

**2004
AMENDMENTS
to the
CTS Manual for Administrators, Counsellors
and Teachers**

Front Section

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Appendix 1

1. **Replace** page 74 with **revised** page 74.
2. **Replace** 2003 Backgrounder Brochure with **revised** 2004 Backgrounder Brochure.
3. **Replace** 2003 Career Transitions Brochure with **revised** 2004 Career Transitions Brochure.
4. **Replace** 2003 Communication Technology Brochure with **revised** 2004 Communication Technology Brochure.
5. **Replace** 2003 Electro-Technologies Brochure with **revised** 2004 Electro-Technologies Brochure.

Appendix 5

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Appendix 6

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PROGRAM OVERVIEW

WHAT IS CTS?

Refer to the *CTS Guide to Standards and Implementation*, Section A: Program Rationale and Philosophy.

CTS is an optional program designed for Alberta's secondary school students. As a program of choice, CTS helps junior and senior high school students to:

- develop skills they can apply in daily living now and in the future
- investigate career options and make effective career choices
- prepare for entry into the workplace or further learning.

The 1-credit course structure of CTS enables schools to design unique clusters of courses that meet the needs of students and take advantage of community resources. Developed across levels rather than grades, CTS has multiple entry points and provides junior and senior high school students with access to a common curriculum.

The CTS curriculum is organized into strands and courses as outlined in the following chart. Each strand represents a group of courses designed to support broad career and occupational opportunities. Courses are the building blocks for each strand, and defines what a student is expected to know and be able to do.

CTS Strands	Number of Courses
Agriculture	33
Career Transitions	31
Communication Technology	34
Community Health	31
Construction Technologies	46
Cosmetology Studies	58
Design Studies	31
Electro-Technologies	47
Energy and Mines	26
Enterprise and Innovation	8
Fabrication Studies	44
Fashion Studies	29
Financial Management	16
Foods	37
Forestry	21
Information Processing	53
Legal Studies	13
Logistics	12
Management and Marketing	20
Mechanics	54
Tourism Studies	24
Wildlife	17

WHO IS AFFECTED BY CTS?

CTS was developed to accommodate the varied experiences and needs of all learners in Alberta's junior and senior high schools. Effective September 1997, the CTS program replaced the former practical arts program, including courses in business education, home economics, industrial arts and vocational education. A list of CTS strands and the former practical arts courses they replace is provided at the end of this section in Chart 1: CTS Strands Replacing Practical Arts Courses.

Refer to the *Guide to Education: ECS to Grade 12, Program Planning*.

CTS is part of the junior and senior high school optional course selection, and is therefore a program of choice for junior and senior high school students. Junior high school students can access up to 450 hours of instruction in CTS throughout their junior high school years. The CTS competencies that students develop while in junior high can form an important foundation for further learning at the high school level. Senior high school students may choose to register in CTS courses to meet optional course requirements for the Alberta High School Diploma. Based on current enrollment patterns, about 75 per cent of Alberta's students will earn at least 30 high school credits in CTS.

HOW WAS CTS DEVELOPED?

Development of the CTS program was based on a review of all the former practical arts programs. Through an extensive consultation process, key interest groups were asked to identify elements of these programs that should continue as well as changes that should be made. Former practical arts programs were analyzed in terms of learning environments, enrollment patterns and delivery methods.

Refer to:

- *A Status Report on the Practical Arts Programs Within Secondary Schools in Alberta*, 1989
- *Trends and Issues Affecting Practical Arts in Alberta Secondary Schools: A Review of Research*, 1989
- *Framework for Change: Career and Technology Studies in Secondary Schools in Alberta*, 1990.

In addition, research was conducted to identify:

- trends and issues affecting specific practical arts programs and secondary education in general
- promising practices that could serve as models for curriculum development and implementation.

Based on the results of this consultation and research, a framework for the CTS program was established that included guiding principles and a structure for curriculum development.

The development process included extensive consultation with key interest groups relevant to each strand; i.e., teachers, schools and school systems, post-secondary institutions, business and industry, other government departments. Throughout the development period, over 2400 Albertans were involved in developing and validating the 22 CTS strands. The consultation process used throughout the development of CTS is illustrated at the end of this section in Chart 2: CTS Advisory and Consultation Network.

Refer to the *Communication Technology Guide to Standards and Implementation*.

Communication Technology

The Communication Technology strand provides students with a broad understanding of the impact that presentation and communication technology, print, photography and media design have on society. Students develop competencies related to presentation techniques, photography, print communication and the use of audio, video and digital technologies.

Refer to the *Electro-Technologies Guide to Standards and Implementation*.

