

# PLANT SCIENCE AND AGRICULTURAL TECHNOLOGY

## Plant Science and Agricultural Technology with Specializations in:

- Horticulture
- Landscape
- Sustainable Agriculture

## Associate in Science Degree CIP# 1101060502

This program is designed to prepare students for careers in the landscape and horticulture industries. Students may choose to specialize in two areas: landscape or horticulture. The Landscape Specialization provides for skills in landscape design, construction, and maintenance, which include instruction in constructing and landscaping parks, airports, communities, resorts, etc. Students are trained to supervise, manage, and design exterior and interior landscapes. The Horticulture Specialization is designed to prepare students for careers in both greenhouse and nursery operations and includes instruction in greenhouse foliage, flower and woody nursery production. Students are specially trained to operate and manage all types of plant productions, programs and facilities.

Students are strongly encouraged to consult a Student Success Coach in the department office for assistance in determining the best education plan for their career goals.

Although scheduling may not always provide for the following progression of courses, students should use the foundation, intermediate and specialization course sequence as a guide in program planning.

All degree-seeking students must satisfy entry testing requirements and satisfactorily complete all mandatory courses in reading, student success, mathematics, English, and English for Academic Purposes in which the student is placed.

## Alternative Ways to Earn Credit

You may be eligible to receive credit toward this degree if you have earned an approved industry certification or Career Pathways credit. For more information and requirements, go to <https://valenciacollege.edu/academics/programs/as-degree/alternative-award-of-credit-agreements.php> to view the award of credit options. Eligible students should contact the related academic department and/or Student Success Coach at Valencia for the award of credit.

## Technical Certificates

The Plant Science and Agricultural A.S. degree also offers the following college credit certificate programs. These certificate programs can put you on the fast-track to reaching your career goals. They are designed to equip you with a specialized skill set for entry-level employment or to upgrade your skills for job advancement. Most can be completed in one year or less, and all of the courses in the certificate programs are embedded in the A.S. degree. Click on the Certificate tab at the top of the page for more information about the course requirements.

- Plant Science Specialist (12 credits) (CIP # 0101060503)
- Plant Science Professional (18 credits) (CIP # 0101060504)
- Plant Science Technician (30 credits) (CIP # 0101060505)

## Start Right

Degree-seeking students enrolling at Valencia for the first time will have a limited range of courses from which to choose for their first 18 college-level credits. Within the first 18 college credit hours, you will be required to take ENC1101 (3 credits), and if applicable, SLS 1122 (3 credits) and a mathematics course appropriate to your selected meta-major (3 credits). The remaining courses will be chosen from the General Education Core Courses in humanities (3 credits), science (3 credits), or social science (3 credits), and/or the introductory courses within the A.S. degree programs. For specific courses see the *Foundation Courses* on the "Program Requirements" tab. For course sequencing recommendations, see your Student Success Coach or create an education plan by logging into Atlas, clicking on the LifeMap tab and clicking My Education Plan.

## Potential Careers

- Nursery Supervisor/Manager
- Supervisor, Parks
- Production Superintendent
- Landscape & Groundskeeping Manager
- Landscape Gardener/Designer/Contractor
- Supervisor/Manager of Landscaping and Horticulture Services
- Landscape & Horticulture Specialist
- Landscape & Horticulture Professional

## Salary & Earnings Information

For career information related to this program, please visit **O\*Net OnLine** (<https://www.onetonline.org/>).

## Contacts

### Future Students

Contact Enrollment Services at [enrollment@valenciacollege.edu](mailto:enrollment@valenciacollege.edu) or call 407-582-1507

### Current Students

Your Student Success Coach contact information can be found in Atlas. Log into Atlas, click on the Courses tab, and check your Academic Profile information to find a link to your Coach.

### West Campus Faculty Program Chair

Javier Garces: 407-582-1820  
[jgarces3@valenciacollege.edu](mailto:jgarces3@valenciacollege.edu)

## Internship and Workforce Services

If you need assistance with job resources or in locating an internship, please visit: [valenciacollege.edu/internship](https://valenciacollege.edu/internship) (<https://valenciacollege.edu/internship/>).

