<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>

LINKAGES – Construction Technologies: Sample CTR Project Modules

MODULE CTR2120: PROJECT 2B: EXTERIOR WALL AND EAVE FINISHING (continued)

Concept	Specific Learner Expectations	Notes★
Project Definition	<p><i>The student should:</i></p> <ul style="list-style-type: none"> • identify a project • outline related issues and implications • prepare a project plan: <ul style="list-style-type: none"> – clarify the purposes of the project – define project deliverables – specify project timelines; e.g., key decision points, consultation points – define resource needs; e.g., materials, costs, support network • identify and comply with all related health and safety standards • define assessment standards (indicators for success) • present project proposal and obtain necessary approvals. 	<p>Have student identify the type and amount of finishing materials to be used.</p> <p>Discuss the need for an event sequence and cost estimate to apply a new or replace an old finish.</p> <p>Standards should be consistent with those held by the trades.</p>
Project Management	<ul style="list-style-type: none"> • proceed with the project as outlined by the project plan • monitor project and make necessary adjustments to project plan. 	<p>Project monitoring should include regular progress checks and consultation with teacher and others.</p>
Project Presentation and Assessment	<ul style="list-style-type: none"> • present the project: <ul style="list-style-type: none"> – outcomes attained – relationship to goals set originally • assess the project: <ul style="list-style-type: none"> – processes and strategies used – recommendations for how the project could have been improved. 	<p>Project presentation could be in print, a display of the project or a description of the processes undertaken.</p> <p>Student assessment could be print, verbal and/or audio-visual.</p>

★ Refer to the Guide to Standards and Implementation for a particular strand for suggestions about how project modules could be used to complement and enhance the learning.

LINKAGES – Construction Technologies: Connections With Other CTS Strands

Construction Technologies Modules	Other CTS Strands																				
	Agriculture	Career Transitions	Communication Technology	Community Health	Cosmetology Studies	Design Studies	Electro-Technologies	Energy and Mines	Enterprise and Innovation	Fabrication Studies	Fashion Studies	Financial Management	Foods	Forestry	Information Processing	Legal Studies	Logistics	Management and Marketing	Mechanics	Tourism Studies	Wildlife
Theme: Building Systems (Processes and Applications)																					
CON1010: Basic Tools & Materials																					
CON1070: Building Construction																					
CON2010: Site Preparation																					
CON2020: Concrete Forming																					
CON2030: Alternate Foundations																					
CON2040: Framing Systems 1 (Floor & Wall)																					
CON2050: Roof Structures 1 (Framing and Finishing)																					
CON2060: Exterior Finishing (Door, Window & Siding)																					
CON2070: Electrical Systems																					
CON2080: Plumbing Systems																					
CON2090: Climate Control Systems																					
CON2100: Agri-structures																					
CON3010: Concrete Work (Structures & Finishes)																					
CON3020: Masonry Work (Structures & Finishes)																					
CON3030: Wall & Ceiling Finishing																					
CON3040: Stair Construction																					
CON3050: Roof Structures 2 (Framing & Covering)																					
CON3060: Doors & Trim																					
CON3070: Floorcovering																					
CON3080: Energy-efficient Housing																					
CON3090: Renovations/Restorations																					
CON3100: Commercial Structures																					
CON3110: Site Management																					
Theme: Manufacturing Systems (Processes and Applications)																					
CON1120: Project Management																					
CON1130: Solid Stock Construction																					
CON1140: Turning Operations																					
CON1160: Manufactured Materials																					
CON1180: Mold Making & Casting																					
CON2120: Multiple Materials																					
CON2130: Furniture Making 1 (Box Construction)																					
CON2140: Furniture Making 2 (Frame & Panel)																					
CON2150: Finishing & Refinishing																					
CON2160: Cabinetmaking 1 (Web & Face Frame)																					
CON2170: Cabinetmaking 2 (Door & Drawer)																					
CON2180: Wood Forming																					
CON2190: Manufacturing Systems																					
CON2200: Product Development																					
CON3120: Tool Maintenance																					
CON3130: Furniture Making 3 (Leg & Rail)																					
CON3140: Furniture Making 4 (Surface Enhancement)																					
CON3150: Furniture Repair																					
CON3160: Cabinetmaking 3 (Cabinets/Countertops)																					
CON3170: Cabinetmaking 4 (Layout & Installation)																					
CON3190: Production Planning																					
CON3200: Production Management																					
CON3210: Framing Systems 2 (Floor, Wall & Ceiling)																					

Provides many direct links with competencies in this strand. Students will reinforce, extend and apply a substantial number of knowledge and/or skill components in practical situations.