Electro-Technologies

The Electro-Technologies strand focuses attention on electric and electronic systems and the role of electronics in daily life, major research and scientific developments. Students develop competencies related to fabrication and service principles, power systems, computer logic systems, computer networking systems, communication systems, and robotic and control systems.

Learning with Technology

The CTS curriculum recognizes the expanding influence of technology in all learning environments. CTS students use and apply technology in strand-specific contexts to:

- develop an understanding of difficult concepts and relationships
- perform tasks that are technology-based
- access a range of current information
- collaborate with other learners on a project.

Learning outcomes relevant to the use of technology are embedded throughout the CTS curricula, and extend and apply a range of competencies identified in the ICT curriculum—including those within the category of inquiry, decision making and problem solving. Many CTS strands and courses require students to:

- refine and extend their skills in the use of all levels of technology, from simple hand tools to sophisticated computer and telecommunications technologies
- select and manage available technology to respond to challenges
- use information, communication or multimedia technology as an aid to learning.

STRATEGIES FOR INSTRUCTION IN CTS

Instruction in CTS should use a range of strategies and methodologies that suit the needs of the learner and the nature of learning taking place. No one strategy is appropriate for all courses or learnings within a course, nor for all students. Key to helping students develop career-specific and basic employability skills within the context of any course are:

- flexible time frames for learning
- access to a range of resources and learning activities
- support, encouragement and opportunities for success.

Teachers are encouraged to plan learning experiences that help students:

- understand the outcomes and standards of performance required to succeed in each course
- link theoretical and practical components of learning within each course
- make connections between learning in a particular course, and:
 - what is learned in other CTS strands and curriculum areas
 - future plans for the workplace and/or related post-secondary programs
- become self-directed lifelong learners who are able to adapt to change.

Suggestions for developing a positive CTS learning environment are provided at the end of this section in Chart 3: Positive Classroom Climate Checklist.

Metric and Nonmetric Measurement

Many CTS strands and courses involve the development and use of measurement skills. While SI units have become the principal measuring system used in provincial curriculum, the present use of imperial and other nonmetric units in technical and trade-related occupations makes the application of other measurement systems unavoidable. Students should be given opportunities to develop measurement skills consistent with those required in future career paths. Teachers should:

- use SI units of measurement wherever possible in activities
- use imperial and other nonmetric units only where such measurement parallels its common usage in occupations.

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 the 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. Teachers need to:

- recognize the different ways in which students learn, and plan activities that enable students to use learning processes appropriate to their needs

Refer to Appendix 4:
Strategies for Instruction in
CTS

Further inquiries regarding basic instruction funding should be directed to the School Finance Branch, Alberta Learning.

Capital Funding

Capital funds are made available each year for new construction and major modernization projects. This funding is provided to school boards for capital projects that may include the upgrading of an existing CTS lab, construction of new space, and associated equipment costs.

Further inquiries regarding capital funding should be directed to Alberta Infrastructure.

POLICIES AND GUIDELINES FOR IMPLEMENTING CTS COURSES

Refer to Appendix 6: Policies and Guidelines for Implementing CTS Courses in Senior High Schools.

Refer to the *Funding Manual for School Authorities*.

Appendix 6 provides a summary of the policies and guidelines, as stated in the *Guide to Education: ECS to Grade 12* and the *Funding Manual for School Authorities*, for planning, delivering and reporting CTS courses in senior high schools.

The information included in Appendix 6 clarifies the practices to be followed by senior high schools in:

- providing access to instruction
- addressing prerequisite requirements for CTS courses
- assessing CTS course completion
- determining when a CTS course is eligible for funding
- maintaining the documentation required to support funding claims
- reporting CTS courses
- programming for application and transfer of learning.

Refer to Appendix 2:
Defining CTS Learning
Environments—Strand and
Course Parameters.

5. IDENTIFY STRANDS AND COURSES TO BE OFFERED

No one school is expected to offer all the strands and all the courses in CTS. In order to meet the needs of most students, schools need to target certain strands and courses for delivery. It is useful to consider:

- related courses formerly offered through the practical arts
- reasons for offering the present selection of courses
- the views of students and the community regarding the relevancy of current course offerings
- the interests and needs of students and the backgrounds and expertise of school staff
- new strands/courses that could be offered to students if the use of present and potential school- and community-based resources was maximized
- the facility and equipment guidelines for proposed strands/courses
- the instructional qualifications required for offering proposed strands/courses and the inservice requirements of teachers.

6. IDENTIFY POTENTIAL BARRIERS AND POSSIBLE SOLUTIONS

The barriers that may affect the implementation of CTS are unique to each school and school system. Barriers may include:

- program credibility within the school and the community—acceptance by community/parents/students of programs that lead to positive career options
- access to resources—teaching expertise, facilities, equipment and instructional materials.

