

## **COURSE AGR3000: AGRICULTURE SAFETY**

**Level:** Advanced

**Prerequisite:** None

**Description:** Students recognize and assess the hazards and manage the risks of working in agriculture.

**Parameters:** Access to appropriate agricultural facilities and/or equipment.

**Supporting Courses:** AGR1010: Introduction to Agriculture  
HCS2020: First Aid/CPR with AED  
HCS3000: Workplace Safety Systems

**Outcomes:** The student will:

- 1. identify and describe potential hazards found in the agricultural area**
  - 1.1 predict hazards within an agricultural environment; e.g., farm, ranch
  - 1.2 research the different types of hazards (e.g., chemical, physical, ergonomic, biological, psychosocial) and provide examples of each in an agricultural home or environment
  - 1.3 describe the major hazards related to farm machinery; e.g., pinch points, wrap points, shear points, pull-in points, crush points
  - 1.4 describe potential hazards related to animal management by:
    - 1.4.1 listing the most common injuries that occur around animals
    - 1.4.2 identifying and describing the warning signs of a threatened animal
    - 1.4.3 identifying and describing the appropriate way to approach an animal
    - 1.4.4 describing and demonstrating the appropriate way to handle an animal
  - 1.5 identify farm environmental hazards; e.g., sun exposure, water hazards, fuel, human factors
- 2. examine and demonstrate standards/practices associated with agricultural health and safety**
  - 2.1 examine and demonstrate standards/practices associated with fire safety by:
    - 2.1.1 examining and justifying the need for fire safety standards
    - 2.1.2 identifying the fire classifications and comparing the appropriate extinguishers
    - 2.1.3 analyzing and discussing the elements of fire
    - 2.1.4 developing a plan to safely address potential fire hazards and identifying fire prevention methods
    - 2.1.5 demonstrating the use of portable fire extinguishers
  - 2.2 examine and demonstrate standards/practices associated with electrical safety by:
    - 2.2.1 investigating potential electrical hazards at home, at school and in an agricultural area
    - 2.2.2 developing a plan to safely address potential electrical hazards found in the home, at school and on a farm
    - 2.2.3 creating a strategy for establishing safe work conditions when working with electricity
    - 2.2.4 explaining and applying lockout/tagout procedures on electrical equipment
  - 2.3 examine and demonstrate standards/practices associated with ladder safety by:
    - 2.3.1 identifying equipment, machinery and structures where ladders are used in an agricultural area
    - 2.3.2 identifying different types of ladders and differentiating when the different types should be used
    - 2.3.3 illustrating the safe set-up and use of ladders

- 2.3.4 identifying and demonstrating the proper inspection, care and storage of ladders
- 2.3.5 diagramming ladder safety rules
- 2.4 examine and demonstrate standards/practices associated with confined space safety by:
  - 2.4.1 examining and justifying the need for confined space standards
  - 2.4.2 identifying and analyzing what constitutes a confined space and describing the associated dangers
  - 2.4.3 determining what tests should be completed before entering a confined space, given the potential hazards of the space
  - 2.4.4 creating a plan to be used before entering a given confined space
  - 2.4.5 discussing the need for a rescue plan—what should be included, and what training should rescuers have (and why)
- 2.5 examine and demonstrate standards/practices associated with workplace chemical health and safety by:
  - 2.5.1 examining and justifying the need for WHMIS legislation
  - 2.5.2 identifying the classes of WHMIS controlled products
  - 2.5.3 describing the role of labels on containers of controlled products and describing the type of information that would be found on them
  - 2.5.4 describing the role of material safety data sheets and describing the type of information that would be found on them
  - 2.5.5 explaining the responsibilities of suppliers, employers and workers when it comes to the safe handling of chemicals in the workplace
  - 2.5.6 identifying risk management techniques associated with agricultural chemicals in regard to transportation, storage, spills, handling, exposure and disposal
- 3. identify and demonstrate methods for dealing with potential hazards in the agricultural area**
  - 3.1 describe and demonstrate the use of personal protective equipment (PPE); e.g., helmets, goggles, safety glasses, earmuffs, earplugs, dust masks, respirators, gloves, safety boots
  - 3.2 identify and demonstrate the correct health and safety practices in ergonomic safety procedures; e.g., lifting, loading, shovelling, bending, working alone
  - 3.3 identify and describe common health and safety practices and equipment that should be used around animals
  - 3.4 create an emergency response action plan for rural areas; e.g., location of first aid kits, emergency numbers, emergency addresses, cell phone availability, legal land descriptions and emergency response directions (create a rural emergency plan kit)
  - 3.5 prepare a health and safety action plan for:
    - 3.5.1 farm machinery and equipment safety
    - 3.5.2 animal management
    - 3.5.3 chemical safety
    - 3.5.4 fire and electrical hazards
    - 3.5.5 farm environmental hazards
- 4. research and identify legislation and/or exemptions for agricultural health and safety**
- 5. demonstrate basic competencies**
  - 5.1 demonstrate fundamental skills to:
    - 5.1.1 communicate
    - 5.1.2 manage information
    - 5.1.3 use numbers
    - 5.1.4 think and solve problems

- 5.2 demonstrate personal management skills to:
  - 5.2.1 demonstrate positive attitudes and behaviours
  - 5.2.2 be responsible
  - 5.2.3 be adaptable
  - 5.2.4 learn continuously
  - 5.2.5 work safely
- 5.3 demonstrate teamwork skills to:
  - 5.3.1 work with others
  - 5.3.2 participate in projects and tasks
- 6. create a transitional strategy to accommodate personal changes and build personal values**
  - 6.1 identify short-term and long-term goals
  - 6.2 identify steps to achieve goals



## **COURSE AGR3030: FIELD CROPS 2**

**Level:** Advanced

**Prerequisite:** AGR2030: Field Crops 1

**Description:** Students demonstrate the techniques used to produce a field crop, focusing attention on industry trends, crop selection, genetics and reproduction, and production skills. Potential areas of specialization include the production of cereals, forage, oil seeds, pulse crops, mushrooms, spices/herbs, vegetables, fruits, medicinal plants and exotic plants.

**Parameters:** Access to a land laboratory. Facilities and equipment should permit students to perform practical skills in **two** areas of plant production; e.g., soil preparation, seeding/propagation, crop cultivation, irrigation/fertilization, pest/weed/disease control, harvesting.