## Program Outcomes

- Differentiate the mechanisms involved in plant physiology and growth.
- Design a pest management program.
- Schedule a fertilization program.
- Demonstrate employability skills in the field of horticulture.

## Foundation Courses

ENC 1101	FRESHMAN COMPOSITION I <sup>++*</sup>	3
CHM 1020	CHEMISTRY IN EVERYDAY LIFE <sup>~</sup>	3
or CHM 1045C	GENERAL CHEMISTRY WITH QUALITATIVE ANALYSIS I	

ENY 1002C	PRINCIPLES OF ENTOMOLOGY	3
MAC 1105	COLLEGE ALGEBRA <sup>++~</sup>	3
or MGF 1106	LIBERAL ARTS MATHEMATICS I	
PLS 1010C	INTRODUCTION TO PLANT SCIENCE	3

**Intermediate Courses**

AMH 2020	U.S. HISTORY 1877 TO PRESENT <sup>~</sup>	3
or POS 2041	U.S. GOVERNMENT	
AOM 2012C	TYPES & SYSTEMS OF AGRICULTURE OPERATIONS	3
BOT 2010C	BOTANY <sup>~</sup>	4
PLP 2001C	PLANT PATHOLOGY <sup>*</sup>	4
SWS 2102C	SOILS AND FERTILIZERS	3
Humanities	See Gen. Ed. Core requirement <sup>~</sup>	3
Specialization (See below)		25

**Total Credit Hours** **60**

+ This course must be completed with a grade of C or better.

\* This course has a prerequisite; check description in Valencia catalog.

~ This is a general education course.

(GB) notes a Gordon Rule course.

**Horticulture Specialization**

Designed for students wishing to specialize in nursery and greenhouse operations.

**Program Outcomes**

- Categorize plants based on growth, morphological, and taxonomic characteristics.
- Design a greenhouse, nursery, or crop management program.

ORH 1510C	ORNAMENTAL PLANT MATERIALS	3
or AOM 1465C	INTRODUCTION TO SUSTAINABLE AGRICULTURE	
ORH 2251C	NURSERY OPERATION AND MANAGEMENT <sup>*</sup>	3
or ORH 2260C	GREENHOUSE OPERATIONS AND MANAGEMENT	
PLS 2220C	PLANT PROPAGATION <sup>*</sup>	3
Plant Science and Agricultural Technology Degree Electives		16
<b>Total Credit Hours</b>		<b>25</b>

\* This course has a prerequisite; check description in Valencia catalog.

**Landscape Specialization**

Designed for students wishing to specialize in landscape design, construction, and maintenance.

**Program Outcomes**

- Categorize plants based on growth, morphological, and taxonomic characteristics.
- Design a landscape or interiorscape project.
- Schedule a landscape or interiorscape maintenance program.

LDE 1000C	LANDSCAPE DESIGN AND IMPLEMENTATION <sup>*</sup>	3
ORH 1234C	ORNAMENTAL PLANT MAINTENANCE <sup>*</sup>	4
ORH 1510C	ORNAMENTAL PLANT MATERIALS	3
ORH 2840C	LANDSCAPE CONSTRUCTION <sup>*</sup>	4

Plant Science and Agricultural Technology Degree Electives	11
<b>Total Credit Hours</b>	<b>25</b>

\* This course has a prerequisite; check description in Valencia catalog.

**Sustainable Agriculture Specialization**

Designed for students wishing to specialize in edible crop production.

**Program Outcomes**

- Develop and use tools to assess the sustainability of agricultural operations.
- Design a crop management program.

**Program Requirements**

AOM 1465C	INTRODUCTION TO SUSTAINABLE AGRICULTURE	3
IPM 1301C	PRINCIPLES OF INTEGRATED PEST MANAGEMENT	3
Electives	Plant Science and Agriculture Technology Degree Electives	19

**Total Credit Hours** **25**

**Plant Science and Agricultural Technology Degree Electives**

These courses may be used for Landscape and Horticulture Technology Degree Electives credit if not a requirement of the Specialization.