While most CTS courses can likely be implemented through the use of existing labs, program delivery can be expanded through off-campus learning experiences, arrangements with neighbouring schools and/or through distance learning technologies. The involvement of community members in planning course offerings can be an effective strategy in establishing innovative solutions to implementation barriers.

7. GAIN COMMITMENTS FOR ACTION AND SECURE APPROVALS

A broad base of support among school and community members is critical to establishing successful implementation practices. It is recommended that approval and commitment for action be obtained from all players, particularly teachers, principals and school system administrators.

Ongoing communication with key players increases local support for actions taken at the school and school system level to implement CTS.

8. CHECK PROGRESS

Take time periodically to review the original goals for implementation as outlined in Step 2: Plan of Action. Also review the Sample Implementation Plan as outlined in Attachment 1.

MARKETING CTS IN THE SCHOOL AND COMMUNITY

Schools and school systems are encouraged to design a communication plan to inform all client and stakeholder groups about the goals and structure of the CTS program. The communication plan should include an initial orientation to CTS and ongoing strategies to reinforce and expand understanding of the CTS program and how it is evolving in the school and community.

To assist in communicating information about CTS, information packages can be developed and modified to address the needs of different groups. A number of materials are available for communicating information about CTS within the school and community.

CTS PROMOTIONAL MATERIALS

Refer to Attachment 5:
Blackline Masters—CTS
Promotional Materials.

The following information brochures on the CTS program are provided to schools for use as blackline masters:

- *CTS Backgrounder*
- *CTS Strand Brochure Series.*

CTS helps students make cross-curriculum connections.

CTS reinforces and expands what students learn in core and other optional secondary programs, including English language arts, mathematics, science, fine arts and physical education programs.

Support materials have been developed to assist CTS teachers, as well as other teachers, to identify and reinforce the connections throughout the instructional process.

CTS helps students build employability skills.

In each course, CTS students are expected to demonstrate the basic competencies—employability skills—designed to assist them in daily living and in the workplace. These basic competencies include:

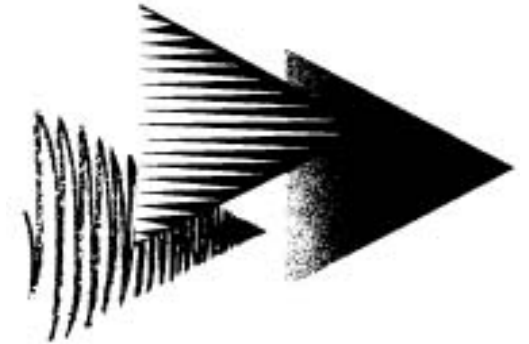
- managing learning
- managing resources
- problem solving and innovation
- communicating effectively
- working with others
- demonstrating responsibility.

FOR FURTHER INFORMATION ABOUT CTS:

- visit the Alberta Learning Web site at <http://www.learning.gov.ab.ca/k_12/curriculum/bySubject/cts/>
- contact the Program Manager, Career and Technology Studies, Curriculum Branch, Alberta Learning, telephone 780-427-2984, fax 780-422-3745. Inside Alberta, dial 310-0000 to be connected toll free.

School systems/schools please contact the CTS Program Coordinator for your jurisdiction.

Career & Technology Studies



BACKGROUND

(Revised 2004)

WHAT IS CTS?

Career and Technology Studies (CTS) is a program designed to help Alberta students:

- develop skills they can apply in daily living now and in the future
- make effective career choices
- prepare for entry into the workplace or further learning opportunities.

As of September 1997, CTS replaced all junior and senior high school practical arts courses—business education, home economics, industrial education. This optional program affects all junior and senior high schools in Alberta (over 740). CTS was phased in beginning in 1992.

Over 2400 Albertans, teachers, post-secondary institutions, business and professional groups and other government departments, have been involved in the development of this curriculum. The CTS curriculum is also offered in some adult learning environments and is being considered for use in other provinces and countries.

The CTS curriculum structure is different from other courses, allowing schools more opportunity to design programs that are relevant to student needs and make more efficient use of school and community resources.

CTS is organized into *strands* and *courses*. A *strand* is a group of courses designed to support broad career and occupational opportunities. A *course* defines what the student is expected to know and be able to do. Most students take 25 hours to complete each course, although some students need more or less time. At the senior high school level, one course, successfully completed, equals one credit.

CTS consists of 22 strands, and over 650 courses, which are available to junior and senior high schools across Alberta.

