



**AEC 6229 – Laboratory Instruction:
Theory & Practice**
Summer 2015 - Online
3 credit hours

Instructor

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Course Description

This course will focus on theoretical and practical approaches to teaching agriscience in laboratory settings. Research and theoretical foundations that underlie the aspects of planning, management, teaching, evaluation, safety, and facility design will be discussed within the context of agriscience laboratory instruction.

Course Essential Questions

1. What is the purpose of laboratory instruction in a School-based Agricultural Education (SBAE) program?
2. How does preparing to teach in a laboratory setting compare to preparing to teach in a classroom setting?

Course Objectives

At the completion of the course, the learner will be able to:

1. Connect theoretical designs and empirical evidence guiding laboratory-based teaching and learning processes.
2. Establish instructional goals and define the nature of agriscience laboratory teaching.
3. Examine key learning constructs as they pertain to learning in agriscience laboratory settings.
4. Plan and deliver effective agriscience laboratory instruction.
5. Develop and implement an agriscience laboratory safety instructional program.
6. Establish strategies for effective management and supervision of student performance in the agriscience laboratory.
7. Integrate research on teacher effectiveness into the planning, teaching, and management aspects of agriscience laboratory teaching.
8. Evaluate agriscience laboratory facilities and develop plans for facility improvement and expansion.
9. Design strategies for effectively teaching agriscience in informal settings.

Required Text

All materials provided via Sakai.

DESCRIPTION OF CORNERSTONE TASKS

Agriscience Written Lesson Plan

Prepare a unit of agricultural lesson plans that will require approximately 3-5 hours of instruction appropriate to be used in a middle school or secondary school agriscience education program based upon the content included in this course. These lessons must include laboratory instruction.

At a minimum, the lesson plans should include the following:

- Describe the audience and/or situation for which instruction will be provided (i.e. middle school students, 10th graders, Agriscience Foundations, etc)
- List the objectives, questions, or competencies that will guide the learning process
- Connect to Sunshine State Standards (SSS) and Student Performance Standards (SPS)

- Describe the interest approaches used
- Outline the subject matter to be taught
- Describe the teaching techniques that will be used
- Describe the learning environment in which the activities will be conducted (i.e. classroom, land laboratory, ag mechanics laboratory, etc.)
- List all references and/or instructional materials that will be used
- Describe the application/evaluation procedures that will be used (include any device[s] and/or grading key[s])
- Include teaching materials (visual aids, handouts, presentations, etc.)
- Modifications that can be made for students with disabilities

Agriscience Facility Plan

Part One

- Conduct a comprehensive evaluation of your educational laboratory facility.
- Submit a brief report explaining how this facility could be better utilized to address teaching agriscience content.

Part Two

- Design an indoor &/or outdoor "ideal" laboratory facility.
- Indicate the subject areas the facility is designed to accommodate.
- This is a "perfect world" and therefore money is no object for this design.
- Your laboratory site should contain at least 10 different components.
- Include a drawing/diagram of the area.
- Complete a written narrative describing each component in your design and suggestions of activities that could be conducted using each component.

Classroom Inquiry Vignettes

Read the classroom vignettes included in Chapter 3 "Images of Inquiry in K-12 Classroom" of *Inquiry and the National Science Education Standards* available on-line at [this link](#). Write a 2-3 page reflection and identify how to apply the principles and ideas of these vignettes in the School-Based Agricultural Education Classroom.

Exam

There will be one exam to evaluate your understanding of the subject matter. The final exam will be comprehensive in nature and is designed to evaluate your understanding of material discussed in the entire course.

Participation/Weekly Assignments

Even though this course is being taught via distance, you are expected to be an active participant in the class web-discussions and exercises. Failure to be engaged in the sharing of ideas not only limits the value you gain from this course, but also that of the other individuals in the course.

Throughout this course a discussion topic will be posted on the discussion board. Students are required to contribute to each of these discussions by posting their own thoughts and opinions. Discussion posts will be graded on both quantity and quality.

