

# MODULE CURRICULUM AND ASSESSMENT STANDARDS:

## SECTION D: INTRODUCTORY LEVEL

The following pages define the curriculum and assessment standards for the introductory level of Agriculture.

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

Module learner expectations define the competencies a student must demonstrate to achieve success in a module. Assessment standards define the criteria and conditions to be used for assessing the competencies defined in the module learner expectations.

Specific learner expectations provide a detailed framework for instruction to help students build the competencies defined in the module learner expectations. Additional information and suggestions for instruction are provided in the Notes column; teachers may wish to use this space to record their ideas for instruction or student projects.

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## MODULE AGR1010: AGRICULTURE: THE BIG PICTURE

**Level:** Introductory

**Theme:** Social and Cultural Perspectives

**Prerequisite:** None

**Module Description:** Students demonstrate knowledge of the diversity and significance of agriculture, and they identify career opportunities within the industry.

**Module Parameters:** Access to a rural and/or urban agriculture industry.

### Curriculum and Assessment Standards

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> <li>describe the diversity of agriculture activity in Alberta, Canada and the global community</li> </ul>	<p><i>Assessment of student achievement should be based on:</i></p> <ul style="list-style-type: none"> <li>a definition/explanation of comprehensive agriculture that encompasses three or more examples of each of the following:               <ul style="list-style-type: none"> <li>production operations</li> <li>processing systems and value-added products</li> <li>marketing and distribution systems</li> <li>business and labour providing inputs and services</li> <li>community services and government agencies serving agriculture.</li> </ul> </li> </ul> <p>Examples to be representative of agriculture activity in Alberta, Canada and the global community.</p> <p><i>Assessment Tool</i>  <i>Knowledge/Application Assessment:</i>            Comprehensive Agriculture, AGR1010–1            Space Age Agriculture: Land and Life</p> <p><i>Standard</i>            Address 5 of the criteria for a definition/explanation of comprehensive agriculture (as identified in AGR1010–1) to a standard of 1 on the rating scale</p>	<p>30</p>



**MODULE AGR1010: AGRICULTURE: THE BIG PICTURE** (continued)

Module Learner Expectations	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>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>Integrated throughout</p>

Concept	Specific Learner Expectations	Notes
<p>Diversity</p>	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>explain the function of subsistence agriculture and commercial agriculture</li> <li>compare agricultural activities in rural and urban areas; e.g.:               <ul style="list-style-type: none"> <li>scale of industry</li> <li>labour requirements</li> <li>type of commodity produced</li> <li>market opportunities</li> <li>degree of mechanization</li> </ul> </li> <li>describe production and consumption patterns of agricultural products at local, national and international levels</li> <li>identify evolving and emerging forms of agriculture that have potential to provide aesthetic, emotional, economic and health benefits; e.g.:               <ul style="list-style-type: none"> <li>food and textiles</li> <li>industrial applications</li> <li>greenhouse production</li> <li>interior plantscape and landscape</li> <li>animal husbandry and health care</li> </ul> </li> <li>identify business/labour that provides inputs and services to agriculture</li> <li>describe the function of community services and government agencies serving agriculture.</li> </ul>	<p>Research how grain was first planted for domestic use.</p> <p>Visit a Farmers' Market. Consider the diversity of agriculture evident through products being sold.</p> <p>Use world maps to show food production/ consumption patterns.</p> <p>Survey local area to determine plants/ animals grown for food. Prepare a display featuring these plants/animals.</p> <p>Invite government and/or industry resource persons to explain their role in agriculture.</p>

**MODULE AGR1010: AGRICULTURE: THE BIG PICTURE** (continued)

Concept	Specific Learner Expectations	Notes
<p>Economic, Environmental and Social Significance</p>	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>• relate consumer needs and wants to a rationale for the exchange of agricultural goods and services at local, national and global levels</li> <li>• describe the exchange of agricultural goods and services between Canada and other nations, and its impact on the national economy</li> <li>• assess the impact of agriculture on quality of life factors; e.g.:               <ul style="list-style-type: none"> <li>– rural and urban development</li> <li>– sustainable food supply</li> <li>– use of natural resources</li> <li>– lifestyle</li> </ul> </li> <li>• define sustainable agriculture production</li> <li>• explain the importance of sustainable production systems in meeting societal needs for food and other amenities, conserving natural resources and enhancing the quality of the environment</li> <li>• assess the impact of choices and decisions made by citizens on the agriculture industry; e.g.:               <ul style="list-style-type: none"> <li>– selection of foods and textiles</li> <li>– use of land and/or chemicals</li> <li>– concern for animal welfare</li> <li>– support given to development and research.</li> </ul> </li> </ul>	<p>Investigate relationships between production and consumption patterns.</p> <p>Prepare a scrapbook of historical trends in the production of a commodity/product.</p> <p>Compare the economic significance of two or more agriculture industries in Alberta. Obtain relevant and current resources from:</p> <ul style="list-style-type: none"> <li>• Alberta Agriculture, Food and Rural Development</li> <li>• Agriculture Canada</li> <li>• Alberta Economic Development Productivity Council.</li> </ul> <p>Research the impact of agriculture on ecosystems.</p> <p>Keep a journal of media articles regarding consumer preferences and their influence on various facets of the agriculture industry.</p>
<p>Career Opportunities</p>	<ul style="list-style-type: none"> <li>• outline potential careers within the agriculture/horticulture industry; e.g.:               <ul style="list-style-type: none"> <li>– production science and management</li> <li>– processing (food/fibre/industrial/horticultural)</li> <li>– marketing, distribution and retail services</li> <li>– support services</li> <li>– resource management</li> </ul> </li> </ul>	<p>Interview community members regarding their involvement in agriculture.</p>

**MODULE AGR1010: AGRICULTURE: THE BIG PICTURE** (continued)

Concept	Specific Learner Expectations	Notes
Career Opportunities (continued)	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>• compare career opportunities in rural and urban areas</li> <li>• describe employment statistics for one or more career opportunities; e.g.:               <ul style="list-style-type: none"> <li>– types of occupations</li> <li>– number of workers</li> <li>– employment trends</li> </ul> </li> <li>• predict career opportunities and trends from employment statistics</li> <li>• describe information regarding agriculture/horticulture industries in the future, and resulting career opportunities.</li> </ul>	<p>Compile comprehensive lists of agriculture-related careers.</p> <p>Contact the “Career Hotline” (telephone: 1-800-661-3753).</p> <p>Plan for individual/group research and presentations.</p> <p>See the National Occupational Profiles (NOC) in Section H: Linkages/Transitions.</p>



## MODULE AGR1030: PRODUCTION BASICS

**Level:** Introductory

**Theme:** Technology and Applications

**Prerequisite:** None

**Module Description:** Students demonstrate the basic steps involved in planting, growing and harvesting a plant commodity; or in raising, growing and finishing an animal commodity, and they identify related career opportunities.