CTS Strands	No. of Courses
Agriculture	33
Career Transitions	31
Communication Technology	34
Community Health	31
Construction Technologies	46
Cosmetology Studies	58
Design Studies	31
Electro-Technologies	47
Energy and Mines	26
Enterprise and Innovation	08
Fabrication Studies	44
Fashion Studies	29
Financial Management	16
Foods	37
Forestry	21
Information Processing	53
Legal Studies	13
Logistics	12
Management and Marketing	20
Mechanics	54
Tourism Studies	24
Wildlife	17

The curriculum is competency based and recognizes prior learning both from formal schooling and community or personal initiatives. Standards for each of the courses are clearly specified and rigorous.

Senior high school transcripts report only those CTS courses that students have completed successfully.

WHO TAKES CTS?

During the 2002–2003 school year, approximately 90% of Alberta senior high school graduates earned 6 or more credits in CTS courses. During the same school year, students awarded an Alberta High School Diploma earned an average of 118 credits in total with 18 credits in CTS courses.

HOW DOES CTS AFFECT STUDENT LEARNING?

CTS improves student transitions into the workplace and post-secondary programs.

One of the key goals in CTS is to improve student transitions into the workplace and into related post-secondary programs.

Post-secondary institutions participated in the development and validation of CTS strands and courses to ensure alignment with further learning opportunities. Many advanced-level CTS courses align with the content of introductory post-secondary courses in the same content areas. Students who pursue advanced levels of CTS may achieve the competencies required in some introductory post-secondary courses.

In addition, a number of credentials and certificates recognized by professional groups and in the workplace can also be obtained through CTS. For example, a St. John Ambulance Certificate for First Aid can be obtained through the CTS Community Health strand. CTS programs also encourage a variety of delivery approaches, including off-campus programs and workplace learning.

What ELSE do I need to know?

Because of its emphasis on practical employment skills, Career Transitions supports your entire high school experience.

This CTS strand is linked to what you learn in:

- Personal Development
- Social Studies
- all other CTS strands.

FOR FURTHER INFORMATION ABOUT CTS:

- visit the Alberta Learning Web site at http://www.learning.gov.ab.ca/k_12/curriculum/bySubject/cts/
- contact the Program Manager, Career and Technology Studies, Curriculum Branch, Alberta Learning, telephone 780-427-2984, fax 780-422-3745. Inside Alberta, dial 310-0000 to be connected toll free.

School systems/schools please contact the CTS Program Coordinator for your jurisdiction.



Career and Technology Studies



CAREER TRANSITIONS

(Revised 2004)

WHAT'S it all ABOUT?

Choosing what you want to do after high school, and knowing how to achieve that goal, can be challenging. The Career Transitions strand gives you the skills you need to make critical decisions as you move toward graduation. It helps you:

- develop decision-making skills
- recognize the value of the knowledge and skills you already possess
- set realistic career goals
- understand the expectations of employers
- prepare for the experience of finding a job.

What will I LEARN in Career Transitions?

You learn about:

- the job market and employment trends
- selected occupations
- good work habits
- resume writing
- interview skills
- project design and management
- leadership principles and practices
- personal and workplace safety.

Career Transitions Courses

Introductory

- Job Preparation
- Project 1A and 1B
- Personal Safety (Management)
- Client Service 1

Intermediate

- Job Maintenance
- Governance & Leadership
- Project 2A, 2B, 2C, 2D and 2E
- Workplace Safety (Practices)
- Client Service 2
- Career Directions—Expansion

Advanced

- Preparing for Change
- Organizational Leadership
- Leading for Change
- Project 3A, 3B, 3C, 3D and 3E
- Practicum A, B, C, D and E
- Safety Management Systems
- Client Service 3
- Career Directions—Transitions

WHERE can this TAKE me?

Career Transitions provides knowledge and skills that can be of value no matter what career you choose. It provides essential job search and employment skills that can be used throughout your work life.

You may be able to use some of the Career Transitions courses to gain certificates in First Aid and Job Safety Skills.

See your counsellor for more information.

What ELSE do I need to know?


CTS Communication Technology courses strongly support what you learn in:

- Fine Arts
- English Language Arts
- Social Studies
- CTS Design Studies
- CTS Enterprise and Innovation
- CTS Information Processing.

FOR FURTHER INFORMATION ABOUT CTS:

- visit the Alberta Learning Web site at <http://www.learning.gov.ab.ca/k_12/curriculum/bySubject/cts/>
- contact the Program Manager, Career and Technology Studies, Curriculum Branch, Alberta Learning, telephone 780-427-2984, fax 780-422-3745. Inside Alberta, dial 310-0000 to be connected toll free.

School systems/schools please contact the CTS Program Coordinator for your jurisdiction.