**Supporting Course:** HCS3000: Workplace Safety Systems

**Outcomes:** The student will:

### **1. identify trends in the production and use of new varieties of field crops**

- 1.1 research production and consumption patterns within Alberta, Canada and the global community
- 1.2 describe the impact of economic, environmental and social trends on production practices within the industry; e.g., international trade and global competition, trade liberalization, rural and urban populations, food safety and consumer confidence, consumer demands, support for research and development, environmental stewardship and sustainable development
- 1.3 identify market factors that influence crop selection, including:
  - 1.3.1 market demands
  - 1.3.2 market size, location and access
  - 1.3.3 market competition
  - 1.3.4 market trends
- 1.4 describe financial opportunities related to crop production, considering:
  - 1.4.1 fixed and variable costs
  - 1.4.2 forecast of returns
  - 1.4.3 risk factors
  - 1.4.4 income stabilization programs
- 1.5 describe land requirements and the suitability of soil and water conditions to production operations
- 1.6 describe the suitability of Alberta's climate to potential crops, considering:
  - 1.6.1 growing days
  - 1.6.2 frost-free days
  - 1.6.3 ambient temperature
  - 1.6.4 soil temperature
- 1.7 describe ways in which government regulations, policies and guidelines may influence production
- 1.8 predict future production on the basis of current issues and trends

**2. describe principles of genetics and reproduction and explain their application to field crop species**

- 2.1 classify field plants according to:
  - 2.1.1 growth habit
  - 2.1.2 taxonomy
- 2.2 identify field plants, using:
  - 2.2.1 common names
  - 2.2.2 botanical nomenclature
- 2.3 research principles of heredity and their application to plants that are grown, considering:
  - 2.3.1 dominant and recessive traits
  - 2.3.2 selection criteria and procedures
  - 2.3.3 systems of breeding
- 2.4 research reproduction technologies and their application to plants that are grown; e.g., propagation techniques, genetic engineering
- 2.5 describe procedures used within the industry to maintain the quality of plants; e.g., selection criteria and regulations, showing and judging, grading systems and standards, record keeping and record systems

**3. demonstrate practical skills in producing a field crop**

- 3.1 perform basic field crop production activities; e.g., soil preparation, seeding/propagation, crop cultivation, irrigation/fertilization, pest/weed/disease control, harvesting
- 3.2 apply knowledge of plant management practices, including:
  - 3.2.1 characteristics of plant health and disorders
  - 3.2.2 remedial strategies for plant disorders
  - 3.2.3 disease and pest control
  - 3.2.4 plant growth management
- 3.3 demonstrate techniques for the sustainable use of natural resources, including management practices related to:
  - 3.3.1 soil fertility and conservation
  - 3.3.2 water quality and the hydrologic cycle
- 3.4 explain concerns regarding plant management practices and sustainable production systems, including:
  - 3.4.1 soil, water and air quality
  - 3.4.2 organic and inorganic amendments
  - 3.4.3 biological and chemical control measures
  - 3.4.4 effluent disposal and pollution
  - 3.4.5 food safety and consumer confidence
- 3.5 demonstrate adherence to relevant legislation and policy through production management activities, considering:
  - 3.5.1 environmental constraints
  - 3.5.2 inspection, regulation and quality control

**4. demonstrate basic competencies**

- 4.1 demonstrate fundamental skills to:
  - 4.1.1 communicate
  - 4.1.2 manage information
  - 4.1.3 use numbers
  - 4.1.4 think and solve problems
- 4.2 demonstrate personal management skills to:
  - 4.2.1 demonstrate positive attitudes and behaviours
  - 4.2.2 be responsible
  - 4.2.3 be adaptable

- 4.2.4 learn continuously
- 4.2.5 work safely
- 4.3 demonstrate teamwork skills to:
  - 4.3.1 work with others
  - 4.3.2 participate in projects and tasks
- 5. create a transitional strategy to accommodate personal changes and build personal values**
  - 5.1 identify short-term and long-term goals
  - 5.2 identify steps to achieve goals



## **COURSE AGR3040: LIVESTOCK/POULTRY 2**

**Level:** Advanced

**Prerequisite:** AGR2040: Livestock/Poultry 1

**Description:** Students demonstrate the techniques used to manage production livestock, poultry or other animal commodities. Areas of focus include industry trends and opportunities, genetics and reproduction, rations and feeding, housing, animal handling and restraint, animal health and welfare, breeding operations and care for the young. Potential areas of specialization include the production of cattle (beef or dairy), poultry, swine, sheep and diversified livestock (elk, bison and deer).

**Parameters:** Access to livestock, poultry or specialty animals and to appropriate animal housing and fencing structures.

**Outcomes:** The student will:

- 1. identify industry trends in cattle (beef or dairy), sheep, swine, poultry or diversified livestock production**
  - 1.1 research production and consumption patterns within Alberta, Canada and the global community
  - 1.2 explain the impact of economic, environmental and social trends on production practices within the industry; e.g., international trade and global competition, trade liberalization, rural and urban populations, food safety and consumer confidence, consumer preferences, support for research and development, environmental stewardship and sustainable development
  - 1.3 identify market factors that influence enterprise selection; e.g., market demands and trends, market size, location and access, market competition
  - 1.4 compare financial opportunities related to animal production, considering:
    - 1.4.1 fixed and variable costs
    - 1.4.2 forecast of returns
    - 1.4.3 risk factors
    - 1.4.4 income stabilization programs
  - 1.5 describe ways in which government regulations, policies and guidelines may influence production
  - 1.6 describe land requirements and the suitability of soil, water and climate conditions to production operations
  - 1.7 describe other needs relative to production activities, including:
    - 1.7.1 structures and equipment
    - 1.7.2 labour
    - 1.7.3 transportation
  - 1.8 predict future production on the basis of current issues and trends
- 2. describe principles of genetics and reproduction and explain their application to cattle (beef or dairy), sheep, swine, poultry or diversified livestock**
  - 2.1 research principles of heredity and their application to animals that are raised, considering:
    - 2.1.1 dominant and recessive traits
    - 2.1.2 selection criteria and procedures
    - 2.1.3 systems of breeding

- 2.2 apply knowledge of specific reproduction processes, including:
  - 2.2.1 estrous cycle
  - 2.2.2 gestation period
  - 2.2.3 natural service/artificial insemination
  - 2.2.4 normal birth process
  - 2.2.5 age criteria for breeding
- 2.3 research reproduction technologies and their application to animals that are raised; e.g., embryo transfer, gender selection
- 2.4 describe procedures used to manage the quality of animals within the industry, including:
  - 2.4.1 selection criteria and regulations
  - 2.4.2 pedigrees and performance information
  - 2.4.3 showing/judging systems and standards
  - 2.4.4 registry and record systems
- 3. demonstrate practical skills in raising, growing and finishing cattle (beef or dairy), sheep, swine, poultry or diversified livestock**
  - 3.1 perform basic animal production activities; e.g., feeding, housing, handling and restraining, addressing health and welfare, breeding operations, caring for young
  - 3.2 describe approved methods of marking or tagging animals for identification
  - 3.3 identify and apply appropriate strategies for the sustainable use of natural resources; e.g., management practices related to soil fertility and conservation, management practices related to water quality and the hydrologic cycle
  - 3.4 explain concerns regarding animal management and sustainable production systems, considering:
    - 3.4.1 biotechnology
    - 3.4.2 food safety
    - 3.4.3 animal rights
    - 3.4.4 pollution
  - 3.5 demonstrate adherence to relevant legislation and policy through production management activities, considering:
    - 3.5.1 environmental health and safety
    - 3.5.2 personal health and safety
- 4. demonstrate basic competencies**
  - 4.1 demonstrate fundamental skills to:
    - 4.1.1 communicate
    - 4.1.2 manage information
    - 4.1.3 use numbers
    - 4.1.4 think and solve problems
  - 4.2 demonstrate personal management skills to:
    - 4.2.1 demonstrate positive attitudes and behaviours
    - 4.2.2 be responsible
    - 4.2.3 be adaptable
    - 4.2.4 learn continuously
    - 4.2.5 work safely
  - 4.3 demonstrate teamwork skills to:
    - 4.3.1 work with others
    - 4.3.2 participate in projects and tasks
- 5. create a transitional strategy to accommodate personal changes and build personal values**
  - 5.1 identify short-term and long-term goals
  - 5.2 identify steps to achieve goals

## **COURSE AGR3050: AGRIFOODS 2**

**Level:** Advanced

**Prerequisite:** AGR2050: Agrifoods 1

**Description:** Students are introduced to the management and development of an agrifood product or related service, focusing attention on government regulation and control, economic principles, product quality and safety, environmental impact and industry trends. Potential areas of investigation include cattle (beef or dairy), poultry, cereals, oil seeds, sugar beets, wine, fruits/vegetables and honey.