**Module Parameters:** Access to plant or animal production facilities.

Off-campus learning can support the development of practical skills in plant/animal production; consultation with a work site supervisor ensures that relevant safety considerations are addressed and that student learning meets or exceeds the learner expectations in this module.

See the *Off-campus Education Guide for Administrators, Counsellors and Teachers* (Alberta Education, 1995) for further information regarding off-campus learning.

**Note:** Opportunities may exist for the completion of practical components of this module through projects undertaken with local youth groups; e.g., 4-H Clubs.

**Supporting Module:** CTR1210 Personal Safety (Management) [Career Transitions Strand]

Because of the practical nature of this module, students need a general knowledge of accepted practices and potential hazards when performing tasks related to plant or animal production. See Planning for Instruction in Section C for further information on student safety.

### Curriculum and Assessment Standards

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"><li>identify and demonstrate the basic steps and procedures involved in producing a plant or animal commodity</li></ul>	<p><i>Assessment of student achievement should be based on:</i></p> <ul style="list-style-type: none"><li>preparing a flow chart that illustrates basic stages and steps involved in planting, growing and harvesting a plant commodity, or raising, growing and finishing an animal commodity.</li></ul> <p><i>Assessment Tool</i> <i>Assessment Criteria: Flow Charts, AGRFLO</i> <i>Sample Flow Chart: Production Basics, AGR1030-1</i></p> <p><i>Standard</i> <i>Complete flow chart of plant/animal production tasks to a standard of 1 on the rating scale</i></p>	25

**MODULE AGR1030: PRODUCTION BASICS (continued)**

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> <li>describe technological systems used within a plant or animal production enterprise</li> </ul>	<p><i>Assessment of student achievement should be based on:</i></p> <ul style="list-style-type: none"> <li>performing practical tasks relevant to plant or animal production. Practical tasks to involve monitoring and maintaining <u>one</u> or more of the following:               <ul style="list-style-type: none"> <li>physical growth requirements</li> <li>plant/animal health</li> <li>buildings/structures and equipment.</li> </ul> </li> </ul> <p><i>Assessment Tool</i> <i>Lab Assessment, AGRLAB–PLT or AGRLAB–ANM</i></p> <p><i>Standard</i> <i>Achieve a minimum performance rating of 1 in applicable areas of task assessment</i></p> <ul style="list-style-type: none"> <li>maintaining an anecdotal record of production tasks performed.</li> </ul> <p><i>Assessment Tool</i> <i>Log/Record of Production Tasks, AGRLOG–PLT or AGRLOG–ANM</i></p> <p><i>Standard</i> <i>Complete all sections of the log/record for each task performed over a negotiated/contracted period of time</i></p> <ul style="list-style-type: none"> <li>constructing a drawing/model of a technological system designed to address one or more needs relevant to plant or animal production.</li> </ul> <p><i>Assessment Tool</i> <i>Project Assessment: Technology Design, AGRTEC</i> <i>Assessment Criteria: Diagrams and Technical Drawings, AGRDRA</i></p> <p><i>Standard</i> <i>Complete the drawing/model to a standard of 1 on the rating scale</i></p>	<p>25</p> <p>25</p>



**MODULE AGR1030: PRODUCTION BASICS (continued)**

Concept	Specific Learner Expectations	Notes
<p>Production Practices (continued)</p>	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>• describe a strategy for protecting the health of a chosen commodity; e.g.:               <ul style="list-style-type: none"> <li>– identification of diseases, deficiencies and ailments</li> <li>– treatment, control and prevention</li> <li>– ethical concerns</li> </ul> </li> <li>• relate concepts of breeding and selection to production practices; e.g.:               <ul style="list-style-type: none"> <li>– systems of breeding</li> <li>– selection criteria</li> <li>– genetic engineering</li> </ul> </li> <li>• describe buildings/structures and equipment appropriate to production; e.g.:               <ul style="list-style-type: none"> <li>– design features</li> <li>– operation and maintenance</li> <li>– safety</li> <li>– economics/cost.</li> </ul> </li> </ul>	<p>Identify common pests/diseases.</p> <p>Discuss chemical and non-chemical methods of pest and disease control.</p> <p>Identify common breeds/varieties.</p> <p>Design/build a hydroponic garden.</p> <p>Research factors in animal health.</p>
<p>Career Opportunities</p>	<ul style="list-style-type: none"> <li>• research career opportunities and occupations relevant to agriculture or horticulture production; e.g.:               <ul style="list-style-type: none"> <li>– science/production management</li> <li>– support services</li> <li>– resource management</li> </ul> </li> <li>• describe current employment statistics for one or more career opportunities; e.g.:               <ul style="list-style-type: none"> <li>– types of occupations</li> <li>– number of workers</li> <li>– employment trends</li> </ul> </li> <li>• predict career opportunities and trends from employment statistics</li> <li>• describe information regarding agriculture or horticulture production industries in the future, and resulting career opportunities.</li> </ul>	<p>Plan for individual/group research and presentations.</p> <p>Arrange/facilitate information interviews and job shadowing.</p> <p>See the National Occupational Profiles (NOC) in Section H: Linkages/Transitions.</p> <p>Contact the “Career Hotline” (telephone: 1-800-661-3753).</p>



**MODULE AGR1060: CONSUMER PRODUCTS & SERVICES** (continued)

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> <li>• describe technological systems used to process a plant or animal commodity and/or to provide a related service</li> <li>• identify career opportunities relevant to processing agriculture or horticulture products and/or to providing related services</li> <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>• constructing a drawing/model of a technological system designed to address one or more needs relevant to processing a plant or animal commodity.</li> </ul> <p><i>Assessment Tool</i>  <i>Project Assessment: Technology Design, AGRTEC</i>  <i>Assessment Criteria: Diagrams and Technical Drawings, AGRDRA</i></p> <p><i>Standard</i>  <i>Complete the drawing/model to a standard of 1 on the rating scale</i></p>	25
	<ul style="list-style-type: none"> <li>• given access to current information on career opportunities in agriculture processing and related service industries, completing a research project on one or more careers in the agriculture processing industry.</li> </ul> <p><i>Assessment Tool</i>  <i>Career Search: Introductory Level, AGRCAR-1</i></p> <p><i>Standard</i>  <i>Complete research to a standard of 1 on the rating scale</i></p>	25
	<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>	Integrated throughout

