

**CAREER &
TECHNOLOGY
STUDIES**
Manual for Administrators,
Counsellors and Teachers

Appendix 4:
**Strategies for Instruction
in CTS**

June 1998

The information provided in this appendix can be used to provide a basis for further collaboration and discussion at the local level in planning effective instruction in CTS.

TABLE OF CONTENTS

PURPOSE	275
LEARN BY DOING/ACTIVE LEARNING	275
APPLIED LEARNING/MAKING CONNECTIONS	277
Making Connections within CTS.....	278
Making Connections Across the Curriculum.....	278
TEAMWORK/COOPERATIVE LEARNING	280
Establishing Learning Teams.....	281
Facilitating Cooperative Learning	281
IOP-CTS TRANSITIONS	283
Managing Concurrent Program Delivery.....	283
Planning Successful Transitions	284
ATTACHMENTS	
Attachment 1: Opportunities for Making Connections within CTS.....	285
Attachment 2: Integrating Concepts in CTS	287
Attachment 3: Opportunities for Making Connections Across the Curriculum.....	289
Attachment 4: Characteristics of Effective Group Members	291
Attachment 5: Comparing the IOP and CTS Programs.....	293
Attachment 6: Connections Between IOP and CTS.....	295

PURPOSE

This appendix provides a range of instructional strategies teachers may wish to consider as they plan delivery of CTS courses. Teachers may use this information to:

- plan for experiential and active learning while assuming roles of facilitator and coach in the learning process
- identify opportunities for making connections in learning
 - among the 22 CTS strands
 - with other areas of the curriculum
- facilitate individual and group enterprise through teamwork and cooperative learning
- manage program delivery and student placement in special circumstances where:
 - CTS courses and Integrated Occupational Program (IOP) courses are delivered concurrently
 - students wish to make transitions from IOP courses into CTS courses.

LEARN BY DOING/ACTIVE LEARNING

Active learning occurs when students learn by doing and reflect on the processes used. Active learning requires that students are not just passive recipients of information, but develop ability to apply what they are learning.

CTS places an emphasis on learning by doing. Essentially, the teacher's role in this process is that of facilitator, guide and coach. It takes time to develop a learning atmosphere conducive to active learning. The classroom climate should be friendly and nonthreatening, with appropriate levels of trust, flexibility and mutual respect. The following strategies may be effective in facilitating an active learning approach in CTS.

Refer to Chart 3: Positive Classroom Climate Checklist.

Agendas

Encourage students to prepare an agenda of tasks to be completed. Ideally, the agenda is cooperatively developed and forms a meaningful basis for subsequent activity.

Action Planning

As more effective results are generally achieved through purposeful pursuit than by chance, students benefit by developing a plan of individual steps that need to be taken to accomplish each task. Action plans can be developed through small group planning sessions, and can be guided through appropriate questioning:

- What do we wish to accomplish?
- How will we achieve results?
- When will the task be completed?
- What resources do we need?

Motivating

Active learning relies on students wanting to become involved. Students may choose to participate because of idea ownership, opportunities for choice, team spirit, group loyalty and interest. Motivation involves developing interests, facilitating involvement, and encouraging individual ownership and responsibility for learning.

Active Listening

Teachers and students are encouraged to engage in active listening. It demands high levels of concentration, devoting attention to the speaker, avoiding interrupting, being receptive, listening rather than just hearing, asking for clarification, elaboration and specific examples, and reserving judgement.

Discussing

Opportunity for discussion is an important part of active learning. It can be spontaneous and associated with the task, or more structured in becoming the task in itself. Ideally, discussion should involve everyone, with no one person being allowed to dominate the exchange of ideas.

An effective facilitator may use “icebreaker” activities to help members of a new group get to know each other, and encourage participants to stay on task.

The facilitator should be alert to the needs of the group and respond as appropriate without being dominant or dictatorial. By asking questions, such as “What if you tried ...?”, teachers can help students understand the essence of a problem and encourage promising ideas.

