AGRICULTURAL OPERATIONS MANAGEMENT

Agricultural Operations Management combines hands-on applied coursework and core business principles with emerging technologies and sustainable methods. Students gain experience in systems management, environmental quality, energy efficiency, agricultural machinery, GIS/GPS technology, remote sensing, irrigation, power systems, water control, and precision agriculture.

About this Program

- **College:** Agricultural and Life Sciences (http://catalog.ufl.edu/UGRD/colleges-schools/UGAGL/)
- **Degree:** Bachelor of Science
- **Credits for Degree:** 120

To graduate with this major, students must complete all university, college, and major requirements.

Department Information

The Department of Agricultural and Biological Engineering is founded on developing, teaching, and applying engineering principles to improve and sustain agricultural and biological systems for current and future generations.
More Info (https://abe.ufl.edu/)

CONTACT

352.392.1864 (tel) | 352.392.4092 (fax)

P.O. Box 110570
Frazier Rogers Hall
1741 Museum Road, Bldg. 474
GAINESVILLE FL 32611-0570
Map (http://campusmap.ufl.edu/#/index/0474)

Curriculum

- Agricultural Operations Management
- Biological Engineering
- Combination Degrees
- Packaging Engineering Certificate
- Packaging Science Minor
- Precision Agriculture Minor

Students in the Agricultural Operations Management (AOM) program gain technical experience in systems management, environmental quality, energy efficiency, agricultural machinery, GIS/GPS remote sensing, computer programs, irrigation, power systems, water control, and precision agriculture. Through interdisciplinary, holistic training in agricultural, natural systems, and business management, AOM students can identify systems problems, formulate potential solutions, evaluate the impact of alternatives, and then implement a best solution.

The curriculum supports students who plan to seek career opportunities in commercial business operations and management. In addition to hands-on applied skills, students also take courses in economics, accounting, business, finance, sales, and business management.

AOM graduates have an abundance of job opportunities. The program provides a solid foundation for managing technical assets, infrastructure, money, and personnel. Graduates can become an integral part of profitable operations of many types of businesses such as production agriculture (e.g., crop management), commercial nurseries, building construction and materials, cattle operations, food processing, and regulatory agencies.

A major strength of the AOM program is its small class sizes. Students benefit from engaging discussions in a welcoming environment, interacting with and getting to know professors, and connecting with classmates through hands-on labs, projects, activities, and club functions.

The Agricultural Operations Management program is housed in Frazier-Rogers Hall with laboratories, classrooms, and a student computing lab, and features an additional off-site construction laboratory near Museum Road and Hull Road.

The program features electives in these focused areas of concentration:

- Sustainable Land, Energy, and Water
- Agribusiness Management
- Animal Production Management
- Horticulture and Crop Management

- Smart Agricultural Management
- Agri-food Systems Management

Critical Tracking

Critical Tracking records each student's progress in courses that are required for entry to each major. Please note the critical-tracking requirements below on a per-semester basis.

Equivalent critical-tracking courses as determined by the State of Florida Common Course Prerequisites (https://cpm.flvc.org/advance-search/) may be used for transfer students.

Semester 1

- Complete 2 of 6 critical-tracking courses, excluding labs, with minimum grades of C: ACG 2021, BSC 2010/BSC 2010L, CHM 2045/CHM 2045L, ECO 2013, MAC 1147 or MAC 2233, STA 2023
- 2.0 GPA required for all critical-tracking courses
- 2.0 UF GPA required

Semester 2

- Complete 2 additional critical-tracking courses, excluding labs, with minimum grades of C: ACG 2021,BSC 2010/BSC 2010L,CHM 2045/CHM 2045L,ECO 2013,MAC 1147 or MAC 2233, STA 2023
- 2.0 GPA required for all critical-tracking courses
- 2.0 UF GPA required

Semester 3

- Complete 1 additional critical-tracking course, excluding labs, with a minimum grade of C: ACG 2021,BSC 2010/BSC 2010L,CHM 2045/CHM 2045L,ECO 2013,MAC 1147 or MAC 2233, STA 2023
- 2.0 GPA required for all critical-tracking courses
- 2.0 UF GPA required