Provides some links with competencies developed in this strand, usually through the application of related technologies and/or processes.



LINKAGES – Construction Technologies: Connections Across the Curriculum

Construction Technologies Modules	Across the Curriculum																		
	Junior High							Senior High											
	Language Arts	Social Studies	Mathematics	Science	Health & PLS	Physical Education	Fine Arts	English	Social Studies	Mathematics	Science (General)	Biology	Chemistry	Physics	CALM	Physical Education	Fine Arts	Social Sciences	Second Language
Theme: Building Systems (Processes and Applications)																			
CON1010: Basic Tools & Materials																			
CON1070: Building Construction			■	■															
CON2010: Site Preparation										■									
CON2020: Concrete Forming										■									
CON2030: Alternate Foundations													■						
CON2040: Framing Systems 1 (Floor & Wall)										■									
CON2050: Roof Structures 1 (Framing & Finishing)										■									
CON2060: Exterior Finishing (Door, Window & Siding)										■									
CON2070: Electrical Systems										■	■								
CON2080: Plumbing Systems										■	■								
CON2090: Climate Control Systems										■	■								
CON2100: Agri-structures										■	■								
CON3010: Concrete Work (Structures & Finishes)										■	■								
CON3020: Masonry Work (Structures & Finishes)										■	■								
CON3030: Wall & Ceiling Finishing										■	■								
CON3040: Stair Construction										■	■								
CON3050: Roof Structures 2 (Framing & Covering)										■	■								
CON3060: Doors & Trim										■	■								
CON3070: Floorcovering										■	■								
CON3080: Energy-efficient Housing										■	■								
CON3090: Renovations/Restorations										■	■								
CON3100: Commercial Structures										■	■								
CON3110: Site Management										■	■								
Theme: Manufacturing Systems (Processes and Applications)																			
CON1120: Project Management			■																
CON1130: Solid Stock Construction			■																
CON1140: Turning Operations																			
CON1160: Manufactured Materials																			
CON1180: Mold Making & Casting																			
CON2120: Multiple Materials																			
CON2130: Furniture Making 1 (Box Construction)																			
CON2140: Furniture Making 2 (Frame & Panel)																			
CON2150: Finishing & Refinishing													■						
CON2160: Cabinetmaking 1 (Web & Face Frame)													■						
CON2170: Cabinetmaking 2 (Door & Drawer)													■						
CON2180: Wood Forming													■						
CON2190: Manufacturing Systems										■	■								
CON2200: Product Development										■	■								
CON3120: Tool Maintenance										■	■								
CON3130: Furniture Making 3 (Leg & Rail)										■	■								
CON3140: Furniture Making 4 (Surface Enhancement)										■	■								
CON3150: Furniture Repair										■	■								
CON3160: Cabinetmaking 3 (Cabinets/Countertops)										■	■								
CON3170: Cabinetmaking 4 (Layout & Installation)										■	■								
CON3190: Production Planning										■	■								
CON3200: Production Management										■	■								
CON3210: Framing Systems 2 (Floor, Wall & Ceiling)										■	■								

Provides many direct links with course content. Students will reinforce, extend and apply a substantial number of knowledge and/or skill components in practical contexts.



Provides some links with course content, usually through the application of related technologies and/or processes.



