AOM 3220 (3 credits)
AGRICULTURAL CONSTRUCTION AND MAINTENANCE
Agricultural & Biological Engineering
University of Florida

Fall 2025 Tuesday (class) **8:30-9:20 AM,** Room 129 Frazier Rogers Hall
Tuesday (lab) 3:00-4:55pm (Lab meets in Bldg 616 Corner of Museum and Hull)
Wed (lab) 3:00-4:55pm (Lab meets in Bldg 616 Corner of Museum and Hull)
Thursday (class) **8:30-9:20 AM,** Room 129 Frazier Rogers Hall
Thursday (lab) 3:00-4:55pm (Lab meets in Bldg 616 Corner of Museum and Hull)

Instructor: Dr. Dan Hofstetter, P.E.
Assistant Professor
Frazier-Rogers Hall, Rm 107, 352-294-6702
Email: d.hofstetter@ufl.edu
Office hours: Tuesday and Thursday 9:30am-10:30am or by appointment

Catalog Description

Selection and use of materials and tools used in planning, constructing, and maintaining buildings. Participate in class lectures and hands-on laboratory activities to build full-scale projects involving framing, plumbing, electrical, windows, etc. Combines building codes and building science to introduce the changing world of construction.

Pre-requisites/Co-requisites:

None.

Course Objectives

This course introduces the student to the construction concepts, materials, and systems that are used throughout agriculture. Topics covered include fastening, the building envelope, electrical wiring, plumbing systems, concrete, heating and cooling, and energy efficiency. The intention of the course is to provide the student with a foundation in building science sufficient to allow them to make informed decisions in the management of agricultural operations. Lab exercises will be used to develop students' small group management skills. At the end of this course, students will be able to:

1. Select, safely use, service, and operate common shop and field construction tools.
2. Estimate material needs, select proper materials, and use them to build common structures.
3. Analyze common electrical circuits, construct or repair them, and demonstrate functionality.
4. Analyze common plumbing systems and materials and demonstrate construction techniques with PVC and copper.
5. Specify appropriate materials and building design for the hot-humid climate using building science information and techniques.
6. Use best management practices to operate buildings in the most resource efficient method possible.

Time does not permit everything to be covered in lecture and lab, therefore, reading and homework will be assigned. Exams will include outside reading material as well as that provided in the lectures and labs. Reading lists and materials will be included in each module. There is no assigned textbook for this class. The schedule is approximate. Exact test dates will be presented in class at least one week ahead of each exam due to particular requirements of the AEC students. The Canvas system will be used to enable students to access course materials.

Course Outline

1. Module 1: Introduction and Safety
2. Module 2: Building Envelope
3. Module 3: Building Systems
4. Module 4: Electrical Systems
5. Module 5: Plumbing Systems
6. Module 6: Concrete
7. Module 7: HVAC Systems
8. Module 8: Case Studies
9. Module 9: Energy Efficiency

Course Schedule (dates are approximate)

Week	Date	Lec#	Topic	HW	Lab/Comments
1	Thursday, August 21, 2025	L1	Syllabus, Intro		No Lab
2	Tuesday, August 26, 2025	L2	Safety/sign-up	HW1	No lab
	Thursday, August 28, 2025	L3	Tape measure Construction Math	HW2	
3	Tuesday, September 2, 2025	L4	Building Envelope	HW3	Lab1: Safety, tools, wall skills
	Thursday, September 4, 2025	L5	Building Envelope types	HW4	
4	Tuesday, September 9, 2025	L6	Building Envelope types	HW5	Lab2: Fasteners
	Thursday, September 11, 2025	L7	Construction Drawings	HW6	
5	Tuesday, September 16, 2025	L8	Construction Drawings		Lab 3: Drywall
	Thursday, September 18, 2025	L9	Test review		
6	Tuesday, September 23, 2025	L10	**Test 1**		Lab 4: Wall Sections
	Thursday, September 25, 2025	L11	Bldg Systems: Electrical	HW7	
7	Tuesday, September 30, 2025	L12	Electrical	HW8	Lab 5: Electrical I
	Thursday, October 2, 2025	L13	Siting Issues, Topo		
8	Tuesday, October 7, 2025	L14	Plumbing	HW9	Lab 6: Electrical II
	Thursday, October 9, 2025	L15	Plumbing	HW10	