Semester 4

- Complete 1 additional critical-tracking course, excluding labs, with a minimum grade of C: ACG 2021,BSC 2010/BSC 2010L,CHM 2045/CHM 2045L,ECO 2013,MAC 1147 or MAC 2233, STA 2023
- 2.0 GPA required for all critical-tracking courses
- 2.0 UF GPA required

Semester 5

- Complete at least 2 required AOM courses
- 2.0 GPA required for all critical-tracking courses
- 2.0 UF GPA required

Semester 6

- Complete at least 2 required AOM courses
- Complete at least 1 approved elective course
- 2.0 GPA required for all critical-tracking courses
- 2.0 Upper division GPA required
- 2.0 UF GPA required

Semester 7

- Complete at least 2 required AOM courses
- Complete at least 1 approved elective course
- 2.0 Upper division GPA required
- 2.0 UF GPA required

Semester 8

- Complete all remaining required AOM courses
- Complete all remaining approved elective courses
- 2.0 Upper division GPA required
- 2.0 UF GPA required

Model Semester Plan

To remain on track, students must complete the appropriate critical-tracking courses, which appear in bold. These courses must be completed by the terms as listed above in the Critical Tracking criteria.

This semester plan represents an example progression through the major. Actual courses and course order may be different depending on the student's academic record and scheduling availability of courses. Prerequisites still apply.

Course	Title	Credits
Semester One		
Quest 1 (Gen Ed Humanities)		3
Select one:		3-4
BSC 2010	Integrated Principles of Biology 1	
& 2010L	and Integrated Principles of Biology Laboratory 1 (**Critical Tracking**)	
BOT 2010C	Introductory Botany (**Critical Tracking**; Gen Ed Biological Sciences)	
Select one:		3-5
MAC 1140	Precalculus Algebra	
& MAC 1114	and Trigonometry (**Critical Tracking**; State Core Gen Ed Mathematics)	
MAC 1147	Precalculus Algebra and Trigonometry (**Critical Tracking**; State Core Gen Ed Mathematics)	
MAC 2233	Survey of Calculus 1 (**Critical Tracking**; State Core Gen Ed Mathematics)	
State Core Gen Ed Composition (http://catalog.ufl.edu/UGRD/academic-programs/general-education/#genedcoursestext); Writing Requirement; with Diversity or International		3
Elective		1
	Credits	**13-16**
Semester Two		
Select one:		4
ACG 2021	Introduction to Financial Accounting (**Critical Tracking**)	
Advisor-approved alternative (**Critical Tracking**)		
CHM 2045	General Chemistry 1	4
& 2045L	and General Chemistry 1 Laboratory (**Critical Tracking**; State Core Gen Ed Physical Sciences)	
State Core Gen Ed Humanities with Diversity or International (http://catalog.ufl.edu/UGRD/academic-programs/general-education/#genedcoursestext)		3
Approved elective		3
Gen Ed Physical Sciences		3
	Credits	**17**
Semester Three		
AOM 2520	Global Sustainable Energy: Past, Present and Future	3
ECO 2013	Principles of Macroeconomics (**Critical Tracking**; Gen Ed Social and Behavioral Sciences)	4
Select one:		4
PHY 2004	Applied Physics 1	
& 2004L	and Laboratory for Applied Physics 1 (Gen Ed Physical Sciences)	
PHY 2020	Introduction to Principles of Physics	
& PHY 2004L	and Laboratory for Applied Physics 1 (Gen Ed Physical Sciences)	
CGS 2531	Problem Solving Using Computer Software (Gen Ed Mathematics)	3
	Credits	**14**
Semester Four		
Quest 2		3
Select one:		3
AEC 3030C	Effective Oral Communication	
SPC 2608	Introduction to Public Speaking	
ENC 2210	Technical Writing (Gen Ed Composition)	3
STA 2023	Introduction to Statistics 1 (**Critical Tracking**; Gen Ed Mathematics)	3
	Credits	**12**