AOM 1465C	INTRODUCTION TO SUSTAINABLE AGRICULTURE	3
AOM 1050C	INTRODUCTION TO ORGANIC FARMING AND GARDENING TECHNICIAN	3
BOT 2010C	BOTANY	4
BOT 2501C	PLANT PHYSIOLOGY	4
BOT 2800	ETHNOBOTANY	3
CGS 2100C	COMPUTER FUNDAMENTALS AND APPLICATIONS	3
ECO 2013	PRINCIPLES OF ECONOMICS-MACRO	3
ETD 1103C	ENGINEERING GRAPHICS WITH CAD	3
EVR 1001	INTRODUCTION TO ENVIRONMENTAL SCIENCE	3
FAS 2010C	PRINCIPLES OF AQUACULTURE	3
GEB 1011	INTRODUCTION TO BUSINESS	3
HOS 2005C	PRINCIPLES OF HYDROPONICS	3
HOS 2932	SELECTED TOPICS IN HORTICULTURE & LANDSCAPE TECHNOLOGY <sup>*</sup>	1-4
HOS 2941	INTERNSHIP EXPLORATION IN LANDSCAPE/HORTICULTURE	1-4
HOS 2942	INTERNSHIP IN LANDSCAPE/HORTICULTURE <sup>*</sup>	1-4
IPM 1301C	PRINCIPLES OF INTEGRATED PEST MANAGEMENT	3
IPM 2011C	DIAGNOSTICS TECHNIQUES FOR PLANT PROBLEMS	4
LDE 1000C	LANDSCAPE DESIGN AND IMPLEMENTATION <sup>*</sup>	3
ORH 1234C	ORNAMENTAL PLANT MAINTENANCE <sup>*</sup>	4
ORH 1510C	ORNAMENTAL PLANT MATERIALS	3

ORH 2251C	NURSERY OPERATION AND MANAGEMENT *	3
ORH 2260C	GREENHOUSE OPERATIONS AND MANAGEMENT *	3
ORH 2840C	LANDSCAPE CONSTRUCTION *	4
PLS 2220C	PLANT PROPAGATION *	3
ORH 2241C	PRINCIPLES OF ARBORICULTURE	3
PLS 2402C	PRINCIPLES OF AQUAPONICS	3
SBM 1000	SMALL BUSINESS MANAGEMENT	3
SLS 1122	NEW STUDENT EXPERIENCE	3
SLS 2940	SERVICE LEARNING	1-4
SWS 1530C	PRINCIPLES OF IRRIGATION	3
VEC 1201C	INTRODUCTION TO VEGETABLE GARDENING	3
BOT 2011C	PLANT DIVERSITY	4

\* This course has a prerequisite; check description in Valencia catalog.

**Notes:**

Specialized program courses are offered on the West Campus and some off-site locations, and may not be offered every session.

Expand your career opportunities with a Bachelor’s Degree in Business and Organizational Leadership (BASBOL) from Valencia. This degree builds on your skills, and prepares you for a supervisory or management role within your respective field. For more information, go to: Bachelor’s Degree in Business & Organizational Leadership (<http://catalog.valenciacollege.edu/degrees/bachelorofscience/bas/>). Students who wish to continue their education should consult with a Student Success Coach to determine the best education plan for their career goals.

Students wishing to transfer credits from this program to another institution must accept responsibility for securing approval from the transfer institution for acceptance of this degree.

## Plant Science Specialist

**Technical Certificate**

This program is designed to prepare students for entry-level employment in the landscape and horticulture industries as nursery workers, landscape and horticulture workers and specialists. Areas of study include an understanding of plant physiology, growth, plant classification and plant identification.

**Program Outcomes**

- Categorize plants based on growth, morphological, and taxonomic characteristics.
- Design a pest management program.
- Demonstrate employability skills in the landscape field.