Week	Date	Lec#	Topic	HW	Lab/Comments
9	Tuesday, October 14, 2025	L16	Concrete	HW11	Lab 7: Plumbing
	Thursday, October 16, 2025	L17	Concrete	HW12	
10	Tuesday, October 21, 2025	L18	Concrete		Lab 8: Concrete
	Thursday, October 23, 2025	L19	Test review		
11	Tuesday, October 28, 2025	L20	**Test 2**		Lab 9: Sheathing
	Thursday, October 30, 2025	L21	HVAC	HW13	
12	Tuesday, November 4, 2025	L22	HVAC	HW14	Lab 10: Roof Trusses
	Thursday, November 6, 2025	L23	Case Studies	HW15	
13	Tuesday, November 11, 2025	L24	**Holiday No Class**		No lab
	Thursday, November 13, 2025	L25	Case Studies	HW16	
14	Tuesday, November 18, 2025	L26	Case Studies	HW17	Lab 11: Picnic Tables
	Thursday, November 20, 2025	L27	Energy & Water Efficiency	HW18	
15	Tuesday, November 25, 2025	L28	No Class Thanksgiving		No Lab Thanksgiving
	Thursday, November 27, 2025	L29			
16	Tuesday, December 2, 2025	L30	Review and the Future, **Take-home Test 3 assigned**		No lab
	Tuesday, December 9, 2025		**Take-home Test 3 due**		

HW and Labs are shown on the assigned dates. Homework is generally due one week from the assigned. Labs are due on Friday of the following week.

This syllabus is subject to change depending on student progress and scheduling.

Texts: None, required readings and other materials will be provided.

Grading

Exams	3 @ 100 pts each	300 pts	800 to 752 pts	A
Labs	12 @ 20 pts each	240 pts	751 to 720 pts	A-
Homework	18 @ 10 pts each	180 pts	719 to 696 pts	B+
Attendance	27 lectures @ 2 pts each, plus		695 to 664 pts	B
	13 labs @ 2 pts each	80 pts	663 to 640 pts	B-
Total points		800 pts	639 to 616 pts	C+
			615 to 576 pts	C
			575 to 560 pts	C-
			559 to 536 pts	D+
Class participation is expected.			535 to 496 pts	D
			495 to 480 pts	D-
			Below 480 pts	E

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/

NO CELL PHONE USE DURING CLASS!!!!!

General Requirements

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

   Attendance is required at the lab you are registered. This is a very hands-on course, the only way to learn in lab and to do the project (both of which earn points) is through attendance. Therefore, it is to the student's great advantage to make every effort to attend. A particular missed lab can not be made up once the week in which that lab is taught, has passed.
2. Skills and psychomotor proficiencies take longer to develop than the cognitive skills, therefore it may take some people additional time and practice to gain mastery of some skills. Much of the lab work in this course is psychomotor or skill oriented and proficiency will be evaluated for grading purposes.
3. Since this is a shop course, please dress accordingly (i.e. no sandals, loose fitting sleeves, dangling jewelry or hair, shirt tails and clothing that might get caught in the machinery).
4. You will be asked to help clean up the lab toward the end of the period.
5. Students are **not only expected to attend each lab but the ENTIRE scheduled period**. Therefore, arrangements should be made ahead of time in order to leave early and still receive credit.

Academic Policies and Resources

Academic policies for this course are consistent with university policies. See https://syllabus.ufl.edu/syllabus-policy/uf-syllabus-policy-links/

Campus Health and Wellness Resources

Visit https://one.uf.edu/whole-gator/topics for resources that are designed to help you thrive physically, mentally, and emotionally at UF. Please contact UMatterWeCare for additional and immediate support.

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.

Privacy and Accessibility Policies

- Instructure (Canvas)
  - Instructure Privacy Policy
  - Instructure Accessibility
- Zoom
  - Zoom Privacy Policy
  - Zoom Accessibility

Technical Support

UF Computing Help Desk & Ticket Number: All technical issues require a UF Helpdesk Ticket Number. The UF Helpdesk is available 24 hours a day, 7 days a week. https://helpdesk.ufl.edu/ | 352-392-4357