Negotiating

Negotiation involves reaching mutually acceptable agreements on what to do next, how to do it, how much time to take and what constitutes a successful outcome. Negotiation occurs between teachers and students and among the students themselves. Skills in negotiation improve with practice.

Networking

Networking involves the clustering of individuals who share a common interest or need. Networking can support learning, with members communicating openly and freely to share knowledge and expertise. Teachers are encouraged to establish support networks to help meet the needs of students. These may include:

- in-school support networks among school administrators, counsellors, teacher–librarians, other teachers, office managers
- community-based support networks among parents, local business and industry, community representatives.

Reflecting

Reflection involves looking back over a recently completed activity to summarize, reinforce and assess learning that has occurred. Reflection can occur on an independent or group basis, and be structured or unstructured. The following phrases may be used to initiate reflection on tasks completed.

- Before I began this course ...
- Some discoveries that I made were ...
- My work in this course was made easier because ...
- In this course I had difficulty with ... because ...
- One thing I would do differently next time is ...
- The part of this course that was most worthwhile was ...
- I would like to learn more about ...
- Now that I can ... I will be able to

APPLIED LEARNING/MAKING CONNECTIONS

CTS courses provide career-specific contexts through which students can reinforce, extend and apply learning from other core and optional programs. As students recognize the relevance of prior learning to their future lives, they are motivated to develop higher levels of competency.

Course planning should focus attention on ways to help students make connections between abstract concepts developed in other curriculum areas and their application in practical settings. Teachers can enhance students' ability to make connections across the curriculum by:

- increasing their sensitivity to the content of other subject areas—and working with other teachers to design courses, lessons and activities that strengthen linkages
- identifying prior learnings in other subject areas that apply in practical CTS contexts—and being prepared to review and/or teach particular core concepts/skills prior to their use in a particular CTS course
- designing projects and assignments that purposely link learnings from one discipline/subject to another—and collaborating with other teachers in their delivery to help students integrate learning across several CTS strands and/or other disciplines
- becoming familiar with the processes used for inquiry, research, reporting and decision making in other disciplines—and providing opportunities for students to use similar processes and vocabulary in CTS settings.

School staffs are encouraged to use teacher planning and student course timetabling opportunities to capitalize on the connections within and across subjects in order to strengthen student learning. All senior high school courses offered to students must be timetabled, taught, assessed and reported appropriately to Alberta Learning.

MAKING CONNECTIONS WITHIN CTS

Refer to Attachment 1:
Opportunities for Making
Connections within CTS.

Each CTS strand provides opportunities for students to develop competencies that link with, or enhance what they learn in other strands. The following strategies are suggested for enhancing connections among the 22 CTS strands.

Strand Clusters

Refer to the *CTS Guide to Standards and Implementation*, Section H: Linkages/Transitions.

Teachers may wish to develop familiarity with courses across various strand “clusters” in CTS; e.g., business education, home economics, industrial education, natural resources. Subsequent course delivery may involve combining courses from two or more strands and/or working with other teachers to share the delivery of the courses.

Process Strands

Familiarity with the scope and intent of the process strands (e.g., Enterprise and Innovation, Design Studies, Information Processing, Management and Marketing) can also enhance connections. Learning in these strands can be effectively contextualized when relevant courses are combined with other strands that are more specialized in context.

Assessment Practices

Refer to the *CTS Guide to Standards and Implementation*, Section G: Assessment Tools.

A number of generic and strand-specific assessment tools have been developed to help teachers assess learning outcomes within each CTS strand. Assessment tools establish benchmarks for student performance, and help assess student achievement fairly and equitably. As students become familiar with the criteria for assessment as defined through each tool, they begin to understand how the skills they develop in one course transfer to other areas of learning.

Integrating Concepts

Refer to Attachment 2:
Integrating Concepts in CTS.