Cornerstone Task Assignments	Points
Agriscience Written Lesson Plan	250
Agriscience Facility Plan	250
Exam	150
Participation/Weekly Assignments	250
Inquiry Classroom Vignettes	100
Total Points	1000

Grading Scale

A = 930-1000	B- = 800-829	D+ = 660-699
A- = 900-929	C+ = 760-799	D = 630-659
B+ = 860-899	C = 730-759	D- = 600-629
B = 830-859	C- = 700-729	E = below 600

Note: This Web address references the UF grades and grading policies:
<http://www.registrar.ufl.edu/catalog/policies/regulationgrades.html>

Attendance and Make-up Exams and Assignments

To receive the maximum number of points for an assignment, it must be completed and submitted by the due date. **No work will be accepted six or more days after its original due date**, unless other arrangements have been made with the instructor.

Academic Honesty

In 1995 the UF student body enacted a new honor code and voluntarily committed itself to the highest standards of honesty and integrity. When students enroll at the university, they commit themselves to the standard drafted and enacted by students.

In adopting this honor code, the students of the University of Florida recognize that academic honesty and integrity are fundamental values of the university community. 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.

The Honor Pledge: We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity.

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.”

The university requires all members of its community to be honest in all endeavors. A fundamental principle is that the whole process of learning and pursuit of knowledge is diminished by cheating, plagiarism and other acts of academic dishonesty. In addition, every dishonest act in the academic environment affects other students adversely, from the skewing of the grading curve to giving unfair advantage for honors or for professional or graduate school admission. Therefore, the university will take severe action against dishonest students. Similarly, measures will be taken against faculty, staff and administrators who practice dishonest or demeaning behavior.

Students should report any condition that facilitates dishonesty to the instructor, department chair, college dean or Student Honor Court.

(Source: 2011-2012 Graduate Catalog)

It is assumed all work will be completed independently unless the assignment is defined as a group project, in writing by the instructor.

This policy will be vigorously upheld at all times in this course.

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

Students experiencing crises or personal problems that interfere with their general well-being are encouraged to utilize the university's counseling resources. Both the Counseling Center and Student Mental Health Services provide confidential counseling services at no cost for currently enrolled students. Resources are available on campus for students having personal problems or lacking clear career or academic goals, which interfere with their academic performance. The Counseling Center is located at 301 Peabody Hall (next to Criser Hall). Student Mental Health Services is located on the second floor of the Student Health Care Center in the Infirmary.

- *University Counseling Center*, 301 Peabody Hall, 392-1575, www.counsel.ufl.edu
- *Career Resource Center*, CR-100 JWRU, 392-1601 ext: 0, www.crc.ufl.edu/
- *Student Mental Health Services*, Rm. 245 Student Health Care Center, 392-1171, www.shcc.ufl.edu/smhs/

Alcohol and Substance Abuse Program (ASAP)
Attention Deficit Hyperactivity Disorder (ADHD)
Center for Sexual Assault / Abuse Recovery & Education (CARE)
Eating Disorders Program
Employee Assistance Program
Suicide Prevention Program

Students with Disabilities

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.

0001 Reid Hall, 392-8565, www.dso.ufl.edu/drc/

Course Calendar

Week	Modules	Dates	Assignment Due
1	Module 1: Defining Laboratories & Laboratory Instruction	May 11 - 17	
2	Module 2: Constructivism	May 18 - 24	
3	Module 3: Inquiry-based Instruction	May 25 - 31	
4	Module 3 (cont.)	June 1 - 7	Inquiry Classroom Vignettes
5	Module 4: Managing Student Learning in the Lab	June 8 - 14	
6	Module 4 (cont.)	June 15 - 21	
	Summer Break	June 22 - 28	
7	Module 5: Planning Laboratory Instruction	June 29 - July 5	
8	Module 6: Evaluating Lab Instruction	July 6 - 12	
9	Module 6 (cont.)	July 13 - 19	Agriscience Written Lesson Plan
10	Module 7: Safety in the Laboratory	July 20 - 26	
11	Module 8: Agriscience Project Development & Management	July 27 - Aug 2	Agriscience Facility Plan
12	Module 8 (cont.)	Aug 2 - Aug 7	Final Exam