LINKAGES – Construction Technologies: Connections With Other CTS Strands

LINKAGES - Construction Technologies: Junior High School Module Clusters

Course Emphasis	Construction Technologies Modules	Design Studies Modules	Fabrication Studies Modules	Forestry Modules
Production (3 modules)	Basic Tools & Materials (CON1010)		Production Systems (FAB1160)	
	Building Construction (CON1070)			
Planning and Management (4 modules)	Project Management (CON1120)	Sketch, Draw & Model (DES1010)	Basic Tools & Materials (CON1010)	
	Solid Stock Construction (CON1130)			
Carpentry (6 modules)	Building Construction (CON1070)	Sketch, Draw & Model (DES1010)	Basic Tools & Materials (CON1010)	
	Solid Stock Construction (CON1130)			
	Manufactured Materials (CON1160)			
Cabinetry (6 modules)	Project Management (CON1120)	Sketch, Draw & Model (DES1010)	Basic Tools & Materials (CON1010)	Harvest Practices (Fibre Harvesting and Processing) (FOR2070)
	Solid Stock Construction (CON1130)			
	Turning Operations (CON1140)			

LINKAGES - Construction Technologies: Senior High School Module Clusters

Introductory Focus

Themes

Exploration	Basic Tools & Materials (CON1010)	Building Construction (CON1070)	Production Systems (FAB1160)
Planning and Management	Sketch, Draw & Model (DES1010)	Project Management (CON1120)	Solid Stock Construction (CON1130)
Material Processing	Mold Making & Casting (CON1180)	Manufactured Materials (CON1160)	Fundamentals of Recycling (ENM1090)
Design	The Design Process (DES1020)	Turning Operations (CON1140)	Multiple Materials (CON2120)

Intermediate Focus

Tool Processes	Manufactured Materials (CON1160)	Furniture Making 1 (CON2130)	Furniture Making 2 (CON2140)
	Cabinetmaking 1 (CON2160)	Cabinetmaking 2 (CON2170)	
Print Reading and Layout	2-D Design Applications (DES2010)	Print Reading (FAB2020)	Site Preparation (CON2010)
Structural Design	Structural Engineering (FAB2010)	Framing Systems 1 (CON2040)	Roof Structures 1 (CON2050)