A number of integrating concepts are developed in and reinforced across the CTS strands. These concepts include:

- career
- technology
- design
- enterprise
- environment
- family
- legislation
- safety
- service.

Focusing attention on these concepts as appropriate in course delivery heightens awareness of their significance in a variety of personal and work-related situations.

MAKING CONNECTIONS ACROSS THE CURRICULUM

Refer to Attachment 3:
Opportunities for Making
Connections Across the
Curriculum.

CTS courses provide career-specific contexts through which students can reinforce, extend and apply knowledge and skills developed in other core and optional programs. Course planning may well involve helping students to make connections between abstract concepts developed in other disciplines and their application in practical settings. The following strategies are suggested for enhancing connections in learning across the curriculum.

Concept Mapping

Refer to the *CTS Guide to Standards and Implementation*, Section H: Linkages/Transitions.

Science and mathematics are two core program areas where an understanding of core concepts and skills are often required prior to their application in practical CTS contexts. Teachers are encouraged to become familiar with the content and processes developed in other core and optional program areas so as to:

- maintain consistency in expectations and demands placed on students
- identify prior learnings, prerequisites and corequisites necessary for success in CTS courses
- avoid instances of overlap or repetition between CTS and other core/optional courses.

Application of Process

Refer to the *CTS Guide to Standards and Implementation*, Section G: Assessment Tools.

CTS students are also required to use many of the process skills developed in core courses. To support the application of process in CTS, developmental frameworks are provided for laboratory investigation, research, reports/presentations, issue analysis, and negotiation/debate. Each framework is consistent with the use of related processes in other disciplines—science, language arts, social studies—and can be used to guide students in their application of process in career-specific settings.

Vertical Alignment

Vertical alignment implies the sequencing of instruction across subject areas so that particular concepts and skills are developed prior to their application in practical CTS settings. Teachers are encouraged to use appropriate references to:

- identify relevant concepts/skills developed in core disciplines; e.g., mathematics, science, and the possible need to review these concepts/skills prior to their use in CTS courses
- identify prior learnings necessary for success in CTS courses, and the possible need to teach core concepts/skills if they are used in a CTS course prior to their development in a core discipline.

TEAMWORK/COOPERATIVE LEARNING

The ability to work as part of a team is essential in the workplace. The transition to a technology- and information-based society requires today's workers to pool their expertise. This trend can be expected to become even more pronounced in the future.

Refer to Attachment 4:
Characteristics of Effective
Group Members.

Cooperative learning also promotes active learning and encourages individual and group enterprise. Group learning can help students to develop increasingly independent and responsible learning habits and to become self-disciplined.

CTS offers many opportunities for students to work in team settings, formally and informally. The teacher's role in cooperative learning involves:

Refer to Form 3: Group
Member Effectiveness.

- communicating objectives, assignments and tasks
- determining the size and composition of groups
- arranging for appropriate facilities, equipment and materials
- informing the group of behavioural expectations
- informing both team leaders and members of their roles, and clarifying learning tasks with all
- acting as a resource person, coach and monitor
- evaluating the product of the group and performance of each group member.

ESTABLISHING LEARNING TEAMS

Students are often motivated through their involvement with other members of a team, and may develop a greater commitment to learning. Effective teamwork requires the establishment of learning groups whose size and nature are appropriate to the nature of the learning task.