**MODULE AGR1060: CONSUMER PRODUCTS & SERVICES** (continued)

Concept	Specific Learner Expectations	Notes
<p>Agriculture Processing</p>	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>• identify steps that are followed in developing a consumer product or providing a related service; e.g.:               <ul style="list-style-type: none"> <li>– inputs to the product or service</li> <li>– processes and techniques</li> <li>– safety, quality and environmental control</li> </ul> </li> <li>• explain relevant legislation and practices regarding identification, grading, packaging and labelling of the product or service</li> <li>• describe strategies for ensuring the quality of the product or service; e.g.:               <ul style="list-style-type: none"> <li>– quality indicators</li> <li>– control measures</li> </ul> </li> <li>• identify appropriate methods for transporting, storing, advertising and/or promoting the product or service</li> <li>• describe buildings/structures and equipment appropriate to providing the product or service; e.g.:               <ul style="list-style-type: none"> <li>– design features</li> <li>– operation and maintenance</li> <li>– safety</li> <li>– economics/cost.</li> </ul> </li> </ul>	<p>If studied in sequence with AGR1030: Production Basics, this module provides opportunities for students to “add value” to an agriculture commodity already produced; e.g.:</p> <ul style="list-style-type: none"> <li>• making bread from grain</li> <li>• making cheese from dairy products.</li> </ul> <p>Prepare flow charts/ diagrams of techniques and processes.</p> <p>Engage students in the <u>application</u> of standards established to grade a product.</p> <p>Consider related health issues.</p> <p>Identify major determinants of regional commodity processing.</p>
<p>Career Opportunities</p>	<ul style="list-style-type: none"> <li>• research career opportunities relevant to developing a consumer product or providing a related service; e.g.:               <ul style="list-style-type: none"> <li>– food/fibre/industrial/horticultural</li> <li>– support services</li> <li>– resource management</li> </ul> </li> <li>• describe employment statistics for one or more career opportunities; e.g.:               <ul style="list-style-type: none"> <li>– types of occupations</li> <li>– number of workers</li> <li>– employment trends</li> </ul> </li> <li>• predict career opportunities and trends from employment statistics</li> <li>• describe information regarding agriculture or horticulture products and services in the future, and resulting career opportunities.</li> </ul>	<p>Plan for individual/group research and presentations.</p> <p>Arrange/facilitate information interviews and job shadowing.</p> <p>Contact the “Career Hotline” (telephone: 1-800-661-3753).</p> <p>See the National Occupational Profiles (NOC) in Section H: Linkages/Transitions.</p>



## MODULE AGR1070: BASIC LANDSCAPE/TURF CARE

**Level:** Introductory

**Theme:** Technology and Applications

**Prerequisite:** None

**Module Description:** Students demonstrate knowledge of the techniques used to perform basic landscape and turf care services, focusing attention on plant identification, equipment and supplies and basic maintenance tasks; and they identify related career opportunities.

**Module Parameters:** Access to a residential, recreational and/or roadside landscape.

Facilities and equipment should permit students to perform practical tasks in basic landscape and turf care; e.g., watering, cultivation/mulching, corrective pruning, mowing/trimming/edging of turfgrass, weed control, installation/removal of plant material.

Off-campus learning can support the development of practical skills in basic landscape and turf care; consultation with a work site supervisor ensures that relevant safety considerations are addressed and that student learning meets or exceeds the learner expectations in this module.

See the *Off-campus Education Guide for Administrators, Counsellors and Teachers* (Alberta Education, 1995) for further information regarding off-campus learning.

**Supporting Module:** CTR1210 Personal Safety (Management) [Career Transitions Strand].

Because of the practical nature of this module, students need a general knowledge of accepted practices and potential hazards when performing tasks related to basic landscape/turf care. See Planning for Instruction in Section C for further information on student safety.

**MODULE AGR1070: BASIC LANDSCAPE/TURF CARE (continued)**

**Curriculum and Assessment Standards**

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> <li>• identify plants suitable for use in Alberta landscapes</li> </ul>	<p><i>Assessment of student achievement should be based on:</i></p> <ul style="list-style-type: none"> <li>• given access to on-site (or photographed) tree, shrub, ground cover, flower and turfgrass species/varieties used in Alberta landscapes, identifying selected specimens according to:               <ul style="list-style-type: none"> <li>– common and botanical names</li> <li>– general characteristics/growth habits</li> <li>– functional use in Alberta landscapes.</li> </ul> </li> </ul> <p><i>Assessment Tool</i>  <i>Identification Guide: Landscape Plants, AGRIDE–LDS</i>  <i>Information Sheet: Landscape Plants, AGRINF–LDS</i></p> <p><i>Standard</i>  <i>Identify 10 landscape plants, including tree, shrub, ground cover, flower and turfgrass specimens</i></p> <ul style="list-style-type: none"> <li>• given access to on-site (or photographed) weed species found in Alberta landscapes and turfgrasses, identifying selected specimens according to:               <ul style="list-style-type: none"> <li>– common name</li> <li>– growth habit</li> <li>– management technique.</li> </ul> </li> </ul> <p><i>Assessment Tool</i>  <i>Identification Guide: Landscape/Turfgrass Weeds, AGRIDE–WED</i>  <i>Information Sheet: Landscape/Turfgrass Weeds, AGRINF–WED</i></p> <p><i>Standard</i>  <i>Identify 5 common weeds found in Alberta landscapes and/or turfgrasses</i></p>	<p>20</p>



**MODULE AGR1070: BASIC LANDSCAPE/TURF CARE (continued)**

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> <li>• identify career opportunities relevant to landscape and turf maintenance</li> <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>• maintaining an anecdotal record of all landscape/turf-care services performed.</li> </ul> <p><i>Assessment Tool</i> <i>Log/Record of Landscape/Turfgrass Services, AGRLOG-LDS</i></p> <p><i>Standard</i> <i>Completing all sections of the log/record for each service performed</i></p> <ul style="list-style-type: none"> <li>• given current information on career opportunities in landscape and turfgrass maintenance, completing a research project on one or more related careers.</li> </ul> <p><i>Assessment Tool</i> <i>Career Search: Introductory Level, AGRCAR-1</i></p> <p><i>Standard</i> <i>Research must be conducted to a standard of 1 on the rating scale</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>10</p> <p>Integrated throughout</p>

