
CAREER AND TECHNOLOGY STUDIES

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.



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.



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	30
3. Communication Technology	33
4. Community Health	31
5. Construction Technologies	46
6. Cosmetology Studies	58
7. Design Studies	31
8. Electro-Technologies	47
9. Energy and Mines	26
10. Enterprise and Innovation	8
11. Fabrication Studies	44
12. Fashion Studies	29
13. Financial Management	16
14. Foods	37
15. Forestry	21
16. Information Processing	53
17. Legal Studies	13
18. Logistics	12
19. Management and Marketing	23
20. Mechanics	54
21. Tourism Studies	24
22. Wildlife	17

LEVELS OF ACHIEVEMENT

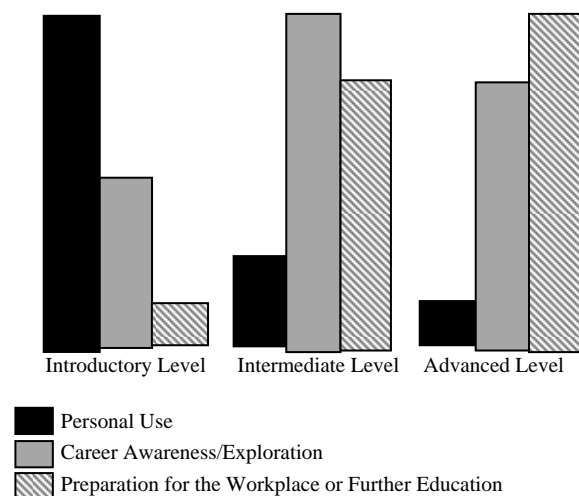
Courses are organized into three levels of achievement: **introductory**, **intermediate** and **advanced**. As students progress through the levels, they will be expected to meet higher standards and demonstrate an increased degree of competence, in both the program outcomes and the general outcomes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

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

FORESTRY

B. STRAND RATIONALE AND PHILOSOPHY

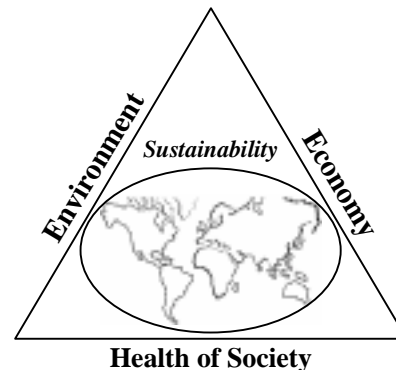
Forests are a source of natural wealth and cover almost two-thirds of Alberta. The resources found on or beneath these public lands contribute to our economy and quality of life. Forested lands in Alberta and Canada provide wildlife habitats, vital watersheds, grazing lands, outdoor recreation and tourism opportunities, and support the development of the forest products industry.

Achieving harmony among the diverse and sometimes competing needs associated with forested lands is an important and continuing task. Through public involvement and a team approach, integrated resource management provides a process for achieving balanced use of forest resources.

Recently, global levels of public concern for forests has expanded to embrace practices that ensure sustainable use of forest ecosystems. Such sustainable use of resources and the environment today will not damage prospects for their continued use by future generations.★

Forestry, a strand in Career and Technology Studies, will provide opportunities for students to examine the dynamics of forest ecosystems, as well as the many benefits and opportunities associated with forests. Conservation is viewed throughout this strand as a process for managing

human use of the forest environment to ensure such use is sustainable. Students will develop practical knowledge of industry practices that support the integrated and sustainable development of forest resources.