**Parameters:** Access to an agrifoods industry.

**Outcomes:** The student will:

- 1. identify government legislation and policies that regulate practices within an agrifood industry**
  - 1.1 explain the role of government legislation in maintaining product quality and safety within an agrifood industry; e.g., inspection of raw materials, product grading, packaging and labelling, sanitation standards, safety regulations
  - 1.2 describe the mandates of the following government agencies in maintaining product quality and safety:
    - 1.2.1 Agriculture and Agri-Food Canada
    - 1.2.2 Alberta Agriculture and Rural Development
    - 1.2.3 Canada's Office of Consumer Affairs
    - 1.2.4 Health Canada
  - 1.3 describe potential applications of the International Organization for Standardization (ISO) in regulating industry practices
  - 1.4 describe the mandates of the following government agencies regarding industry use of land, water and air:
    - 1.4.1 Alberta Environment
    - 1.4.2 Environment Canada
- 2. describe techniques used to manage industry practices, including the application of economic principles, standards for product quality and safety, and measures to reduce environmental impact**
  - 2.1 apply knowledge of basic economic principles to management decisions within the industry; e.g., supply and demand, law of diminishing returns, comparative advantage
  - 2.2 identify criteria and techniques for managing environmental impact; e.g., methods of effluent disposal, water treatment after use, soil conservation practices, use of biodegradable materials
  - 2.3 explain how relevant supply systems may influence industry management; e.g., supply of raw materials, production volumes, access to markets
  - 2.4 describe current issues regarding food quality and sustainable processing systems; e.g., food additives, preservatives and irradiation, use of organic and inorganic materials, effluent disposal and pollution
- 3. identify industry trends and opportunities for developing new agrifood products or related services**
  - 3.1 describe production and consumption patterns within Alberta, Canada and the global community
  - 3.2 describe the impact of economic, environmental and social trends on practices within the industry; e.g., international trade and global competition, trade liberalization, rural and urban populations, food safety and consumer confidence, consumer preferences, support for research and development, environmental stewardship and sustainable development

- 3.3 describe opportunities for product research and development within the industry, including:
  - 3.3.1 altering existing products or related services
  - 3.3.2 developing new products or related services
  - 3.3.3 developing new markets
- 3.4 predict future production on the basis of current trends and issues
- 4. demonstrate basic competencies**
  - 4.1 demonstrate fundamental skills to:
    - 4.1.1 communicate
    - 4.1.2 manage information
    - 4.1.3 use numbers
    - 4.1.4 think and solve problems
  - 4.2 demonstrate personal management skills to:
    - 4.2.1 demonstrate positive attitudes and behaviours
    - 4.2.2 be responsible
    - 4.2.3 be adaptable
    - 4.2.4 learn continuously
    - 4.2.5 work safely
  - 4.3 demonstrate teamwork skills to:
    - 4.3.1 work with others
    - 4.3.2 participate in projects and tasks
- 5. create a transitional strategy to accommodate personal changes and build personal values**
  - 5.1 identify short-term and long-term goals
  - 5.2 identify steps to achieve goals

## **COURSE AGR3060: LANDSCAPING 3**

**Level:** Advanced

**Prerequisites:** AGR2060: Landscaping 2  
AGR3000: Agriculture Safety

**Description:** Students demonstrate basic landscape practices, focusing attention on plant identification, effective maintenance practices, diagnosis of problems and installation of specialty items. Potential areas of specialization include residential landscapes, institutional/industrial grounds and recreational/roadside landscapes.

**Parameters:** Access to a residential, institutional/industrial and/or recreational/roadside landscape and appropriate equipment and supplies. Facilities and equipment should permit students to perform practical tasks in basic landscape services; e.g., watering, cultivation/mulching, corrective pruning, weed control, installation/removal of plant material.

**Supporting Courses:** HCS2020: First Aid/CPR with AED  
HCS3000: Workplace Safety Systems

**Outcomes:** The student will:

### **1. identify plants suitable for use in Alberta landscapes**

- 1.1 explain the use of taxonomy keys in plant identification
- 1.2 identify five selected deciduous and five coniferous woody plants suitable for use in Alberta landscapes according to:
  - 1.2.1 common name and/or botanical names
  - 1.2.2 general characteristics/growth habits
  - 1.2.3 functional use and growth habits in Alberta landscapes
- 1.3 identify five selected annuals according to:
  - 1.3.1 common name and/or botanical names
  - 1.3.2 general characteristics/growth habits
  - 1.3.3 functional use and growth habits in Alberta landscapes
- 1.4 identify five selected perennials according to:
  - 1.4.1 common name and/or botanical names
  - 1.4.2 general characteristics/growth habits
  - 1.4.3 functional use and growth habits in Alberta landscapes
- 1.5 identify five selected specialty plants (e.g., bulbs, tubers, rhizomes) according to:
  - 1.5.1 common name and/or botanical names
  - 1.5.2 general characteristics/growth habits
  - 1.5.3 functional use and growth habits in Alberta landscapes

### **2. identify weeds and pests commonly found in Alberta landscapes**

- 2.1 identify five selected weeds according to:
  - 2.1.1 common name and/or botanical names
  - 2.1.2 general characteristics and/or growth habits
- 2.2 identify five selected pests according to:
  - 2.2.1 common name and/or order
  - 2.2.2 general characteristics and/or life cycle
- 2.3 compare methods used to control these weeds and pests

- 3. explore different types of specialty items and/or systems found in Alberta landscapes**
  - 3.1 research hardscape structures; e.g., underground sprinkling systems, paving stones, retaining walls, landscape lighting, ponds
  - 3.2 research softscape structures; e.g., hedging and screening, hillside planting, specialty plants
- 4. explore different types of specialty landscape design**
  - 4.1 research a variety of specialty gardens; e.g., Japanese, xeriscaping, sensory garden
  - 4.2 explore the benefits and/or aesthetic value of a specialty garden
  - 4.3 explore local regulations that may influence the selection, design and/or installation of a specialty item or system; e.g., land planning and zoning, use of equipment or chemicals, environmental constraints
  - 4.4 plan and/or cost one specialty item and/or system for an Alberta landscape; e.g., explanation of need, description of component parts, plan for installation, estimated total cost
- 5. perform routine maintenance of hand tools and/or power equipment used for landscaping**
  - 5.1 perform safety checks on equipment
  - 5.2 identify and report potential hazards
  - 5.3 record/report general maintenance and/or malfunctions; e.g., hours of operation, periodic servicing
  - 5.4 prepare basic hand tools/power equipment for off-season storage; e.g., cleaning
- 6. perform practical skills that promote the health and maintenance of woody plants**
  - 6.1 demonstrate techniques for pruning/shaping trees, shrubs and other landscape plants
  - 6.2 develop an understanding of basic pruning; e.g., schedules, methods, shaping, safety
  - 6.3 use various techniques to protect woody plants; e.g., guying, staking, wrapping, edging
- 7. demonstrate proper landscape procedures**
  - 7.1 assess environmental conditions related to plant survival; e.g., zones, wind, drought
  - 7.2 apply seasonal landscaping maintenance practices; e.g., weeding, transplanting, preparing beds, staking, pest control, mulching
  - 7.3 maintain a logbook of landscape gardening activities
- 8. demonstrate basic competencies**
  - 8.1 demonstrate fundamental skills to:
    - 8.1.1 communicate
    - 8.1.2 manage information
    - 8.1.3 use numbers
    - 8.1.4 think and solve problems
  - 8.2 demonstrate personal management skills to:
    - 8.2.1 demonstrate positive attitudes and behaviours
    - 8.2.2 be responsible
    - 8.2.3 be adaptable
    - 8.2.4 learn continuously
    - 8.2.5 work safely
  - 8.3 demonstrate teamwork skills to:
    - 8.3.1 work with others
    - 8.3.2 participate in projects and tasks
- 9. create a transitional strategy to accommodate personal changes and build personal values**
  - 9.1 identify short-term and long-term goals
  - 9.2 identify steps to achieve goals

