ORIGINAL COURSE IMPLEMENTATION DATE:	January 2009
REVISED COURSE IMPLEMENTATION DATE:	January 2024
COURSE TO BE REVIEWED (six years after UEC approval)**:**	April 2029

Course outline form version: 09/08/2021

OFFICIAL UNDERGRADUATE COURSE OUTLINE FORM

Note: The University reserves the right to amend course outlines as needed without notice.

Course Code and Number: AGRI 212	**Number of Credits:** 3 Course credit policy (105)
Course Full Title: Principles of On-Farm Food Protection **Course Short Title:** On-Farm Food Protection	
Faculty: Faculty of Science	**Department (or program if no department):** Agriculture Technology

Calendar Description:

Principles of hazard analysis and critical control points (HACCP) are explored in depth to demonstrate the development of third-party audit programs for on-farm food safety and other aspects of production. Implementation of these types of programs including record keeping tools, management practices, and HACCP training methods will be demonstrated and used by students in hands-on practice in the on-campus greenhouses and barn.

Note: Field trips outside of class time will be required. Please check with the department for details.

Prerequisites (or NONE):	None.
Corequisites (if applicable, or NONE):	None.
Pre/corequisites (if applicable, or NONE):	6 credits of Agriculture.

Antirequisite Courses *(Cannot be taken for additional credit.)*

Former course code/number: **AGRI 121**

Cross-listed with:

Equivalent course(s):

(If offered in the previous five years, antirequisite course(s) will be included in the calendar description as a note that students with credit for the antirequisite course(s) cannot take this course for further credit.)

Typical Structure of Instructional Hours

Lecture/seminar	30
Experiential (work-integrated learning)	12
Experiential (field trip)	3
Total hours	**45**

Scheduled Laboratory Hours

Labs to be scheduled independent of lecture hours: ☒ No ☐ Yes

Course Details

Special Topics course: **No**

(If yes, the course will be offered under different letter designations representing different topics.)

Directed Study course: **No**

(See policy 207 for more information.)

Grading System: **Letter grades**

Delivery Mode: **Face-to-face only**

Expected frequency: **Annually**

Maximum enrolment (for information only)**: 25**

Prior Learning Assessment and Recognition (PLAR)

PLAR is available for this course.

Transfer Credit *(See **bctransferguide.ca**.)*

Transfer credit already exists: **Yes**

Submit outline for (re)articulation: **Yes**

(If yes, fill in transfer credit form.)

Department approval	**Date of meeting:**	November 2022
Faculty Council approval	**Date of meeting:**	December 2, 2022
Undergraduate Education Committee (UEC) approval	**Date of meeting:**	April 21, 2022

Learning Outcomes *(These should contribute to students' ability to meet program outcomes and thus Institutional Learning Outcomes.)*

Upon successful completion of this course, students will be able to:

1. Explain the principles used to identify issues regarding food safety, quality, security, biosecurity, and welfare for both livestock and crop production settings.
2. Analyse the hazards, management practices and records associated with food safety, quality, security, biosecurity, and animal welfare.
3. Implement applicable controls and programs to minimize risks to food safety quality, security, biosecurity, and animal welfare.
4. Explain hazard analysis and critical control points (HACCP) principles.
5. Describe the implementation of different types of HACCP based programs in various commodity areas.
6. Use different types of monitoring methods to implement a risk assessment.
7. Perform a mock verification audit.
8. Access online and in-person resources to gain information about on-farm HACCP-based programs.

Recommended Evaluation Methods and Weighting *(Evaluation should align to learning outcomes.)*

Assignments:	30%	Final exam:	15%	Quizzes/tests:	45%
Project:	10%		%		%

Details:

NOTE: The following sections may vary by instructor. Please see course syllabus available from the instructor.

Typical Instructional Methods *(Guest lecturers, presentations, online instruction, field trips, etc.)*

Lectures, guest speakers, website searches/commodity producer guides review, case studies, field trips, labs.

