AG 003: ECONOMIC ENTOMOLOGY

Proposer:

Name:	Email:
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Effective Term:
Fall 2021

Credit Status:
Credit - Degree Applicable

Subject:
AG - Agriculture

Course Number:
003

Catalog Title
Economic Entomology

Catalog Description
The study of the insects and mites of economic importance to agriculture, including morphology, taxonomy, identification, life cycles, hosts, habitat relationships, and control methods. Collection and labeling of specimens will be required. Laboratory required. Recommended for Pest Control Advisors' licensing.

Method of Instruction:
Distance Education
Laboratory
Lecture and/or Discussion

Course Units/Hours:

Course Units Minimum:
3

Lecture Hours Minimum (week)
3

Lab Hours Minimum (week)
1

Activity Hours Minimum (week)
0

Total Contact Hours Minimum (semester)
70

Total Outside Hours Minimum (semester)
105

Total Student Learning Minimum Hours (semester)
175

Repeatability:
No

Open Entry/Exit:
No

Field Trips:
Required

Grade Mode:
Standard Letter

TOP Code:
010310 - * Agricultural Pest Control Adviser and Operator (Licensed)

SAM Code:
C - Clearly Occupational

Course Content

Methods of Assessment:
Essay quizzes or exams
Mulitple choice tests
Oral presentations
Problem solving assignments or activities
Problem solving quizzes or exams
Project
Short answer quizzes or exams
Skill demonstrations
Written essays or extended papers

Course Topics:

	Course Topics
1	The Place of the Insect in the Agricultural Economy
2	History of Pest Control
3	Basic Insect Anatomy
4	Insect Life Cycles
5	Insect Ecology
6	Primitive Insect Orders
7	Exopterygota Orders
8	Lepidoptera Order
9	Hymenoptera Order
10	Neuroptera Order
11	Coleoptera Order
12	Diptera Order
13	Mites and other Arthropods
14	Insect Identification and Classification
15	Integrated Pest Management
16	Insect Monitoring Methods
17	Cultural and Mechanical Controls
18	Biological Controls
19	Pesticides
20	Pesticide Application and Calibration

Course Objectives:

	Course Objectives
1	Students will describe the benefits and drawbacks of insects to human society.
2	Students will describe key points of the history of pest control.
3	Students will identify and label insect anatomy, and describe their role in the insect life cycle.

4	Students will compare and contrast different insect life cycles and name several common insects that undergo each life cycle.
5	Students will describe the roles of insects in natural and agricultural ecosystems.
6	Identify common and economically important insects in the primitive insect orders, and define their general life cycle, mouthparts, feeding habits, ecological role, and damage symptoms.
7	Identify common and economically important insects in the exopterygota orders, and define their general life cycle, mouthparts, feeding habits, ecological role, and damage symptoms.
8	Identify common and economically important insects in the order Lepidoptera, and define their general life cycle, mouthparts, feeding habits, ecological role, and damage symptoms.
9	Identify common and economically important insects in the order Hymenoptera, and define their general life cycle, mouthparts, feeding habits, ecological role, and damage symptoms.
10	Identify common and economically important insects in the order Neuroptera, and define their general life cycle, mouthparts, feeding habits, ecological role, and damage symptoms.
11	Identify common and economically important insects in the order Coleoptera, and define their general life cycle, mouthparts, feeding habits, ecological role, and damage symptoms.
12	Identify common and economically important insects in the order Diptera, and define their general life cycle, mouthparts, feeding habits, ecological role, and damage symptoms.
13	Students will identify common mites and other related arthropods and define their basic anatomy, general life cycle, feeding habits and ecological roles.
14	Students will describe the biological classification system and the importance of correct identification.
15	Students will describe the basic principles of Integrated Pest Management.
16	Students will describe the major methods of monitoring insect populations.
17	Students will describe possible cultural and mechanical pest control methods.
18	Students will describe the three types of biological control and give examples of each type.
19	Students will describe the major groups of insecticides and their modes of action.
20	Students will be able to calibrate pesticide application equipment.

Course Outcomes:

	Course Outcomes
1	Given information about economically important pests, students will be able to identify other pests in various food and fiber crops in the San Joaquin Valley.

Assignments:

Assignment Type:	Details
Writing	Students will be able to collect and identify insects to order and family level.
Reading	Using the UC IPM website, students will be able to read a pest management recommendations and identify the appropriate control measures for a given situation.
Homework	Given a crop and pest scenario, students will determine whether pest control is appropriate and necessary.
Lab	In an orchard or field crop, students will scout for pests and make an IPM based control recommendation.

Textbooks or other support materials

Resource Type:	Details
Books	Entomology and Pest Management, 2021, Pedigo and Rice, 7th edition. ISBN 9781478639923
Web/Other	University of California Statewide Integrated Pest Managment Website, http://ipm.ucanr.edu/

Transferable to CSU

Yes - Approved

CSU General Education

Transferable to CSU

Transferable to UC
Yes - Approved

UC/IGETC General Education
Transferable to UC

COS General Education
COS GE B: Natural Sciences

Other Degree Attributes
Degree Applicable
Not a Basic Skills Course

Distance Learning Addendum
AG 003 DLA.pdf

Banner Title:
Economic Entomology

Curriculum Committee Approval Date:
05/06/2021

Academic Senate Approval Date:
05/12/2021

District Governing Board Approval Date:
06/07/2021

Course Control Number:
CCC000526893

C-ID:
AG-PS 144L