

# 1999 CTS AMENDMENTS to the Communication Technology Guide to Standards and Implementation

## Summary of Curriculum Changes

Course revisions:

- COM1010: Presentation and Communication 1

### Section A

1. **Remove** pages A.1 to A.8 (1997) and **replace** with new pages A.1 to A.8 (1999).

### Section B

2. **Remove** pages B.1–2 (1997) and **replace** with new pages B.1–2 (1999).
3. **Remove** pages B.5 to B.8 (1997) and **replace** with new pages B.5 to B.8 (1999).

### Section C

1. **Remove** pages C.1 to C.4 (1997) and **replace** with new pages C.1 to C.4 (1999).

### Section D

1. **Remove** pages D.3 to D.6 (1997) and **replace** with new pages D.3 to D.6 (1999).

### Section E

1. **Remove** pages E.15–16 (1997) and **replace** with new pages E.15–16 (1999).

### Section G

1. **Remove** pages G.1 to G.8 (1997) and **replace** with new pages G.1 to G.8 (1999).
2. **Remove** pages G.17–18 (1997) and **replace** with new pages G.17–18 (1999).

### Section I

1. **Remove** pages I.1 to I.32 (1997) and **replace** with new pages I.1 to I.8 (1999).

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# CAREER AND TECHNOLOGY STUDIES

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## A. PROGRAM RATIONALE AND PHILOSOPHY

Through Career and Technology Studies (CTS), secondary education in Alberta is responding to the many challenges of modern society, helping young people develop daily living skills and nurturing a flexible, well-qualified work force.

In Canada's information society, characterized by rapid change in the social and economic environment, students must be confident in their ability to respond to change and successfully meet the challenges they face in their own personal and work lives. In particular, they make decisions about what they will do when they finish high school. Many students will enter the work force, others will continue their education. All students face the challenges of growing independence and responsibility, and of entering post-secondary programs and/or the highly competitive workplace.

Secondary schools also face challenges. They must deliver, on a consistent basis, high quality, cost-effective programs that students, parents and the community find credible and relevant.

CTS helps schools and students meet these challenges. Schools can respond more efficiently and effectively to student and community needs and expectations by taking advantage of the opportunities in the CTS curriculum to design courses and access school, community and distance learning resources. Students can develop the confidence they need as they move into adult roles by assuming increased responsibility for their

learning; cultivating their individual talents, interests and abilities; and by defining and acting on their goals.

As an important component of education in Alberta secondary schools, CTS promotes student achievement by setting clear expectations and recognizing student success. Students in CTS develop competencies—the knowledge, skills and attitudes they are expected to demonstrate, that is, what they know and what they are able to do.

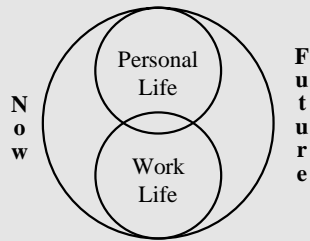
Acquired competencies can be applied now and in the future as students make a smooth transition into adult roles in the family, community, workplace and/or further education. To facilitate this transition, clearly stated expectations and standards have been defined in cooperation with teachers, business and industry representatives and post-secondary educators.

CTS offers all students important learning opportunities. Regardless of the particular area of study chosen, *students in CTS will:*

- develop skills that can be applied in their daily lives, now and in the future
- refine career-planning skills
- develop technology-related skills
- enhance employability skills
- apply and reinforce learnings developed in other subject areas.

In CTS, students build skills they can apply in their everyday lives. For example, in the CTS program, particularly at the introductory levels, students have the opportunity to improve their ability to make sound consumer decisions and to appreciate environmental and safety precautions.

### CAREERS



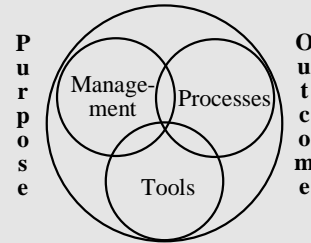
A career encompasses more than activities just related to a person's job or occupation; it involves one's personal life in both local and global contexts; e.g., as a family member, a friend, a community volunteer, a citizen of the world.

The integration of careers throughout the CTS program helps students to make effective career decisions and to target their efforts. CTS students will have the opportunity to expand their knowledge about careers, occupations and job opportunities, as well as the education and/or training requirements involved. Also, students come to recognize the need for lifelong learning.

Students in CTS have the opportunity to use and apply technology and systems effectively and efficiently. This involves:

- a decision regarding which processes and procedures best suit the task at hand
- the appropriate selection and skilled use of the tools and/or resources available
- an assessment of and management of the impact the use of the technology may have on themselves, on others and on the environment.

### TECHNOLOGY



Integrated throughout CTS are employability skills, those basic competencies that help students develop their personal management and social skills. Personal management skills are improved as students take increased responsibility for their learning, design innovative solutions to problems and challenges, and manage resources effectively and efficiently. Social skills improve through learning experiences that require students to work effectively with others, demonstrate teamwork and leadership, and maintain high standards in safety and accountability.

As well as honing employability skills, CTS reinforces and enhances learnings developed in core and other optional courses. The curriculum emphasizes, as appropriate, the effective application of communication and numeracy skills.

In addition to the common outcomes described above, students focusing on a particular area of study will develop career-specific competencies that support entry into the workplace and/or related post-secondary programs. Career-specific competencies can involve understanding and applying appropriate terminology, processes and technologies related to a specific career, occupation or job.

## PROGRAM OUTCOMES

The program outcomes describe the basic competencies integrated throughout the CTS program.

Within an applied context relevant to personal goals, aptitudes and abilities; *the student in CTS will:*

- demonstrate the basic knowledge, skills and attitudes necessary for achievement and fulfillment in personal life
- develop an action plan that relates personal interests, abilities and aptitudes to career opportunities and requirements
- use technology effectively to link and apply appropriate tools, management and processes to produce a desired outcome
- develop basic competencies (employability skills), by:
  - selecting relevant, goal-related activities, ranking them in order of importance, allocating necessary time, and preparing and following schedules (managing learning)
  - linking theory and practice, using resources, tools, technology and processes responsibly and efficiently (managing resources)
  - applying effective and innovative decision-making and problem-solving strategies in the design, production, marketing and consumption of goods and services (problem solving and innovation)
  - demonstrating appropriate written and verbal skills, such as composition, summarization and presentation (communicating effectively)
  - participating as a team member by working cooperatively with others and contributing to the group with ideas, suggestions and effort (working with others)

- maintaining high standards of ethics, diligence, attendance and punctuality, following safe procedures consistently, and recognizing and eliminating potential hazards (demonstrating responsibility).

## PROGRAM ORGANIZATION

### CURRICULUM STRUCTURE

Career and Technology Studies is organized into **strands** and **courses**.

**Strands** in CTS define competencies that help students:

- build daily living skills
- investigate career options
- use technology (managing, processes, tools) effectively and efficiently
- prepare for entry into the workplace and/or related post-secondary programs.

In general, strands relate to selected industry sectors offering positive occupational opportunities for students. Some occupational opportunities require further education after high school, and some allow direct entry into the workplace. Industry sectors encompass goods-producing industries, such as agriculture, manufacturing and construction; and service-producing industries, such as business, health, finance and insurance.

**Courses** are the building blocks for each strand. They define what a student is expected to know and be able to do (exit-level *competencies*). Courses also specify prerequisites. Recommendations for course parameters, such as instructional qualifications, facilities and equipment can be found in the guides to implementation.

The competencies a student must demonstrate to achieve success in a course are defined through *general outcomes*. Senior high school students who can demonstrate the general outcomes defined for a CTS course; i.e., who have the designated competencies, will qualify for 1 credit toward their high school diploma.

*Specific outcomes* provide a more detailed framework for instruction. Within the context of the general outcomes, the specific outcomes further define the knowledge, skills and attitudes the student should acquire.

The following chart shows the 22 strands that comprise the CTS program and the number of 1-credit courses available in each strand.

Strand	No. of Courses
1. Agriculture	33
2. Career Transitions	31
3. Communication Technology	33
4. Community Health	31
5. Construction Technologies	46
6. Cosmetology Studies	58
7. Design Studies	31
8. Electro-Technologies	37
9. Energy and Mines	26
10. Enterprise and Innovation	8
11. Fabrication Studies	41
12. Fashion Studies	29
13. Financial Management	14
14. Foods	37
15. Forestry	21
16. Information Processing	48
17. Legal Studies	13
18. Logistics	12
19. Management and Marketing	20
20. Mechanics	54
21. Tourism Studies	24
22. Wildlife	17

## LEVELS OF ACHIEVEMENT

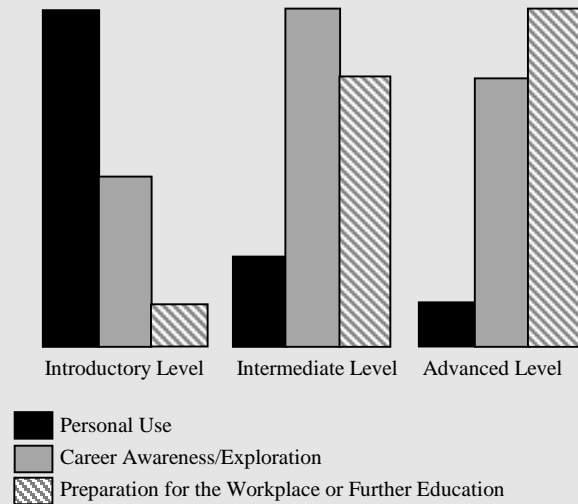
Courses are organized into three levels of achievement: **introductory**, **intermediate** and **advanced**. As students progress through the levels, they will be expected to meet higher standards and demonstrate an increased degree of competence, in both the program outcomes and the general outcomes defined for individual courses.

**Introductory** level courses help students build daily living skills and form the basis for further learning. Introductory courses are for students who have no previous experience in the strand.

**Intermediate** level courses build on the competencies developed at the introductory level. They provide a broader perspective, helping students recognize the wide range of related career opportunities available within the strand.

**Advanced** level courses refine expertise and help prepare students for entry into the workplace or a related post-secondary program.

The graph below illustrates the relative emphasis on the aspects of career planning at each of the levels.



## CURRICULUM AND ASSESSMENT STANDARDS

**Curriculum standards** in CTS define what students must know and be able to do. Curriculum standards are expressed through the program outcomes for CTS, and through general and specific outcomes defined for individual courses within each strand.

**Assessment standards** define how student performance is to be judged. In CTS, each assessment standard defines the conditions and criteria to be used for assessing the competencies associated with each general outcome. To receive credit for a course, students must demonstrate competency at the level specified by the conditions and criteria defined for each general outcome.

