

## OFFICIAL UNDERGRADUATE COURSE OUTLINE FORM

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

<b>Course Code and Number:</b> AGRI 306		<b>Number of Credits:</b> 3 <a href="#">Course credit policy (105)</a>													
<b>Course Full Title:</b> Field Techniques in Integrated Pest Management <b>Course Short Title:</b> Field Techniques in IPM															
<b>Faculty:</b> Faculty of Science		<b>Department (or program if no department):</b> Agriculture Technology													
<b>Calendar Description:</b> <p>Focus is on the practice of integrated pest management (IPM), i.e. detection, diagnosis, and management of pests (arthropods, weeds, diseases, vertebrates) common to any agricultural production system (field, greenhouse, indoor, housed animals, or pastured animals). Students will conduct hands-on research (pest survey or production evaluation). Communication and extension practice including developing training modules, posters, and information sessions. Students will participate in weekly scouting of greenhouse and/or barn pests on UFV Chilliwack campus.</p> <p>Note: Field trips outside of class time, including to the Pacific Agriculture Show, will be required. Please check with the department for details.</p>															
<b>Prerequisites (or NONE):</b>		AGRI 163 and AGRI 203.													
<b>Corequisites (if applicable, or NONE):</b>		None													
<b>Pre/corequisites (if applicable, or NONE):</b>		None													
<b>Antirequisite Courses</b> <i>(Cannot be taken for additional credit.)</i> Former course code/number: <b>AGRI 206, AGRI 205</b> Cross-listed with: Equivalent course(s): <i>(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.)</i>		<b>Course Details</b> Special Topics course: <b>No</b> <i>(If yes, the course will be offered under different letter designations representing different topics.)</i> Directed Study course: <b>No</b> <i>(See <a href="#">policy 207</a> for more information.)</i> Grading System: <b>Letter grades</b> Delivery Mode: <b>Face-to-face only</b> Expected frequency: <b>Winter only</b> Maximum enrolment (for information only): <b>25</b>													
<b>Typical Structure of Instructional Hours</b> <table border="1"> <tr> <td>Lecture/seminar</td> <td>25</td> </tr> <tr> <td>Supervised laboratory hours (science lab)</td> <td>10</td> </tr> <tr> <td>Experiential (field trip)</td> <td>10</td> </tr> <tr> <td></td> <td></td> </tr> <tr> <td></td> <td></td> </tr> <tr> <td><b>Total hours</b></td> <td><b>45</b></td> </tr> </table>		Lecture/seminar	25	Supervised laboratory hours (science lab)	10	Experiential (field trip)	10					<b>Total hours</b>	<b>45</b>	<b>Prior Learning Assessment and Recognition (PLAR)</b> PLAR is available for this course.	
Lecture/seminar	25														
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<b>Total hours</b>	<b>45</b>														
<b>Scheduled Laboratory Hours</b> Labs to be scheduled independent of lecture hours: <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes		<b>Transfer Credit</b> <i>(See <a href="#">bctransferguide.ca</a>.)</i> Transfer credit already exists: <b>Yes</b> Submit outline for (re)articulation: <b>Yes</b> <i>(If yes, fill in <a href="#">transfer credit form</a>.)</i>													
<b>Department approval</b>		<b>Date of meeting:</b> June 2022													
<b>Faculty Council approval</b>		<b>Date of meeting:</b> September 9, 2022													
<b>Undergraduate Education Committee (UEC) approval</b>		<b>Date of meeting:</b> February 24, 2023													

**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:

- Calibrate a backpack sprayer to determine standard pesticide use variables (amount of product, amount of water, amount of area).
- Solve various pesticide application calculations including application and product rates, volumes, and area to be treated.
- Implement a biological control program for one of the UFV greenhouse pests, including quality control assessments and post release monitoring.
- Conduct a research project from conception to final analysis of data and presentation of results via a poster.
- Evaluate the efficacy of different pest control measures using data collected before and after implementation.
- Deliver a training module for fellow students on a pest management specific activity.
- Develop and implement a weekly monitoring program for an agricultural operation (horticulture or livestock), using information from a variety of sources.
- Discuss the advantages and disadvantages of a variety of pest control tools commonly used in the Fraser Valley, including pesticides, biological control and genetically-engineered crops (e.g. glyphosate-tolerant crops).
- Engage in professional practice specifically agricultural extension e.g., participate in the Pacific Agriculture Show.

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

Assignments:	50%	Project:	25%	Quizzes/tests:	25%
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**Details:**

Lecture and hands-on work in UFV Lab, Greenhouses and Barns. Guest lecturers and field trips. A total of five assignments are used throughout the semester including a large research project that is scaffolded into four smaller assignments. Assignments 1-4 are between 10-15% of course grade and the research project has a total weight of 25%.

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

**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. Textbook	Flint, M.	IPM in Practice: Principles and Methods of IPM	2012
2.			
3.			
4.			
5.			

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

Calculator; appropriate, sage clothing for field trips; transportation for field trips.

**Course Content and Topics****Module 1: Pest Control Techniques**

- Biological control
  - When to use biological control
  - Determining which natural enemies are needed
  - Assessing natural enemy quality
  - Handling and release considerations for natural enemies
  - Developing a biologically based management program
  - Compatibility of natural enemies with other control tools
- Chemical control
  - When to use chemical control
  - Selecting the appropriate pesticide
  - Reading the pesticide label
  - Sprayer calibration & pesticide calculations
  - Storage, mixing and application
  - Sprayer types - including nozzles
  - Assessing spray coverage (use of spray cards)
- Other types of control:
  - Mammals and birds in both agricultural and urban environments
  - Structural pest control
  - Pest control of stored grain

**Module 2: Pest monitoring**

- Components of a monitoring program

- Finding thresholds for pests
  - Economic thresholds
  - Other types of thresholds
- Tools for monitoring
  - Data sheet
  - Visual assessment
  - Trapping tools
  - BCMAL plant diagnostic lab
- Decision making following monitoring
  - Grower reports
  - Record keeping

**Module 3: Pest Control Research**

- Types of research
  - Assessing control methods
    - Experimental
    - Operational
  - Pest biology and phenology
  - Survey
- Steps in conducting a research project
  - Identifying question in collaboration with growers
  - Grower group priority lists
  - Previous work
    - Literature review
  - Identifying other researchers and experts
  - Identifying grower collaborators for on-farm trials
  - Setting up experiment, survey area etc.
  - Data collection and analysis
  - Writing up and presenting results (usually at UFV Student Research Day)

**Module 4: Communications and extension**

- Train-the-trainer (learning to be a supervisor)
- Standard operating procedures and other training materials