Advanced Focus

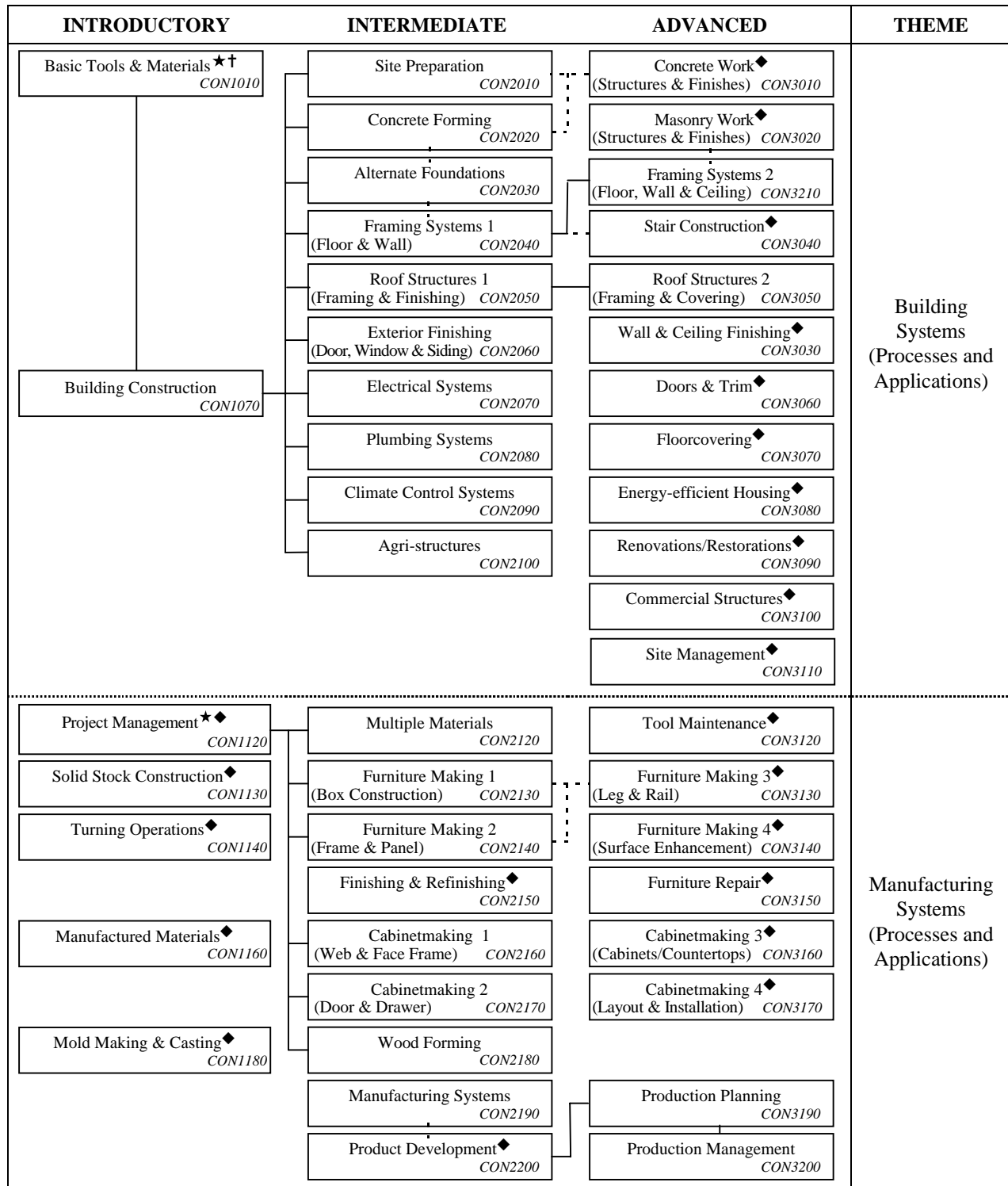
Material Processes	Concrete Work (CON3010)	Masonry Work (CON3020)	Wall & Ceiling Finishing (CON3030)
Interior Finishing	Stair Construction (CON3040)	Doors & Trim (CON3060)	Floor Covering (CON3070)
Energy Efficiency	Energy Designs/Systems 1 (ENM2090)	Energy Efficient Housing (CON3080)	Renovations/Restorations (CON3090)
Commercial Construction	Building Construction (CON1070)	Commercial Structures (CON3100)	Site Management (CON3110)
Design	Draft/Design Applications (DES2040)	Furniture Making 3 (CON3130)	Renovations/Restorations (CON3090)
Production	Manufacturing Systems (CON2190)	Production Planning (CON3190)	Production Management (CON3200)



Indicates Linking Module.

LINKAGES – Construction Technologies: Connections With Other CTS Strands

Construction Technologies: Scope and Sequence



—— Prerequisite

--- Recommended sequence

★ Module provides a strong foundation for further learning in this strand.

† Module is also offered in Fabrication Studies.

♦ Refer to specific modules for additional prerequisites.

H.14/ Construction Technologies, CTS

(1997)

Linkages/Transitions

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LINKAGES – Construction Technologies: Extended Scope and Sequence

THEME	INTRODUCTORY	INTERMEDIATE	ADVANCED				
<p>Building Systems (Processes and Applications)</p>	<p>Sketch, Draw & Model <i>DES1010</i></p> <p>CAD Fundamentals <i>DES1050</i></p>	<p>Project 2A <i>CTR2110</i></p> <p>Harvest Practices <i>FOR2070</i></p> <p>Structural Engineering <i>FAB2010</i></p> <p>Technical Drawing Applications <i>DES2050</i></p> <p>Project 2B <i>CTR2120</i></p> <p>Print Reading <i>FAB2020</i></p>	<p>Practicum A <i>CTR3040</i></p> <p>Living Environment Studio 2 <i>DES3080</i></p> <p>Info Management Tools <i>INF3080</i></p>				
				<p>Manufacturing Systems (Processes and Applications)</p>	<p>CAD Applications <i>DES2030</i></p> <p>Implementing the Venture <i>ENT2040</i></p>	<p>3-D Design Studio 3 <i>DES3060</i></p> <p>Managing the Venture <i>ENT3010</i></p>	
							<p>Fundamentals of Recycling <i>ENM1090</i></p>
							<p>Production Systems <i>FAB1160</i></p>
							<p>Planning a Venture <i>ENT1020</i></p>

