Department of Agricultural and Biological Engineering  
University of Florida

Agricultural Operations Management 3333  
Pesticide Application Techniques
Fall, 2021 (Class Number 10582, Section 0179)

Catalog Description: AOM 3333 Pesticide Application Technology. F. Credits: 3. Equipment and methods to apply pesticides in agriculture. Techniques used to avoid misapplication, a common cause of pesticide failures, are emphasized.

Prerequisite: Junior/Senior standing in the College of Agricultural and Life Sciences and other related disciplines or instructor approval. Minimum technical skills include basic math and logical thinking skills.

Instructor: Dr. Wonsuk "Daniel" Lee  
Frazier Rogers Hall, Room 207  
(352) 294-6721  
wslee@ufl.edu  
https://abe.ufl.edu/people/faculty/wonsuk-lee/

Lab TA: Mr. Michael Zingaro  
ABE Machine Shop (Steel Building)  
(352) 392-9771, zgator1@ufl.edu  
TA: Mr. Hunter Smith  
(352) 392-1811, huntersmith@ufl.edu

Lecture Hours: M W 1:55 PM – 2:45 PM (7th period). During lectures, each student will be given a review question in random order for extra credit, which requires you to be present during lectures.

Laboratory Hour: W 3:00 PM – 4:55 PM (8th-9th periods). Since there are eight lab exercises, sometimes lectures will be given instead.

Course homepage: https://elearning.ufl.edu. Course lecture notes will be available on the course website.

Office Hours: By appointment.


You will summarize each chapter every week during the first 9 weeks, so that you can use the summary to (1) learn the basic knowledge by yourself and (2) take a pesticide application license exam in the future. Every Monday, starting Aug. 30th, you will need to submit a summary of each chapter in the E-Learning. Start with “Terms to Know” and include all sub-sections of each chapter. Each week one to two best summaries will be chosen and awarded extra credit.

Course Objectives:

1. To be familiar with agricultural pests and the measures for controlling them
2. To understand different sprayer components and learn how they work
3. To be able to properly calibrate different types of spray equipment. Special emphasis will be placed on using the proper equipment and techniques for applying pesticides.
4. To become familiar with pesticide laws, labels, and safety
Lecture Topics:
- Pest identification and control
- Nozzles and flow rate formula
- Sprayer components
- Calibration of farm sprayers
- Pesticide formulation and arithmetic
- Variable rate application (VRA)

Laboratory Topics:
- General purpose boom sprayer
- Nozzles and spray patterns
- Sprayer calibration
- Airblast sprayers

Course Schedule (Dates are approximate)

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<th>Week (Date)</th>
<th>Lecture</th>
<th>Lab</th>
<th>Quiz</th>
<th>SM1 Summary</th>
<th>HW</th>
<th>Test</th>
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<tr>
<td>1 (8/23)</td>
<td>Module 1 – Pest identification and control</td>
<td>(Continue Module 1)</td>
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<tr>
<td>2 (8/30)</td>
<td>(Continue Module 1)</td>
<td>Lab 1 – General purpose farm sprayer</td>
<td>Ch. 1</td>
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<td>3 (9/6)</td>
<td>Module 2 – Nozzles and flow rate formula</td>
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<td>4 (9/13)</td>
<td>(Continue Module 2; Solve HW #1)</td>
<td>Lab 2 – Nozzle pressure vs. flow rate and spray patterns</td>
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<td>5 (9/20)</td>
<td>Module 3 – Sprayer parts and calibration</td>
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<td>6 (9/27)</td>
<td>(Continue Module 3)</td>
<td>Lab 3 – Calibration of a general purpose farm sprayer</td>
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<td>7 (10/4)</td>
<td>Module 4 – Pesticide formulation and arithmetic</td>
<td>Lab 4 – Aerial pesticide application</td>
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<td>Solve HW #2</td>
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<td>9 (10/18)</td>
<td>Module 5 – Pumps</td>
<td>Lab 5 – Airblast sprayer calibration and other activities at PSREU</td>
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<td>10 (10/25)</td>
<td>Module 6 – Granule applicators</td>
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<td>11 (11/1)</td>
<td>Module 7 – Drift and aquatic weed control</td>
<td>Lab 6 – Pumps</td>
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<td>12 (11/8)</td>
<td>(Continue Module 7)</td>
<td>Lab 7 – Granular application</td>
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<tr>
<td>13 (11/15)</td>
<td>Module 8 – Laws, labels, and safety</td>
<td>Pesticide applicator license exam - Category</td>
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<tr>
<td>14 (11/22)</td>
<td>Pesticide applicator license exam - Core</td>
<td>Thanksgiving!</td>
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<td>15 (11/29)</td>
<td>Module 9 – Variable Rate Technology (VRT); Solve HW #3</td>
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<td>16 (12/6)</td>
<td>(Continue Module 9 and HW #3)</td>
<td>No Lab (Test 3)</td>
<td>#13</td>
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<td>Test 3</td>
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COVID-19:

- You are expected to wear approved face coverings at all times during class and within buildings, even if you are vaccinated.
- If you are sick, stay home and self-quarantine. Please visit the UF Health Screen, Test & Protect website about next steps, retake the questionnaire and schedule your test for no sooner than 24 hours after your symptoms began. Please call your primary care provider if you are ill and need immediate care or the UF Student Health Care Center at 352-392-1161 (or email covid@shcc.ufl.edu) to be evaluated for testing and to receive further instructions about returning to campus.
- If you are withheld from campus by the Department of Health through Screen, Test & Protect, you are not permitted to use any on campus facilities. Students attempting to attend campus activities when withheld from campus will be referred to the Dean of Students Office.
- UF Health Screen, Test & Protect offers guidance when you are sick, have been exposed to someone who has tested positive or have tested positive yourself. Visit the UF Health Screen, Test & Protect website for more information.
- Please continue to follow healthy habits, including best practices like frequent hand washing. Following these practices is our responsibility as Gators.
Grades and Grade Points: For information on current UF policies for assigning grade points, see https://catalog.ufl.edu/UGRD/academic-regulations/grades-grading-policies/.

Attendance and Make-Up Work: Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policies that can be found at: https://catalog.ufl.edu/UGRD/academic-regulations/attendance-policies/.

Services for Students with Disabilities: Students with disabilities who experience learning barriers and would like to request academic accommodations should connect with the disability Resource Center. Click here to get started with the Disability Resource Center. It is important for students to share their accommodation letter with their instructor and discuss their access needs, as early as possible in the semester.

Online Course Evaluation Process: Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at https://gatorevals.aa.ufl.edu/students/. Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via https://ufl.bluer.com/ufl/. Summaries of course evaluation results are available to students at https://gatorevals.aa.ufl.edu/public-results/.

Software Use: All faculty, staff, and students of the university are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against university policies and rules, disciplinary action will be taken as appropriate.

Academic Honesty: UF students are bound by The Honor Pledge which states, “We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: “On my honor, I have neither given nor received unauthorized aid in doing this assignment.” The Honor Code specifies a number of behaviors that are in violation of this code and the possible sanctions. Click here to read the Honor Code. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor or TAs in this class.

In-Class Recording: Students are allowed to record video or audio of class lectures. However, the purposes for which these recordings may be used are strictly controlled. The only allowable purposes are (1) for personal educational use, (2) in connection with a complaint to the university, or (3) as evidence in, or in preparation for, a criminal or civil proceeding. All other purposes are prohibited. Specifically, students may not publish recorded lectures without the written consent of the instructor.

A “class lecture” is an educational presentation intended to inform or teach enrolled students about a particular subject, including any instructor-led discussions that form part of the presentation, and delivered by any instructor hired or appointed by the University, or by a guest instructor, as part of a University of Florida course. A class lecture does not include lab sessions, student presentations, clinical presentations such as patient history, academic exercises involving solely student participation, assessments (quizzes, tests, exams), field trips, private conversations between students in the class or between a student and the faculty or lecturer during a class session.

Publication without permission of the instructor is prohibited. To “publish” means to share, transmit, circulate, distribute, or provide access to a recording, regardless of format or medium, to another person (or persons), including but not limited to another student within the same class section. Additionally, a recording, or transcript of a recording, is considered published if it is posted on or uploaded to, in whole or in part, any media platform, including but not limited to social media, book, magazine, newspaper, leaflet, or third party note/tutoring services. A student who publishes a recording without written consent may be
subject to a civil cause of action instituted by a person injured by the publication and/or discipline under UF Regulation 4.040 Student Honor Code and Student Conduct Code.

