Agricultural and Biological Engineering Department
University of Florida

Agricultural Operations Management 5334C
Agricultural Chemical Application Technology
Fall, 2018 (Class Number 10749)

Catalog Description: **AOM 5334C Agricultural Chemical Application Technology. F. *Credits: 3.*** Equipment and methods used to apply pesticides in agriculture. Emphasis on techniques to avoid misapplication and pesticide drift.

Instructor: Dr. Wonsuk "Daniel" Lee
Frazier Rogers Hall, Room 207
(352) 392-1864 Ext. 207
wslee@ufl.edu
https://abe.ufl.edu/people/lee-wonsuk-daniel/

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

Class Hours : M W 1:55 PM – 2:45 PM (7th period), Frazier Rogers Hall Room 129
Laboratory Hour: W 3:00 PM – 4:55 PM (8th-9th periods), Frazier Rogers Hall Room 129, and various other locations.

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

Office Hours: I have an open door policy. You are welcome to visit me whenever I am available, or by appointment.

Text: ***SM 53 Private Applicator Agricultural Pest Control****,* 3rd Edition, by Frederick M. Fishel, UF/IFAS Communication Services, Revised June 2014. (http://ifasbooks.ifas.ufl.edu/p-118-private-applicator-agricultural-pest-control.aspx)

SM 1 Applying Pesticides Correctly*: A Study Guide for the General Certifications Standards (Core) Exam,* 7th Edition, by Frederick M. Fishel, UF/IFAS Communications Services, 2014 (Revised for 2015, http://ifasbooks.ifas.ufl.edu/p-104-applying-pesticides-correctly-a-guide-for-pesticide-applicators-core.aspx)
: You will summarize each chapter every week during the first 9 weeks, so that you can use the summary for taking a license test in the future. Every Wednesday, **starting Sep. 5**, you will need to submit a summary of each chapter. Start with "Terms to Know" and include all sub-sections of each chapter. A hand-written summary will not be accepted.

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)
- Pumps
- Granule applicators and calibration
- Spray drift
- Aquatic weed control
- Pesticide laws, labels, and safety

Laboratory Topics:

- General purpose boom sprayer
- Nozzles and spray patterns
- Sprayer calibration
- Different types of sprayers
- Airblast sprayer
- Pumps
- Granule applicator
- Aerial application
- Variable rate application (VRA)

Course grading will be based on the following items:

1. **Quizzes** will be given every Monday at the end of lecture. The quiz problems are from the previous week's lecture, lab exercise and/or homework. Quizzes cannot be made up.
2. **Lab assignments** will be handed out every laboratory session.
3. **Homework** – Approximately 3 sets of problems related to the calibration of pesticides application equipment will be assigned. The problems will be similar to calibration problems given on the quizzes and tests. The support numbers needed to arrive at the problem answer must be shown on homework paper. As long as you have tried to solve, you will receive a credit.
4. **Tests** – There will be three (3) tests. There will not be a comprehensive final examination given in this course. The test could have calculation problems similar to those in the previous test(s), but any verbal questions will be tested only once.
5. **SM1 Summary** and **Review Paper**
6. **Late submission policy: All assignments are due at the beginning of the class**. Thereafter 10% reduction/business day.

Tests: Test 1: Wed, Sep. 26 Test 2: Wed, Oct. 31 Test 3: Wed, Dec. 5

Grading will be based on the following assignment of weights:

Tests:	20% each	91 – 100%	A	72 – 76%	C
Quiz:	10%	89 – 91%	A-	69 – 72%	C-
Homework:	5%	86 – 89%	B+	66 – 69%	D+
Lab assignment:	10%	82 – 86%	B	62 – 66%	D
SM1 summary:	5%	79 – 82%	B-	59 – 62%	D-
Review paper:	10%	76 – 79%	C+	Below 59%	E

Academic Honesty: Students who enroll at the university commit to holding themselves and their peers to the high standard of honor required by the honor code. Any individual who becomes aware of a violation of the honor code is bound by honor to take corrective action. The quality of a University of Florida education is dependent upon community acceptance and enforcement of the honor code. On all work submitted for credit by students at the university, the following pledge is either required or implied:

"On my honor, I have neither given nor received unauthorized aid in doing this assignment."

Use of Library, Personal References, PC Programs and Electronic Data Bases: These items are university property and should be utilized with other users in mind. Never remove, mark, modify nor deface resources that do not belong to you. If you're in the habit of underlining text, do it only on your personal copy. It is inconsiderate, costly to others, and dishonest to use common references otherwise.

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.

Campus Helping Resources: I hope to establish a class relationship and encourage dialog so that students feel comfortable discussing academic problems directly with me. In addition, resources are available on campus for students having personal problems or lacking clear career and academic goals which interfere with their academic performance. These resources include:

1. Counseling & Wellness Center, 3190 Radio Road, 392-1575, www.counseling.ufl.edu.
2. Student Mental Health Services, Student Health Care Center, 392-1575, shcc.ufl.edu/services.
3. Career Resource Center, 6861 Reitz Union Drive, 392-1601, www.crc.ufl.edu.
4. Submitting a written complaint: https://registrar.ufl.edu/writtencomplaints

Students with Disabilities: 0001 Reid Hall, 392-8565, www.dso.ufl.edu/drc. The Disability Resource Center coordinates the needed accommodations of students with disabilities. This includes registering disabilities, recommending academic accommodations within the classroom, accessing special adaptive computer equipment, providing interpretation services and mediating faculty-student disability related issues.