## **COURSE AGR3070: EQUINE 2**

**Level:** Advanced

**Prerequisite:** AGR2070: Equine 1

**Description:** Students develop practical skills, based on approved practices, for providing the daily care of a horse. Attention will focus on the use of physical facilities, procedures for stall cleaning and bedding a horse, guidelines for turnout and shelter, reproductive fundamentals and techniques, and basic horsemanship.

**Parameters:** Access to a horse and appropriate equine housing/fencing structures.

It is recommended that students have a **minimum of 50 hours** of previous experience in horse handling and horse care prior to commencing the study of AGR2070: Equine 1 and AGR3070: Equine 2. Students must have access to instruction from an individual with specialized training and/or experience related to horsemanship and/or English or Western riding.

**Supporting Courses:** HCS2020: First Aid/CPR with AED  
HCS3000: Workplace Safety Systems

**Outcomes:** The student will:

### **1. identify factors to consider in selecting a stable and other physical facilities**

- 1.1 describe the use of stables and other confinement structures used in caring for horses, including:
  - 1.1.1 fences and shelters
  - 1.1.2 totally confined rearing structures; e.g., barn
- 1.2 describe criteria relevant to the selection and/or design of structures and equipment, considering:
  - 1.2.1 function, operation and maintenance
  - 1.2.2 safety and efficiency
  - 1.2.3 ethical, legal and environmental factors
  - 1.2.4 economics and cost
- 1.3 identify specific factors to consider in selecting:
  - 1.3.1 a stall/paddock
  - 1.3.2 the type of flooring
  - 1.3.3 interior ancillary facilities
- 1.4 describe selection criteria relevant to watering and feeding systems
- 1.5 describe approved waste management systems
- 1.6 describe factors to consider in selecting an appropriate type of fencing
- 1.7 identify policy, legislation and safe practices relevant to the use of physical structures and equipment

### **2. demonstrate practical skills and approved procedures for stall cleaning, bedding a horse, turnout and shelter**

- 2.1 describe the characteristics of a healthy environment for horses, including:
  - 2.1.1 sanitation
  - 2.1.2 housing
  - 2.1.3 pest control
  - 2.1.4 exercise

- 2.2 identify agents and sources of stress for a horse and describe their effects on general health
- 2.3 describe veterinary services that are available and the protocol for accessing these services
- 2.4 demonstrate appropriate procedures for cleaning and disinfecting stalls
- 2.5 demonstrate appropriate procedures for bedding a horse
- 2.6 demonstrate appropriate procedures for turnout and shelter
- 3. describe the reproductive cycle of horses and describe basic techniques of equine reproduction**
  - 3.1 explain reproductive processes characteristic of horses; e.g., estrous cycle, gestation period, natural service/artificial insemination, normal birth process, age criteria for breeding
  - 3.2 identify the signs of the estrous cycle in a mare
  - 3.3 describe methods of preparing a mare and stallion for breeding; e.g., teasing protocol, hormone treatments, artificial light
  - 3.4 describe appropriate procedures for the care and handling of mares and stallions during the breeding season
  - 3.5 explain reproductive technologies that are used in equine breeding; e.g., artificial insemination, embryo transfer, estrus manipulation, gender selection
- 4. demonstrate approved horsemanship techniques**
  - 4.1 demonstrate proper tack fitting
  - 4.2 demonstrate appropriate use of selected bits in communicating with a horse; e.g., snaffle bits, curb bits
  - 4.3 explain applications of various training devices for schooling a horse; e.g., draw rein, German martingale, running martingale, standing martingale, cavesson/headstall, browband
  - 4.4 demonstrate appropriate use of the following artificial aids in reinforcing natural riding aids:
    - 4.4.1 a riding crop
    - 4.4.2 spurs
  - 4.5 demonstrate the natural aids of hands and voice while engaging the horse to:
    - 4.5.1 walk
    - 4.5.2 yield and half halt
    - 4.5.3 halt
    - 4.5.4 turn
  - 4.6 demonstrate the basic positions of the balanced seat at the:
    - 4.6.1 walk
    - 4.6.2 trot
    - 4.6.3 lope/canter
  - 4.7 demonstrate the natural aids of the legs in a balanced seat at the:
    - 4.7.1 walk
    - 4.7.2 trot
    - 4.7.3 lope/canter
  - 4.8 explain the use of psychology in achieving personal riding goals, including:
    - 4.8.1 focusing
    - 4.8.2 visualization
    - 4.8.3 self-talk
- 5. demonstrate basic competencies**
  - 5.1 demonstrate fundamental skills to:
    - 5.1.1 communicate
    - 5.1.2 manage information
    - 5.1.3 use numbers
    - 5.1.4 think and solve problems

- 5.2 demonstrate personal management skills to:
  - 5.2.1 demonstrate positive attitudes and behaviours
  - 5.2.2 be responsible
  - 5.2.3 be adaptable
  - 5.2.4 learn continuously
  - 5.2.5 work safely
- 5.3 demonstrate teamwork skills to:
  - 5.3.1 work with others
  - 5.3.2 participate in projects and tasks
- 6. create a transitional strategy to accommodate personal changes and build personal values**
  - 6.1 identify short-term and long-term goals
  - 6.2 identify steps to achieve goals



## **COURSE AGR3085: FLORAL DESIGN 3**

**Level:** Advanced

**Prerequisite:** AGR2085: Floral Design 2

**Description:** Students study the requirements and practices involved in providing creative floral design services, focusing on plant and flower identification, advanced design techniques, and floral services for special occasions.

