

Sustainable Agriculture

Program Coordinator: **Daniela Elliott**

Location: BS 205

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The Associate in Science (AS) in Sustainable Agriculture will prepare students for various careers in agriculture through hands-on practice and classroom instruction. Students will gain fundamental skills, knowledge and experiences in sustainable crop production, pest management, business principles, food systems, agriculture and the environment.

Note: Sustainable Agriculture is formerly Plant Biology, and Tropical Agriculture.

Sustainable Agriculture Degrees and Certificates

Sustainable Agriculture: Academic Subject Certificate

Description

The Academic Subject Certificate (ASC) in Sustainable Agriculture is designed to prepare students for a career in agriculture through hands-on practice and classroom instruction. It will provide farmers, returning non-traditional students and youth who are interested in agriculture with fundamental skills, knowledge and experiences in sustainable tropical crop production.

Program Learning Outcomes

After successful completion of this program, students will be able to:

- Identify opportunities to succeed in Hawaii's diversified agriculture and natural resource management workforce.
- Identify options for transfer to four-year institutions majoring in agriculture and natural resource management.
- Describe entrepreneurship opportunities in diversified agriculture.

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Required Courses

Item #	Title	Credits
AG 200	Principles of Horticulture	3
AG 200L	Principles of Horticulture Lab	1
AG 100	Orientation to Hawai'i Agriculture Industry	1
AG 264	Plant Propagation	3
AG 141	Integrated Pest Management	3
AG 271	Introduction to Crop Improvement	3
AG 293V	Plant Biology & Tropical Agriculture Internship	1 - 4
	BIOL/BOT Requirement (ASC-PBS-E2020)	4
	CHEM 151&151L or CHEM 161&161L	4
	BUS 101 or ICS 101	3
	Sub-Total Credits	26-29
Total credits:		26-29

Sustainable Agriculture: Aquaponics Technician

Description

This is an industry aligned, entry-level commercial aquaponics certification of competency (CO) standardized and offered across the University of Hawai'i Community College system. The proposed technician certification of competency is slated to be the nation's first comprehensive third-party certified technician education and training program to address the need for a university-trained and properly prepared, entry-level aquaponics labor force in the commercial aquaponics industry.

Program Learning Outcomes

Upon completion of the certificate, students will be able to:

- Demonstrate basic knowledge of aquaponics systems.
- Demonstrate an understanding of aquaponics standard operating procedures.
- Demonstrate current food safety policies and procedures related to aquaponics.
- Work in a professional setting through an experiential-learning environment.

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Required Courses

Item #	Title	Credits
AG 104	Food Safety & Post-Harvest Handling	1
AG 170	Introduction to Commercial Aquaponics	3
AG 170L	Introduction to Commercial Aquaponics Laboratory	1
	AG 110+110L or AG 112 or AG 200+200L	4
AG 293V	Plant Biology & Tropical Agriculture Internship	1 - 4
	Sub-Total Credits	10-13

Total credits:

10-13

Sustainable Agriculture: Associate in Science

Description

The Associate in Science (AS) in Sustainable Agriculture will prepare students for various careers in agriculture through hands-on practice and classroom instruction. Students will gain fundamental skills, knowledge and experiences in sustainable crop production, pest management, business principles, food systems, agriculture and the environment.

Program Learning Outcomes

Upon completion of the certificate, students will be able to:

- Use appropriate scientific and agricultural terminology to communicate in different settings and with different audiences.
- Identify and analyze the biotic and abiotic factors that affect agricultural production and explain how to manage these factors at the local, state, national, and global level.
- Apply principles and practices from plant and soil sciences, and tropical agriculture to improve production and profitability.
- Apply scientific methods and information technology to explain how to manage agronomic and agribusiness challenges and opportunities.
- Analyze contemporary issues involving food, agriculture and the environment.

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Notes

When AG 112 or AG 251 is used to count as a concentration requirement, it cannot also count as an elective.

The program is organized in an order that the student builds a foundation (CO = 12-13 credits; CA at least 25 credits; AS = minimum 60 credits) as progressing through a recommended group of courses. Courses with required knowledge have prerequisites, and the counselors will have the program information to guide the student into the proper course sequence. Students who have earned 58 credits are required to earn at least 2 more credits from either the **concentration** or **electives** sections.