Concept	Specific Learner Expectations	Notes
Plant Identification	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>• describe the general characteristics and functional uses of basic plant groups used in landscaping; e.g.:               <ul style="list-style-type: none"> <li>– trees</li> <li>– shrubs</li> <li>– ground covers and vines</li> <li>– flowers</li> <li>– turfgrasses</li> </ul> </li> </ul>	<p>Create a pictorial display of basic types of landscape plants.</p> <p>Identify and distinguish among annuals, biennials and perennials.</p>

**MODULE AGR1070: BASIC LANDSCAPE/TURF CARE (continued)**

Concept	Specific Learner Expectations	Notes
Plant Identification (continued)	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>• explain criteria used to identify individual plant species; e.g.:               <ul style="list-style-type: none"> <li>– plant height and shape</li> <li>– leaf structure and colour</li> <li>– flower or fruit characteristics</li> </ul> </li> <li>• identify common tree, shrub, ground cover, flower and turfgrass species used for landscaping in Alberta</li> <li>• distinguish between native and exotic trees, shrubs and ground covers.</li> </ul>	<p>Identify 10 or more different landscape plants.</p>
Equipment and Supplies	<ul style="list-style-type: none"> <li>• identify and describe hand and/or power equipment commonly used in providing landscape/turf-care services; e.g.:               <ul style="list-style-type: none"> <li>– planting and transplanting tools</li> <li>– cultivating and aerating equipment</li> <li>– thatch removing and raking equipment</li> <li>– mowing equipment</li> <li>– irrigation equipment</li> <li>– pruning and trimming equipment</li> <li>– chemical and fertilizer applicators</li> </ul> </li> <li>• calibrate and adjust hand and/or power equipment as required to perform basic landscape/turf-care services</li> <li>• identify and describe organic and inorganic materials commonly used in providing basic landscape/turf-care services; e.g.:               <ul style="list-style-type: none"> <li>– growing media</li> <li>– fertilizers</li> <li>– pesticides</li> </ul> </li> <li>• demonstrate safe procedures for using equipment and materials in providing basic landscape/turf care services; e.g.:               <ul style="list-style-type: none"> <li>– safe practices and potential hazards</li> <li>– protective clothing</li> <li>– safety labels and instructions</li> <li>– government legislation and regulation</li> <li>– emergency first aid.</li> </ul> </li> </ul>	<p><b>Practical “on-site” demonstrations are essential.</b></p> <p>Follow a set of instructions as illustrated through a demonstration.</p> <p>Possible hand tools include:</p> <ul style="list-style-type: none"> <li>• hand trimmer</li> <li>• half moon edger</li> <li>• lawn rake</li> <li>• weed puller.</li> </ul> <p>Possible power equipment includes:</p> <ul style="list-style-type: none"> <li>• push mower</li> <li>• power edger</li> <li>• lawn vacuum</li> <li>• cord trimmer</li> <li>• leaf blower.</li> </ul> <p><b>CAUTION:</b>  <b>Successful completion of a safety test is essential prior to the use of equipment and materials.</b></p>

**MODULE AGR1070: BASIC LANDSCAPE/TURF CARE (continued)**

Concept	Specific Learner Expectations	Notes
<p>Basic Landscape/ Turf Care</p>	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>• describe the cultural requirements of common trees, shrubs, ground cover, flowers and turfgrasses; e.g.:               <ul style="list-style-type: none"> <li>– soil</li> <li>– moisture</li> <li>– light</li> <li>– temperature</li> <li>– pruning and/or trimming</li> </ul> </li> <li>• identify common weeds and insect pests at different stages of growth</li> <li>• compare biological, cultural and chemical control measures for weeds and plant pests</li> <li>• explain safe practices for mixing and applying fertilizers and chemicals</li> <li>• perform basic landscape/turf-care services; e.g.:               <ul style="list-style-type: none"> <li>– irrigate and fertilize plants and turf</li> <li>– cultivate and mulch plants</li> <li>– prune plants</li> <li>– mow and trim turf</li> <li>– remove dead and diseased plant materials</li> <li>– control weeds, disease and pests.</li> </ul> </li> </ul>	<p>Demonstrate appropriate procedures for maintaining planting beds, annuals and perennials.</p> <p>Collect/mount a display of common weeds.</p> <p>Potential linkages exist with various pesticide applicator/dispenser certificate courses (see Section H: Linkages/Transitions).</p> <p>Discuss beneficial and harmful effects of insects.</p> <p>List pros and cons associated with the use of common pesticides.</p> <p>Develop a weed-control program.</p> <p>Collect and examine some diseased plants.</p>
<p>Career Opportunities</p>	<ul style="list-style-type: none"> <li>• research potential careers and the range of occupational opportunities related to providing landscape and turf-care services; e.g.:               <ul style="list-style-type: none"> <li>– establishment and maintenance                   <ul style="list-style-type: none"> <li>• home landscape</li> <li>• golf courses</li> <li>• recreational fields and parks</li> <li>• institutional/industrial grounds</li> <li>• highway and roadside turfgrass</li> </ul> </li> <li>– design and construction</li> <li>– equipment maintenance and repair</li> <li>– agriscience/resource management</li> </ul> </li> <li>• describe current employment opportunities based on employment statistics</li> <li>• describe information regarding trends in landscape and turfgrass management, and future career opportunities.</li> </ul>	<p>Plan for individual/group research and presentations.</p> <p>Research information regarding:</p> <ul style="list-style-type: none"> <li>• job description</li> <li>• employment markets</li> <li>• education/training</li> <li>• wage expectations.</li> </ul> <p>Arrange/facilitate:</p> <ul style="list-style-type: none"> <li>• information interviews</li> <li>• work study/experience</li> <li>• job shadowing.</li> </ul> <p>Contact the “Career Hotline” (telephone: 1-800-661-3753).</p> <p>See the National Occupational Profiles in Section H: Linkages/Transitions.</p>

## MODULE AGR1080: BASIC FLORAL DESIGN

**Level:** Introductory

**Theme:** Technology and Applications

**Prerequisite:** None

**Module Description:** Students demonstrate knowledge of the techniques used to construct basic floral designs and arrangements, focusing attention on plant and flower identification, care and handling of fresh cut flowers and foliage, and simple fresh/dried/artificial arrangements; and they identify related career opportunities.

**Module Parameters:** Access to a flower arrangement room with refrigeration, a source of water, adequate storage facilities and workbenches/table surfaces for flower arranging.