Students throughout the province receive a fair and reliable assessment as they use the standards to guide their efforts, thus ensuring they participate more effectively and successfully in the learning and assessment process. Standards at advanced levels are, as much as possible, linked to workplace and post-secondary entry-level requirements.

## TYPES OF COMPETENCIES

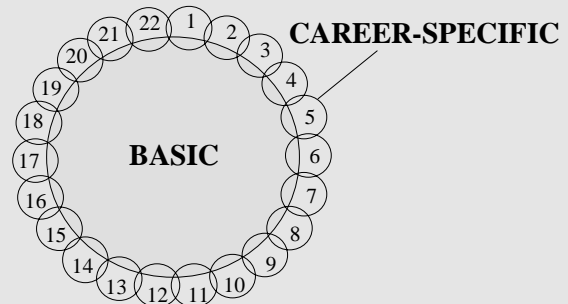
Two types of competencies are defined within the CTS program: basic and career-specific.

**Basic** competencies are generic to any career area and are developed within each course. Basic competencies include:

- personal management; e.g., managing learning, being innovative, ethics, managing resources
- social; e.g., communication, teamwork, leadership and service, demonstrating responsibility (safety and accountability).

**Career-specific** competencies relate to a particular strand. These competencies build daily living skills at the introductory levels and support the smooth transition to the workplace and/or post-secondary programs at the intermediate and advanced levels.

The model below shows the relationship of the two types of competencies within the 22 strands of the CTS program.



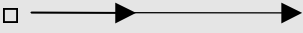








## BASIC COMPETENCIES REFERENCE GUIDE

The chart below outlines basic competencies that students endeavour to develop and enhance in each of the CTS strands and courses. Students' basic competencies should be assessed through observations involving the student, teacher(s), peers and others as they complete the requirements for each course. In general, there is a progression of task complexity and student initiative as outlined in the Developmental Framework<sup>★</sup>. **As students progress through Stages 1, 2, 3 and 4 of this reference guide, they build on the competencies gained in earlier stages.** Students leaving high school should set themselves a goal of being able to demonstrate Stage 3 performance.

*Suggested strategies for classroom use include:*

- having students rate themselves and each other
- using in reflective conversation between teacher and student
- highlighting areas of strength
- tracking growth in various CTS strands
- highlighting areas upon which to focus
- maintaining a student portfolio.

Stage 1— <i>The student:</i>	Stage 2— <i>The student:</i>	Stage 3— <i>The student:</i>	Stage 4— <i>The student:</i>
<p><b>Managing Learning</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> comes to class prepared for learning</li> <li><input type="checkbox"/> follows basic instructions, as directed</li>   <li><input type="checkbox"/> acquires specialized knowledge, skills and attitudes</li> <li><input type="checkbox"/> identifies criteria for evaluating choices and making decisions</li>   <li><input type="checkbox"/> uses a variety of learning strategies</li> </ul>	<p style="text-align: center;"><input type="checkbox"/> → → →</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> follows instructions, with limited direction</li> <li><input type="checkbox"/> sets goals and establishes steps to achieve them, with direction</li>   <li><input type="checkbox"/> applies specialized knowledge, skills and attitudes in practical situations</li> <li><input type="checkbox"/> identifies and applies a range of effective strategies for solving problems and making decisions</li>   <li><input type="checkbox"/> explores and uses a variety of learning strategies, with limited direction</li> </ul>	<p style="text-align: center;"><input type="checkbox"/> → → →</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> follows detailed instructions on an independent basis</li> <li><input type="checkbox"/> sets clear goals and establishes steps to achieve them</li>   <li><input type="checkbox"/> transfers and applies specialized knowledge, skills and attitudes in a variety of situations</li> <li><input type="checkbox"/> uses a range of critical thinking skills to evaluate situations, solve problems and make decisions</li> <li><input type="checkbox"/> selects and uses effective learning strategies</li> <li><input type="checkbox"/> cooperates with others in the effective use of learning strategies</li> </ul>	<p style="text-align: center;"><input type="checkbox"/> → → →</p> <p style="text-align: center;"><input type="checkbox"/> → → →</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> demonstrates self-direction in learning, goal setting and goal achievement</li> <li><input type="checkbox"/> transfers and applies learning in new situations; demonstrates commitment to lifelong learning</li> <li><input type="checkbox"/> thinks critically and acts logically to evaluate situations, solve problems and make decisions</li>   <li><input type="checkbox"/> → → →</li> <li><input type="checkbox"/> provides leadership in the effective use of learning strategies</li> </ul>
<p><b>Managing Resources</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> adheres to established timelines; uses time/schedules/planners effectively</li> <li><input type="checkbox"/> uses information (material and human resources), as directed</li> <li><input type="checkbox"/> uses technology (facilities, equipment, supplies), as directed, to perform a task or provide a service</li> <li><input type="checkbox"/> maintains, stores and/or disposes of equipment and materials, as directed</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> creates and adheres to timelines, with limited direction; uses time/schedules/planners effectively</li> <li><input type="checkbox"/> accesses and uses a range of relevant information (material and human resources), with limited direction</li> <li><input type="checkbox"/> uses technology (facilities, equipment, supplies), as appropriate, to perform a task or provide a service, with minimal assistance and supervision</li> <li><input type="checkbox"/> maintains, stores and/or disposes of equipment and materials, with limited assistance</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> creates and adheres to detailed timelines on an independent basis; prioritizes task; uses time/schedules/planners effectively</li> <li><input type="checkbox"/> accesses a range of information (material and human resources), and recognizes when additional resources are required</li> <li><input type="checkbox"/> selects and uses appropriate technology (facilities, equipment, supplies) to perform a task or provide a service on an independent basis</li> <li><input type="checkbox"/> maintains, stores and/or disposes of equipment and materials on an independent basis</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> creates and adheres to detailed timelines; uses time/schedules/planners effectively; prioritizes tasks on a consistent basis</li> <li><input type="checkbox"/> uses a wide range of information (material and human resources) in order to support and enhance the basic requirement</li> <li><input type="checkbox"/> recognizes the monetary and intrinsic value of managing technology (facilities, equipment, supplies)</li>   <li><input type="checkbox"/> demonstrates effective techniques for managing facilities, equipment and supplies</li> </ul>
<p><b>Problem Solving and Innovation</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> participates in problem solving as a process</li> <li><input type="checkbox"/> learns a range of problem-solving skills and approaches</li>   <li><input type="checkbox"/> practices problem-solving skills by responding appropriately to a clearly defined problem, specified goals and constraints, by: <ul style="list-style-type: none"> <li>– generating alternatives</li> <li>– evaluating alternatives</li> <li>– selecting appropriate alternative(s)</li> <li>– taking action</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> identifies the problem and selects an appropriate problem-solving approach, responding appropriately to specified goals and constraints</li> <li><input type="checkbox"/> applies problem-solving skills to a directed or a self-directed activity, by: <ul style="list-style-type: none"> <li>– generating alternatives</li> <li>– evaluating alternatives</li> <li>– selecting appropriate alternative(s)</li> <li>– taking action</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> thinks critically and acts logically in the context of problem solving</li>   <li><input type="checkbox"/> transfers problem-solving skills to real-life situations, by generating new possibilities</li> <li><input type="checkbox"/> prepares implementation plans</li> <li><input type="checkbox"/> recognizes risks</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> identifies and resolves problems efficiently and effectively</li>   <li><input type="checkbox"/> identifies and suggests new ideas to get the job done creatively, by: <ul style="list-style-type: none"> <li>– combining ideas or information in new ways</li> <li>– making connections among seemingly unrelated ideas</li> <li>– seeking out opportunities in an active manner</li> </ul> </li> </ul>

Stage 1— <i>The student:</i>	Stage 2— <i>The student:</i>	Stage 3— <i>The student:</i>	Stage 4— <i>The student:</i>
<p><b>Communicating Effectively</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> uses communication skills; e.g., reading, writing, illustrating, speaking</li> <li><input type="checkbox"/> uses language in appropriate context</li> <li><input type="checkbox"/> listens to understand and learn</li> <li><input type="checkbox"/> demonstrates positive interpersonal skills in selected contexts</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> communicates thoughts, feelings and ideas to justify or challenge a position, using written, oral and/or visual means</li> <li><input type="checkbox"/> uses technical language appropriately</li> <li><input type="checkbox"/> listens and responds to understand and learn</li> <li><input type="checkbox"/> demonstrates positive interpersonal skills in many contexts</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> prepares and effectively presents accurate, concise, written, visual and/or oral reports providing reasoned arguments</li> <li><input type="checkbox"/> encourages, persuades, convinces or otherwise motivates individuals</li> <li><input type="checkbox"/> listens and responds to understand, learn and teach</li> <li><input type="checkbox"/> demonstrates positive interpersonal skills in most contexts</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> negotiates effectively, by working toward an agreement that may involve exchanging specific resources or resolving divergent interests</li> <li><input type="checkbox"/> negotiates and works toward a consensus</li> <li><input type="checkbox"/> listens and responds to understand, learn, teach and evaluate</li> <li><input type="checkbox"/> promotes positive interpersonal skills among others</li> </ul>
<p><b>Working with Others</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> fulfills responsibility in a group project</li> <li><input type="checkbox"/> works collaboratively in structured situations with peer members</li> <li><input type="checkbox"/> acknowledges the opinions and contributions of others in the group</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> </li> <li><input type="checkbox"/> cooperates to achieve group results</li> <li><input type="checkbox"/> maintains a balance between speaking, listening and responding in group discussions</li> <li><input type="checkbox"/> respects the feelings and views of others</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> seeks a team approach, as appropriate, based on group needs and benefits; e.g., idea potential, variety of strengths, sharing of workload</li> <li><input type="checkbox"/> works in a team or group: <ul style="list-style-type: none"> <li>– encourages and supports team members</li> <li>– helps others in a positive manner</li> <li>– provides leadership/followership as required</li> <li>– negotiates and works toward consensus as required</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> leads, where appropriate, mobilizing the group for high performance</li> <li><input type="checkbox"/> understands and works within the context of the group</li> <li><input type="checkbox"/> prepares, validates and implements plans that reveal new possibilities</li> </ul>
<p><b>Demonstrating Responsibility</b></p> <p><b>Attendance</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> demonstrates responsibility in attendance, punctuality and task completion</li> </ul> <p><b>Safety</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> follows personal and environmental health and safety procedures</li> <li><input type="checkbox"/> identifies immediate hazards and their impact on self, others and the environment</li> <li><input type="checkbox"/> follows appropriate/emergency response procedures</li> </ul> <p><b>Ethics</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> makes personal judgements about whether or not certain behaviours/actions are right or wrong</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> </li> <li><input type="checkbox"/> recognizes and follows personal and environmental health and safety procedures</li> <li><input type="checkbox"/> identifies immediate and potential hazards and their impact on self, others and the environment</li> <li><input type="checkbox"/> </li> <li><input type="checkbox"/> assesses how personal judgements affect other peer members and/or family; e.g., home and school</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> </li> <li><input type="checkbox"/> establishes and follows personal and environmental health and safety procedures</li> <li><input type="checkbox"/> </li> <li><input type="checkbox"/> </li> <li><input type="checkbox"/> assesses the implications of personal/group actions within the broader community; e.g., workplace</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> </li> <li><input type="checkbox"/> transfers and applies personal and environmental health and safety procedures to a variety of environments and situations</li> <li><input type="checkbox"/> </li> <li><input type="checkbox"/> </li> <li><input type="checkbox"/> demonstrates accountability for actions taken to address immediate and potential hazards</li> <li><input type="checkbox"/> analyzes the implications of personal/group actions within the global context</li> <li><input type="checkbox"/> states and defends a personal code of ethics as required</li> </ul>
<p><b>★Developmental Framework</b></p> <ul style="list-style-type: none"> <li>• <i>Simple task</i></li> <li>• <i>Structured environment</i></li> <li>• <i>Directed learning</i></li> </ul>	<ul style="list-style-type: none"> <li>• <i>Task with limited variables</i></li> <li>• <i>Less structured environment</i></li> <li>• <i>Limited direction</i></li> </ul>	<ul style="list-style-type: none"> <li>• <i>Task with multiple variables</i></li> <li>• <i>Flexible environment</i></li> <li>• <i>Self-directed learning, seeking assistance as required</i></li> </ul>	<ul style="list-style-type: none"> <li>• <i>Complex task</i></li> <li>• <i>Open environment</i></li> <li>• <i>Self-directed/self-motivated</i></li> </ul>