- Discussion groups encourage students to become involved with their peers, and provide opportunities for students to explore classroom, community or national issues when given background information and an understanding of objectives.
- Brainstorming groups encourage creative thinking and problem solving, and require students to identify as many ideas or suggestions as possible within a given time frame. A quantity of ideas is desired, “hitchhiking” on the ideas of others is permitted, judgement is deferred until the end of the activity, and criticism is not allowed.
- Buzz groups involve small clusters of students who, for a short period of time, seek the solution to an issue or problem. A variety of solutions to the issue are sought, the pros and cons of each proposal considered, consensus developed and an appropriate alternative selected.
- Laboratory groups can be established to complete a project, conduct an investigation, or practice a skill demonstrated by the teacher. Assigned questions or research can become a part of the group activities.
- Tutorial groups can be established to assist students who need extra help or additional practice, or for students who would benefit from enrichment. Tutorial groups are led by a teacher or student, and focus on meeting individual needs.
- Role-playing groups help students understand the perspectives and feelings of others regarding a controversial topic. Each group member is given a role to assume and defend, regardless of their actual beliefs.

FACILITATING COOPERATIVE LEARNING

The following guidelines may be effective in facilitating teamwork and cooperative learning in CTS.

Establish Ground Rules

Ground rules represent an explicit, negotiated and accepted code of expectations. Ideally, they are enforced through peer group pressure. Specific ground rules can be negotiated, but also include some givens—safety, attendance, respect for others.

**Observe
Team Process**

Team activities are accomplished through interaction between individuals. This interaction should be observed by the teacher, who focuses on the nature of the interaction and its consequences. Observation of team process permits the identification of methods by which the team achieves its goals. Feedback on process allows the team to examine the way it works and explore ways of improving its effectiveness. The following questions suggest a possible approach to observing team process:

- How did the group begin the task?
- Was a leader appointed? If so, by whom?
- What method of appointment was used? Did a leader naturally emerge?
- How were decisions reached? If no decisions were reached, why not?
- Was there negotiation, confrontation, and/or cooperation?
- How was consensus established? Did the majority rule?
- Who spoke the most? The least?
- Were any members ignored? If so, why?

**Manage
Group Dynamics**

Interaction between team members can often be anticipated and directed. Management of group dynamics involves adjusting the number and composition of work groups in effective ways.

**Resolve
Conflict**

Conflict may arise among team members during an activity. Resolution of the conflict should, when possible, be a responsibility of team members. Conflict provides opportunities for students to develop critical skills in negotiation and mediation.

Students and teacher can expect to compromise, not only through negotiation and mediation, but also because of organizational constraints. For certain principles, however, there can be no compromise (see “Establish Ground Rules”).

**Plan for
Debriefing**

Effective debriefing summarizes, reinforces and assesses learning. The process should allow sufficient time to reflect on what has happened and what students have learned. Debriefing can occur within learning teams, and be prompted with key questions. Teachers can facilitate debriefing by:

- including time for debriefing in their long-range plans
- organizing students into smaller groups to give everyone an opportunity to share their feelings
- asking open-ended questions
- summarizing team accomplishments, the knowledge/skills developed, and team processes observed.

IOP–CTS TRANSITIONS

Refer to Attachment 5:
Comparing the IOP and CTS
Programs.

The Integrated Occupational Program (IOP) is designed for selected students who need special learning support systems, including hands-on learning and remediation in mathematics, science, social studies and language arts. In general, IOP courses and learning environments are characterized by:

- more hands-on learning with minimal reference to occupation-related theory
- greater emphasis on generic self-management skills than on career-specific competencies
- smaller class sizes, thus providing for more individual assistance in developing course-specific competencies.

Although many of the CTS strands/courses may extend competencies that IOP students have initially developed in 16–26–36 occupational courses, these connections do not represent course equivalencies. Curriculum and assessment standards defined for CTS courses are different from those defined for IOP occupational courses.

MANAGING CONCURRENT PROGRAM DELIVERY

Refer to Attachment 6:
Connections Between IOP
and CTS.

Some schools may schedule IOP students and CTS students in the same time block/facility. Teachers may choose to manage the concurrent delivery of CTS and IOP courses by:

- using connections between courses in CTS and the content of IOP occupational courses and student workbooks
- clarifying performance expectations for CTS and IOP students
- using a combination of IOP and CTS instructional materials to deliver the required IOP generic learnings
- providing support for IOP students to develop and apply academic competencies; e.g., mathematics, language arts
- developing a “buddy system” among IOP and CTS students
- providing IOP students with as much practice time as possible.