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

**Outcomes:** The student will:

- 1. identify and explain the cultural requirements of cut flowers, foliage and interior plants**
  - 1.1 identify flowers, greenery and other materials commonly used in floral design, including:
    - 1.1.1 greenhouse or field-grown cut flowers
    - 1.1.2 imported cut flowers
    - 1.1.3 foliage and filler
    - 1.1.4 dried flowers and foliage
    - 1.1.5 silk and other fabric materials
  - 1.2 explain the advantages and disadvantages of using different types of floral materials
  - 1.3 relate different growth styles of flowers to use in floral arrangements
  - 1.4 explain ethnic and cultural influences on floral materials and practices
- 2. construct fresh, dried and/or artificial floral arrangements for special occasions**
  - 2.1 explain and apply elements and principles of design, including:
    - 2.1.1 line, form, pattern and texture
    - 2.1.2 colour, balance and rhythm
    - 2.1.3 scale and proportion
    - 2.1.4 harmony, contrast and repetition
  - 2.2 apply the colour wheel and basic colour theory
  - 2.3 design and construct fresh, dried and/or artificial floral arrangements for special purposes and occasions (e.g., calendar events, weddings, funerals, hospitals), demonstrating special effects and advanced design techniques (e.g., crescent, Hogarth curve, T-shape, L-shape)
- 3. calculate the cost and selling price of floral products and services**
  - 3.1 identify fixed and variable costs associated with floral services
  - 3.2 explain and apply pricing formulas used in the floral industry
  - 3.3 calculate the cost price and selling price of a floral arrangement
  - 3.4 explain the importance of accountability for pricing practices used within the industry
- 4. identify and perform safe and sanitary practices**
  - 4.1 demonstrate proper handling, use and maintenance of all implements and tools
  - 4.2 apply universal precautions related to blood-borne pathogens; e.g., minor cuts, blood spills
  - 4.3 maintain a clean, sanitary, safe work area
  - 4.4 use all materials and products appropriately
  - 4.5 clean, sanitize and return implements and materials to a storage area after use
  - 4.6 dispose of waste materials in an environmentally safe manner

**5. demonstrate basic competencies**

5.1 demonstrate fundamental skills to:

- 5.1.1 communicate
- 5.1.2 manage information
- 5.1.3 use numbers
- 5.1.4 think and solve problems

5.2 demonstrate personal management skills to:

- 5.2.1 demonstrate positive attitudes and behaviours
- 5.2.2 be responsible
- 5.2.3 be adaptable
- 5.2.4 learn continuously
- 5.2.5 work safely

5.3 demonstrate teamwork skills to:

- 5.3.1 work with others
- 5.3.2 participate in projects and tasks

**6. create a transitional strategy to accommodate personal changes and build personal values**

6.1 identify short-term and long-term goals

6.2 identify steps to achieve goals

## **COURSE AGR3095: DISPLAY DESIGN**

**Level:** Advanced

**Prerequisite:** AGR3085: Floral Design 3

**Description:** Students build on floral design practices and create a promotional floral display, focusing on products and services in the floral industry.

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

**Supporting Course:** AGR2095: Indoor Plants

**Outcomes:** The student will:

- 1. identify and explain the cultural requirements of interior plants**
  - 1.1 identify interior plants and gift plants, recognizing both botanical and common name; e.g., tropical flowering plants, foliage plants, flowering bulbs
  - 1.2 explain the cultural requirements of interior plants, including:
    - 1.2.1 light intensity and duration; e.g., low, medium, high, very high
    - 1.2.2 water; e.g., dry, moist, wet
    - 1.2.3 growing medium/soil condition
    - 1.2.4 temperature and humidity
    - 1.2.5 nutrition; e.g., general rate, low, medium, high
- 2. demonstrate techniques used to promote products and services within the floral industry**
  - 2.1 identify important components of promotional displays
  - 2.2 establish a theme and goals for a floral display that promotes/advertises a seasonal product and/or service
  - 2.3 design and construct a promotional floral display that promotes/advertises a seasonal product and/or service
  - 2.4 maintain the promotional display for a specified period of time
  - 2.5 disassemble and remove the promotional floral display
- 3. calculate the cost and selling price of floral products and services**
  - 3.1 identify fixed and variable costs associated with floral services
  - 3.2 explain and apply pricing formulas used in the floral industry
  - 3.3 calculate the cost price and selling price of the promotional floral display
  - 3.4 explain the importance of accountability for pricing practices used within the industry
- 4. identify and perform safe and sanitary practices**
  - 4.1 demonstrate proper handling, use and maintenance of all implements and tools
  - 4.2 apply universal precautions related to blood-borne pathogens; e.g., minor cuts, blood spills
  - 4.3 maintain a clean, sanitary, safe work area
  - 4.4 use all materials and products appropriately
  - 4.5 clean, sanitize and return implements and materials to a storage area after use
  - 4.6 dispose of waste materials in an environmentally safe manner

**5. demonstrate basic competencies**

5.1 demonstrate fundamental skills to:

- 5.1.1 communicate
- 5.1.2 manage information
- 5.1.3 use numbers
- 5.1.4 think and solve problems

5.2 demonstrate personal management skills to:

- 5.2.1 demonstrate positive attitudes and behaviours
- 5.2.2 be responsible
- 5.2.3 be adaptable
- 5.2.4 learn continuously
- 5.2.5 work safely

5.3 demonstrate teamwork skills to:

- 5.3.1 work with others
- 5.3.2 participate in projects and tasks

**6. create a transitional strategy to accommodate personal changes and build personal values**

- 6.1 identify short-term and long-term goals
- 6.2 identify steps to achieve goals

## **COURSE AGR3100: BIOTECHNOLOGY**

**Level:** Advanced

**Prerequisite:** None

**Description:** Students present the results of research on applications of biotechnology in agriculture and food production.

**Parameters:** Access to resources on current applications of biotechnology in agriculture and food production.

**Outcomes:** The student will:

### **1. describe the history and development of biotechnology**

- 1.1 explain how biotechnology involves the altering of cells and organisms to produce goods and services
- 1.2 provide a historical perspective on methods by which the characteristics of plants and animals have been altered, including:
  - 1.2.1 natural selection
  - 1.2.2 selective breeding
  - 1.2.3 genetic engineering
- 1.3 describe basic vocabulary and techniques used in genetic engineering, including:
  - 1.3.1 chromosome
  - 1.3.2 gene
  - 1.3.3 gene mapping
  - 1.3.4 gene splicing
  - 1.3.5 cloning
- 1.4 outline emerging applications of biotechnology

### **2. identify the benefits and costs associated with applications of biotechnology in agriculture and food production**

- 2.1 describe specific applications of biotechnology in agriculture and food production; e.g., product and market development, industry diversification, production efficiency, disease and pest control
- 2.2 describe environmental, economic and ethical issues related to developments in biotechnology; e.g., use of natural resources, control and patenting of life forms, impact of genetically altered organisms, food quality and safety, world food supply
- 2.3 predict possible effects of new biotechnologies on producers, processors, consumers and governments
- 2.4 explain the role of legislation in regulating developments in biotechnology
- 2.5 identify a specific problem in agriculture and food production recently addressed through biotechnology (e.g., production costs, product quality, market supply, environmental impact) and:
  - 2.5.1 identify key stakeholder groups affected by the problem
  - 2.5.2 describe funding and partnerships that were established to address the problem
  - 2.5.3 explain applications of biotechnology in dealing with the problem; e.g., principles of genetic engineering, scientific design, experimental outcomes
  - 2.5.4 describe the social, economic and environmental consequences of experimental outcomes

- 2.5.5 make recommendations regarding the use of biotechnology and practical solutions to the problem; e.g., management actions, further research
- 3. explain the process used to develop a recent biotechnology within Alberta's agriculture industry**
- 4. demonstrate basic competencies**
  - 4.1 demonstrate fundamental skills to:
    - 4.1.1 communicate
    - 4.1.2 manage information
    - 4.1.3 use numbers
    - 4.1.4 think and solve problems
  - 4.2 demonstrate personal management skills to:
    - 4.2.1 demonstrate positive attitudes and behaviours
    - 4.2.2 be responsible
    - 4.2.3 be adaptable
    - 4.2.4 learn continuously
    - 4.2.5 work safely
  - 4.3 demonstrate teamwork skills to:
    - 4.3.1 work with others
    - 4.3.2 participate in projects and tasks
- 5. create a transitional strategy to accommodate personal changes and build personal values**
  - 5.1 identify short-term and long-term goals
  - 5.2 identify steps to achieve goals

## **COURSE AGR3120: SOILS MANAGEMENT 2**

**Level:** Advanced

**Prerequisite:** AGR2120: Soils Management 1

**Description:** Students study appropriate soil testing and amending techniques and learn to interpret soil survey maps and reports.