Career and Technology Studies



COMMUNICATION TECHNOLOGY

(Revised 2004)

WHAT'S it all ABOUT?

The information age of the 21st century requires effective communication, using a variety of media. Communication Technology can provide you with a broad awareness of the impact that presentation and communication technology, print, photography, and media design and application have in every aspect of your life.

The CTS Communication Technology strand provides an opportunity for you to explore:

- presentation techniques
- photography
- print communication
- audio/video/digital.

What will I LEARN in Communication Technology?

At the introductory level, you study:

- presentation and communication
- photography
- printing
- audio/video production
- animation
- digital design.

At the intermediate and advanced levels, you study:

- media design and analysis
- script writing
- photojournalism.

Communication Technology Courses

Introductory

- Media & You
- Photography 1
- Digital Imaging 1
- Printing 1
- Audio/Video Production 1
- Animation 1
- Digital Design 1

Intermediate

- Media Design & Analysis 1
- Script Writing 1
- Photography 2
- Photographic Communication
- Photographic Techniques 1
- Special Effects Photography
- Digital Imaging 2
- Printing Techniques 1
- Printing Applications 1
- Audio/Video 1
- Audio/Video 2
- Animation 2
- Digital Design 2

Advanced

- Presentation & Communication 3
- Media Design & Analysis 2
- Script Writing 2
- Photography 3
- Photojournalism
- Photographic Techniques 2
- Colour Photography
- Digital Imaging 3
- Printing Techniques 2
- Printing Applications 2
- Audio 3
- Video 3
- Animation 3
- Digital Design 3

WHERE can this TAKE me?

The knowledge and skills gained from studying communication technology can be used in a variety of career fields and numerous post-secondary education choices. These skills give students an edge in presenting their views and ideas, in understanding others and in completing projects. The areas most affected by communication technology include:

- animation
- graphic design
- journalism
- photography
- radio and television arts.

What ELSE do I need to know?

CTS Electro-Technologies courses strongly support what you learn in:

- Drama
- English Language Arts
- Mathematics
- Physics
- Science
- CTS Career Transitions
- CTS Community Health
- CTS Construction Technologies
- CTS Design Studies
- CTS Enterprise and Innovation
- CTS Fabrication Studies
- CTS Information Processing
- CTS Mechanics.

FOR FURTHER INFORMATION ABOUT CTS:

- visit the Alberta Learning Web site at <http://www.learning.gov.ab.ca/k_12/curriculum/bySubject/cts/>
- contact the Program Manager, Career and Technology Studies, Curriculum Branch, Alberta Learning, telephone 780-427-2984, fax 780-422-3745. Inside Alberta, dial 310-0000 to be connected toll free.

School systems/schools please contact the CTS Program Coordinator for your jurisdiction.



Career and Technology Studies



ELECTRO- TECHNOLOGIES

(Revised 2004)

WHAT'S it all ABOUT?

In a rapidly changing and expanding technological world, we are constantly surrounded by an increasing number of electric and electronic systems. These systems play a significant role in our day-to-day lives, and in the success of major research and development in science.

The CTS Electro-Technologies strand provides an opportunity for you to explore:

- fabrication and service principles
- power systems
- computer logic systems
- computer networking systems
- communication systems
- robotic and control systems.

What will I LEARN in Electro-Technologies?

At the introductory level, you study:

- electro-assembly
- electronic power supply
- logic principles
- analog communication.

At the intermediate and advanced levels, you study:

- branch circuit wiring
- digital technology
- radio frequency communication
- magnetic control devices
- power generation and transformation
- computer networking principles and applications
- microprocessor interfacing applications
- robotics.

Electro-Technologies Courses

Introductory

- Electro-assembly 1
- Conversion & Distribution
- Electronic Power Supply 1
- Digital Technology 1
- Control Systems 1
- Analog Communication 1
- Electronic Communication
- Security Systems 1
- Robotics 1

Intermediate

- Electro-assembly 2
- Electrical Servicing
- Branch Circuit Wiring
- Electronic Power Supply 2
- Digital Technology 2
- Computer Technology
- Control Systems 2
- Analog Communication 2
- Radio Communication
- Security Systems 2
- Electro-optics
- Magnetic Control Devices
- Robotics 2
- Electronic Controls
- Network Structures
- Network Media & Devices
- OSI Model (Open System Interconnection)
- Network Protocols
- Local Area Networks

Advanced

- Electro-assembly 3
- Electronic Servicing
- Power Systems & Services
- Generation/Transformation
- Digital Technology 3
- Digital Applications
- Microprocessors
- Microprocessor Interface
- Analog Communication 3
- Amplifiers
- Data/Telemetry Systems
- Motors
- Robotics 3

- Control Applications
- Network Operating Systems
- Routing Fundamentals
- Wide Area Networks
- Internet Processes
- Network Management

WHERE can this TAKE me?