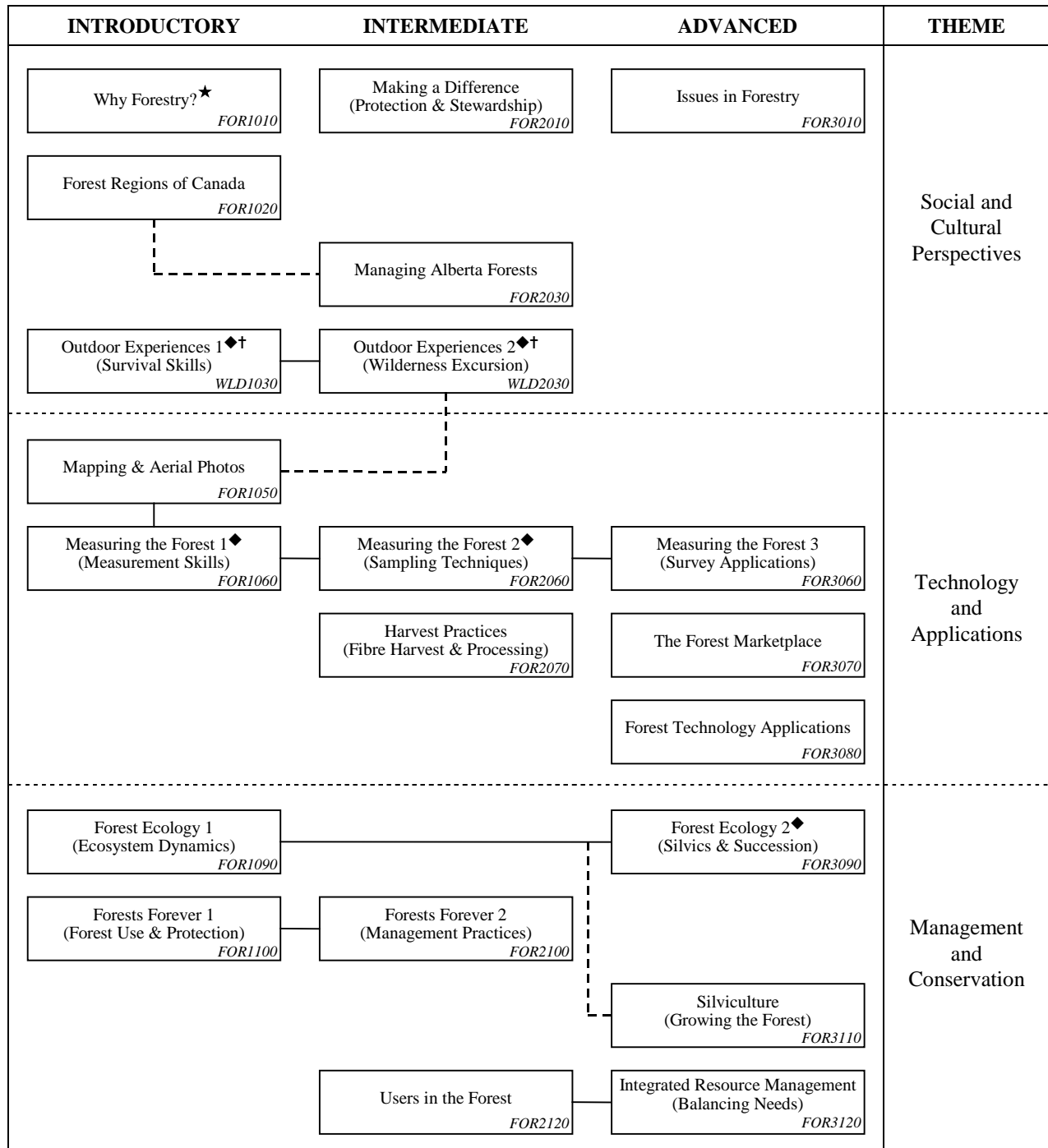
Students in Forestry will develop the knowledge, skills, attitudes, motivation and commitment to work individually and collectively, as private citizens and members of the work force, toward the conservation and responsible use of water, land, air, forests and wildlife. Within the philosophy of Career and Technology Studies, *students in Forestry will:*

- develop greater awareness of the economic, environmental and social significance of the forest resource in Alberta and the rest of the world, and the benefits and costs of resource development

★ Parks Canada and the Canadian Wildlife Service. *The Nature of Canada: A Primer on Spaces and Species*. Ottawa, ON: Environment Canada, 1993.