IOP students who wish to receive credit in CTS courses must meet all of the learner outcomes (learner expectations in 1997 document) to the standard established for each CTS course.

PLANNING SUCCESSFUL TRANSITIONS

After completing Grade 11 or Grade 12 IOP programs, some students may be able to successfully transfer from IOP occupational courses into related CTS strands/courses. Students who demonstrate high levels of success in the IOP mathematics, science, language arts and social studies curriculum—16–26–36 courses—are more likely to be able to:

- handle the increased requirements to read, write, make calculations and take measurements in the CTS program
- understand and apply theory that is fundamental to technical processes.

Refer to Attachment 6:
Connections Between IOP
and CTS.


Assessment of prior learning assists in identifying previously developed IOP competencies and their relationships to the learner outcomes of particular CTS courses. When choosing appropriate CTS strands/courses for IOP students, care should be taken to select from those that:


- link with and extend concepts/skills already introduced in related IOP occupational courses and student workbooks
- involve considerable hands-on learning with limited emphasis on theory
- support workplace entry.

A list of courses that may be suitable for IOP students transferring into CTS courses is provided in Attachment 6: Connections Between IOP and CTS.

Opportunities for Making Connections within CTS

CTS Strands	CTS Strands																							
	Agriculture	Career Transitions	Communication Technology	Community Health	Construction Technologies	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		
Agriculture																								
Career Transitions																								
Communication Technology																								
Community Health																								
Construction Technologies																								
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																								

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

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

Integrating Concepts in CTS

Integrating Concept	Agriculture	Career Transitions	Communication Technology	Community Health	Construction Technologies	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	
Career	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Technology	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Design	X		X		X	X		X		X	X	X		X		X			X	X			
Enterprise	X			X		X						X	X	X			X		X		X		
Environment				X			X	X		X			X				X			X	X		
Family						X						X	X	X			X						
Legislation	X			X				X	X				X		X		X	X	X	X			X
Safety							X			X		X				X	X	X	X		X	X	X
Service	X					X		X						X			X		X	X	X		

■—primary development X—application and reinforcement

Career: provides opportunities for students to identify and assess a wide range of career options, in their personal life and work life; students learn about career and occupational expectations and opportunities.

Technology: focuses on the use of all levels of technology, from simple hand tools to sophisticated computer and telecommunications technologies; students learn to select and manage available technology to respond to challenges.

Design: presents the concept of design as a generic strategy that can be used across the CTS strands for resolving problems; resolution may be in two- or three-dimensions and involve plans, systems, materials, etc.

Enterprise: develops students' ability to identify and respond to challenges and opportunities in creative ways, and to respond to change efficiently and effectively.

Environment: addresses a variety of relevant environmental issues; focuses attention on citizen/worker empowerment; develops strategies for problem solving through goal setting, planning, negotiation and consensus building.

Family: applies related concepts in contexts related to the individual's role in the family and the changing nature of the family as a support system and economic unit.



Legislation: develops understanding of the processes used in establishing and changing laws; makes specific reference to laws and/or statutes and general reference to regulations, policies and standards that imply legislation.

Safety: establishes expectations regarding safe and responsible behaviour in situations that involve the use of tools, equipment, materials and facilities.

Service: focuses attention on strategies for identifying and responding to client/customer needs in a proactive manner; addresses career options within the service sector.

Opportunities for Making Connections Across the Curriculum

CTS Strands	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 Languages
Agriculture																			
Career Transitions																			
Communication Technology																			
Community Health																			
Construction Technologies																			
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																			

-  Provides many direct links with course content; students reinforce, extend and apply a substantial number of knowledge/skill components in practical contexts.
-  Provides some links with course content, usually through the application of related technologies and/or processes.