**Parameters:** Access to a science laboratory and land laboratory.

**Outcomes:** The student will:

- 1. select appropriate fertilization techniques based on an analysis of the nutrient requirements of plants**
  - 1.1 list the names and sources of essential micronutrients and macronutrients for plants
  - 1.2 describe soil colloids and their role in storing and releasing plant nutrients
  - 1.3 identify major fertilizer nutrients and describe their benefits to plant growth
  - 1.4 distinguish between natural and synthetic fertilizers and explain the advantages and disadvantages of each
  - 1.5 define fertilizer grade and give examples of commonly used grades
  - 1.6 describe the pros and cons of specialty fertilizer products
  - 1.7 describe common methods of fertilizer application
  - 1.8 calculate an appropriate amount and blend of fertilizer based upon plant nutrient requirements
- 2. demonstrate appropriate soil sampling techniques and interpret soil test reports**
  - 2.1 identify reasons for soil testing
  - 2.2 identify major soil nutrients and soil quality factors evaluated through a soil test
  - 2.3 describe the steps involved in conducting a soil test, including:
    - 2.3.1 soil sampling
    - 2.3.2 laboratory analysis
    - 2.3.3 interpretation of results
  - 2.4 demonstrate accurate soil sampling techniques
  - 2.5 describe the major elements of a soil test report, including:
    - 2.5.1 soil and cropping information
    - 2.5.2 fertilizer recommendations
    - 2.5.3 soil analysis results
    - 2.5.4 yield increase data
  - 2.6 interpret a soil test report
- 3. describe the legal location of a parcel of land, using the Dominion Land Survey (Western Grid Survey System)**
  - 3.1 identify and describe components of the Dominion Land Survey (Western Grid Survey System), including:
    - 3.1.1 lines of latitude and longitude
    - 3.1.2 townships and ranges
    - 3.1.3 sections and legal subdivisions
    - 3.1.4 roads
  - 3.2 identify the area of a parcel of land based upon information provided through its legal land description

- 3.3 provide reasons for correction lines, partial sections and acreage anomalies
- 3.4 locate a specific parcel of land on a soil map by applying knowledge of its legal land description
- 4. read and interpret soil survey maps and reports**
  - 4.1 describe key components of the Canada Land Inventory (CLI) system, including:
    - 4.1.1 soil classes and subclasses
    - 4.1.2 climatic subregions
  - 4.2 describe the agricultural capacity of a given piece of land by interpreting a CLI Soil Capability for Agriculture map
  - 4.3 describe the strengths and limitations of information provided through CLI maps in establishing agriculture management and conservation practices
  - 4.4 describe the nature and purpose of information conveyed through a soil survey map and report, including:
    - 4.4.1 overview of natural environment
    - 4.4.2 classification of soils
    - 4.4.3 potential land use
  - 4.5 identify and explain components of a soil survey map, including:
    - 4.5.1 map units
    - 4.5.2 map legend
    - 4.5.3 map symbols
    - 4.5.4 reference section
    - 4.5.5 key map
  - 4.6 interpret a soil survey map and report
- 5. demonstrate basic competencies**
  - 5.1 demonstrate fundamental skills to:
    - 5.1.1 communicate
    - 5.1.2 manage information
    - 5.1.3 use numbers
    - 5.1.4 think and solve problems
  - 5.2 demonstrate personal management skills to:
    - 5.2.1 demonstrate positive attitudes and behaviours
    - 5.2.2 be responsible
    - 5.2.3 be adaptable
    - 5.2.4 learn continuously
    - 5.2.5 work safely
  - 5.3 demonstrate teamwork skills to:
    - 5.3.1 work with others
    - 5.3.2 participate in projects and tasks
- 6. create a transitional strategy to accommodate personal changes and build personal values**
  - 6.1 identify short-term and long-term goals
  - 6.2 identify steps to achieve goals

## **COURSE AGR3150: GREENHOUSE/NURSERY CROPS 3**

**Level:** Advanced

**Prerequisite:** AGR2150: Greenhouse/Nursery Crops 2

**Description:** Students apply knowledge of materials and processes in identifying, selecting, growing and maintaining a greenhouse crop, focusing on a marketable crop.

**Parameters:** Access to a land laboratory and/or controlled growing environment. Facilities and equipment should permit students to perform practical tasks in plant production, as is required to produce a greenhouse crop; e.g., soil preparation, plant propagation, transplanting, cultivation, watering and fertilizing, pest and disease control.

Access to instruction from an individual with a Pesticide Applicator/Dispenser Certificate is required.

**Supporting Courses:** AGR3000: Agriculture Safety  
HCS2020: First Aid/CPR with AED  
HCS3000: Workplace Safety Systems

**Outcomes:** The student will:

### **1. identify and assess opportunities for producing a greenhouse crop**

- 1.1 explain how personal/customer needs may influence crop selection; e.g., food for consumption, economic goals, aesthetics, personal motivation, aptitude
- 1.2 identify market factors that influence crop selection; e.g., market demands, market size, market trends, market competition
- 1.3 describe financial opportunities related to crop production; e.g., forecast of returns, risk factors
- 1.4 describe costs related to crop production; e.g., fixed and variable costs
- 1.5 consider the use of promotional technologies to market products
- 1.6 explore the legalities of marketing a greenhouse crop
- 1.7 describe land requirements and/or the suitability of soil and water conditions to production operations
- 1.8 describe the suitability of Alberta's climate to potential crops; e.g., growing days, frost-free days, ambient temperature, soil temperature
- 1.9 describe equipment needs at different stages of production; e.g., seeding/planting, cultivation, harvesting
- 1.10 describe labour and transportation needs within the industry; e.g., availability, cost

### **2. identify and describe greenhouse plants suited to Alberta climates**

- 2.1 classify plants according to:
  - 2.1.1 growth habit
  - 2.1.2 taxonomy
- 2.2 research principles of heredity and/or reproduction technologies and their application to plants that are grown; e.g., dominant and recessive traits, selection criteria and procedures, systems of breeding, propagation techniques, hybridization, heritage seeds
- 2.3 identify marketable crops grown in Alberta greenhouses; e.g., poinsettias, bedding plants, Easter lilies, hydrangeas, perennials, gift pans, herbs
- 2.4 describe procedures used to maintain the quality of plants within the industry; e.g., selection criteria, application of hybridization, showing and judging