- describe relationships among production, processing and marketing systems within the forest products industry
- describe technologies and research programs designed to develop, conserve, protect, enhance and sustain the productivity of forested lands
- translate sustainable development and conservation goals into viable plans for managing use of the forest resource
- develop competencies and behaviours that have broad application to environmental career paths, and specific application to careers within Alberta's forest industries.

SCOPE AND SEQUENCE



—— Prerequisite

----- Recommended sequence

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

◆ Refer to specific courses for additional prerequisites.

† Course is also offered in Wildlife.

GENERAL OUTCOMES: INTRODUCTORY LEVEL

COURSE FOR1010: WHY FORESTRY?

Level: Introductory

Theme: Social and Cultural Perspectives

Prerequisite: None

Description: Students explain the social, economic and environmental significance of forests, describe the impact of individuals on forests, and identify career opportunities in forestry.

General Outcomes: *The student will:*

- describe the social, economic and environmental significance of forests
- explain how personal needs, wants, beliefs and actions may influence the forest resource
- identify career opportunities relevant to forestry
- demonstrate basic competencies.

COURSE FOR1020: FOREST REGIONS OF CANADA

Level: Introductory

Theme: Social and Cultural Perspectives

Prerequisite: None

Description: Students identify factors that determine the distribution of forests, as well as research forest regions of Canada with an emphasis on specific species and forest associations found in Alberta.

General Outcomes: *The student will:*

- identify factors that determine the type and distribution of forests
- locate and describe the forest regions of Canada
- identify and describe trees that grow in specific regions of Canada and Alberta
- demonstrate basic competencies.

COURSE WLD1030: OUTDOOR EXPERIENCES 1 (SURVIVAL SKILLS)

Level: Introductory

Theme: Social and Cultural Perspectives

Prerequisite: Emergency First Aid (current certification)

Description: Students demonstrate basic skills required for responsible participation in a range of outdoor activities.

General Outcomes: *The student will:*

- demonstrate knowledge and skills necessary for responsible outdoor experiences
- conduct safe outdoor activities that have minimal environmental impact
- demonstrate basic competencies.

COURSE FOR1050: MAPPING & AERIAL PHOTOS

Level: Introductory

Theme: Technology and Applications

Prerequisite: None

Description: Students interpret information from different types of maps and aerial photographs used in the forestry industry.

General Outcomes: *The student will:*

- describe different types of maps and aerial photographs used in forestry
- interpret and apply information from maps and aerial photographs
- demonstrate procedures used to create maps
- identify careers in the forest industry relevant to mapping and aerial photography
- demonstrate basic competencies.

COURSE FOR1060: MEASURING THE FOREST 1 (MEASUREMENT SKILLS)

Level: Introductory

Theme: Technology and Applications

Prerequisite: FOR1050 Mapping & Aerial Photos
Emergency First Aid (current certification)

Description: Students demonstrate basic forest measurement skills, and apply these skills to sample fibre values in a forested region.

General Outcomes: *The student will:*

- explain the goals and techniques of conducting forest surveys
- demonstrate basic compass and measurement skills used in forest inventory practices
- gather sample data regarding fibre volumes in a forested region
- demonstrate basic competencies.

COURSE FOR1090: FOREST ECOLOGY 1 (ECOSYSTEM DYNAMICS)

Level: Introductory

Theme: Management and Conservation

Prerequisite: None

Description: Students investigate forest ecosystems, and explain the structure and functioning of trees.

General Outcomes: *The student will:*

- describe interrelationships among elements in the forest ecosystem
- describe structural units of the tree and their function in performing life processes
- demonstrate basic competencies.

COURSE FOR1100: FORESTS FOREVER 1 (FOREST USE & PROTECTION)

Level: Introductory

Theme: Management and Conservation

Prerequisite: None

Description: Students describe past and present uses of Canada's forests, and explain how research and technology assist in forest management.