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# COMMUNICATION TECHNOLOGY

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## B. STRAND RATIONALE AND PHILOSOPHY

In an information society characterized by rapid change in the social, economic and technological environments, students must be prepared to use information and technology effectively and efficiently. Communication Technology, a strand in Career and Technology Studies, helps students develop a broad awareness of the impact that presentation and communication, print, photography, and media design and application make in every aspect of their lives.

The knowledge and skills acquired from studying Communication Technology are transferable throughout the core and optional curricula, giving students an edge in presenting their views and ideas, in understanding others and in completing projects.

For example, a student may no longer be restricted to doing an essay or preparing a written report as part of a course requirement. Instead, the student may use any combination of Communication Technology skills to complete an assignment. On a more personal level, the student may apply these skills in everyday activities.

Finally, as the communications industry becomes more and more sophisticated, and as the merging of the different communication technologies continues to evolve, it is imperative that students improve their level of media and technological literacy in order to cope with their daily chores. Students need to broaden their horizons to include the latest digital technology as it applies to print, photography, animation, and audio and video production, whether

they intend to apply these skills professionally or for their personal use. Communication skills are necessary for the pursuit of a successful career in any field, and communicating effectively using a variety of media gives students an advantage as they enter the information age of the 21st century.

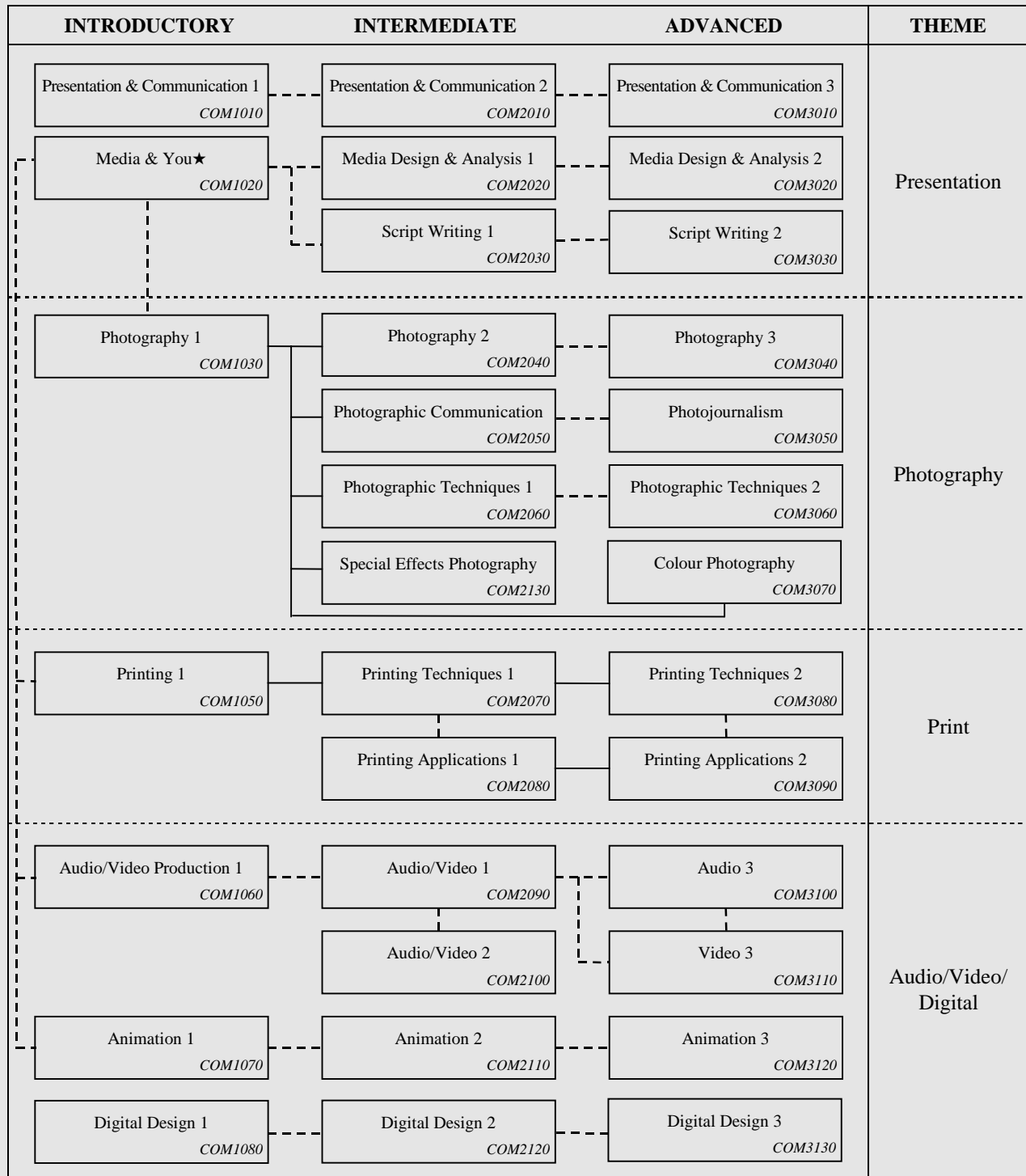
Within the philosophy of Career and Technology Studies, *students* in Communication Technology *will*:

- develop the basic knowledge, skills and attitudes necessary for exploration and pursuit of further training for a career in the communication technology field
- demonstrate an understanding of the various sectors of the industry and of their own potential with respect to job opportunities
- learn how to function in a productive team environment and how to develop individual competence in a creative and imaginative way
- develop a positive self-concept and realistic life goals through exploring personal interests and aptitudes
- develop the ability to function as media and technologically literate citizens, and understand not only the technological factors, but also the social, cultural and global issues that affect the various communication media

- develop expertise in applying creative thinking and enterprising/innovative strategies to problem solving
- develop an appreciation for environmental, safety and ethical issues related to communication technology
- develop an appreciation for local, regional and global contribution to communication technology
- develop a positive attitude toward work ethics, productivity and time management.

**SCOPE AND SEQUENCE**

**COMMUNICATION TECHNOLOGY**



— Prerequisite      - - - Recommended sequence

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

## **COURSE DESCRIPTIONS**

### **Course COM1010: Presentation & Communication 1**

Students communicate information and ideas through the use of speech, body language and meaningful text, graphics, audio, video and/or animation.

### **Course COM1020: Media & You**

Students are provided with a hands-on introduction to the various segments of communication studies: presentation and communication, photography, print, and audio/video production.

### **Course COM1030: Photography 1**

Students operate a camera to take photographs and produce prints.

### **Course COM1050: Printing 1**

Students are introduced to basic layout/design techniques and to various print reproduction processes; e.g., offset, screen, electrostatic.

### **Course COM1060: Audio/Video Production 1**

Students acquire basic production skills through the use of simple audio and/or video equipment and techniques.

### **Course COM1070: Animation 1**

Students are introduced to a variety of animation techniques and are given the opportunity to produce simple animation.

### **Course COM1080: Digital Design 1**

Students are introduced to the integration of various media; e.g., audio, video, photographic, graphic, for the purpose of producing a multimedia message.

### **Course COM2010: Presentation & Communication 2**

Students use verbal and nonverbal communication skills to produce and deliver presentations incorporating a variety of media.

### **Course COM2020: Media Design & Analysis 1**

Students explore various media and examine their impact on personal, community and national interests.

### **Course COM2030: Script Writing 1**

Students write sample scripts for a variety of media forms.

### **Course COM2040: Photography 2**

Students review and expand on the concepts outlined in COM1030 Photography 1, including composition, exposure, camera operation, image processing, proofing and enlarging.

### **Course COM2050: Photographic Communication**

Students use photographic prints, slides or digital images to communicate a message or tell a story.

### **Course COM2060: Photographic Techniques 1**

Students expand photographic concepts using various lenses and applying depth of field in composition.

### **Course COM2070: Printing Techniques 1**

Students are introduced to single-register reproductive printing.

### **Course COM2080: Printing Applications 1**

Students apply the technique of single-register printing to practical situations.

### **Course COM2090: Audio/Video 1**

Students expand on basic audio/video production techniques.

### **Course COM2100: Audio/Video 2**

Students build on production skills through application of preproduction and post-production techniques.

### **Course COM2110: Animation 2**

Students build skills in planning, idea development and storytelling technique, and their application through various animation methods.

### **Course COM2120: Digital Design 2**

Students enhance their abilities to integrate various media for the purpose of producing a multimedia message for a target audience, using the computer as a significant production tool.

### **Course COM2130: Special Effects Photography**

Students are introduced to the creative use of the camera, the darkroom and/or digital techniques, in order to produce various photographic effects.

**Course COM3010: Presentation & Communication 3**

Students refine presentation skills specific to a target audience.

**Course COM3020: Media Design & Analysis 2**

Students use school and/or community resources to produce messages for a target audience to be delivered through two or more media.