Semester Five		
AEB 3300	Agricultural and Food Marketing	3-4
or MAR 3023	or Principles of Marketing	
AEB 3133	Principles of Agribusiness Management	3-4
or MAN 3025	or Principles of Management	
AOM 3220	Agricultural Construction and Maintenance	3
AOM 3333	Pesticide Application Techniques	3
Approved elective		3
	Credits	**15-17**
Summer After Semester Five		
AOM 3734	Irrigation Principles and Practices in Florida	3
	Credits	**3**
Semester Six		
ALS 3133	Agricultural and Environmental Quality	3
or AOM 4521	or Introduction to Biofuels	
AOM 4314C	Power and Machinery Management	3
SWS 3022	Introduction to Soils in the Environment	3
Approved electives		6
	Credits	**15**
Semester Seven		
Select one business law, ethics, or human resources course:		3-4
AEB 4085	Agricultural Risk Management and the Law	
AEB 4123	Agricultural and Natural Resource Law	
AEB 4126	Agricultural and Natural Resource Ethics	
BUL 4310	The Legal Environment of Business	
AOM 4642	Environmental Systems for Agricultural Structures	3
AOM 4643	Environmental Hydrology: Principles and Issues	3
AOM 4933	Professional Practices in Agricultural Operations Management	1
Approved electives		6
	Credits	**16-17**
Semester Eight		
AOM 4434	Precision Agriculture	3
AOM 4444C	Electrical Power and Instrumentation for Agricultural Operations Management	3
AOM 4455	Agricultural Operations and Systems	3
AOM 4461	Sustainable Agricultural Systems	3
Approved elective		3
	Credits	**15**
	Total Credits	**120**

Academic Learning Compact

The Agricultural Operations Management (AOM) curriculum integrates business and technical knowledge of agricultural operations. Knowledge is developed through formal courses, laboratory experimentation and individual experience. Students will learn to incorporate technical agricultural skills with modern business techniques and to communicate these results effectively in an appropriate presentation style.

Before Graduating Students Must

- Complete modules, assignments, exams, projects, and presentations that fulfill the Student Learning Outcomes (SLOs) in the Agricultural Operations Management program, presented in three parts. One part will be given in one or more of the following required courses:

Code	Title	Credits
AOM 4455	Agricultural Operations and Systems	3
AOM 3734	Irrigation Principles and Practices in Florida	3
AOM 4314C	Power and Machinery Management	3
or AOM 3734	Irrigation Principles and Practices in Florida	
AOM 4642	Environmental Systems for Agricultural Structures	3
or AOM 4434	Precision Agriculture	

Completion of these requirements ensures that students meet the expectations, goals, and learning outcomes of the program. All courses listed above are required in the AOM major. Student learning outcomes in the AOM program (see below) are either introduced, reinforced, and/or assessed in these courses (see Curriculum Map).

- Satisfactory completion of final project in AOM 4455.
- Complete requirements for the baccalaureate degree, as determined by faculty.

Students in the Major Will Learn to

Student Learning Outcomes | SLOs

Content

1. Describe fundamental concepts, skills, and processes in Agricultural Operations Management.
2. Apply fundamental concepts, skills, and processes in Agricultural Operations Management.

Critical Thinking

3. Critically evaluate information or data in Agricultural Operations Management.
4. Solve problems in Agricultural Operations Management.

Communication

5. Communicate effectively in written form in a manner appropriate in Agricultural Operations Management.
6. Communicate effectively orally in a manner appropriate in Agricultural Operations Management.

Curriculum Map

I = Introduced; R = Reinforced; A = Assessed

Courses	SLO 1	SLO 2	SLO 3	SLO 4	SLO 5	SLO 6
AEC 3030C						I
AEC 3033C					I	
AOM 2520	I		I		A	R
AOM 3220	I	I	I			
AOM 3734	R	R	R	I		
AOM 4314C	R	R	R	R		
AOM 4455	A	A	A	A		A

Assessment Types

- Course modules
- Presentations
- Exams
- Final grades