The CTS Electro-Technologies strand offers you skills and knowledge in electronics and electrical applications, including fabrication or servicing of electronic equipment, house wiring, use of remote control devices and programming of robots. You will be introduced to a wide variety of occupations in this field, including:

- audio and video recording technicians
- avionics technicians
- broadcast technicians
- communication electricians
- electrical and electronic engineers
- electrical products manufacturing supervisors
- fibre optics technicians
- laser technicians
- power system electricians
- utilities managers.

Post-secondary Education! Many careers in electro-technologies require some form of post-secondary education. In Alberta, numerous public, private and vocational colleges offer apprenticeship programs in this area.

In addition, you may be eligible to apply for either credits or advanced standing in some post-secondary programs.

See your counsellor for more information.

PATHWAYS INTO POST-SECONDARY

Involvement of business/industry, professional associations and post-secondary programs in the development of CTS curriculum has enhanced its relevance and credibility in career contexts. Many students who complete intermediate- and advanced-level courses in one or more CTS strands develop competencies that align with those expected by post-secondary institutions.

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

A summary of post-secondary programs offered at the college, technical and university level, as well as through Apprenticeship and Industry Training, is published periodically in *It's About Time to Start Thinking About Your Future* by Alberta Learning and is available for purchase from the LRC.

RECOGNITION OF PRIOR LEARNING

Prior learning in CTS may be recognized at the post-secondary level in a variety of ways, including:

- recommended learning
- preferred entrance
- prerequisite to entry
- time credit
- partial credit
- advanced placement.

Refer to:

- *CTS Guide to Standards and Implementation*, Section H: Linkages/Transitions

While agreements with post-secondary institutions vary in terms of how prior learning in CTS is recognized, most provide preferred entrance, advanced placement and/or advanced standing for CTS students who have successfully completed designated courses or course sequences. Schools and school systems are encouraged to contact local post-secondary institutions regarding:

- the status of existing articulation agreements established at the provincial level
- other ways of having locally designed CTS courses recognized by post-secondary institutions.

Schools and teachers may decide to work with local post-secondary institutions in establishing a basis for recognizing prior learning in locally designed CTS courses.

Advanced level courses are accepted in lieu of 30-level practical arts courses in qualifying for post-secondary entrance.

ARTICULATION WITH ALBERTA'S DESIGNATED TRADES AND OCCUPATIONS

Articulation agreements have been established between CTS strands and a number of the Alberta's designated trades and occupations. Through these agreements, students who complete required CTS courses and successfully challenge appropriate theory and practical examinations may qualify for:

- a portion of the in-school training program for a trade or occupation, and/or
- on-the-job time credit within the trade or occupation.

The following chart summarizes articulation agreements with Alberta's designated trades and occupations that are currently in place.

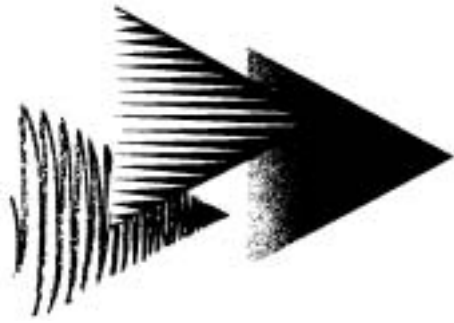
<i>Trades and Occupations</i>	<i>Length of Program</i>	<i>Number of Required CTS 1-credit Courses</i>	<i>Credit for Formal Training</i>	<i>On-the-Job Time Credit</i>
Automotive Service Technician	4 yrs	25 35	1 st Period 1 st & 2 nd Period	Nil 525 hrs
Cabinetmaker	4 yrs	30	Nil	408 hrs
Carpenter	4 yrs	25	1 st Period	Nil
Cook	3 yrs	17 30	1 st Period 1 st & 2 nd Period	Nil 450 hrs
Electrician	4 yrs	25	1 st Period	Nil
Electronic Technician	4 yrs	25	1 st Period	Nil
Hairstylist	2 yrs	35 55	1 st Period 1 st & 2 nd Period	525 hrs 700 hrs
Outdoor Power Equipment Technician (any branch)	4 yrs	20	1 st Period	Nil
Warehousing			Partial	Nil
– Basic	12 mo	4		
– Intermediate	12 mo	3		
– Technician	12 mo	5		
Welder	3 yrs	28	1 st Period	Nil

Refer to Attachment 2:
Apprenticeship Articulation
Agreements.