**Course COM3030: Script Writing 2**

Students refine script-writing skills by producing scripts for specific media formats.

**Course COM3040: Photography 3**

Students apply various light sources, multiple lighting arrangements and metering techniques with an emphasis on flash and studio lighting.

**Course COM3050: Photojournalism**

Students are introduced to photojournalism.

**Course COM3060: Photographic Techniques 2**

Students create special photographic effects through a variety of approaches, including advanced enlarging techniques, high contrast derivations, toning, retouching and print presentation.

**Course COM3070: Colour Photography**

Students are introduced to colour photography.

**Course COM3080: Printing Techniques 2**

Students are introduced to multiregister reproductive printing.

**Course COM3090: Printing Applications 2**

Students apply the technique of multiregister printing to practical situations.

**Course COM3100: Audio 3**

Students plan, develop and produce specific audio projects.

**Course COM3110: Video 3**

Students plan, develop and produce specific video projects.

**Course COM3120: Animation 3**

Students apply production planning techniques to produce animation that tells a story, communicates an idea or message, or creates a mood or theme. Students select and employ traditional animation techniques for the project work..

**Course COM3130: Digital Design 3**

Students develop and produce multimedia messages within a common theme and for a client who has an identified target audience. Students select and use a variety of media and justify their selection based on the strengths of the media and appropriateness to the task. Digital technology forms a key link in all project work.



## SECTION C: PLANNING FOR INSTRUCTION

CTS provides increased opportunity for junior and senior high schools to design courses based on the needs and interests of their students and the circumstances within the school and community. Some strands may be appropriately introduced at the junior high school level. Other strands are more appropriately introduced at the senior high school level or to Grade 9 students. Refer to this section for recommendations regarding the Communication Technology strand.

### PLANNING FOR CTS

#### Defining Courses

Schools determine which strands and courses will be offered in a particular school, and may combine 1-credit courses into multiple-credit CTS offerings.

Each 1-credit course was designed for approximately 25 hours of instruction. However, this time frame is only a guideline to facilitate planning. The CTS curricula are competency based, and the student may take more or less time to gain the designated competencies within each course.

A multiple-credit CTS offering will usually consist of 1-credit courses primarily from the same strand but, where appropriate, may include courses from other CTS strands. Refer to the *Guide to Education: ECS to Grade 12* (Appendix 1) for more information on course names and course codes.

Course selection and sequencing should consider:

- prerequisite(s)
- supporting courses (other CTS courses that may enhance the learning opportunity if offered with the course)
- course parameters
  - instructional qualifications, if specialized
  - equipment and facility requirements, if specialized.

The course parameters are defined in Sections D, E and F of this Guide.

#### Degree of Flexibility

The CTS program, while designed using the modular structure to facilitate flexible timetabling and instructional delivery, does not mandate the degree of flexibility a school or teacher will offer. The teacher and school will determine the degree of flexibility available to the student. Within the instructional plan established by the school, the student may:

- be given the opportunity to progress at a rate that is personally challenging
- have increased opportunity to select the courses that develop competencies he or she finds most relevant.

#### Integrating Basic Competencies

The basic competencies relate to managing learning and resources, problem solving and innovation, communicating effectively, working with others and demonstrating responsibility are developed throughout the CTS program, and within each 1-credit course.

Assessment of student achievement on the basic competencies is integrated throughout the other general outcomes. Refer to Section G (Assessment Tools) of this Guide for the description of student behaviours expected at each of the four developmental stages defined for the basic competencies.

Assessment of basic competencies could include input and reflection involving the student, teacher(s), peers and others. Description of the observed behaviour could be provided through a competency profile for the course. Positive, ongoing interaction between the student and teacher will support motivation for student growth and improvement.

## Assessing Student Achievement

Assessing student achievement is a process of gathering information by way of observations of process, product and student interaction.

Where appropriate, assessment tools have been defined to assist the teacher and student in the assessment. Refer to Section G (Assessment Tools) of this Guide for copies of the various tools (worksheets, checklists, sample questions, etc.).

A suggested emphasis for each general outcome has also been established. The suggested emphasis provides a guideline to help teachers determine time allocation and/or the appropriate emphasis for each general outcome and the student grade.

## Recognizing Student Achievement

At the high school level, successful demonstration of the exit-level competencies in a course qualifies the student for one credit. Refer to Section A of this Guide for more detailed information about how curriculum and assessment standards are defined in CTS. Refer to the *Career & Technology Studies Manual for Administrators, Counsellors and Teachers* for more information on how student achievement can be recognized and reported at the school and provincial levels.

## Portfolios

When planning for instruction and assessment, consider a portfolio as an excellent tool to provide evidence of a student's effort, progress and achievement. Portfolios will aid students in identifying skills and interest. They also provide the receiving teacher, employer and/or post secondary institution proof of a student's accomplishments. The make-up and evaluation of the portfolio should be a collaborative agreement between the student and teacher.

## Resources

A comprehensive resource base, including print, software and audio-visual, has been identified to support CTS strands. It is intended that these resources form the basis of a resource centre, encouraging teachers and students to access a wide selection of resources and other information sources throughout the learning process. Unless otherwise noted, these resources are considered to be suitable for both junior and senior high school students.

Refer to Section I (Learning Resource Guide) to obtain directions for accessing up-to-date information about learning resources that have been identified to support the delivery of CTS courses in this strand.

## Student Learning Guides

In addition to the resources, sample Student Learning Guides are available (see Section J of this guide). These samples, designed for individual student or small group use, provide an instructional plan for selected courses and include the following components:

- Why take this course?
- What are the entry-level competencies?
- What are the exit-level competencies?
- What resources may be accessed?
- What assignments/activities must be completed?
- What are the timelines?
- How will the final mark be calculated?

Sample Student Learning Guides have been developed for the following courses in Communication Technology:

- Photography 1
- Photographic Techniques 1
- Audio/Video 1

## **PLANNING FOR COMMUNICATION TECHNOLOGY**

The following suggestions are provided to assist teachers and school and school system administrators as they plan to deliver courses in the Communication Technology strand.

### **Selecting Courses**

The Communication Technology curriculum heavily depends on, and is influenced by, technology. Therefore, teachers are encouraged to incorporate the latest available technologies—computers, scanners, laser printers, digital photography, etc.—where possible in addressing the various courses.

Communication Technology emphasizes experiential and hands-on learning. Students will participate in a wide range of practical activities within the classroom, the school and their local community.

In addition to functioning in a traditional manner, the teacher should use resourcefulness to create the appropriate learning environment for the students, either by bringing the necessary personnel and/or resources to the classroom or by taking students to the community. Flexibility in scheduling and programming is encouraged.

Through educational strategies such as partnerships, teamwork, group assignments and work experience, the teacher should stress “process” as well as “product” depending on the context. Teachers should encourage creative thinking, enterprising and innovative strategies, and problem solving as much as possible. Also, the concepts of portfolio development and “critiquing” should be addressed throughout Communication Technology.

The scope and sequence chart in Section B provides an overview of the Communication Technology courses, indicating prerequisites and theme areas. Brief descriptions of each of the courses follow the scope and sequence chart in Section B.

One course, *Media & You*, is a general introduction to Communication Technology. It is recommended that students, especially at the junior high level, take this course before proceeding to other courses in the curriculum. In addition, some courses may be prerequisite to others.

Following are three sample course clusters designed to be delivered to junior high school students:

- junior high—Grades 7 or 8 (25 hours per year):
  - *Media & You*
- junior high—Grades 7, 8 and/or 9 (50 hours per year):
  - *Photography 1*
  - *Printing 1*
- junior high—Grades 7, 8 and/or 9 (75 hours per year):
  - *Photography 1* or *Audio/Video Production 1*
  - *Printing 1*
  - *Presentation and Communication 1*.

Senior high students with no previous experience in Communication Technology might consider the following multiple-credit offerings:

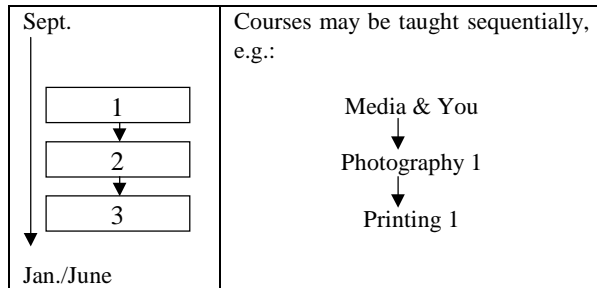
- 3-credit personal use (no previous experience):
  - *Photography 1* or *Audio/Video Production 1*
  - *Printing 1*
  - *Presentation & Communication 1*.

### **Organizing For Learning**

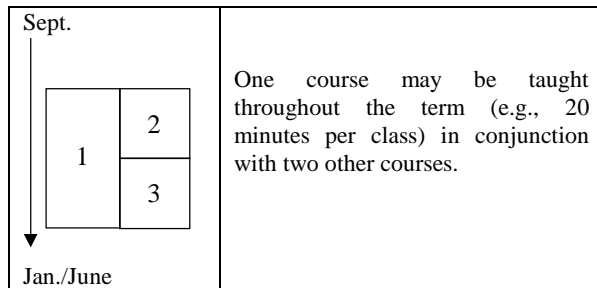
A number of courses may be taught concurrently when the skills are discreet; for example, *Basic Photography 1* and *Printing 1*. *Presentation & Communication 1*, however, should be offered after the student has acquired skills in the various thematic areas, since these can then be more readily incorporated into the presentation.

Some courses may be combined in order to give the student the required time to complete a major project. For example, by combining Printing Techniques and Printing Applications, the student is able to apply the printing techniques in a project situation. Alternatively, a multiple-credit offering may be composed of a video production course, followed by a course in which the student produces the script.

*Scenario A*

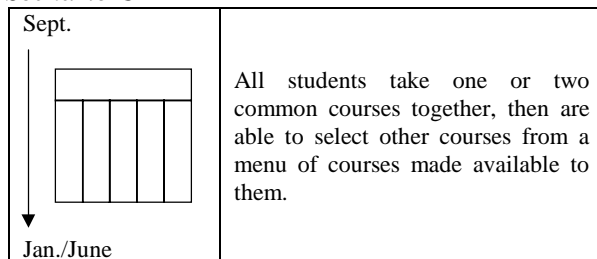


*Scenario B*

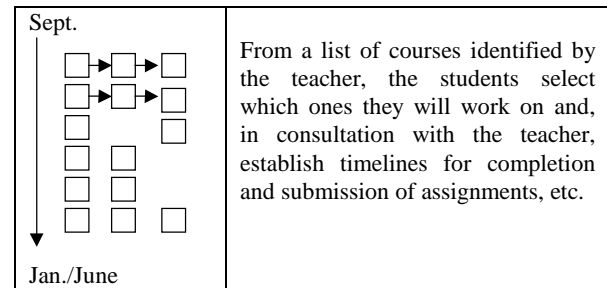


Teachers can also allow students to progress at a rate that is personally challenging; e.g.:

*Scenario C*



*Scenario D*



Students can learn the skills in courses that are technique-oriented (e.g., photographic techniques, printing techniques) in which the task is assigned by the teacher. However, in the application-oriented course, the task(s) may be selected by the student, and the emphasis is on project management skills as well as previously learned skills.