General Outcomes: *The student will:*

- describe past and present uses of forests in Alberta and Canada
- explain how the consumptive and nonconsumptive use of forests has created a need for conservation and sustainable management of forested regions
- describe the role of research and technology in forest protection
- demonstrate basic competencies.

GENERAL OUTCOMES: INTERMEDIATE LEVEL

COURSE FOR2010: MAKING A DIFFERENCE (PROTECTION & STEWARDSHIP)

Level: Intermediate

Theme: Social and Cultural Perspectives

Prerequisite: None

Description: Students analyze the impact of attitudes, actions and lifestyles on forests, and propose individual and shared actions that foster environmental stewardship.

General Outcomes: *The student will:*

- describe the impact of personal attitudes, actions and lifestyle on the forest resource
- explain strategies for reducing, reusing and recycling
- demonstrate, through personal and shared actions, commitment to environmental responsibility/citizenship
- demonstrate basic competencies.

COURSE FOR2030: MANAGING ALBERTA FORESTS

Level: Intermediate

Theme: Social and Cultural Perspectives

Prerequisite: None

Description: Students research agencies and structures used to manage forested lands in Alberta.

General Outcomes: *The student will:*

- explain how Alberta's forested lands are managed
- describe government legislation and policies that influence the use of Alberta's forest resource
- explain methods of allocating land and timber in forest management
- demonstrate basic competencies.

COURSE WLD2030: OUTDOOR EXPERIENCES 2 (WILDERNESS EXCURSION)

Level: Intermediate

Theme: Social and Cultural Perspectives

Prerequisite: WLD1030 Outdoor Experiences 1 (Survival Skills)
Emergency First Aid (current certification)

Description: Students plan, prepare for and conduct an extended outdoor wilderness trip.

General Outcomes: *The student will:*

- present a plan for an extended outdoor wilderness trip
- conduct and conclude, safely, an extended outdoor wilderness trip with minimal impact on the environment
- demonstrate basic competencies.

COURSE FOR2060: MEASURING THE FOREST 2 (SAMPLING TECHNIQUES)

Level: Intermediate

Theme: Technology and Applications

Prerequisite: FOR1060 Measuring the Forest 1 (Measurement Skills)
Emergency First Aid (current certification)

Description: Students research current forest inventory practices, and demonstrate appropriate strategies for sampling the fibre and nonfibre values of forests.

General Outcomes: *The student will:*

- describe random and systematic sampling techniques for gathering information about the forest resource
- gather sample data regarding fibre and nonfibre values in a forested region
- demonstrate basic competencies.

COURSE FOR2070: HARVEST PRACTICES (FIBRE HARVEST & PROCESSING)

Level: Intermediate

Theme: Technology and Applications

Prerequisite: None

Description: Students research the steps involved in harvesting and processing the forest fibre resource.

General Outcomes: *The student will:*

- identify major components of a plan for a forest harvest
- describe the mechanics of harvesting trees
- explain techniques used in fibre utilization and product formation
- describe career opportunities relevant to forest harvesting and fibre use
- demonstrate basic competencies.

COURSE FOR2100: FORESTS FOREVER 2 (MANAGEMENT PRACTICES)

Level: Intermediate

Theme: Management and Conservation

Prerequisite: FOR1100 Forests Forever 1 (Forest Use & Protection)

Description: Students explain Alberta's forest management goals, and describe the current management practices used to address these goals.

General Outcomes: *The student will:*

- explain the goals of Alberta forest management
- identify different types of forest use and the views and values of different users in the forest
- describe sustainable management practices within the context of Alberta's forested lands
- demonstrate basic competencies.

COURSE FOR2120: USERS IN THE FOREST

Level: Intermediate

Theme: Management and Conservation

Prerequisite: None

Description: Students identify different forest users, and explain the planning principles used to develop an integrated resource management plan.