Instructor training in floral design; e.g., Flowers Canada Accreditation Program, and/or relevant industry experience would be an asset.

### Curriculum and Assessment Standards

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"><li>identify and explain the cultural requirements of cut flowers, foliage and interior plants</li></ul>	<p><i>Assessment of student achievement should be based on:</i></p> <ul style="list-style-type: none"><li>given access to on-site (or photographed) cut flowers, foliage and interior plants used in the floral industry, identifying selected specimens by:<ul style="list-style-type: none"><li>– common and botanical names</li><li>– basic characteristics and general use.</li></ul></li></ul> <p><i>Assessment Tool</i></p> <p><i>Identification Guide: Cut Flowers and Interior Plants, AGRIDE–FLO</i></p> <p><i>Information Sheet: Cut Flowers and Interior Plants, AGRINF–FLO</i></p> <p><i>Standard</i></p> <p><i>Identify 10 cut flowers and/or foliage specimens and 5 interior plants</i></p>	20

**MODULE AGR1080: BASIC FLORAL DESIGN** (continued)

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> <li>• demonstrate appropriate care and handling of fresh cut flowers and foliage</li> <li>• construct simple floral arrangements</li> <li>• identify career opportunities relevant to the retail florist industry</li> </ul>	<p><i>Assessment of student achievement should be based on:</i></p> <ul style="list-style-type: none"> <li>• under supervision and with regard for safety and sanitation, demonstrate correct technique for:               <ul style="list-style-type: none"> <li>– conditioning fresh cut flowers and greenery for storage</li> <li>– handling dried and fabric flowers and greenery</li> <li>– packaging flowers in sleeves and boxes</li> <li>– packaging gift plants and floral arrangements</li> <li>– tying floral bows using ribbon of different widths</li> <li>– wrapping wires of different gauge with floral tape.</li> </ul> </li> </ul> <p><i>Assessment Tool</i>  <i>Task Checklist: Basic Floral Design, AGR1080–1</i></p> <p><i>Standard</i>  <i>All tasks must be performed to a standard of 1 on the rating scale.</i></p> <ul style="list-style-type: none"> <li>• constructing seven or more fresh, dried and/or artificial floral arrangements as identified in <i>Task Checklist: Basic Floral Design</i>. Each arrangement to illustrate the application of design principles outlined in <i>Product Assessment: Basic Floral Design</i>.</li> </ul> <p><i>Assessment Tools</i>  <i>Development Framework: Floral Construction, AGRDEV–FLO</i>  <i>Task Checklist: Basic Floral Design, AGR1080–1</i>  <i>Product Assessment: Basic Floral Design, AGR1080–2</i>  <i>Lab Assessment: Floral Design, AGRLAB–FLO</i>  <i>Project Planning: Floral Design, AGRPLN–FLO</i></p> <p><i>Standard</i>  <i>Achieve a minimum rating of 1 in product assessment and 1 in lab assessment for each arrangement</i></p> <ul style="list-style-type: none"> <li>• given career information relevant to the retail florist industry, completing a research project on one or more career opportunities in floral design and/or interior plantscape.</li> </ul> <p><i>Assessment Tool</i>  <i>Career Search: Introductory Level, AGRCAR–1</i></p> <p><i>Standard</i>  <i>Research must be conducted to a standard of 1 on the rating scale</i></p>	<p>20</p> <p>50</p> <p>10</p>

**MODULE AGR1080: BASIC FLORAL DESIGN** (continued)

Module Learner Expectations	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>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>Integrated throughout</p>

Concept	Specific Learner Expectations	Notes
<p>Plant and Flower Identification</p>	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>research the history and development of floral design</li> <li>identify cut flowers and greenery commonly used in floral design; e.g.:               <ul style="list-style-type: none"> <li>greenhouse/fieldgrown cut flowers</li> <li>imported cut flowers</li> <li>foliage and filler</li> </ul> </li> <li>identify interior plants and gift plants; e.g.:               <ul style="list-style-type: none"> <li>tropical flowering and foliage plants</li> <li>flowering bulbs</li> </ul> </li> <li>identify dried and artificial materials commonly used in floral design; e.g.:               <ul style="list-style-type: none"> <li>dried flowers and foliage</li> <li>silk and other fabric materials.</li> </ul> </li> </ul>	<p>A brief discussion of history will provide a basis for understanding current industry practices.</p> <p>Subscribe to the <i>Florists' Review</i> (a monthly periodical).</p> <p>Arrange to visit a local florist shop.</p> <p>Plant and flower identification guides used by industry are available from:</p> <ul style="list-style-type: none"> <li>United Floral Growers (Burnaby)</li> <li>Holland Flower Council.</li> </ul> <p>Identify:</p> <ul style="list-style-type: none"> <li>10 or more different cut flowers and/or foliage specimens</li> <li>five or more interior plants and/or gift plants.</li> </ul>

**MODULE AGR1080: BASIC FLORAL DESIGN** (continued)

Concept	Specific Learner Expectations	Notes
Care and Handling	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>• describe techniques for the care of perishable floral materials; e.g.:               <ul style="list-style-type: none"> <li>– use of water and preservatives</li> <li>– temperature and humidity control</li> <li>– cleanliness and sanitation</li> <li>– methods of packaging</li> </ul> </li> <li>• describe techniques used to condition fresh cut flowers and greenery for storage</li> <li>• describe techniques used to handle and preserve dried flowers and greenery.</li> </ul>	<p><b>CAUTION:</b>  <b>Demonstrate safe use of tools prior to practical activities.</b></p> <p>Industry resources produced by Redbook Floral Services and available through the Olds College Bookstore include:</p> <ul style="list-style-type: none"> <li>• Basic Floral Design</li> <li>• Care and Handling of Fresh Flowers and Foliages.</li> </ul>
Design and Construction	<ul style="list-style-type: none"> <li>• describe different construction materials used in floral design; e.g.:               <ul style="list-style-type: none"> <li>– wire, tape and adhesive</li> <li>– ribbon</li> <li>– holding devices and containers</li> </ul> </li> <li>• demonstrate basic construction techniques used in floral design; e.g.:               <ul style="list-style-type: none"> <li>– wiring</li> <li>– taping</li> <li>– bow making</li> </ul> </li> <li>• demonstrate and apply basic design principles in constructing floral arrangements; e.g.:               <ul style="list-style-type: none"> <li>– colour harmony</li> <li>– composition</li> <li>– balance and symmetry</li> <li>– proportion and scale</li> </ul> </li> <li>• construct a boutonniere, corsage, bud vase and rose bowl</li> <li>• construct a simple floral design using fresh, dried and/or artificial materials.</li> </ul>	<p>Discuss applications of different design techniques:</p> <ul style="list-style-type: none"> <li>• symmetrical and asymmetrical</li> <li>• vertical and horizontal</li> <li>• circular and oval.</li> </ul> <p>Contact your local Flowers Canada Accreditation Council regional liaison member for information on instructor workshops (see Section H: Linkages/Transitions).</p> <p>Encourage students to gain job/productivity skills through work experience. Students need to experience their perceived skills in a work setting.</p>