**Identifying Linkages**

Refer to Section H of this Guide for additional linkages to enhance the learnings defined in Communication Technology.

**Improving Smooth Transitions to the Workplace and/or Related Post-secondary Programs**

Refer to Section H of this Guide for information.

**COURSE COM1010: PRESENTATION & COMMUNICATION 1****Level:** Introductory**Theme:** Presentation**Prerequisite:** None**Description:** Students communicate information and ideas through the use of speech, body language and meaningful text, graphics, audio, video and/or animation.**Parameters:** No specialized facilities are required. Students should have access to various media technologies (e.g., overhead projector, slide projector, computer, still and video cameras, VHS player).**Supporting Course:** COM1020 Media & You**Curriculum and Assessment Standards**

General Outcomes	Assessment Criteria and Conditions	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> <li>describe the basic steps in the presentation process</li> <li>apply knowledge of the presentation process to communicate information and ideas</li> <li>demonstrate effective integration of one or more communication technologies in the presentation process (e.g., text, graphics, audio, video, animation)</li> </ul>	<p><i>Assessment of student achievement should be based on:</i></p> <ul style="list-style-type: none"> <li>a multimedia presentation assignment, minimum of 3 to 5 minutes in length, aimed at an audience of peers, that: <ul style="list-style-type: none"> <li>demonstrates knowledge of steps in the presentation process</li> <li>incorporates meaningful text, graphics, audio, video and/or animation</li> <li>communicates information and/or ideas in a persuasive and engaging manner</li> </ul> </li> </ul> <p><i>Assessment Tool</i> <i>Presentations/Reports (COM1010-1)</i></p> <p><i>Standard</i> <i>A performance rating of 1 for each applicable task</i></p>	<p>10</p> <p>40</p> <p>30</p>



**COURSE COM1010: PRESENTATION & COMMUNICATION 1 (continued)**

Concept	Specific Outcomes	Notes
<p>The Presentation Process</p>	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>• incorporate the following steps into a process for making presentations:               <ul style="list-style-type: none"> <li>– know the information:                   <ul style="list-style-type: none"> <li>• research the subject, detailed content and context of what is being communicated</li> <li>• make and review abbreviated notes prior to the presentation</li> </ul> </li> <li>– understand the audience:                   <ul style="list-style-type: none"> <li>• research the age, background and interests of the audience</li> <li>• select information that is suitable for the audience</li> </ul> </li> <li>– organize the presentation:                   <ul style="list-style-type: none"> <li>• establish plans and timelines</li> <li>• select appropriate methods of delivery</li> <li>• research relevant content</li> <li>• establish a logical flow for content and activities</li> <li>• organize materials and equipment</li> </ul> </li> <li>– plan for the use of audio/visual aids:                   <ul style="list-style-type: none"> <li>• identify potential audio/visual aids (e.g., photographs, pictures, slides, transparencies)</li> <li>• select for use audio/visual aids that support the presentation</li> </ul> </li> <li>– practice making the presentation                   <ul style="list-style-type: none"> <li>• speak clearly and confidently</li> <li>• emphasize/review the important points</li> <li>• use communication aids effectively</li> </ul> </li> </ul> </li> <li>• present/communicate with a variety of audiences:               <ul style="list-style-type: none"> <li>– one on one</li> <li>– small group</li> <li>– classroom</li> <li>– media audiences (i.e., in front of a video camera)</li> <li>– student’s union</li> <li>– community</li> </ul> </li> </ul>	<p>Select information from appropriate primary and secondary sources. Discuss the advantages and disadvantages of various search strategies.</p> <p>Take into account factors such as the size, age, gender, ethnicity and geographic location of the audience.</p> <p>Identify and discriminate between aspects of ‘style’ and ‘content’ in a presentation.</p> <p>Apply principles of graphic design to enhance meaning and audience appeal.</p> <p>The student should be encouraged to start at his or her ‘comfort’ level. For example, some students may be comfortable starting with the ‘small group’ presentation, others may choose to start ‘one on one’.</p>

**COURSE COM1010: PRESENTATION & COMMUNICATION 1 (continued)**

Concept	Specific Outcomes	Notes
The Presentation Process (continued)	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>• respect the privacy and products of others, and cite sources of information when using copyright and/or public domain materials</li> <li>• demonstrate responsible and ethical behaviour by working within school and community standards.</li> </ul>	<p>Discuss the need for copyright legislation.</p> <p>Explain issues involved in balancing the right to access information with the right to personal privacy.</p>
Technology Integration	<ul style="list-style-type: none"> <li>• explain the attributes of different communication technologies and how they can be used to enhance communication</li> <li>• demonstrate how conceptual ideas can be converted into symbols, words and pictures for effective communication</li> <li>• demonstrate how information can be emphasized through effective placement and the use of colour</li> <li>• connect and use audio, video and/or digital equipment as required</li> <li>• identify and apply safety procedures that are required for each of technology being used</li> <li>• demonstrate how one or more communication technologies can be used in combination with other processes to share information</li> <li>• use appropriate images, sounds and/or music to support the communication process.</li> </ul>	<p>Identify specific techniques used by media to elicit particular responses from an audience.</p> <p>Perform routine maintenance and management of personal files.</p> <p>Identify risks to health that result from improper use of technology.</p> <p>Evaluation should include the student's own evaluation as well as other students' evaluation of the presentation(s). Students must be sure to 'critique', and not 'criticize' the presentations. Critique—make careful judgements about the merits and faults. Criticize—disapprove of, find fault with.</p>

## COURSE COM2040: PHOTOGRAPHY 2

**Level:** Intermediate

**Theme:** Photography

**Prerequisite:** COM1030 Photography 1

**Description:** Students review and expand on the concepts outlined in COM1030 Photography 1, including composition, exposure, camera operation, image processing, proofing and enlarging.

**Parameters:** Access to a still camera (film or digital) and film or digital processing and printing equipment.

### Curriculum and Assessment Standards

General Outcomes	Assessment Criteria and Conditions	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"><li>• apply exposure principles and composition guidelines in photography assignments</li><li>• demonstrate proficiency in the theory and practice of image processing, proofing, enlarging and print display</li></ul>	<p><i>Assessment of student achievement should be based on:</i></p> <ul style="list-style-type: none"><li>• a portfolio consisting of:<ul style="list-style-type: none"><li>– at least five photographs that demonstrate composition based on the elements and principles of design and rules of composition; e.g., rule of thirds, line, balance</li><li>– a critique of each photograph making reference to the composition guidelines</li><li>– demonstration of basic lighting</li><li>– demonstration of image processing, proofing and enlarging skills</li><li>– a caption for each photograph describing the technique used and/or the intent</li><li>– mounted and displayed prints.</li></ul></li></ul> <p><i>Assessment Tool</i> <i>Portfolio Assessment, COM2040–1</i></p> <p><i>Standard</i> <i>Performance rating of 2 for each criteria</i></p>	70

**COURSE COM2040: PHOTOGRAPHY 2** (continued)

General Outcomes	Assessment Criteria and Conditions	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> <li>• demonstrate basic competencies.</li> </ul>	<p><i>Assessment of student achievement should be based on:</i></p> <ul style="list-style-type: none"> <li>• a grade of at least 50% on a teacher-designed concept test (approximately 20 questions) dealing with:               <ul style="list-style-type: none"> <li>– the elements and principle of design applied to photo composition</li> <li>– principles of metering and exposure</li> <li>– light sources</li> <li>– photographic equipment</li> <li>– photographic materials, processes and techniques</li> </ul> </li> <li>• a presentation of project to teacher and peers.</li> </ul> <p><i>Assessment Tool</i> <i>Presentations/Reports, COM2040–2</i></p> <p><i>Standard</i> <i>Performance rating of 2 for each criteria</i></p> <ul style="list-style-type: none"> <li>• observations of individual effort and interpersonal interaction during the learning process.</li> </ul> <p><i>Assessment Tool</i> <i>Basic Competencies Reference Guide and any assessment tools noted above</i></p>	<p>20</p> <p>10</p> <p>Integrated throughout</p>

# COMMUNICATION TECHNOLOGY

## SECTION G: ASSESSMENT TOOLS

The following comprise include background information and strategies for assessing student achievement and the assessment tools that are listed in Sections D, E and F of this Guide.

This section of the *Guide to Standards and Implementation* has been designed to provide a common base of understanding about the level of competencies students are expected to demonstrate to successfully complete a 1-credit course in CTS. The goal is to establish assessment standards for junior and senior high school students that are fair, credible and challenging.

These tools will assist teachers throughout the province to more consistently assess student achievement. The purpose of expanding on the assessment standards is to:

- increase confidence among students, parents, business/industry and post-secondary that students can demonstrate the competencies specified in the courses they have completed
- encourage fairness and equity in how students' efforts are judged
- enable learners to focus effort on key learnings
- support teachers and community partners in planning and implementing CTS.

These tools were validated during the optional stage of CTS implementation.

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## ASSESSING STUDENT ACHIEVEMENT IN CTS

The CTS assessment standards assess two basic forms of competency:

- What can a student *do*?
  - **make** a product (e.g., wood bowl, report, garment)
  - **demonstrate** a process
    - strand-related competencies (e.g., keyboarding, hair cutting, sewing techniques, lab procedures)
    - basic competencies (e.g., resource use, safety procedures, teamwork).
- What does a student *know*?
  - knowledge base needed to demonstrate a competency (link theory and practice).

### CTS Defines Summative Assessment Standards

The assessment standards and tools defined for the CTS courses, referenced in Sections D, E and F of this Guide, focus on the final (or summative) assessment of student achievement.

Assessment throughout the learning period (formative assessment) will continue to evaluate how students are progressing. Teachers direct and respond to students' efforts to learn—setting and marking tasks and assignments, indicating where improvement is needed, sending out interim reports, congratulating excellence, etc.

Teachers will decide which instructional and assessment strategies to apply during the formative learning period. As formative and summative assessment are closely linked, some teachers may wish to modify the tools included in this section to use during the instructional process. Teachers may also develop their own summative assessment tools as long as the standards are consistent with the minimum expectations outlined by Alberta Learning.

