

**Course Code:** AGB 118

**Course Title:** Applicator Equipment Operations II

**Department:** Agricultural Technologies

**Effective Date:** Summer 2026

**PCS Code:** 1.2 - Occupational/Technical Instruction

**CIP Code:** 01.0205

**Repeatability:** 0

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## Credit Hours

**Catalog Notation:** 2-2-3

**Credit Hour Distribution:**

Lecture: 2

Lab: 2

Clinical: 0

**Total: 3**

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## General Course Information

### Catalog Description

Advanced application of pesticides using knowledge and operator skills required of agriculture professional applicator technicians. Handling and mixing of pesticides, economic thresholds, equipment maintenance, and cleaning emphasized.

### General Course Objectives

Students will gain the knowledge and skills needed to pass the Field Crops Pesticide Applicator exam, determine appropriate equipment adjustments for uniform and accurate application, perform equipment maintenance, and make product applications in row cropping situations.

### Minimum Placement Levels

English	Reading	Math
Placement into ENG 098	Placement into CCS 098	Placement out of MAT 060

### Prerequisites

Credit in AGB 111, AGB 113, and AGB 117

### Methods of Evaluation

The minimum number of evaluation methods include: 5 labs, 3 practical exams, 5 quizzes, and 1 final exam.

### Instructional Materials and Additional Supplies

None.

## Course Content

### General Learning Outcomes (GLOs)

- Reasoning and Inquiry: Students will demonstrate the ability to solve problems using deductive reasoning and logic, quantitative reasoning, or the scientific method.
- Technology: Students will demonstrate the ability to evaluate, select, and appropriately use current and emerging tools.

### Course Segments and Student Learning Outcomes

Course Segment	Learning Outcomes	Lecture Hours	Lab Hours	Clinical Hours
Custom Applicator Standards	<ol style="list-style-type: none"> <li>Describe the role of applicators in agriculture retail organizations.</li> <li>Define the importance of and professionalism required of a custom applicator.</li> <li>Explain the legal responsibility and liability of off-label pesticide recommendations.</li> </ol>	2	0	0
Integrated Pest Management - Field Crops	<ol style="list-style-type: none"> <li>Describe the implications of utilizing the same chemistry on pesticide recommendations.</li> <li>Identify economic thresholds to determine if pesticide application is warranted.</li> <li>Classify pests of corn, soybeans, and other crops in the Midwest.</li> <li>Discuss the implications of misapplication of pesticides.</li> <li>Determine the appropriate tank mix to control pesticide-resistant weeds.</li> </ol>	3	4	0
Application Equipment Nozzle Selection	<ol style="list-style-type: none"> <li>Describe the impact that spray droplet size has on application coverage.</li> <li>Describe the most common spray nozzle designs used in field drop applications.</li> <li>Select the correct nozzle type and size for correct application.</li> <li>Determine the appropriate nozzle assembly for given field crop situations.</li> </ol>	3	2	0
Application Equipment Maintenance	<ol style="list-style-type: none"> <li>Describe the importance of proper maintenance and cleaning of application equipment.</li> <li>Implement maintenance strategies to maintain equipment properly.</li> <li>Record maintenance performed on application equipment.</li> </ol>	4	6	0
Spray Rate Controllers and Pulse Width Modulation (PWM)	<ol style="list-style-type: none"> <li>Describe the function of spray rate monitors and controllers.</li> <li>Select the correct settings in spray rate monitors for given application parameters.</li> <li>Explain how PWM changes flow rate.</li> <li>Describe how PWM creates continuous, uniform spray patterns.</li> </ol>	4	4	0
Spray Solution Characteristics	<ol style="list-style-type: none"> <li>Describe how flow rate changes when switching the carrier from water to fertilizer.</li> <li>Determine the flow rate for various densities of solutions.</li> <li>Select and calibrate the appropriate nozzle type for changes in flow rate due to fertilizer carrier.</li> <li>Describe the characteristics of improper mixing order of pesticides.</li> </ol>	4	4	0

Course Segment	Learning Outcomes	Lecture Hours	Lab Hours	Clinical Hours
Chemical Applications	<ol style="list-style-type: none"> <li>1. Calculate maximum speed of equipment with given nozzles.</li> <li>2. Calculate formulation application rate given various application scenarios.</li> <li>3. Perform uniform applications of product in a given field.</li> <li>4. Explain the importance of drift additives for chemical applications.</li> <li>5. Prepare for the Field Crops Applicator exam.</li> <li>6. Perform safe operation of application equipment.</li> </ol>	10	10	0

**Total Contact Hours**

Lecture Hours	Lab Hours	Clinical Hours
30	30	0