**MODULE AGR1080: BASIC FLORAL DESIGN** (continued)

Concept	Specific Learner Expectations	Notes
Career Opportunities	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>• research careers and the range of occupational opportunities related to the retail florist industry; e.g.:               <ul style="list-style-type: none"> <li>– nursery and greenhouse production</li> <li>– floral design and service</li> <li>– merchandising and marketing</li> </ul> </li> <li>• describe current employment opportunities based on employment statistics</li> <li>• describe information regarding trends in floristry, and future career opportunities.</li> </ul>	<p>Plan for individual/group research and presentations.</p> <p>Research information regarding:</p> <ul style="list-style-type: none"> <li>• job description</li> <li>• employment markets</li> <li>• education/training</li> <li>• wage expectations.</li> </ul> <p>Arrange/facilitate:</p> <ul style="list-style-type: none"> <li>• interviews</li> <li>• work study/experience</li> <li>• job shadowing.</li> </ul> <p>Contact the “Career Hotline” (telephone: 1-800-661-3753).</p>



## MODULE AGR1090: MARKET FUNDAMENTALS

**Level:** Introductory

**Theme:** Technology and Applications

**Prerequisite:** None

**Module Description:** Students explain the basic principles involved in marketing a plant or animal product or service, and they identify related career opportunities.

**Module Parameters:** Access to agriculture marketing facilities.

### Curriculum and Assessment Standards

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> <li>explain basic principles involved in marketing an agriculture/horticulture commodity, product or service</li> </ul>	<p><i>Assessment of student achievement should be based on:</i></p> <ul style="list-style-type: none"> <li>identifying basic components of an existing strategy used to market an agriculture/horticulture commodity, product or service. Marketing components to include: <ul style="list-style-type: none"> <li>commodity supply</li> <li>current and potential markets</li> <li>marketing principles and strategies</li> <li>pricing</li> <li>packaging and labelling</li> <li>advertising and promotion</li> <li>sales and distribution.</li> </ul> </li> </ul> <p><i>Assessment Tool</i>  <i>Assessment Criteria: Components of a Marketing Strategy, AGR1090-1</i></p> <p><i>Standard</i>  <i>Identify basic components of the marketing strategy to a standard of 1 on the rating scale</i></p>	50
<ul style="list-style-type: none"> <li>explain how agriculture/horticulture markets are expanded and existing products are altered to meet the needs of new markets</li> </ul>	<ul style="list-style-type: none"> <li>developing a plan for expanding market opportunities, altering an existing agriculture or horticulture product, or developing a new product.</li> </ul> <p><i>Assessment Tool</i>  <i>Assessment Criteria: Product/Market Development, AGR1090-2</i></p> <p><i>Standard</i>  <i>Develop a plan to a standard of 1 on the rating scale</i></p>	30



**MODULE AGR1090: MARKET FUNDAMENTALS (continued)**

Concept	Specific Learner Expectations	Notes
Marketing Principles (continued)	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>• describe the effectiveness of different types of packaging and labelling; e.g.:               <ul style="list-style-type: none"> <li>– for consumer purposes</li> <li>– as a marketing tool</li> </ul> </li> <li>• assess the impact of advertising and promotion on personal preferences and consumer decisions.</li> </ul>	<p>Visit a supermarket and note grades, date, stamping, etc. Compare methods of packaging.</p> <p>Design/evaluate an approach to marketing.</p> <p>Examine trends in promotional and marketing strategies.</p>
Product Development	<ul style="list-style-type: none"> <li>• identify factors that influence consumer trends and the development of new markets for an agriculture or horticulture product; e.g.:               <ul style="list-style-type: none"> <li>– economic</li> <li>– environmental</li> <li>– social and demographic</li> </ul> </li> <li>• identify market opportunities that arise from specialization, international trade and participation in a global economy</li> <li>• explain the steps followed in altering an existing agriculture or horticulture product, or in developing a new product.</li> </ul>	<p>Discuss the role of consumer preferences in product determination.</p> <p>A possible <u>extension activity</u> might be to research the procedures involved in patenting a process or product.</p>
Career Opportunities	<ul style="list-style-type: none"> <li>• research career opportunities related to marketing an agriculture/horticulture commodity, product or service; e.g.:               <ul style="list-style-type: none"> <li>– market survey</li> <li>– advertising and promotion</li> <li>– distribution and retail services</li> <li>– product development</li> <li>– support services</li> </ul> </li> <li>• describe employment statistics related to one or more areas of employment; e.g.:               <ul style="list-style-type: none"> <li>– types of occupations</li> <li>– number of workers</li> <li>– employment trends</li> </ul> </li> <li>• predict career opportunities and trends from employment statistics</li> <li>• describe information regarding agriculture/horticulture marketing in the future, and resulting career opportunities.</li> </ul>	<p>Plan for individual/group research and presentations.</p> <p>Arrange/facilitate information interviews and job shadowing.</p> <p>Contact the “Career Hotline” (telephone: 1-800-661-3753).</p> <p>See National Occupational Profiles (NOC) in Section H: Linkages/Transitions.</p>



## MODULE AGR1100: AGRICULTURE TECHNOLOGY

**Level:** Introductory

**Theme:** Technology and Applications

**Prerequisite:** None

**Module Description:** Students describe applications of science and technology within an agriculture or horticulture industry.