Texts and Resource Materials *(Include online resources and Indigenous knowledge sources. Open Educational Resources (OER) should be included whenever possible. If more space is required, use the Supplemental Texts and Resource Materials form.)*

	Type	Author or description	Title and publication/access details	Year
1.	Other		Canadian Food Inspection Agency. Food Safety Recognition Program https://inspection.canada.ca/food-safety-for-industry/archived-food-guidance/safe-food-production-systems/food-safety-enhancement-program/recognition-program/eng/1299860970026/1299861042890	
2.	Online resource		Government of Alberta. HACCP Principles Explained https://www.alberta.ca/hazard-analysis-critical-control-point-program-planning.aspx	
3.	Online resource		Dairy Farmers of Canada. proAction Manual http://verifiedbeefproductionplus.ca/files/producer-resources/VBP_Producer_Manual_combined_V_1.6_and_V_7.8_Feb_13_2019.pdf	
4.	Online resource		Canada GAP. Greenhouse Manual https://www.canadagap.ca/wp-content/uploads/English/Manuals/Version-8.0/CORRECTED-CanadaGAP-Greenhouse-Manual-8.0-2020-ENG.pdf	
5.				

Required Additional Supplies and Materials *(Software, hardware, tools, specialized clothing, etc.)*

Appropriate, safe clothing for field trips; transportation for field trips.

Course Content and Topics

1. Introduction
   A. History of food protection on-farm and its interface, i.e., how the various types of programs have evolved, and what incidences have occurred to make them become the level they are at today
   B. Compare and contrast the various issues/programs to clarify what makes them different and yet similar
   C. Explore the program recognition process and how that impacts their credibility.
   D. Using all forms of media (e.g., internet, printed press, etc.) to demonstrate how widespread and public these issues can be and how these programs help mitigate risk for the farm and agri-food industry and ensure future farm sustainability and food security

2. HACCP – Using on-farm commodity programs to demonstrate how HACCP principles are used
   A. Introduction to the principles of HACCP in general, and HACCP-based farm production principles
      a. History of HACCP and HACCP-based programs
      b. Purpose of these programs

c. Status of HACCP-based programs now in use in BC

B. Identification of potential hazards (Hazard Analysis)
   a. Identification of the hazards
   b. Why they are hazards
   c. Potential origin of hazards in food from the farm, during processing, during shipping, by consumers
   d. Site schematics/verification – how it impacts potential hazards
   e. Case studies

C. Good Agricultural Practices (GAPs) – understanding program prerequisites (GAPs) and how they are the foundation of all on-farm programs using actual commodity examples, as they relate to:
   a. Premise
   b. Equipment
   c. Transportation and storage
   d. Personnel training and hygiene
   e. Sanitation and pest control
   f. Recall

D. Critical Control Point (CCPs) determination:
   a. Identification of on-farm CCPs specific using examples of various commodities
   b. Determination of what makes a good CCP
   c. Differentiation between CCPs and Level B GAPs

E. Critical limits: definition, examples and determination

F. Monitoring methods: using case studies explore what works and what doesn't:
   a. Standard operating procedures
   b. Impact of frequency/timing
   c. Ensuring credibility / accountability and why a food safety culture is important
   d. Documentation – variation of all forms, benefits, and importance to HACCP

G. Deviation / corrective action procedures: as applied preventatively and as a corrective control

H. Verification procedures: why this is important for long-term program success and program validity/credibility

3. Food security / animal care / biosecurity / environmental stewardship

A. Define, compare contrast how these issues (and where applicable programs) utilized HACCP to control risk, and ensure farm sustainability and food security. Evaluate cost/risk of not addressing these issues to industry and society in general.

B. Demonstrate issues/applications with real examples (food security – e.g., flood/earthquake preparedness and its impact) and food security/biosecurity programs (e.g., impact of a regional or even national disease outbreak). Demonstrate how other programs such as traceability programs (e.g., premise identification) interact and support these programs.

4. Audit process

A. Understand the audit process, and its importance to program credibility

B. Audit standards – how they were derived and what makes them credible

C. Audit procedures - what makes a good audit/auditor

D. Preparing for an audit from both a producer and auditor perspective: using case studies and real experience the students will perform audits in both greenhouse and/or livestock settings