**LINKAGES - Construction Technologies:
Module Relationships to Specific Trades and Occupations**

Introductory, Intermediate and Advanced Modules	Bricklayer	Cabinetmaker	Carpenter	Cement Finisher	Construction Estimator	Electrician	Floor Covering Installer	Lather - Interior	Painter & Decorator	Plasterer	Plumber	Recreation Veh. Maintenance	Residential Bldg. Renovator	Roofer	Saw Filer	Tile Setter	Wood Product Assembler	Woodworking Mach. Operator
Basic Tools & Materials		X	X														X	X
Building Construction			X		X								X					
Project Management	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	
Solid Stock Construction		X	X										X					
Turning Operations		X	X										X					X
Manufactured Materials		X	X														X	X
Mold Making & Casting		X	X	X														
Site Preparation	X		X								X							
Concrete Forming	X		X		X													
Alternate Foundations			X		X													
Framing Systems 1			X		X		X					X						
Roof Structures 1			X									X		X				
Exterior Finishing			X															
Electrical Systems						X						X						
Plumbing Systems											X	X						
Climate Control Systems						X					X	X						
Agri-structures	X		X	X	X	X					X			X				
Multiple Materials		X										X	X					X
Furniture Making 1 and 2		X																X
Finishing & Refinishing		X	X										X				X	
Cabinetmaking 1 and 2		X															X	X
Wood Forming		X	X															
Manufacturing Systems																	X	
Product Development																	X	X
Concrete Work				X														
Masonry Work	X			X														
Framing Systems 2			X		X								X					
Wall & Ceiling Finishing			X						X									
Stair Construction			X															
Roof Structures 2			X											X				
Doors & Trim		X	X														X	
Floorcovering			X				X											
Energy-efficient Housing			X															
Renovations/Restorations	X	X	X	X	X	X	X	X	X	X	X		X	X		X		
Commercial Structures	X	X	X	X	X	X	X	X	X	X	X			X	X	X		
Site Management	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X		
Tool Maintenance		X	X			X									X		X	X
Furniture Making 3 and 4		X															X	X
Furniture Repair		X															X	X
Cabinetmaking 3 and 4		X	X	X									X		X			
Production Planning																	X	X
Production Management																	X	X

TRANSITIONS – Construction Technologies: Related Occupations

Information for this chart was obtained from the National Occupational Classification (NOC) descriptions.

Educational Requirements:

D: High School Education
C: Apprenticeship

B: College or Vocational Education
A: University

Occupation Profile	NOC#	D	C	B	A
Bricklayer	7281		✓		
Cabinetmaker	7272		✓		
Carpenters	7271		✓		
Cement Finisher	7282		✓		
Concrete, Clay and Stone Forming Operators	9419	✓			
Construction Estimator	2234	✓		✓	
Construction Inspector	2264	✓		✓	
Construction Manager	0711	✓		✓	✓
Construction Trade Helpers and Labourers	7611	✓			
Contractors and Supervisors, Carpentry Trades	7215		✓		
Contractors and Supervisors, Heavy Construction Equipment Crews	7217		✓		
Contractors and Supervisors, Other Construction Trades, Installers, Repairers and Services	7219		✓		
Contractors and Supervisors, Pipefitting Trades	7213		✓		
Crane and Hoisting Equipment Operators	7371		✓		
Elevator Constructor	7318		✓		
Floorcovering Installer	7295		✓		
Gasfitter	7253		✓		
Glazier/Glassworker	7292		✓		
Heavy Equipment Operator	7421	✓			
Insulator	7293				
Lather/Interior Systems Mechanics	7284		✓		
Machinist/Machining Tool Operators	9511		✓		
Nondestructive Testers and Inspectors	2261			✓	
Other Trades and Related Occupations	7383	✓		✓	
Other Wood Products Assemblers and Inspectors	9493	✓			
Painters and Decorators	7294		✓		
Plasterers, Drywall Installers and Finishers and Lathers	7284		✓		
Plating, Metal Spraying and Related Operators	9497	✓			
Plumber	7251		✓		
Residential Home Builders and Renovators	0712				
Roofer	7291		✓		
Steamfitters, Pipefitters and Sprinkler System Installers	7252		✓		
Tilesetter	7283		✓		
Woodworking Machine Operator	9224		✓		