**Module Parameters:** Access to a construction/fabrication/mechanic's workshop, greenhouse and/or science laboratory.

### Curriculum and Assessment Standards

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> <li>explain how science and technology influence the development of agriculture products, methods and services</li> </ul>	<p><i>Assessment of student achievement should be based on:</i></p> <ul style="list-style-type: none"> <li>preparing a chart/display that identifies and describes:               <ul style="list-style-type: none"> <li>a range of needs/problems addressed by the agriculture/horticulture industry within the last 20 years</li> <li>specific products, processes or services developed in response to each need/problem</li> <li>applications of science and technology in developing each product, process or service.</li> </ul> </li> </ul> <p><i>Assessment Tool</i>  <i>Sample Chart: Product Development in the Agriculture/Horticulture Industry, AGR1100-1</i></p> <p><i>Standard</i>  <i>Complete a chart/display that identifies products and technologies developed in response to each of <u>ten</u> problems/needs</i></p>	20
<ul style="list-style-type: none"> <li>describe current applications of science and technology in agriculture production, processing and marketing</li> </ul>	<ul style="list-style-type: none"> <li>completing a research project on one or more applications of science and technology in <u>each</u> of the following areas:               <ul style="list-style-type: none"> <li>agriculture/horticulture production</li> <li>agriculture/horticulture processing</li> <li>agriculture/horticulture marketing.</li> </ul> </li> </ul> <p><i>Assessment Tool</i>  <i>Research Process: Applications of Science and Technology, AGR1100-2</i></p> <p><i>Standard</i>  <i>Complete all components of research to a standard of 1 on the rating scale</i></p>	30



**MODULE AGR1100: AGRICULTURE TECHNOLOGY (continued)**

Concept	Specific Learner Expectations	Notes
<p>Influences of Science and Technology (continued)</p>	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>• predict some future trends in research and technology based on current challenges facing the agriculture industry</li> <li>• relate specific technologies to current and emerging career opportunities in the agriculture industry.</li> </ul>	<p>Compare manual and mechanical approaches to addressing a specific challenge in the industry.</p>
<p>Applications of Science and Technology</p>	<ul style="list-style-type: none"> <li>• describe applications of science and technology in addressing specific plant production needs; e.g.:               <ul style="list-style-type: none"> <li>– seed bed preparation/soil fertility</li> <li>– planting/harvesting</li> <li>– weed and pest control</li> <li>– plant propagation</li> <li>– maintaining soil moisture levels</li> <li>– improved production and yields</li> </ul> </li> <li>• describe applications of science and technology in addressing specific needs within the livestock production industry; e.g.:               <ul style="list-style-type: none"> <li>– animal handling</li> <li>– animal housing</li> <li>– nutrition</li> <li>– health</li> <li>– waste management</li> <li>– breeding management</li> <li>– improved production and yields</li> </ul> </li> <li>• describe specific applications of science and technology in agriculture processing; e.g.:               <ul style="list-style-type: none"> <li>– processing systems</li> <li>– quality control</li> <li>– pollution control</li> <li>– preserving perishable products</li> <li>– packaging and storage</li> </ul> </li> </ul>	<p>Plan for independent/group research and presentations.</p> <p>For example:</p> <ul style="list-style-type: none"> <li>• zero tillage fertilizers</li> <li>• air seeders and combines</li> <li>• hydroponics and irrigation.</li> </ul> <p>Predict future production technologies.</p> <p>Invite a local veterinarian as a resource person.</p> <p>For example:</p> <ul style="list-style-type: none"> <li>• electronic management systems</li> <li>• gene mapping</li> <li>• embryo transfer</li> <li>• artificial insemination.</li> </ul> <p>This module provides a good introduction to AGR3100: Biotechnology.</p> <p>Conduct research on the life and work of Dr. Temple Grandin, a professor of animal science.</p> <p>Predict future processing technologies.</p> <p>Discuss quality assurance (QA) programs.</p> <p>Obtain resources from:</p> <ul style="list-style-type: none"> <li>• Leduc Food Processing Centre</li> <li>• Agriculture, Food and Nutritional Sciences Department, U of A.</li> </ul>

**MODULE AGR1100: AGRICULTURE TECHNOLOGY (continued)**

Concept	Specific Learner Expectations	Notes
Applications of Science and Technology (continued)	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>• describe specific applications of science and technology in agriculture marketing; e.g.:               <ul style="list-style-type: none"> <li>– enterprise budgets</li> <li>– communication</li> <li>– advertising and promotion</li> <li>– commodity sales</li> <li>– product distribution.</li> </ul> </li> </ul>	<p>Predict future marketing technologies.</p> <p>Research strategic alliances developed among industry partners to increase market share in the global economy (e.g., Canada Beef Export Federation).</p>
Technology Design	<ul style="list-style-type: none"> <li>• identify a need within an agriculture or horticulture industry</li> <li>• research the need; e.g.:               <ul style="list-style-type: none"> <li>– talk to others in order to clarify ideas</li> <li>– consider similar needs and how they were addressed</li> <li>– make reasoned judgments regarding design potential</li> </ul> </li> <li>• generate ideas and alternatives regarding a mechanical system and/or process that will address the need</li> <li>• select the most appropriate alternative and design the technology</li> <li>• construct a drawing/model of the technology by following plans that have been established</li> <li>• assess the design process and technology outcomes in relation to:               <ul style="list-style-type: none"> <li>– original needs and design intentions</li> <li>– efficient use of resources</li> <li>– human and environmental safety</li> </ul> </li> <li>• identify possible improvements to the design process and/or technology outcomes.</li> </ul>	<p>Discuss technology as problem solving.</p> <p>Plan for activities that involve:</p> <ul style="list-style-type: none"> <li>• drawing and designing</li> <li>• constructing models.</li> </ul> <p>Assess process and outcomes on the basis of:</p> <ul style="list-style-type: none"> <li>• effectiveness</li> <li>• efficiency</li> <li>• safety in use.</li> </ul>

## MODULE AGR1110: RESOURCE MANAGEMENT

**Level:** Introductory

**Theme:** Management and Conservation

**Prerequisite:** None

**Module Description:** Students describe the practices used to manage water, soil and land use; and they present the results of research on one or more related issues in agriculture.