Further details regarding each articulation agreement—including correlations to CTS strands and courses—are provided as an attachment to this document.

Refer to Attachment 3:
Directory of Alberta Career
Development Centres.

For more information, contact the Apprenticeship and Industry Training Division or access their Web site at www.tradesecrets.org. A list of local Career Development Centres throughout Alberta is also provided as an attachment.



**CAREER &
TECHNOLOGY
STUDIES**

**Manual for Administrators,
Counsellors and Teachers**

Appendix 6:

**Policies and Guidelines
for Implementing
CTS Courses in
Senior High Schools**

Revised 2004

The information provided in this appendix may be time sensitive; teachers, counsellors and administrators are encouraged to consult the current Guide to Education: ECS to Grade 12 and Funding Manual for School Authorities on an ongoing basis about policies and guidelines for implementing CTS courses.

ACCESS TO INSTRUCTION

Reference:
Guide to Education: ECS to Grade 12, Senior High School Programming.

Any method of instructional delivery must ensure that each student has access to at least 25 hours of instruction per credit. Access to instruction means:

- certificated teachers are assigned to deliver or supervise the instruction
- the instruction, and evaluation of performance, is based on the outcomes in an approved program of studies
- there are designated times when teachers are available to the students
- students know, prior to enrolling in courses, how and when they will be able to access the instructional expertise of teachers.

Instructional services must be timetabled for both students and teachers. Schools can deliver a block of three, 1-credit CTS courses for 62.5 hours; however, schools must ensure that students meet all of the outcomes of each 1-credit course.

PREREQUISITE COURSES

Reference:

- *Guide to Education: ECS to Grade 12, Awarding Course Credits*
- *Funding Manual for School Authorities, Section 1.2 Basic Instruction – Grades 1–12.*

Prerequisite course requirements are essential to maintaining safety standards and appropriate instructional sequence in CTS. The waiver provision for prerequisites in regular (non-CTS) courses does not apply to CTS. Prerequisite requirements for CTS courses must be met through successful completion of the prerequisite course, or successful challenge of the prerequisite course.

The only time in which a CTS 1-credit (prerequisite) course may be waived is when the senior high school principal accepts the recommendation of a junior high school principal to place a Grade 10 student into a higher level 1-credit course that requires a prerequisite. In this case, the senior high school principal would place the student in the higher level 1-credit course, in effect waiving the lower level 1-credit course. Upon successful completion of the higher level course, the student would then receive credit for the waived course and a mark and credit for the 1-credit course completed. This is the only way in which a CTS prerequisite may be waived.

Refer to the CTS Prerequisite Requirements on the Alberta Learning Web site at www.learning.gov.ab.ca/k_12/curriculum/bySubject/cts/prereq.asp.

Refer to the CTS section of the Alberta Learning Web site for a listing of CTS prerequisite requirements in effect during the current school year and for a list of prerequisite requirements applicable for the upcoming year.

Effective September 2004, funding will not be provided for a CTS course if the prerequisite(s) was (were) not completed in the same term or a prior term.

CTS COURSE COMPLETION

Reference:

- *Guide to Education: ECS to Grade 12, Courses and Programs*
- *Guides to Standards and Implementation* (Sections D, E, F in each of the 22 CTS strands)
- *CTS Manual for Administrators, Counsellors and Teachers* (pages 43–44).

Students must be individually assessed and graded on each 1-credit CTS course taken.

Successful completion of a CTS course at the senior high school level is based on demonstrating **all** of the general outcomes for any given course to the standard defined for each competency. This means that a student must be individually assessed on each of the general outcomes defined for the course in the program of studies. When a student is able to successfully demonstrate all of the general outcomes for any given CTS course, the teacher designates the course as successfully completed and assigns a percentage grade for the course—a mark not less than 50%.

Practices of placing students in an all-or-nothing situation by assessing course completion on the basis of a single assignment is not recommended. However, if circumstances warrant that 100% of the assessment for a CTS course be based on one comprehensive assignment, then it must be clearly evident how the assignment addresses each of the general outcomes, and the records maintained must demonstrate that the student was individually assessed on each general outcome.

As a competency-based curriculum, CTS defines curriculum standards—what students must know and be able to do—and assessment standards—the criteria and conditions for assessing student performance. Curriculum and assessment standards are defined for each 1-credit course in the *CTS Guides to Standards and Implementation* through:

- module learner expectations in the 1997 documents and general outcomes in the subsequent documents—the exit-level competencies that students are expected to achieve to complete a course
- assessment criteria and conditions—the behaviours a student must demonstrate to achieve each exit-level competency and the conditions under which that competency should be judged
- suggested emphases—guidelines for the relative significance of each module learner expectation/general outcome. Though not prescriptive, the suggested emphases should be used as a guide to allocate instructional time and determine percentage marks for a course.