- 3. identify strategies for managing a crop from seed to sale**
  - 3.1 apply knowledge of plant management practices in production activities; e.g., characteristics of plant health and disorders, remedial strategies for plant disorders, disease and pest control
  - 3.2 use appropriate techniques to propagate greenhouse plants
  - 3.3 apply principles of nutrition to production practices, including:
    - 3.3.1 reviewing the functions of micronutrients, macronutrients and secondary nutrients
    - 3.3.2 diagnosing and treating plants for nutrient excesses and deficiencies
    - 3.3.3 discussing and assisting in fertilizer preparation; e.g., mixing, measuring
    - 3.3.4 determining the pH and electroconductivity (EC) levels of soil
    - 3.3.5 assisting with the application of necessary nutrients
  - 3.4 demonstrate techniques for maintaining a sustainable production system; e.g., organic and inorganic amendments, biological and chemical control measures, waste disposal in an environmentally responsible manner
- 4. demonstrate practical skills in growing a greenhouse crop**
  - 4.1 prepare the growing medium/seed bed
  - 4.2 use appropriate methods of propagation and/or transplanting
  - 4.3 define appropriate use of growing space
  - 4.4 apply appropriate cultivating, watering and fertilizing techniques
  - 4.5 control plant pests and diseases, using nontoxic, safe material
  - 4.6 prepare packaging for plant material
  - 4.7 use soil and water conservation practices
  - 4.8 maintain an anecdotal record/logbook of production tasks
  - 4.9 assess a time line and participate in a scheduling process
  - 4.10 evaluate cultural requirements; e.g., soil medium, light, water, fertilizer, spacing
- 5. develop and present a plan for future greenhouse crop production, based on the outcomes of current production practices**
  - 5.1 describe production venture outcomes based on:
    - 5.1.1 product quality
    - 5.1.2 product saleability
    - 5.1.3 application of new skills
  - 5.2 describe the impact of economic, environmental and/or social factors on production practices and outcomes
  - 5.3 make recommendations regarding future production ventures on the basis of current accomplishments and challenges in plant production
- 6. demonstrate basic competencies**
  - 6.1 demonstrate fundamental skills to:
    - 6.1.1 communicate
    - 6.1.2 manage information
    - 6.1.3 use numbers
    - 6.1.4 think and solve problems
  - 6.2 demonstrate personal management skills to:
    - 6.2.1 demonstrate positive attitudes and behaviours
    - 6.2.2 be responsible
    - 6.2.3 be adaptable
    - 6.2.4 learn continuously
    - 6.2.5 work safely
  - 6.3 demonstrate teamwork skills to:
    - 6.3.1 work with others
    - 6.3.2 participate in projects and tasks

- 7. create a transitional strategy to accommodate personal changes and build personal values**
  - 7.1 identify short-term and long-term goals
  - 7.2 identify steps to achieve goals



## **COURSE AGR3160: TURF MANAGEMENT**

**Level:** Advanced

**Prerequisite:** AGR1070: Landscaping 1

**Description:** Students demonstrate the techniques used to provide turf maintenance services, focusing on plant identification, equipment maintenance, effective practices, cost analysis and pricing.

**Parameters:** Access to a residential, recreational and/or institutional landscape and appropriate equipment and supplies. Facilities and equipment should permit students to perform practical tasks in basic turf management; e.g., watering, mowing/trimming/edging of turfgrass, weed control.

**Supporting Courses:** AGR3000: Agriculture Safety  
HCS2020: First Aid/CPR with AED  
HCS3000: Workplace Safety Systems

**Outcomes:** The student will:

- 1. identify ground cover and turfgrass species used for landscaping**
  - 1.1 describe methods of identifying turfgrass, including:
    - 1.1.1 using common names
    - 1.1.2 using botanical nomenclature
  - 1.2 describe the general characteristics and functional uses of turfgrasses
  - 1.3 identify and select appropriate turfgrasses for given applications in Alberta landscapes, considering:
    - 1.3.1 rhizome producing, stolon producing and bunch type
    - 1.3.2 fine, medium and course leaf texture
  - 1.4 describe the cultural requirements of turfgrass; e.g., soil, moisture, light, temperature, trimming
- 2. implement appropriate strategies for the treatment and prevention of pests, diseases and ailments that affect the health of turfgrass**
  - 2.1 identify common weeds and insect pests at different stages of growth
  - 2.2 discuss the beneficial and harmful effects of insects
  - 2.3 describe and correct turfgrass problems; e.g., fairy rings, scalping, ridging, compacting, animal and disease problems
  - 2.4 compare biological, cultural and chemical control measures for weeds and plant pests
  - 2.5 list the pros and cons associated with the use of common pesticides
  - 2.6 explain safe practices for mixing and applying fertilizers and chemicals
  - 2.7 develop a weed-control program
- 3. demonstrate proper techniques for maintenance of turfgrass**
  - 3.1 demonstrate proper procedures in maintenance; e.g., clean-up, dethatching, aerating, top-dressing, irrigation, fertilizing, patching, mowing, trimming, edging
  - 3.2 describe proper techniques for winterizing turfgrasses
  - 3.3 identify and describe organic and inorganic materials commonly used in providing basic turf-care services; e.g., fertilizers, pesticides
  - 3.4 demonstrate proper watering techniques

- 4. demonstrate practical skills in using tools to perform basic turf-care services**
  - 4.1 identify and describe hand and/or power equipment commonly used in providing turf-care services; e.g., aerators, mowers, chemical and fertilizer applicators
  - 4.2 demonstrate safe and efficient use of hand/power tools (e.g., rakes, power rakes, edgers, trimmers, blowers), considering:
    - 4.2.1 safe practices and potential hazards
    - 4.2.2 protective clothing
    - 4.2.3 safety labels and instructions
    - 4.2.4 government legislation and regulation
    - 4.2.5 emergency first aid
  - 4.3 perform safety checks on equipment
  - 4.4 record/report general maintenance and/or malfunctions; e.g., hours of operation, periodic servicing
  - 4.5 prepare basic hand tools/power equipment for off-season storage; e.g., cleaning
  - 4.6 compare two-stroke and four-stroke engines and their required maintenance
- 5. prepare cost analyses and pricing for basic turf-grass services**
  - 5.1 identify factors that determine the cost of a turfgrass service; e.g., material costs, labour costs, equipment usage costs, overhead costs
  - 5.2 explain technologies used to cost and price turfgrass services; e.g., software
  - 5.3 prepare simple cost analyses and pricing for basic turfgrass services
- 6. demonstrate basic competencies**
  - 6.1 demonstrate fundamental skills to:
    - 6.1.1 communicate
    - 6.1.2 manage information
    - 6.1.3 use numbers
    - 6.1.4 think and solve problems
  - 6.2 demonstrate personal management skills to:
    - 6.2.1 demonstrate positive attitudes and behaviours
    - 6.2.2 be responsible
    - 6.2.3 be adaptable
    - 6.2.4 learn continuously
    - 6.2.5 work safely
  - 6.3 demonstrate teamwork skills to:
    - 6.3.1 work with others
    - 6.3.2 participate in projects and tasks
- 7. create a transitional strategy to accommodate personal changes and build personal values**
  - 7.1 identify short-term and long-term goals
  - 7.2 identify steps to achieve goals

## **COURSE AGR3910: AGR PROJECT D**

**Level:** Advanced

**Prerequisite:** None

**Description:** Students develop project design and management skills to extend and enhance competencies and skills in other CTS courses through contexts that are personally relevant.

**Parameters:** Advanced project courses must connect with a minimum of two CTS courses, one of which must be at the advanced level and be in the same occupational area as the project course. The other CTS course(s) must be at least at the intermediate level from any occupational area.

Project courses cannot be connected to other project courses or practicum courses.