## Grading and Reporting Student Achievement

When a student can demonstrate ALL of the exit-level competencies defined for a 1-credit course (general outcomes), the teacher will designate the course as “successfully completed.” The teacher will then use accepted grading practices to determine the percentage grade to be given for the course—a mark not less than 50%.

The time frame a teacher allows a student to develop the exit-level competency is a local decision. NOTE: The *Guide to Education: ECS to Grade 12* specifies that students must have access to 25 hours of instruction for each credit. Students may, however, attain the required competencies in less time and may then proceed to other courses.

Teachers are encouraged to consult their colleagues to ensure grading practices are as consistent as possible. Further information about assessing and reporting student achievement in CTS is provided in the *CTS Manual for Administrators, Counsellors & Teachers* (Assessing Student Achievement).

### Components of Assessment Standards in CTS

The following components are included in each 1-credit course:

- **general outcomes** (in the shaded left-hand column) define the exit-level competencies students are expected to achieve to complete the course. Each general outcome defines and describes critical behaviours that can be measured and observed. The student must meet the standard specified for **ALL** the general outcomes within a course to be successful.

- **suggested emphasis** (in the right-hand column) provides a guideline for the relative significance of each general outcome and can be used to organize for instruction.
- **criteria and conditions** (in the middle column) set the framework for the assessment of student competency, specifying the minimum standard for performance and including a reference to assessment tools, where appropriate.

*Criteria* define the behaviours that a student must demonstrate to meet the designated standard. For example, the criteria could describe the various techniques that must be demonstrated when using a tool, and/or describe the minimum components of a project the student must complete.

*Conditions* outline the specifications under which a student's competency can be judged. For example, the conditions could specify whether the assessment should be timed or not, or if the student should be allowed to access to support resources or references.

*Standard* may be defined by (1) assessment tools, which are referenced in this section (or sometimes in approved learning resources) and/or (2) "illustrative examples" of student work, if appropriate.

*Assessment Tools* included in this section of the Guide tend to be of two types:

- tools generic to a strand or to the entire CTS program; e.g., a standard five-point rating scale is used in all strands. Other generic tools include assessing reports and presentations and lab safety checklists. (*Names of these tools include the strand code [e.g., "INF" for Information Processing] and a code for the type of tool [e.g., "TDENT" for Text-Data Entry].*)

- tools specific to a 1-credit course; e.g., assessment checklist for assessing a venture plan in Enterprise and Innovation or a checklist for sketching, drawing and modelling in Design Studies. (*Names of these tools include the course code; e.g., "INF1010-1" indicating that it is the first course-specific tool used in Information Processing Course 1010.*)

## Development and Validation Processes

The "Criteria and Conditions" and "Suggested Emphasis" columns have been validated with extensive input from teachers, professional associations/contacts and post-secondary institutions. The goal was to prepare well-structured assessment standards and related assessment tools that:

- establish an appropriate level of challenge and rigour
- relate directly to the type of learning described in the curriculum standard
- are easy to understand
- are efficient to implement
- can provide a consistent measure of what was expected to be measured.

As students and teachers work with the assessment standards and tools, it is expected that levels of performance will increase as more and more students are able to achieve the minimum standard. Therefore, the assessment standards and related tools will continue to be monitored, and revised as necessary to ensure appropriate levels of rigour and challenge, and successful transitions for students as they leave high school and enter the workplace or related post-secondary programs.

## **ASSESSING STUDENT ACHIEVEMENT IN COMMUNICATION TECHNOLOGY**

The Communication Technology curriculum is based on the premise that recognizable outcomes may be compared to stated standards. In Communication Technology, the standards identify students' growth in knowledge, skills and attitudes. The curriculum defines outcomes through the general outcomes and specific outcomes specified for each course. It also suggests criteria and conditions for assessment and the emphasis to be placed on each outcome. These elements combine to provide an overall framework for instruction and assessment.

But student growth and the assessment standards that describe this growth are brought about through several components. To get a clear picture of the growth, you need to consider the increased expectations of students with respect to their ability to use a technical or creative process or ability to produce photographs, videos, printed or electronic images. You must also consider the level of maturity and intellectual and technical skill students bring to their assignments and the rigour of the projects themselves. You will be able to establish benchmarks for assignments by referring to the criteria and conditions for assessments found in each course. The specifics of the assignments (e.g., theme, topic, resources, tools, materials, processes, scope) are up to you.

### **Assessment Strategies and Tools**

A variety of tools have been provided for your reference and use. In the development of the assessment materials there has been an attempt to keep it as simple as possible while also providing guidance and assistance to teachers. The tools are intended to help you assess students' work as accurately and consistently as possible by stating standards of performance for elements felt to be important within the curriculum as a whole or in specified courses. They also provide standards for basic competencies students should be able to demonstrate while engaging in learning.

The tools that have been developed are intended to be used as summative assessment tools. Depending on the way the classroom is organized, they may be used when the student has indicated he or she is ready for the final assessment or by the entire class at the end of the learning period.

### **Tools Generic to CTS**

The generic rating scale has been used to develop several of the tools in CTS. A generic framework for assessing the processes CTS students apply in completing a task or project is included in this section. It is based on the notion that students will follow a process as they work through their projects and that this process has a number of sequential steps. The framework shows the increasing expectations from the introductory, to the intermediate, to the advanced level.

Some assessment tools, e.g., Presentations/ Reports are generic to CTS and have been included in this Section. In assessing general outcomes at the introductory level, PRE100 would be used. Since the content portion of this tool must relate to the learning outcomes defined for specific courses, the tool has been adapted and included under Assessment Tools Specific to the Communication Technology strand.

The Basic Competencies Reference Guide can be used directly as a checklist or as a guide to assess these competencies through other teacher-developed tools.

### Assessment Framework: Presentation/Reports (CTSPRE)

This assessment framework deals with expectations of students as they make presentations and prepare reports at each of the three levels of the curriculum. It has been adapted from a generic pool of assessment tools that may be used in any CTS strand. You may wish to adapt this tool to meet your specific needs or use it as is in conjunction with other assessment tools.

### Assessment Framework: Research Process (CTSRES)

As with presentation/reports, this assessment framework deals with expectations of students conducting research in any aspect of the Communication Technology curriculum. It has also been adapted from a generic pool of assessment tools. You may wish to adapt this tool to meet your specific needs or use it as is in conjunction with other assessment tools.

#### **Tools Generic to Communication Technology**

Assessment tools generic to Communication Technology have been developed to assist in assessing student performance in key areas of learning across the scope and sequence. The generic tools communicate minimum performance standards for:

- conducting project work through the project-development process
- communicating information and ideas through the presentation process.

The generic tools referenced as applicable throughout each course in the criteria and conditions column are identified with a six-letter code (e.g., COMPAF for Communication Technology Project Assessment Framework, COMFEP for Framework for Evaluating Presentations).

#### **Tools Specific to Communication Technology**

Other assessment tools have been developed to assess competencies that are unique to specific courses within the Communication Technology strand. These “course specific” tools, also referenced in the criteria and conditions column, are identified by course number followed by a tool number (e.g., COM1070–1 for the first course-specific tool in course COM1070).

In some instances, authorized learning resources have been identified as assessment tools for specific courses. These learning resources usually contain test banks and other assessment strategies

considered effective in establishing minimum standards for achievement.

Where appropriate, “Illustrative Examples” or “Sample Assignments/Projects” have been provided in a further attempt to communicate realistic expectations and acceptable standards of achievement.

#### **Marks and Mark Ranges**

You will note that no marks or mark ranges have been assigned on any of the assessment tools, because you are in the best position to determine the marks students should receive for the work they produce. If a student meets the standards as stated in the assessment tools, he or she should receive credit for the course. However, it may be that one student’s work is “better” than another student’s because of its scope, technical quality or aesthetic quality. Or it may be that one student is more proficient than another owing to his or her perseverance, responsibility level or technical skill. You can recognize this through your marks even though both students will have met the standard for the course.

## BASIC COMPETENCIES REFERENCE GUIDE

The chart below outlines basic competencies that students endeavour to develop and enhance in each of the CTS strands and courses. Students' basic competencies should be assessed through observations involving the student, teacher(s), peers and others as they complete the requirements for each course. In general, there is a progression of task complexity and student initiative as outlined in the Developmental Framework\*. **As students progress through Stages 1, 2, 3 and 4 of this reference guide, they build on the competencies gained in earlier stages.** Students leaving high school should set themselves a goal of being able to demonstrate Stage 3 performance.

*Suggested strategies for classroom use include:*

- having students rate themselves and each other
- using in reflective conversation between teacher and student
- highlighting areas of strength
- tracking growth in various CTS strands
- highlighting areas upon which to focus
- maintaining a student portfolio.