Characteristics of Effective Group Members

Team members should:

- be on time and attend all group sessions
- take an active part, and contribute information, ideas and experience
- display a positive, rather than negative or critical approach
- show respect for the ideas and opinions of others
- listen when others speak, be empathetic and hear others out
- respect and interact with other members
- respect individual differences
- avoid prejudice and bias
- seek, and be open to, the ideas and suggestions of others
- encourage noncontributors to take part
- accept responsibility for the consequences of their own behaviour
- be sensitive to the feelings and concerns of others
- avoid self-serving, judgemental, blaming, grandstanding or storytelling behaviour
- stay on topic
- be genuine and open
- support others, and help them articulate their ideas
- help phrase ideas and statements
- help the group by clarifying, mediating, praising and encouraging
- help make summaries and reach conclusions
- avoid distracting the group
- use problem solving, decision making and conflict resolution frames of reference

- confine the argument to ideas and not engage in personal attacks
- act as group leader, recorder, discussion evaluator or group effectiveness monitor, as appropriate.

Group leaders should:

- clarify the problem or issue
- initiate discussion
- keep discussion moving
- see that all phases of the problem are discussed
- attempt to keep discussion on topic
- encourage the participation of all members
- be objective
- rephrase and clarify statements, or have others do this
- ensure that summaries or conclusions are made
- ensure that all members are treated with respect
- respect the confidence of the group
- summarize the thoughts of the group in an accurate manner.

Comparing the IOP and CTS Programs

Student Placement

	IOP	CTS
Target Group	At-risk students (12.5 to 19 years of age).	All junior and senior high school students.
Grade Levels	Specific curriculum designed for Grades 8, 9, 10, 11, 12.	Designed around levels, not grades—introductory, intermediate, advanced (Grades 7–12).
Proportion of Student Population	IOP students represent 4–8% of the junior/senior high school population. (In 1994–95, there were approximately 5,000 students in 180 schools.)	Most junior/senior high school students receive 3 or more credits in CTS.
Learning Styles	Concrete learning experience.	Concrete to abstract.
Expectations for Student Performance	Students are expected to demonstrate generic skills within an occupational context with limited emphasis on theory. Grading merges student ability and effort.	Students must demonstrate a set of competencies to a specified standard, based on workplace and post-secondary expectations. Grading only occurs after the minimum competencies have been met.
Credentialing Opportunities	A Certificate of Achievement is awarded to students who have completed 80 credits —a minimum of 27 credits in academic courses, 13 credits in optional courses and 40 credits in IOP occupational courses.	A High School Diploma is awarded to students who have completed 100 credits and meet the requirements specified for the diploma. External credentialing opportunities have been identified for specific CTS courses.


Program Delivery

	IOP	CTS
On-campus Learning Experiences	<i>On-campus learning</i> (classroom/lab) is primarily used for core program and selected sections of occupational courses.	Most programs are delivered on-campus, depending on student interest, school facilities and instructional expertise.
Off-campus Learning Experiences	<i>Community partnerships</i> is a required component for delivery of occupational courses. This may include off-campus learning, job shadowing and mentoring.	<i>Off-campus learning</i> can be used to deliver competencies outlined in courses. Student achievement is reported using CTS courses assessment tools.

Connections Between IOP and CTS

This chart identifies connections between CTS strands and IOP 16–26–36 occupational courses. The connections do not indicate course equivalencies. IOP students wishing to receive credit in CTS courses must meet all of the learner outcomes (learner expectations in 1997 document) to the standard set for each CTS course.