**Module Parameters:** Access to community and government agencies responsible for sustainable resource management.

### Curriculum and Assessment Standards

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> <li>describe the nature and extent of Alberta's water resource, and explain practices for managing its use</li> </ul>	<p><i>Assessment of student achievement should be based on:</i></p> <ul style="list-style-type: none"> <li>given outline maps of Alberta, locating and describing:               <ul style="list-style-type: none"> <li>four major rivers and four major lakes</li> <li>geographic areas where irrigation is a common practice.</li> </ul> </li> </ul> <p><i>Assessment Tool</i> <i>Task Checklist for Mapping, AGRMAP</i></p> <p><i>Standard</i> <i>Complete applicable mapping tasks to a standard of 1 on the rating scale</i></p> <ul style="list-style-type: none"> <li>explaining three or more practices used in Alberta to manage limited and/or excess water supplies for agriculture.</li> </ul> <p><i>Assessment Tool</i> <i>Knowledge/Application Assessment: Water Management Practices, AGR1110-1</i></p> <p><i>Standard</i> <i>Respond to a standard of 1 on the rating scale</i></p>	<p>25</p>

**MODULE AGR1110: RESOURCE MANAGEMENT** (continued)

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> <li>• describe the nature and characteristics of soil in Alberta, and explain practices for managing its use</li>   <li>• explain different uses of land in rural and urban Alberta and the factors upon which land use decisions are made</li> </ul>	<p><i>Assessment of student achievement should be based on:</i></p> <ul style="list-style-type: none"> <li>• a presentation or report that describes the characteristics of soil in Alberta and its influence on agriculture practices. Presentation/report to address:               <ul style="list-style-type: none"> <li>– the identification of major soil zones in Alberta</li> <li>– the characteristics of soil within each zone and their influence on agriculture</li> <li>– explanations of three or more soil management practices commonly used in Alberta.</li> </ul> </li> </ul> <p><i>Assessment Tool</i>  <i>Presentations/Reports: Introductory Level, AGRPRE-1</i></p> <p><i>Standard</i>  <i>Achieve a minimum rating of 1 on the rating scale for Presentations/Reports</i></p> <ul style="list-style-type: none"> <li>• completing a research project on rural and urban land use in Alberta. Research to include:               <ul style="list-style-type: none"> <li>– examples of five rural and five urban land uses</li> <li>– consideration of factors involved in making each land use decision</li> <li>– development of a plan (including a 2-D/3-D model) for the use of a specific piece of rural or urban land.</li> </ul> </li> </ul> <p><i>Assessment Tool</i>  <i>Research Process: Rural and Urban Land Use, AGR1110-2</i></p> <p><i>Standard</i>  <i>Complete all components of research to a standard of 1 on the rating scale</i></p>	<p>25</p>       <p>25</p>



**MODULE AGR1110: RESOURCE MANAGEMENT (continued)**

Concept	Specific Learner Expectations	Notes
<p>Water Management (continued)</p>	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>• research techniques used to manage limited and excess water supplies in agriculture; e.g.:               <ul style="list-style-type: none"> <li>– irrigation, storage, conservation practices</li> <li>– diversion, drainage, flood control</li> </ul> </li> <li>• cite examples of legislation used to manage the water resource in Alberta</li> <li>• describe the effects of agricultural practices on water quality</li> <li>• explain the impacts of limited, excessive or inappropriate water supplies on humans, livestock, crops, wildlife and ecosystems</li> <li>• propose strategies for managing water within a specific rural, urban and/or indoor agriculture environment.</li> </ul>	<p>Compare and contrast effective and ineffective management strategies.</p> <p>Examples:</p> <ul style="list-style-type: none"> <li>• water rights</li> <li>• pollution control.</li> </ul> <p>Relate prevailing winds and topography to precipitation patterns in Alberta.</p> <p>Consider/discuss trade-offs in water use.</p>
<p>Soil Management</p>	<ul style="list-style-type: none"> <li>• describe the nature and composition of soils present in different regions of Alberta, and their potential to support agriculture</li> <li>• identify physical, chemical and biological characteristics of soil that determine its suitability for use in agriculture</li> <li>• describe the advantages and disadvantages of different management practices; e.g.:               <ul style="list-style-type: none"> <li>– chemical treatments, addition of organic material</li> <li>– cultivation, no tillage practices</li> <li>– water conservation practices</li> </ul> </li> <li>• explain the impacts of soil quality on crops and livestock</li> <li>• propose strategies for managing soil within a specific rural, urban and/or indoor environment.</li> </ul>	<p>Investigate:</p> <ul style="list-style-type: none"> <li>• soil development process</li> <li>• soil functions</li> <li>• soil zones and classification</li> <li>• mineral, organic, air and water content.</li> </ul> <p>Compare different soil types in relation to water retention/movement.</p> <p>Research nutrient cycles.</p> <p>Identify organic and inorganic nutrients.</p> <p>Cite practices leading to:</p> <ul style="list-style-type: none"> <li>• erosional loss</li> <li>• nutrient loss.</li> </ul> <p>Discuss alternatives in soil management.</p> <p>Research composting methods. Construct/monitor a compost pile.</p>

**MODULE AGR1110: RESOURCE MANAGEMENT** (continued)

Concept	Specific Learner Expectations	Notes
Land Use	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>• describe different uses of land in rural and urban Alberta; e.g.:               <ul style="list-style-type: none"> <li>– resource development</li> <li>– urban development</li> <li>– recreation/protected and natural areas</li> <li>– transportation corridors</li> </ul> </li> <li>• define and give examples of multiple use, conservation and sustained yield within the context of water, soil and land use</li> <li>• describe legislation and policies used to manage land in Alberta; e.g.:               <ul style="list-style-type: none"> <li>– land zoning/classification</li> <li>– environmental impact assessment</li> <li>– multiple use/range management courses</li> </ul> </li> <li>• identify appropriate uses for land in agriculture by considering:               <ul style="list-style-type: none"> <li>– soil characteristics and topography</li> <li>– water and climate</li> <li>– market value of products</li> <li>– environmental stewardship.</li> </ul> </li> </ul>	<p>Research public and private land stewardship agencies.</p> <p>Examine historical changes in land use.</p> <p>Set goals for land use in an area.</p> <p>Identify concerns related to land use:</p> <ul style="list-style-type: none"> <li>• depletion of moisture/nutrients</li> <li>• soil erosion</li> <li>• removal of natural pest control organisms.</li> </ul> <p>Assess alternative uses of a specific land site:</p> <ul style="list-style-type: none"> <li>• agriculture</li> <li>• wood land</li> <li>• recreation</li> <li>• wildlife habitat</li> <li>• building site.</li> </ul>
Issues in Resource Management	<ul style="list-style-type: none"> <li>• present the results of research on an issue involving water, soil or land use in agriculture; e.g.:               <ul style="list-style-type: none"> <li>– identify major viewpoints and stakeholders</li> <li>– distinguish among facts, opinions and beliefs</li> <li>– outline alternatives and consequences</li> </ul> </li> <li>• explain the issue by analyzing information gathered.</li> </ul>	<p>Contact local government agencies.</p> <p>Collect news articles.</p> <p>Resource management is also important in agriculture processing. Consider issues related to water use, solid waste, packaging reduction and energy conservation.</p> <p>Use computer simulation programs.</p>