General Education Requirements

Item #	Title	Credits
	FW Requirement (AS-PBS-E2020)	3
	FQ MATH Requirement (AS-PBS-E2020)	3
	FG Requirement (AS-PBS)	6
	DS Requirement (AS-PBS)	3
	DA/DH/DL Requirement (AS-PBS)	3
	DP+DY Requirement (AS-PBS)	4
	Sub-Total Credits	22

Concentration Requirements (At least 24 credits)

Item #	Title	Credits
	BOT 101+101L or BOT 130+130L or AG 110+110L	4
	AG 112 or AG 251	4
AG 100	Orientation to Hawai'i Agriculture Industry	1
AG 122	Soil Technology	3
AG 141	Integrated Pest Management	3
	AG 200 and AG 200L	4
AG 264	Plant Propagation	3
AG 104	Food Safety & Post-Harvest Handling	1
AG 293V	Plant Biology & Tropical Agriculture Internship	1 - 4
	Sub-Total Credits	24-27

Electives (At Least 6 Credits)

Item #	Title	Credits
AG 260	Tropical Landscape	4
AG 269	Ornamental Plant Materials	3
AG 271	Introduction to Crop Improvement	3
	AG 112 or AG 251	4
	AG 170, AG 170L	4
AG 210	Introduction to Environmental Science	3
	Sub-Total Credits	6

Additional Requirements

Item #	Title	Credits
	ICS 101 (or higher) or BUS 101	3
	ENT 125, BUSN 164	3
	Sub-Total Credits	6

	Total credits:	60
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Sustainable Agriculture: Certificate of Achievement

Description

The Certificate of Achievement (CA) in Sustainable Agriculture is designed to prepare students for a career in agriculture through hands-on practice and classroom instruction. It will provide students who are interested in agriculture with fundamental skills, knowledge, and experiences in sustainable tropical crop production.

Program Learning Outcomes

Upon completion of the certificate, students will be able to:

- Identify and analyze the biotic and abiotic factors that affect agricultural production and explain how to manage these factors at the local, state, national, and global level.
- Apply principles and practices from plant and soil sciences, and tropical agriculture to improve production and profitability.
- Apply scientific methods and information technology to explain how to manage agronomic and agribusiness challenges and opportunities.
- Interpret contemporary issues involving food, agriculture and the environment.

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Note

When AG 112 or AG 251 is used to count as a concentration requirement, it cannot also count as an elective.

Students would need to complete or concurrently enrolled in CHEM 151/CHEM 151L or CHEM 161/CHEM 161L or GEO 101 or GEO 101L if taking AG 200.

The program will provide comprehensive courses in plant science and sustainable agriculture. The subjects included plants, soils, crop production, pest management, food, agricultural systems, business, and landscaping. The CA program builds on Certificate of Competence (CO) program, utilizing several existing courses in Sustainable Agriculture. Students will have an opportunity to pursue an Associate in Science (AS) degree, which builds upon this program.

Core Requirements

Item #	Title	Credits
AG 100	Orientation to Hawai'i Agriculture Industry	1
AG 104	Food Safety & Post-Harvest Handling	1
AG 122	Soil Technology	3
AG 141	Integrated Pest Management	3
AG 264	Plant Propagation	3
	AG 112 or AG 200 & 200L (CA-PBS-E2020)	4
	BOT 130+130L or AG 110+110L	4
	Sub-Total Credits	19

Electives (PBS)

Item #	Title	Credits
AG 112	Introduction to Organic Agriculture	4
	AG 200 and AG 200L	4
AG 251	Sustainable Crop Production	4
AG 260	Tropical Landscape	4
AG 269	Ornamental Plant Materials	3
AG 271	Introduction to Crop Improvement	3
	AG 170, AG 170L	4
HWST 107	Hawai'i: Center of the Pacific	3
ENT 125	Starting a New Business	3
AG 293V	Plant Biology & Tropical Agriculture Internship	1 - 4
	Sub-Total Credits	6

Total credits:	25
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Sustainable Agriculture: Certificate of Competence

Description

The Certificate of Competence (CO) in Sustainable Agriculture offers comprehensive courses that will help students develop the skills and acquire knowledge in plant production and agricultural systems through hands-on practices and classroom instructions. It will provide students who are interested in agricultural production with fundamental skills and experiences in tropical crop production.

Program Learning Outcomes

Upon completion of the certificate, students will be able to:

- Apply principles and practices from plant and soil sciences, and tropical agriculture to improve production and profitability.
- Apply scientific methods and information technology to explain how to manage agronomic and agribusiness challenges and opportunities.
- Interpret contemporary issues involving food, agriculture and the environment.

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Notes

The program will provide comprehensive courses in plant science and agriculture. The subjects include plants, soils, pest management and agricultural systems. Students will have an opportunity to pursue CA and AS degree, which build upon this program.

Required Courses

Item #	Title	Credits
AG 100	Orientation to Hawai'i Agriculture Industry	1
AG 104	Food Safety & Post-Harvest Handling	1

AG 122	Soil Technology	3
	Sub-Total Credits	5

Diversification Requirements

Item #	Title	Credits
	Diversification Requirements 4cr (CO-PBS-E2020)	4
	Sub-Total Credits	4

Elective Requirements (3-4 cr)

Item #	Title	Credits
AG 141	Integrated Pest Management	3
AG 210	Introduction to Environmental Science	3
AG 251	Sustainable Crop Production	4
AG 260	Tropical Landscape	4
AG 269	Ornamental Plant Materials	3
	BIOL 124 and BIOL 124L	4
	Sub-Total Credits	3-4

	Total credits:	12-13
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