CTS STRANDS	Jr. High Occupational Themes			Senior High School IOP Occupational Course Sequence																				
	Business Education	Personal and Public Service	Technical / Occupational	Agricultural Production	Agricultural Mechanics	Horticultural Services	Business Services	Office Services	Building Services	Construction Services	Crafts and Arts	Technical Arts	Natural Resource Services	Child and Health Care	Esthetology	Fashion and Fabric Services	Hair Care	Commercial Food Preparation	Food Services	Maintenance and Hospitality Services	Automotive Services	Service Station Services	Warehouse Services	
Agriculture																								
Career Transitions																								
Communication Technology																								
Community Health																								
Construction Technologies																								
Cosmetology Studies																								
Design Studies																								
Electro-Technologies																								
Energy and Mines																								
Enterprise and Innovation																								
Fabrication Studies																								
Fashion Studies																								
Foods																								
Forestry																								
Information Processing																								
Logistics																								
Management and Marketing																								
Mechanics																								
Tourism Studies																								

 Connections exist between some courses in this CTS strand and content of the IOP student workbook.

The following courses may be suitable for IOP students transferring into CTS courses because they:

- link with and extend concepts/skills previously introduced in related IOP occupational courses and student workbooks
- involve considerable hands-on learning with limited emphasis on theory
- support workplace learning.

Agriculture

- AGR1010: Agriculture: The Big Picture
- AGR1030: Production Basics
- AGR1060: Consumer Products & Services
- AGR1070: Basic Landscape/Turf Care
- AGR1080: Basic Floral Design

Career Transitions

- CTR1010: Job Preparation
- CTR1210: Personal Safety (Management)

Communication Technology

- COM1020: Media & You
- COM1030: Photography 1
- COM1050: Printing 1

Community Health

- CMH1040: Caring for Children
- CMH1050: Child Development
- CMH1060: Home Care 1

Construction Technologies

- CON1010: Basic Tools & Materials
- CON1070: Building Construction
- CON1120: Project Management
- CON1130: Solid Stock Construction
- CON1160: Manufactured Materials

Cosmetology Studies

- COS1010: Personal Images
- COS1020: Hair Graphics 1
- COS1030: Hair & Scalp Care 1
- COS1040: Forming & Finishing 1
- COS1050: Permanent Waving 1
(The Physical Process)
- COS1060: Skin Care 1 (Basic Principles)
- COS1070: Manicuring 1
- COS1080: Theatrical Makeup 1
(Basic Principles)

Design Studies

- DES1010: Sketch, Draw & Model
- DES1020: The Design Process
- DES1030: 2-D Design Fundamentals

Electro-Technologies

- ELT1010: Electro-assembly 1

Energy and Mines

- ENM1010: Overview of Alberta Geology
- ENM1020: Nonrenewable Resources

Fabrication Studies

- FAB1040: Oxyacetylene Welding
- FAB1050: Basic Electric Welding
- FAB1100: Fabrication Principles

Fashion Studies

- FAS1050: Repair & Recycle
- FAS1070: Creative Yarns/Textiles

Foods

- FOD1010: Food Basics
- FOD1020: Baking Basics
- FOD1050: Fast & Convenience Foods

Forestry

- FOR1010: Why Forestry?
- FOR1020: Forest Regions of Canada
- FOR1050: Mapping & Aerial Photos
- FOR1060: Measuring the Forest 1

Information Processing

- INF1020: Keyboarding 1
- INF1030: Word Processing 1

Logistics

- LOG1010: Logistics
- LOG1020: Warehouse & Distribute 1

Management and Marketing

- MAM1010: Management & Marketing Basics
- MAM1020: Quality Customer Service
- MAM1030: Communication Strategies 1

Mechanics

- MEC1010: Modes & Mechanisms
- MEC1020: Vehicle Service & Care
- MEC1040: Engine Fundamentals
- MEC1090: Electrical Fundamentals
- MEC1110: Pneumatics & Hydraulics
- MEC1150: Ride & Control Systems
- MEC1160: Structures & Materials
- MEC1170: Metal Forming & Finishing
- MEC1190: Surface Preparation 1

Tourism Studies

- TOU1030: Quality Guest Service
- TOU1040: The Food Sector

