UCFV
UNIVERSITY COLLEGE of the FRASER VALLEY

OFFICIAL UNDERGRADUATE COURSE OUTLINE (page 1)

COURSE IMPLEMENTATION DATE: September 2008
COURSE REVISED IMPLEMENTATION DATE: January 2009
COURSE TO BE REVIEWED: February 2012
(four years after UPAC approval) *(month, year)*

OFFICIAL UNDERGRADUATE COURSE OUTLINE INFORMATION

Students are advised to keep course outlines in personal files for future use.
Shaded headings are subject to change at the discretion of the department – see course syllabus available from instructor

AGRI 203	Trades and Technology - Agriculture Technology	3
COURSE NAME/NUMBER	FACULTY/DEPARTMENT	UCFV CREDITS

Fundamentals of Pest Management
COURSE DESCRIPTIVE TITLE

CALENDAR DESCRIPTION:

This course emphasizes pest management as a decision-making process in a variety of settings, with a focus on collecting pest data via monitoring. Concepts such as economic injury level and action threshold will be discussed, and the concept of pest management strategies and tactics will be explored. Important pesticide issues will also be discussed, including pesticide treadmill, resistance, secondary pest outbreaks, and environmental impact. Examples from local agricultural commodities, horticultural commodities, and livestock will be used throughout the course to illustrate concepts. Students will be required to work in the UFV greenhouses or barn outside of regular class times. Field trips are mandatory.

PREREQUISITES:
COREQUISITES:
PRE or COREQUISITES: AGRI 163

SYNONYMOUS COURSE(S):
(a) Replaces: **AGRI 200**
(b) Cross-listed with:
(c) Cannot take: for further credit.

SERVICE COURSE TO: *(department/program)*

TOTAL HOURS PER TERM: **75**

STRUCTURE OF HOURS:

Lectures:	**45**	Hrs
Seminar:		Hrs
Laboratory:	**10**	Hrs
Field experience:	**10**	Hrs
Student directed learning:	**10**	Hrs
Other (specify):		Hrs

TRAINING DAY-BASED INSTRUCTION:
Length of course:
Hours per day:

OTHER:
Maximum enrolment: **25**
Expected frequency of course offerings: Annually
(every semester, annually, every other year, etc.)

WILL TRANSFER CREDIT BE REQUESTED? (lower-level courses only)	☒ Yes	☐ No
WILL TRANSFER CREDIT BE REQUESTED? (upper-level requested by department)	☐ Yes	☐ No
TRANSFER CREDIT EXISTS IN BCCAT TRANSFER GUIDE:	☐ Yes	☐ No

Course designer(s): **Renee Prasad/Tom Baumann**
Department Head: **Rose Morrison** Date approved: **April 14, 2008**
Supporting area consultation (UPACA1) Date of meeting: **April 18, 2008**
Curriculum Committee chair: **Rose Morrison** Date approved: **April 2008**
Dean/Associate VP: **Harv McCullough** Date approved: **May 2008**
Undergraduate Program Advisory Committee (UPAC) approval Date of meeting: **May 23, 2008**

LEARNING OUTCOMES:

Upon successful completion of this course, students will:

- Be able to describe the concept of Integrated Pest Management as a decision making process.
- Be familiar with pest monitoring tools, thresholds, and management tactics.
- Understand the pros and cons of various chemical and non-chemical management tools for pests.

METHODS: *(Guest lecturers, presentations, online instruction, field trips, etc.)*

Lecture, field trips and guest speakers

METHODS OF OBTAINING PRIOR LEARNING ASSESSMENT RECOGNITION (PLAR):

☒ Examination(s) ☐ Portfolio assessment ☐ Interview(s)

☐ Other (specify):

☐ PLAR cannot be awarded for this course for the following reason(s):

TEXTBOOKS, REFERENCES, MATERIALS:

[Textbook selection varies by instructor. An example of texts for this course might be:]

Pedigo, L. Entomology and Pest Management

SUPPLIES / MATERIALS:

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

STUDENT EVALUATION:

[An example of student evaluation for this course might be:]

Assignment	20%
Quizzes	10%
Midterm	30%
Final exam	40%

COURSE CONTENT: *[Course content varies by instructor. An example of course content might be:]*

1. Pest control: A brief history (1 class + course introduction)
    - 1.1 Pre WWII
    - 1.2 Post WWII
    - 1.3 Pesticide treadmill and resistance
    - 1.4 Impact of Silent Spring
    - 1.5 Birth of Integrated Pest Management

2. Integrated Pest Management as a decision making process (2 classes + field trip)
    - 2.1 Gathering information - Monitoring programs
    - 2.2 Making decisions - economic and action thresholds
    - 2.3 Other types of decision making processes in pest management
        - 2.3.1 Degree days
        - 2.3.2 Area wide programs

3. Ecology of pests (1 class)
    - 3.1 Biological characteristics of pests
    - 3.2 Agricultural practices: contributing to pest problems?
        - 3.2.1 Horticulture
        - 3.2.2 Livestock
        - 3.2.3 Greenhouse
        - 3.2.4 Special scenarios - The urban environment and pests (chafer beetle, Dutch elm disease, mammals)

COURSE CONTENT (cont.):

4. Strategies and Tactics
   4.1 Four classic pest management strategies (1 class)
      4.1.1 Do nothing
      4.1.2 Reduce Numbers
      4.1.3 Reduce susceptibility
      4.1.4 Combination of reduce numbers and susceptibility
      4.1.5 Case studies

   4.2 Tactics
      4.2.1 Cultural control (including regulatory) (1 class with regulatory)
         Case studies: Varroa mites in honey bee colonies and club root management
      4.2.2 Physical control
         Weeds
         Insects
         Disease including post-harvest
         Case study: Wondermesh for cabbage maggot control in the UK and in BC
      4.2.3 Biological Control (2 classes)
         Types of biological control
         Best type of biological control for specific pest situation
         Types of natural enemies including microbial control
         Weeds
         Insects and mites
         Disease
         Vertebrates: Rabbits in UK and Australia
         Biological control issues including biodiversity and invasive species
         Case study: Biological control of flies in poultry barns, biological control of winter moth, Btk in vegetable greenhouses
      4.2.4 Chemical Control (2.5 classes)
         Classification of pesticides
         Pesticide concepts: mode of action, re-entry interval, pre-harvest interval, group, toxicity (chronic and acute), resistance, resistance management
         Pesticide application: adjuvants and synergists, drift
         Pesticide Label
         Weeds
         Arthropods
         Disease
         Pesticide Issues (Environment and Human Health Concerns - including use of pesticides for vector control e.g. malaria, Food Safety and Yield)
         Case studies: Indonesian rice production, Brigade for raspberry production, anthelmintics