Consistent application of curriculum and assessment standards throughout the learning process is critical to maintaining the credibility of CTS courses and preparing students for successful transitions to further study and the workplace.

CTS FUNDING ELIGIBILITY

Reference:

- *Funding Manual for School Authorities*, Section 1.2 Basic Instruction – Grades 1–12
- *Guides to Standards and Implementation* (Sections D, E, F in each of the 22 CTS strands).

Funding eligibility for a CTS course is based on course completion rate. A 1-credit CTS course is eligible for funding when a student has worked on and been assessed for at least 50% of the course content. In contrast to funding criteria for regular (non-CTS) courses, course content completion rate is the **sole criterion** for CTS funding eligibility.

When determining course completion rate, schools can take into account the suggested emphasis for each general outcome as provided in the *CTS Guides to Standards and Implementation*. A course completion rate of at least 50% could be met when a student has responded to instruction in at least one half of the course content as defined by the general outcomes, taking into account the respective emphasis of each general outcome within the course.

Sample Course Framework:

General Outcome	Suggested Emphasis
A	50%
B	30%
C	20%
D	Integrated throughout

In this sample course framework, funding eligibility requirements; i.e., a course completion rate of at least 50%, would be met if a student had received access to instruction in, and demonstrated effort in, the course work related to any of the following:

- General Outcome A
- General Outcomes A and B
- General Outcomes A and C
- General Outcomes B and C
- General Outcomes A, B and C.

Schools are required to maintain and retain documentation that students have met funding requirements. Documentation must include course outlines and detailed assessment records of student work in each 1-credit CTS course, records of student withdrawal and final marks. The assessment records should provide evidence that the student has worked on, and been assessed on, at least one half of the course content as defined in the program of studies.

When a school has reported a CTS course as incomplete but eligible for funding at the end of a term, and then wishes to report it as completed in the following term, the school should submit the course with a completion status of “complete” and place a “N” for No in the fund flag field. If instruction in the course has only been delivered once, it can only be funded once.

Schools are required to maintain and retain for a period of 7 years, records of student attendance, final marks, course outlines, detail assessment records for student work in the course and records of course withdrawal for students in grades 10 to 12.

REPORTING UNSUCCESSFUL CTS COURSES

Reference:
Funding Manual for School Authorities, 2003/2004 School Year, Sections 1.A.1, Basic Instruction Funding.

A “complete” (COM) status should be used when a student successfully completes a CTS course (i.e., demonstrates all of the general outcomes for any given course to the standard defined for each competency). A course completion status of COM may be used for both regular (non-CTS) and CTS courses.

A “withdrawal” (WDR) status should be used when a student chooses not to complete a course and the school agrees to remove the student from the course. When a completion status of WDR is used, the course will not appear on a student’s transcript. A course completion status of WDR may be used for both regular (non-CTS) and CTS courses.

An “incomplete” (INC) status should be used when a student does not withdraw from a CTS course yet does not demonstrate mastery of all the learner outcomes identified in the program of studies. A course completion status of INC has no associated mark(s), and may only be used for CTS courses.

No mark is submitted with either a course completion status of WDR or INC. However, eligibility for funding must be indicated in both instances if the criterion for funding as previously outlined has been met.

When a course is reported as eligible for funding, all funding conditions must be met and all supporting documentation maintained, regardless of the completion status reported.

A school cannot request funding for a CTS course more than once when the course has only been delivered once. If a student subsequently completes a course for which funding has already been provided in an earlier term, the school should submit the course with a completion status of “complete” and place a “N” for No in the fund flag field.

PROGRAMMING FOR APPLICATION AND TRANSFER OF LEARNING

Reference:

- *Guide to Education: ECS to Grade 12, Senior High School Programming*
- *Career Transitions Guide to Standards and Implementation* (Sections D, E, F).

To enhance student learning, senior high school programming and course timetabling should provide students with the opportunity to transfer learning to other areas.

Within each course, students have opportunities to apply their learning. As well, student learning may be extended through the application of the outcomes in one course to the outcomes in other courses. Educators are encouraged to use planning and course timetabling to capitalize on opportunities for connections within and across subjects in order to strengthen student learning.

CTS courses within the Career Extensions Theme of the Career Transitions strand are intended to extend and enhance competencies developed in other CTS strands and courses. The Project and Practicum courses may not be delivered as stand-alone courses, nor may they be combined with core courses.

All senior high school courses offered to students must be appropriately timetabled, taught, assessed, and reported to Alberta Learning.