TRANSITIONS - Construction Technologies: Summary of Related Post-secondary Programs

	PUBLIC COLLEGES										APPRENTICESHIP TRADE	PRIVATE COLLEGES				TECH. INST.	Banff	UNIVERSITIES			VOCATIONAL COLLEGES					
	Alberta College of Art & Design	Fairview College	Grande Prairie Regional College	Grant MacEwan Community College	Keyano College	Lakeland College	Lethbridge Community College	Medicine Hat College	Mount Royal College	Olds College		Red Deer College	Augustana University College	Canadian Union College	Concordia College	King's University College, The	North American Baptist College	Northern Alberta Institute of Technology	Southern Alberta Institute of Technology	Banff Centre	University of Alberta	University of Calgary	University of Lethbridge	AVC - Calgary	AVC - Edmonton	AVC - Lac La Biche
Civil Engineering Technologies (including Building Construction)						D										D	D						C			C
Bricklayer											3y															
Carpenter (including Cabinetmaker, Millwork & Carpentry, Pre-employment Carpentry, and Production Cabinetmaker)		V				C(12w)	8w				4y					VC	VC							C	C(14w)	
Construction Management/Technology and Residential Renovation Contractor							24w									C	V		C							
Elevator Constructor											4y															
Floorcovering Installer											2y					V										
Glassworker											4y															
Heavy Equipment/Industrial Operations (including Crane & Hoisting Equipment Operator, Crawler Tractor, Front End Loader, Hydraulic Backhoe Excavating, Motor Grader/Scraper)					C(5w)						1y2y 3y															
Insulator											4y															
Other Construction-related Apprenticeship Trades (including Cement Finisher, Lather-Interior Systems Mechanic, Painter & Decorator, Roofer and Tilesetter)											3y															
Sheet Metal Worker											4y															
Wood Processing Technology																	2yr									

CODES: B Bachelor's Degree D Diploma (2 years) w weeks
M Master's Degree V Varies m months
Ph.D. Doctoral Degree 1t One-year transfer y years
C Certificate (1 year or less) 2t Two-year transfer

*Information adapted from "It's About Time: To Start Thinking About Your Future," Advanced Education and Career Development, 1995.

**CREDENTIALLING – Construction Technologies: Credentialling Opportunities★
(March 1997)**

The following credentialling opportunities link with modules in the Construction Technologies and other strands.

Certificate	Agency	Modules	Instructor Qualifications	Comments
Explosive Actuated Tools	Technical Institute or College (post-secondary)	Concrete Work (CON3010)	EAT certificate	Required by OH&S for all operators to be certified. Formal credentialling to be arranged through local college or technical institute.
Construction Safety Training System	Alberta Construction Safety Association	Site Management (CON3110)	Alberta Construction Safety Association Trainer	Can be offered through a CD-ROM interactive video computer system.
Emergency First Aid	St. John Ambulance Canadian Red Cross	Personal Safety (Management) (CTR1210)	Certified First Aid/CPR Instructor	Three-year nationally recognized certificate.
Workplace Hazardous Materials Information Systems (WHMIS)	Occupational Health and Safety	Personal Safety (Management) (CTR1210)	WHMIS Instructor	Addresses skills required to work safely with hazardous materials.
Transportation of Dangerous Goods (TDG)	Transportation and Utilities	Workplace Safety (Practices) (CTR2210)	TDG Instructor	Addresses skills required by individuals involved with the transportation and handling of dangerous goods.

★ Further information regarding these and other credentialling opportunities available to CTS students is available through Alberta Education's web site at <<http://ednet.edc.gov.ab.ca>>.