General Outcomes: *The student will:*

- identify different uses of the forest and the needs of each forest user
- explain principles of multiple and integrated land use
- describe a plan for integrated resource management
- demonstrate basic competencies.

GENERAL OUTCOMES: ADVANCED LEVEL

COURSE FOR3010: ISSUES IN FORESTRY

Level: Advanced

Theme: Social and Cultural Perspectives

Prerequisite: None

Description: Students analyze current local and global issues in forest management, and demonstrate individual and shared actions that foster environmental stewardship.

General Outcomes: *The student will:*

- describe alternatives and consequences associated with current issues in forest management
- compare and contrast issues and trends involving Canada's forests with similar issues and trends in other parts of the world
- demonstrate individual and shared actions that foster the sustainable management of forested regions
- demonstrate basic competencies.

COURSE FOR3060: MEASURING THE FOREST 3 (SURVEY APPLICATIONS)

Level: Advanced

Theme: Technology and Applications

Prerequisite: FOR2060 Measuring the Forest 2 (Sampling Techniques)

Description: Students explain management applications of data collected from a forest survey, and examine the role of technology in current forest inventory practices.

General Outcomes: *The student will:*

- explain the applications of forest survey data in resource management
- describe the role of technology in current forest inventory practices
- explain career opportunities relevant to forest measurement
- demonstrate basic competencies.

COURSE FOR3070: THE FOREST MARKETPLACE

Level: Advanced

Theme: Technology and Applications

Prerequisite: None

Description: Students describe the range of consumer products and services derived from Canada's forests, and research the production and marketing of these forest products.

General Outcomes: *The student will:*

- describe fibre and nonfibre products and services derived from Canada's forests
- explain processes used in developing fibre and nonfibre forest products and services in Canada and Alberta
- identify market trends, and develop a marketing plan for a forest product or service
- explain career opportunities relevant to developing and marketing forest products
- demonstrate basic competencies.

COURSE FOR3080: FOREST TECHNOLOGY APPLICATIONS

Level: Advanced

Theme: Technology and Applications

Prerequisite: None

Description: Students examine research and technological applications in the forest industry, and examine changing career opportunities in the forestry sector.

General Outcomes: *The student will:*

- describe different areas of forest research presently being conducted in Canada and Alberta
- cite examples of current and emerging technologies used in the forest industry
- explain career opportunities and trends relevant to the forestry sector
- demonstrate basic competencies.

COURSE FOR3090: FOREST ECOLOGY 2 (SILVICS & SUCCESSION)

Level: Advanced

Theme: Management and Conservation

Prerequisite: FOR1090 Forest Ecology 1 (Ecosystem Dynamics) or Biology 20
Emergency First Aid (current certification)

Description: Students investigate the interrelationships among soil, water, air, trees and the environment, and explain how forests change over time as a result of these interrelationships.

General Outcomes: *The student will:*

- explain the effects of soil, air and water characteristics on forest ecosystems
- identify factors that determine the presence of tree species and forest ecosystems in particular environments
- explain the process of change in a forest environment
- demonstrate basic competencies.

COURSE FOR3110: SILVICULTURE (GROWING THE FOREST)

Level: Advanced

Theme: Management and Conservation

Prerequisite: None

Description: Students demonstrate knowledge of the techniques used to establish, grow and harvest tree crops.

General Outcomes: *The student will:*

- describe silviculture and the silvics of Alberta tree species
- demonstrate practices used to establish a stand of trees and manipulate growing conditions to favour particular species
- describe and compare methods of harvesting tree species
- explain career opportunities relevant to silviculture
- demonstrate basic competencies.

COURSE FOR3120: INTEGRATED RESOURCE MANAGEMENT (BALANCING NEEDS)

Level: Advanced

Theme: Management and Conservation

Prerequisite: FOR2120 Users in the Forest

Description: Students develop and present an integrated plan for sustainable development of the forest resource.

General Outcomes: *The student will:*

- describe basic forest management principles
- develop a plan for sustainable development and integrated use of forested land
- demonstrate basic competencies.