Stage 1— <i>The student:</i>	Stage 2— <i>The student:</i>	Stage 3— <i>The student:</i>	Stage 4— <i>The student:</i>
<p><b>Managing Learning</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> comes to class prepared for learning</li> <li><input type="checkbox"/> follows basic instructions, as directed</li>   <li><input type="checkbox"/> acquires specialized knowledge, skills and attitudes</li> <li><input type="checkbox"/> identifies criteria for evaluating choices and making decisions</li>   <li><input type="checkbox"/> uses a variety of learning strategies</li> </ul>	<p style="text-align: center;"><input type="checkbox"/> → → →</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> follows instructions, with limited direction</li> <li><input type="checkbox"/> sets goals and establishes steps to achieve them, with direction</li>   <li><input type="checkbox"/> applies specialized knowledge, skills and attitudes in practical situations</li> <li><input type="checkbox"/> identifies and applies a range of effective strategies for solving problems and making decisions</li>   <li><input type="checkbox"/> explores and uses a variety of learning strategies, with limited direction</li> </ul>	<p style="text-align: center;"><input type="checkbox"/> → → →</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> follows detailed instructions on an independent basis</li> <li><input type="checkbox"/> sets clear goals and establishes steps to achieve them</li>   <li><input type="checkbox"/> transfers and applies specialized knowledge, skills and attitudes in a variety of situations</li> <li><input type="checkbox"/> uses a range of critical thinking skills to evaluate situations, solve problems and make decisions</li> <li><input type="checkbox"/> selects and uses effective learning strategies</li> <li><input type="checkbox"/> cooperates with others in the effective use of learning strategies</li> </ul>	<p style="text-align: center;"><input type="checkbox"/> → → →</p> <p style="text-align: center;"><input type="checkbox"/> → → →</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> demonstrates self-direction in learning, goal setting and goal achievement</li> <li><input type="checkbox"/> transfers and applies learning in new situations; demonstrates commitment to lifelong learning</li> <li><input type="checkbox"/> thinks critically and acts logically to evaluate situations, solve problems and make decisions</li>   <li><input type="checkbox"/> → → →</li> <li><input type="checkbox"/> provides leadership in the effective use of learning strategies</li> </ul>
<p><b>Managing Resources</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> adheres to established timelines; uses time/schedules/planners effectively</li> <li><input type="checkbox"/> uses information (material and human resources), as directed</li> <li><input type="checkbox"/> uses technology (facilities, equipment, supplies), as directed, to perform a task or provide a service</li> <li><input type="checkbox"/> maintains, stores and/or disposes of equipment and materials, as directed</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> creates and adheres to timelines, with limited direction; uses time/schedules/planners effectively</li> <li><input type="checkbox"/> accesses and uses a range of relevant information (material and human resources), with limited direction</li> <li><input type="checkbox"/> uses technology (facilities, equipment, supplies), as appropriate, to perform a task or provide a service, with minimal assistance and supervision</li> <li><input type="checkbox"/> maintains, stores and/or disposes of equipment and materials, with limited assistance</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> creates and adheres to detailed timelines on an independent basis; prioritizes task; uses time/schedules/planners effectively</li> <li><input type="checkbox"/> accesses a range of information (material and human resources), and recognizes when additional resources are required</li> <li><input type="checkbox"/> selects and uses appropriate technology (facilities, equipment, supplies) to perform a task or provide a service on an independent basis</li> <li><input type="checkbox"/> maintains, stores and/or disposes of equipment and materials on an independent basis</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> creates and adheres to detailed timelines; uses time/schedules/planners effectively; prioritizes tasks on a consistent basis</li> <li><input type="checkbox"/> uses a wide range of information (material and human resources) in order to support and enhance the basic requirement</li> <li><input type="checkbox"/> recognizes the monetary and intrinsic value of managing technology (facilities, equipment, supplies)</li> <li><input type="checkbox"/> demonstrates effective techniques for managing facilities, equipment and supplies</li> </ul>
<p><b>Problem Solving and Innovation</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> participates in problem solving as a process</li> <li><input type="checkbox"/> learns a range of problem-solving skills and approaches</li>   <li><input type="checkbox"/> practices problem-solving skills by responding appropriately to a clearly defined problem, specified goals and constraints, by: <ul style="list-style-type: none"> <li>– generating alternatives</li> <li>– evaluating alternatives</li> <li>– selecting appropriate alternative(s)</li> <li>– taking action</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> identifies the problem and selects an appropriate problem-solving approach, responding appropriately to specified goals and constraints</li> <li><input type="checkbox"/> applies problem-solving skills to a directed or a self-directed activity, by: <ul style="list-style-type: none"> <li>– generating alternatives</li> <li>– evaluating alternatives</li> <li>– selecting appropriate alternative(s)</li> <li>– taking action</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> thinks critically and acts logically in the context of problem solving</li> <li><input type="checkbox"/> transfers problem-solving skills to real-life situations, by generating new possibilities</li> <li><input type="checkbox"/> prepares implementation plans</li> <li><input type="checkbox"/> recognizes risks</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> identifies and resolves problems efficiently and effectively</li>   <li><input type="checkbox"/> identifies and suggests new ideas to get the job done creatively, by: <ul style="list-style-type: none"> <li>– combining ideas or information in new ways</li> <li>– making connections among seemingly unrelated ideas</li> <li>– seeking out opportunities in an active manner</li> </ul> </li> </ul>

# FRAMEWORK FOR EVALUATING PRESENTATIONS

COMFEP

Student Name: \_\_\_\_\_

Teacher: \_\_\_\_\_

Course/Topic: \_\_\_\_\_

Date: \_\_\_\_\_

CRITERIA	OBSERVATION/ RATING	STANDARD
Written Script	4 3 2 1 0	1
Content	4 3 2 1 0	1
Technical Quality	4 3 2 1 0	1
Presentation	4 3 2 1 0	1

## STANDARD IS 1 IN EACH APPLICABLE CRITERIA

### Rating Scale

*The student:*

- 4 exceeds defined outcomes. Plans and solves problems effectively and creatively in a self-directed manner. Tools, materials and/or processes are selected and used efficiently, effectively and with confidence.
- 3 meets defined outcomes. Plans and solves problems in a self-directed manner. Tools, materials and/or processes are selected and used efficiently and effectively.
- 2 meets defined outcomes. Plans and solves problems with limited assistance. Tools, materials and/or processes are selected and used appropriately.
- 1 meets defined outcomes. Follows a guided plan of action. A limited range of tools, materials and/or processes are used appropriately.
- 0 has not completed defined outcomes. Tools, materials and/or processes are used inappropriately.

### Assessment Tools

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### CRITERIA

*The student:*

#### Written Script

- uses attractive, easy-to-read format
- organizes format, including use of communication aids and special effects
- uses correct spelling, punctuation and grammatical conventions
- records information accurately, using correct technical terms
- sites sources of information when using copyright and/or public domain materials

#### Content

- selects content suitable to the audience
- demonstrates knowledge of the subject/topic being communicated
- provides an introduction that describes the purpose of the presentation
- communicates information in a logical sequence
- states a conclusion based on a summary of facts

### Technical Quality

- connects and uses audio, video and digital equipment as required
- maintains smoothness and continuity throughout the presentation
- emphasizes information by using effective placement and colour
- applies principles of graphic design to enhance meaning and audience appeal
- uses appropriate images, sounds and/or music to support the communication process

### Presentation

- delivers a presentation of appropriate length
- attracts attention with a strong opening
- builds interest by focusing on a single big idea
- makes effective use of voice and body language
- uses symbols, words and pictures to communicate conceptual ideas
- uses audio/visual aids that support the presentation
- communicates in a persuasive and engaging manner
- demonstrates effective integration of communication technologies in the presentation process

### COMMENTS

CTS, Communication Technology /G.17  
(Revised 1999)

## PRESENTATIONS/REPORTS

COM1010-1

Student Name: \_\_\_\_\_

Teacher: \_\_\_\_\_

Course/Topic: \_\_\_\_\_

Date: \_\_\_\_\_

CRITERIA	OBSERVATION/ RATING					STANDARD
Preparation and Planning	4	3	2	1	0	1
Presentation	4	3	2	1	0	1
Portfolio Development	4	3	2	1	0	1

### STANDARD IS 1 IN EACH APPLICABLE CRITERIA

### Rating Scale

*The student:*

- 4 exceeds defined outcomes. Plans and solves problems effectively and creatively in a self-directed manner. Tools, materials and/or processes are selected and used efficiently, effectively and with confidence.
- 3 meets defined outcomes. Plans and solves problems in a self-directed manner. Tools, materials and/or processes are selected and used efficiently and effectively.
- 2 meets defined outcomes. Plans and solves problems with limited assistance. Tools, materials and/or processes are selected and used appropriately.
- 1 meets defined outcomes. Follows a guided plan of action. A limited range of tools, materials and/or processes are used appropriately.
- 0 has not completed defined outcomes. Tools, materials and/or processes are used inappropriately.

### CRITERIA

*The student:*

#### Preparation and Planning

- sets goals and follows instructions accurately
- adheres to established timelines
- uses appropriate information gathering techniques
- selects information suitable to audience
- establishes a logical flow for content/activities
- plans for the use of one or more communication technologies
- uses time effectively

#### Presentation

- follows steps identified in the presentation process by:
  - demonstrating knowledge of information being presented
  - demonstrating knowledge of audience
  - providing an introduction that describes the purpose of the presentation
  - communicating information in a logical sequence
  - stating a conclusion based on a summary of facts
  - citing sources of information when using copyright and/or public domain materials

#### Presentation (continued)

- makes effective use of one or more communication technologies (e.g., text, graphics, audio, video, animation) by:
  - representing conceptual ideas through the use of symbols, words, pictures and/or sounds
  - using effective placement and colour to emphasize information
  - connecting and using audio, video and digital equipment as required
  - uploading and downloading text, image, audio and video files as required
  - applying appropriate safety procedures for each technology that is used
- communicates information and/or ideas in a persuasive and engaging manner by:
  - speaking clearly and confidently
  - using correct grammatical conventions and technical terms
  - emphasizing/reviewing important points
  - making effective use of communication aids
  - responding to questions
  - using images, sounds and/or music to support the communication process

#### Portfolio Development

- creates a portfolio or adds assignment to existing portfolio

### COMMENTS

# SECTION I: LEARNING RESOURCE GUIDE

This section of the GSI explains how to obtain up-to-date information regarding learning resources that have been identified to support the delivery of courses in this strand. It provides directions for searching, by electronic means, the most current information on:

- authorized student basic, support and authorized teaching resources—resources approved by Alberta Learning for use in this strand
- provincial software agreements—licensing agreements that allow school jurisdictions to purchase educational software at significantly reduced prices
- additional sources of information—other titles and information sources that may provide potentially useful ideas for courses in this strand.

The resource listings compiled for this strand are time sensitive and subject to change. Teachers are encouraged to browse the web sites identified in this guide on a regular basis for the most up-to-date information on new learning resources, more recent versions/editions and other sources of support.

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# NOTICE

## SECTION I: LEARNING RESOURCE GUIDE

Alberta Learning authorizes a variety of resources that support learning and teaching in this strand. The 1999 amendments to Section I provide directions for obtaining, by electronic means, up-to-date information about authorized resources and other sources of information.

Teachers are encouraged to browse the web sites identified in this guide on a regular basis for the most up-to-date information on:

- authorized resources; i.e., student basic, support, and authorized teaching
- provincial software licensing agreements
- additional sources of support.

The lists of authorized resources that were previously included in Section I have been removed from the 1999 amendments to this document. From 1999 onward, up-to-date listings of authorized resources are to be accessed through:

- the Learning Resources Distributing Centre *Buyers Guide*, available electronically at <<http://ednet.edc.gov.ab.ca/lrdc>>
- the Authorized Resources Database, available electronically at <<http://ednet.edc.gov.ab.ca>> under Students and Learning, Learning and Teaching Resources.

Subsequent amendments to the *Guide to Standards and Implementation* for other CTS strands will include similar changes to Section I.

## LEARNING RESOURCE GUIDE

This section of the guide provides directions for obtaining, from electronic sources, up-to-date information about learning resources that support the delivery of CTS courses in this strand. Teachers may use the information to search for current listings of:

- authorized resources that support learning and teaching
  - basic learning resources
  - support learning resources
  - authorized teaching resources
- provincial software licensing agreements
- additional sources of information
  - other titles and sources that contain potentially useful information and ideas
  - web sites that may provide access to global networks of information.

Learning resources for this strand will continue to be updated in order to maintain and expand access to current information suitable for use in a variety of CTS learning environments.

