



CABRILLO COLLEGE

Sustainable Agriculture Technology A.S.

1. Program Goals and Objectives

The primary goal of this program is:

To give students a core horticulture and plant science curriculum and develop their skills in a broad range of agriculture technology topics including: data management, GIS mapping, networking technology tools on farm, producing plants in nutrient film technique, deep raft, ebb and flood, and substrate hydroponic production systems, electrical and hydraulic engineering basics, soil moisture sensing, and energy and water conservation. Upon completion, students will be prepared for emerging careers at the nexus of agriculture, technology, and sustainable food production including precision agriculture technicians, greenhouse managers, hydroponic growers, farmers, ranch or operations managers, field technicians and many more.

The primary objectives of this program are:

1. To train horticulturalists skilled in the plant production in multiple high tech growing systems.
2. To provide each student with the fundamental knowledge of plant biology, plant production, agriculture research, technology tools, and computer literacy to make high tech agriculture more sustainable.
3. To create opportunities for students to solve complex production, technology, sustainability, and research problems, resulting in more diversely trained horticulturists who are prepared to solve tomorrow's agriculture business problems.

2. Catalog Description

The Sustainable Agriculture Technology degree is designed to prepare students for a career in the emerging agriculture technology industry. The course of study will cover all aspects of technology and horticultural study including hydroponics, aquaponics, organic substrate production, GIS/GPS, water and energy conservation, and computing and connecting technology tools and data streams on farm. Students will finish this degree program prepared for careers as precision agriculture technicians, greenhouse managers, hydroponic growers, farmers, ranch or operations managers, first line supervisors for agriculture and horticulture industries, biological technicians, among others. This program is designed for those wishing to go directly into employment in the agriculture and horticulture industries; therefore, students wishing to transfer courses should consult a counselor or consider the AS-T degree in Agriculture Plant Science.

Program Learning Outcomes:

- 1) Strong understanding of the plant science fundamentals of soil, plant, and water relationships to produce plants in a variety of high tech production systems. (Global Awareness, Communication)
- 2) Understanding of how to use technology tools to increase sustainability and production. (Personal Responsibility and Professional Development, Communication)
- 3) Ability to use, manage, and manipulate data and data streams from technology tools to inform management decisions. (Critical Thinking and Information Competency, Communication)

3. Course of Study

General Education	21 units
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Core Courses

HORT 1A	Basic Horticulture	4 units
HORT 1B	Basic Horticulture: Crop Production	4 units
HORT 2	Soil Science and Management	4 units
HORT 52	Greenhouse Design and Operation	3 units
HORT 58	Irrigation Systems Design and Management	3 units
HORT 71	Organic Food Production	4 units
HORT 72	Organic Food Production 2	1 unit
HORT 125	Hydroponic and Substrate Production	3 units
		26 units

AND

PATH 1 – Breadth of Ag Tech

ENGR 3	How Things Work	3 units
GEOG 17	Introduction to Geographic Information Systems and Techniques	3 units
CIS 71	Information & Communication Technology Essentials	4 units
CABT 41	Excel	3 units
		13 unit

OR

PATH 2 – Computing within Ag Tech

CS1L	Technology Tools	2 units
CIS 15	Cloud Programming with Python	4 units
CIS 75	Fundamentals of Computer Security	3 units
CIS 81	Computer Network Fundamentals	4 units
		13 units

TOTAL 60