**All projects and/or performances, whether teacher- or student-led, must include a course outline or student proposal.**

### **Outcomes:**

The teacher/student will:

- 1. identify the connection between this project course and two or more CTS courses**
  - 1.1 identify the outcome(s) from each identified CTS course that support the project and/or performance deliverables
  - 1.2 explain how these outcomes are being connected to the project and/or performance deliverables
- 2. propose the project and/or performance**
  - 2.1 identify the project and/or performance by:
    - 2.1.1 preparing a plan
    - 2.1.2 clarifying the purposes
    - 2.1.3 defining the deliverables
    - 2.1.4 specifying time lines
    - 2.1.5 explaining terminology, tools and processes
    - 2.1.6 defining resources; e.g., materials, costs, staffing
  - 2.2 identify and comply with all related health and safety standards
  - 2.3 define assessment standards (indicators for success)
  - 2.4 present the proposal and obtain necessary approvals

The student will:

- 3. meet goals as defined within the plan**
  - 3.1 complete the project and/or performance as outlined
  - 3.2 monitor the project and/or performance and make necessary adjustments
  - 3.3 present the project and/or performance, indicating the:
    - 3.3.1 outcomes attained
    - 3.3.2 relationship of outcomes to goals originally set

- 3.4 evaluate the project and/or performance, indicating the:
  - 3.4.1 processes and strategies used
  - 3.4.2 recommendations on how the project and/or performance could have been improved
- 4. demonstrate basic competencies**
  - 4.1 demonstrate fundamental skills to:
    - 4.1.1 communicate
    - 4.1.2 manage information
    - 4.1.3 use numbers
    - 4.1.4 think and solve problems
  - 4.2 demonstrate personal management skills to:
    - 4.2.1 demonstrate positive attitudes and behaviours
    - 4.2.2 be responsible
    - 4.2.3 be adaptable
    - 4.2.4 learn continuously
    - 4.2.5 work safely
  - 4.3 demonstrate teamwork skills to:
    - 4.3.1 work with others
    - 4.3.2 participate in projects and tasks
- 5. create a transitional strategy to accommodate personal changes and build personal values**
  - 5.1 identify short-term and long-term goals
  - 5.2 identify steps to achieve goals

## **COURSE AGR3920: AGR PROJECT E**

**Level:** Advanced

**Prerequisite:** None

**Description:** Students develop project design and management skills to extend and enhance competencies and skills in other CTS courses through contexts that are personally relevant.

**Parameters:** Advanced project courses must connect with a minimum of two CTS courses, one of which must be at the advanced level and be in the same occupational area as the project course. The other CTS course(s) must be at least at the intermediate level from any occupational area.

Project courses cannot be connected to other project courses or practicum courses.

**All projects and/or performances, whether teacher- or student-led, must include a course outline or student proposal.**

### **Outcomes:**

The teacher/student will:

- 1. identify the connection between this project course and two or more CTS courses**
  - 1.1 identify the outcome(s) from each identified CTS course that support the project and/or performance deliverables
  - 1.2 explain how these outcomes are being connected to the project and/or performance deliverables
- 2. propose the project and/or performance**
  - 2.1 identify the project and/or performance by:
    - 2.1.1 preparing a plan
    - 2.1.2 clarifying the purposes
    - 2.1.3 defining the deliverables
    - 2.1.4 specifying time lines
    - 2.1.5 explaining terminology, tools and processes
    - 2.1.6 defining resources; e.g., materials, costs, staffing
  - 2.2 identify and comply with all related health and safety standards
  - 2.3 define assessment standards (indicators for success)
  - 2.4 present the proposal and obtain necessary approvals

The student will:

- 3. meet goals as defined within the plan**
  - 3.1 complete the project and/or performance as outlined
  - 3.2 monitor the project and/or performance and make necessary adjustments
  - 3.3 present the project and/or performance, indicating the:
    - 3.3.1 outcomes attained
    - 3.3.2 relationship of outcomes to goals originally set

- 3.4 evaluate the project and/or performance, indicating the:
  - 3.4.1 processes and strategies used
  - 3.4.2 recommendations on how the project and/or performance could have been improved
- 4. demonstrate basic competencies**
  - 4.1 demonstrate fundamental skills to:
    - 4.1.1 communicate
    - 4.1.2 manage information
    - 4.1.3 use numbers
    - 4.1.4 think and solve problems
  - 4.2 demonstrate personal management skills to:
    - 4.2.1 demonstrate positive attitudes and behaviours
    - 4.2.2 be responsible
    - 4.2.3 be adaptable
    - 4.2.4 learn continuously
    - 4.2.5 work safely
  - 4.3 demonstrate teamwork skills to:
    - 4.3.1 work with others
    - 4.3.2 participate in projects and tasks
- 5. create a transitional strategy to accommodate personal changes and build personal values**
  - 5.1 identify short-term and long-term goals
  - 5.2 identify steps to achieve goals

## **COURSE AGR3950: AGR ADVANCED PRACTICUM**

**Level:** Advanced

**Prerequisite:** None

**Description:** Students apply prior learning and demonstrate the attitudes, skills and knowledge required by an external organization to achieve a credential/credentials or an articulation.

**Parameters:** This practicum course, which may be delivered on- or off-campus, should be accessed only by students continuing to work toward attaining a recognized credential/credentials or an articulation offered by an external organization. This course must be connected to at least one CTS course from the same occupational area and cannot be used in conjunction with any introductory (1XXX) level course. A practicum course cannot be delivered as a stand-alone course, cannot be combined with a CTS project course and cannot be used in conjunction with the Registered Apprenticeship Program or the Green Certificate Program.

**Outcomes:** The student will:

- 1. perform assigned tasks and responsibilities, as required by the organization granting the credential(s) or articulation**
  - 1.1 identify regulations and regulatory bodies related to the credential(s) or articulation
  - 1.2 describe personal roles and responsibilities, including:
    - 1.2.1 key responsibilities
    - 1.2.2 support functions/responsibilities/expectations
    - 1.2.3 code of ethics and/or conduct
  - 1.3 describe personal work responsibilities and categorize them as:
    - 1.3.1 routine tasks; e.g., daily, weekly, monthly, yearly
    - 1.3.2 non-routine tasks; e.g., emergencies
    - 1.3.3 tasks requiring personal judgement
    - 1.3.4 tasks requiring approval of a supervisor
  - 1.4 demonstrate basic employability skills and perform assigned tasks and responsibilities related to the credential(s) or articulation
- 2. analyze personal performance in relation to established standards**
  - 2.1 evaluate application of the attitudes, skills and knowledge developed in related CTS courses
  - 2.2 evaluate standards of performance in terms of:
    - 2.2.1 quality of work
    - 2.2.2 quantity of work
  - 2.3 evaluate adherence to workplace legislation related to health and safety
  - 2.4 evaluate the performance requirements of an individual who is trained, experienced and employed in a related occupation in terms of:
    - 2.4.1 training and certification
    - 2.4.2 interpersonal skills
    - 2.4.3 technical skills
    - 2.4.4 ethics

**3. demonstrate basic competencies**

3.1 demonstrate fundamental skills to:

- 3.1.1 communicate
- 3.1.2 manage information
- 3.1.3 use numbers
- 3.1.4 think and solve problems

3.2 demonstrate personal management skills to:

- 3.2.1 demonstrate positive attitudes and behaviours
- 3.2.2 be responsible
- 3.2.3 be adaptable
- 3.2.4 learn continuously
- 3.2.5 work safely

3.3 demonstrate teamwork skills to:

- 3.3.1 work with others
- 3.3.2 participate in projects and tasks

**4. create a transitional strategy to accommodate personal changes and build personal values**

- 4.1 identify short-term and long-term goals
- 4.2 identify steps to achieve goals