Canvas Technology Requirements
Computers, Internet, and Web browsers: Canvas runs on Windows, Mac, Linux, iOS, Android, or any other device with a modern web browser. It is recommended to use a computer less than five years old with at least 1GB of RAM. It is recommended to have a minimum Internet speed of 512kbps. It is strongly recommended to not use a wireless connection, phone, tablet, or notepad for critical course tasks such as exams and discussions.

Canvas currently supports the following browsers: Chrome, Safari, Firefox, Edge. Canvas supports the last two versions of most browsers. It is highly recommend updating to the newest version of whatever browser you are using. Note that your computer’s operating system may affect browser function. Failure to use one of these browsers will cause problems.

For more information on approved computers and browsers please visit: https://community.canvaslms.com/t5/Canvas-Basics-Guide/What-are-the-browser-and-computer-requirements-for-Canvas/ta-p/66. On this web page there is an area titled "Is My Browser up to Date?" Use it to check each computer and browser you may use in this course. There is another important area on "Browser Privacy Settings." Read the section(s) for any browser intended for use. For example, Note that: In browsers such as Safari, insecure content will never be displayed in the browser. Return to the page to check for updates on technology issues in Canvas.

If you encounter technical difficulties in this course, contact the UF Computing Help Desk right away to troubleshoot. https://helpdesk.ufl.edu/ or (352) 392-HELP. If the problem cannot be fixed immediately, notify your instructor, and provide them with the Help Desk ticket number.

Campus Resources: Students experiencing crises or personal problems that interfere with their general well-being are encouraged to utilize the university’s counseling resources.

Health and Wellness
- U Matter, We Care: If you or someone you know is in distress, please contact umatter@ufl.edu, 352-392-1575, or visit U Matter, We Care website to refer or report a concern and a team member will reach out to the student in distress.
- Counseling and Wellness Center: Visit the Counseling and Wellness Center website or call 352-392-1575 for information on crisis services as well as non-crisis services.
- Student Health Care Center: Call 352-392-1161 for 24/7 information to help you find the care you need, or visit the Student Health Care Center website.
- University Police Department: Visit UF Police Department website or call 352-392-1111 (or 9-1-1 for emergencies).
- UF Health Shands Emergency Room / Trauma Center: For immediate medical care call 352-733-0111 or go to the emergency room at 1515 SW Archer Road, Gainesville, FL 32608; Visit the UF Health Emergency Room and Trauma Center website.
- GatorWell Health Promotion Services: For prevention services focused on optimal wellbeing, including Wellness Coaching for Academic Success, visit the GatorWell website or call 352-273-4450.

Academic Resources
- E-learning technical support: Contact the UF Computing Help Desk at 352-392-4357 or via e-mail at helpdesk@ufl.edu.
- Career Connections Center: Reitz Union Suite 1300, 352-392-1601. Career assistance and counseling services.
- Library Support: Various ways to receive assistance with respect to using the libraries or finding resources.
• **Teaching Center**: Broward Hall, 352-392-2010 or to make an appointment 352-392-6420. General study skills and tutoring.

• **Writing Studio**: 2215 Turlington Hall, 352-846-1138. Help brainstorming, formatting, and writing papers.

• **Career Resource Center**, First Floor JWRU, 392-1601, [https://career.ufl.edu/](https://career.ufl.edu/).

• Student Complaints On-Campus: Visit the Student Honor Code and Student Conduct Code webpage for more information

• On-line Students Complaints: [View the Distance Learning Student Complaint Process](https://career.ufl.edu/).
Assignment submission guidelines – the following rules will be strictly enforced!

- Submit on time, i.e., “at the beginning of the class”!

- Since the class starts at 1:55 pm, one-day late submission starts from 1:56 pm until 1:55 pm the next day (24-hour period).

- Example 1: If your assignment is due Monday and you submit it at 2 pm on Monday, your submission is considered to be 1-day late (10% deduction). (I am sorry about this strict rule, however have to enforce the rule fairly for all of you.)

- Example 2: If your assignment is due Monday and you submit it at 3 pm on Tuesday, your submission is considered to be 2-days late (20% deduction).

- If you show any extra effort on your assignments and activities in lecture and lab exercises, there is a high potential for extra credit.

IFAS Extension Bookstore