### CTS AND THE RESOURCE-BASED CLASSROOM

CTS supports the development of resource-based classrooms where a variety of appropriate, up-to-date print and nonprint resources are available. This approach enables students to:

- interact with a wide range of information sources
- access and use information sources appropriately
- take an active role in managing their own learning.

CTS identifies learning resources in print, software, video and CDROM formats, as well as other sources of information available in the community and through the Internet.

Collaboration between the teacher–librarian and CTS teacher in planning resource-based research activities will ensure that students develop research skills as they increase their understanding of subject content. Planned and purposeful research activities will help students learn to

gather, process and share information, and will require access to a range of current print and nonprint resources available in the school library, other libraries, the community and/or from other sources.

Teachers are encouraged to reference *Focus on Research: A Guide to Developing Students' Research Skills*, referenced in the Alberta Learning Monographs section of this guide, when planning research activities.

### LEARNING RESOURCE POLICY

Alberta Learning authorizes resources considered appropriate for provincial programs of study and that have met criteria for acceptability. The authorized resources for CTS include:

- student basic—resources that address the majority of the learner outcomes in one or more CTS courses
- student support—resources that assist in addressing some of the learner outcomes of a CTS course
- authorized teaching—resources that support the implementation of one or more CTS courses and assist teachers in the instructional process.

The Learning Technologies Branch also has developed distance education materials for a number of CTS courses. These course materials, also authorized by the province of Alberta, include a range of print and electronic products that can be used to support teaching and learning in CTS.

School boards may identify and approve instructional materials for use in their schools under section 44 (2) of the *School Act*. Many school boards have delegated the power to approve resources to school staff or other board employees under section 45 (1) of the *School Act*.

For further information on resource policy and definitions, refer to the *Student Learning Resources Policy* and *Teaching Resources Policy* or contact:

Learning Resources Unit  
Curriculum Standards Branch  
Alberta Learning  
5<sup>th</sup> Floor, Devonian Building, East Tower  
11160 Jasper Avenue  
Edmonton, AB, Canada T5K 0L2  
Telephone: 780-422-4872 (to be connected toll free inside Alberta dial 310-0000)  
Fax: 780-422-0576  
Internet: <<http://ednet.edc.gov.ab.ca>>

## HOW TO OBTAIN UP-TO-DATE INFORMATION

### Authorized Resources

A searchable online index of all student basic, support and authorized teaching resources for courses in this CTS strand is provided through the Authorized Resources Database on the provincial web site. Each entry in the database provides bibliographic information about the resource, an annotation where appropriate, a correlation to specific one-credit courses in this strand, and information about how to obtain the resource.

The Authorized Resources Database can be accessed at <<http://ednet.edc.gov.ab.ca>>:

- click on “Students and Learning”
- select “Learning and Teaching Resources”
- then select the “Authorized Resources Database”.

When using the database to search for resources within a particular CTS strand:

- enter the strand name as the “Curricular Area”
- select the desired “Format” and “Authorization Status” from the options provided
- click on “Submit”.

The database begins each list of student basic, support and authorized teaching resources with those resources that been authorized most recently.

Upon first entering the database, the user is provided with a title and brief description of each resource, accompanied with copyright information, authorization status, number of pages and intended use by curriculum area and grades. Then by clicking on the “More” icon, a more detailed description of each resource can be obtained, along with additional information regarding publisher/distributor, physical appearance, cost, correlation to individual CTS courses, how to obtain the resource and where the resource can be previewed.

Up-to-date information regarding the availability of distance education materials for CTS courses (i.e., print products, electronic products, products in development) can also be obtained through the web site:

- click on “Students and Learning”
- select “Learning and Teaching Resources”
- then select the “Learning Technologies Branch”.

Teachers are encouraged to browse the Authorized Resources Database and Learning Technologies Branch Homepage on a regular basis for the most up-to-date information on authorized learning resources and distance education course materials that are available.

### Provincial Software Agreements

Due to frequent upgrades occurring in productivity software (e.g., software packages developed for word processing, spreadsheet, database, multimedia, drawing and design applications), this kind of software is no longer authorized by the department. However, a number of provincial licensing agreements for software products are in place that allow school jurisdictions to purchase productivity software at significantly reduced prices.

An up-to-date listing of provincial software agreements can be obtained through the “Technology” section of the web site. Teachers are encouraged to browse this listing on a regular basis for information regarding additional provincial software licensing agreements that may be established from time to time.

## HOW TO ORDER AUTHORIZED RESOURCES

Most of the student basic, support and authorized teaching resources can be obtained from the Learning Resources Distributing Centre (LRDC). The LRDC *Buyer's Guide*, available in electronic or print formats, provides a complete listing of resources available for purchase and additional ordering information. The LRDC can be contacted at:

12360 – 142 Street  
Edmonton, AB, Canada T5L 4X9  
Telephone: 780-427-5775 (to be connected toll free inside Alberta dial 310-0000)  
Fax: 780-422-9750  
Internet: <<http://ednet.edc.gov.ab.ca/lrdc>>.

It is recommended that all resources be previewed prior to purchase. In some instances, teachers may find it desirable to purchase one copy for their reference and additional copies as required.

## ADDITIONAL SOURCES OF INFORMATION

There are many additional sources of information—other titles, and information available from government, professional associations, industry organizations and community agencies—that may provide potentially useful ideas for courses in this strand. Of further note are a number of web sites relevant to courses in this strand, which when used effectively, can provide both teachers and learners with a global network of useable information.

**The responsibility to evaluate these additional sources of information prior to selection rests with the user, in accordance with any existing local policy.**

## CTS Council

An online listing of additional sources of information relevant to courses in this strand is available on the CTS Council web site at <<http://ctscouncil.com>>. This site can be accessed through the CTS homepage by going to “Related Sites”.

Each entry in this listing includes the name of the resource or agency/organization, appropriate distributor/contact information, and where possible a description of the materials/services available.

The CTS Council welcomes your suggestions for maintaining and expanding the sources of information that are shared through this site.

## Telus 2Learn Alliance

A searchable online listing of web sites containing information and materials relevant to courses in this strand is available through the Telus 2Learn Alliance at <<http://www.2Learn.ca>>. This site can also be accessed through the CTS homepage by going to “Related Sites”.

The Telus 2Learn Alliance welcomes your feedback and ideas on these and other sites relevant to courses in this strand.

## OTHER SOURCES OF SUPPORT

### ACCESS: The Education Station

ACCESS: The Education Station offers a variety of resources and services to teachers. For a nominal dubbing and tape fee, ACCESS: The Education Station will copy audiotapes and videotapes for teachers.

ACCESS: The Education Station publishes listings of audiocassettes and videocassettes as well as a comprehensive programming schedule. For further information, visit their web site at <<http://www.accessstv.ab.ca>>.

## **National Film Board of Canada**

The National Film Board of Canada (NFB) has numerous audiovisual resources that may be suitable for use in CTS courses. While these resources can be ordered directly from the NFB, many of their materials are also available in public libraries.

For a list of NFB audiovisual resources indexed by title and subject, or to place an order for audiovisual resources, visit their web site at <<http://www.nfb.ca>>.

## **Media and Resource Centres**

There are a number of urban media and regional resource centres across the province that provide on a loan basis instructional materials that may support CTS courses. Teachers are encouraged to contact their local media or resource centre for further information regarding services that are available.

### Urban Media Centres

Calgary Board of Education  
Calgary, AB, Canada  
Web site: <[www.cbe.ab.ca](http://www.cbe.ab.ca)>

Calgary Separate School Board  
Calgary, AB, Canada  
Web site: <[www.crcssd1.calgary.ab.ca](http://www.crcssd1.calgary.ab.ca)>

Edmonton Catholic School District  
Edmonton, AB, Canada  
Web site: <[www.ecs.edmonton.ab.ca](http://www.ecs.edmonton.ab.ca)>

Edmonton Public School Board  
Edmonton, AB, Canada  
Web site: <[www.epsb.edmonton.ab.ca](http://www.epsb.edmonton.ab.ca)>

Elk Island Public School Division  
Sherwood Park, AB, Canada  
Web site: <[www.ei.educ.ab.ca](http://www.ei.educ.ab.ca)>

Medicine Hat School District  
Medicine Hat, AB, Canada  
Web site: <[www.sd76.ab.ca](http://www.sd76.ab.ca)>

Northern Lights School Division  
Spirit River, AB, Canada  
Web site: <[www.nlsd.ab.ca](http://www.nlsd.ab.ca)>

Red Deer Public School District  
Red Deer, AB, Canada  
Web site: <[www.rdpsd.ab.ca](http://www.rdpsd.ab.ca)>

### Regional Resource Centres

Zone 1  
Zone One Regional Resource Centre  
Peace River, AB, Canada  
Web site: (not yet available)

Zone 2/3  
Central Alberta Media Services  
Sherwood Park, AB, Canada  
Web site: <[www.cams.ab.ca](http://www.cams.ab.ca)>

Zone 4  
Parkland Regional Library  
Lacombe, AB, Canada  
Web site: <[www.prl.lacombe.ab.ca](http://www.prl.lacombe.ab.ca)>

Zone 5  
South Central Alberta Resource Centre  
Strathmore, AB, Canada  
Web site: (available in September 1999)

Zone 6  
Southern Alberta Learning Resource Centre  
Lethbridge, AB, Canada  
Web site: (available in July 1999)

## **Alberta Learning Monographs**

The following monographs are available for purchase from the Learning Resources Distributing Centre. Refer to the "Support Documents" section or the "Legal, Service and Information Publications" section in the LRDC *Buyers Guide* for ordering information and costs.

- *The Emerging Student: Relationships Among the Cognitive, Social and Physical Domains of Development*, 1991 (LRDC Product No. 161555)

This document examines the child, or student, as a productive learner, integrating all the domains of development: cognitive, social and physical. It emphasizes the need for providing balanced curriculum and instruction.

- *Students' Interactions Developmental Framework: The Social Sphere*, 1988 (LRDC Product No. 161399)

This document examines children's perceptual, structural and motor development and how such physical development affects certain learning processes.

- *Focus on Research: A Guide to Developing Students' Research Skills*, 1990 (LRDC Product No. 161802)

This document outlines a resource-based research model that helps students manage information effectively and efficiently, and gain skills that are transferable to school and work situations. This model provides a developmental approach to teaching students how to do research.

- *Teaching Thinking: Enhancing Learning*, 1990 (LRDC Product No. 161521)

Principles and guidelines for cultivating thinking, ECS to Grade 12, have been developed in this resource. It offers a definition of thinking, describes nine basic principles on which the suggested practices are based, and discusses possible procedures for implementation in schools and classrooms.

*[The 1997 text was deleted September 1999.]*

***Note***

*Effective September 1999,  
pages I.9 to I.32 have been deleted  
and not replaced.*