AOM 1461C		3
or ORH 1510C	ORNAMENTAL PLANT MATERIALS	
ENY 1002C	PRINCIPLES OF ENTOMOLOGY	3
PLS 1010C	INTRODUCTION TO PLANT SCIENCE	3
Plant Science and Agricultural Technology Elective(s)		3
<b>Total Credit Hours</b>		<b>12</b>

**Notes:**

All certificate courses are offered on the West Campus.

Specialized courses may not be offered every session or on every campus.

## Plant Science Professional

**Technical Certificate**

This program is designed to prepare students for immediate employment in the landscape and horticulture industries as landscape gardeners, park workers, gardener specialists and landscape or horticulture professionals. Students focus on the maintenance of landscape plants, including nutrition, fertilization and pest control.

**Program Outcomes**

- Categorize plants based on growth, morphological, and taxonomic characteristics.
- Demonstrate employability skills in the field or horticulture.
- Design a pest management program.
- Schedule a fertilization program.

AOM 1461C		3
or ORH 1510C	ORNAMENTAL PLANT MATERIALS	
PLS 1010C	INTRODUCTION TO PLANT SCIENCE	3
ENY 1002C	PRINCIPLES OF ENTOMOLOGY	3
SWS 2102C	SOILS AND FERTILIZERS	3
	Plant Science and Agricultural Technology Elective(s)	6

**Total Credit Hours 18**

\* This course has a prerequisite; check description in Valencia catalog.

**Note:**

All certificate courses are offered on the West Campus.

Specialized courses may not be offered every session or on every campus.

## Plant Science Technician with Specializations in

- Horticulture
- Landscape

**Technical Certificate**

This program is designed to prepare students for immediate employment in the landscape and horticulture industries as supervisors of landscaping and horticulture, production and nursery supervisors, and horticulture technicians. Areas of study include managing culture of plant materials and installing and constructing landscape projects. Students should select the Horticulture or Landscape Specialization.

**Program Outcomes**

- Categorize plants based on growth, morphological, and taxonomic characteristics.
- Design a pest management program.
- Schedule a fertilizer program.

**Foundation Courses**

AOM 1461C		3
or ORH 1510C	ORNAMENTAL PLANT MATERIALS	
ENY 1002C	PRINCIPLES OF ENTOMOLOGY	3
PLS 1010C	INTRODUCTION TO PLANT SCIENCE	3
SWS 2102C	SOILS AND FERTILIZERS	3
Specialization (See below)		18
<b>Total Credit Hours</b>		<b>30</b>

\* This course has a prerequisite; check description in Valencia catalog.

## Horticulture Specialization

**Program Outcomes**

- Design a greenhouse, nursery or crop management program.

ORH 2251C	NURSERY OPERATION AND MANAGEMENT *	3
or ORH 2260C	GREENHOUSE OPERATIONS AND MANAGEMENT	
	Plant Science and Agricultural Technology Elective(s)	15
<b>Total Credit Hours</b>		<b>18</b>

## Landscape Specialization

**Program Outcomes**

- Design a landscape or interiorscape project.
- Schedule a landscape or interiorscape maintenance program.

LDE 1000C	LANDSCAPE DESIGN AND IMPLEMENTATION	3
ORH 1234C	ORNAMENTAL PLANT MAINTENANCE *	4
ORH 2840C	LANDSCAPE CONSTRUCTION *	4
	Plant Science and Agricultural Technology Elective(s)	7
<b>Total Credit Hours</b>		<b>18</b>

\* This course has a prerequisite; check description in Valencia catalog.

## Plant Science Technician Certificate Electives

These courses may be used for Landscape and Horticulture Technology Certificate Electives credit if not being used as a certificate requirement.

AOM 1050C	INTRODUCTION TO ORGANIC FARMING AND GARDENING TECHNICIAN	3
AOM 1465C	INTRODUCTION TO SUSTAINABLE AGRICULTURE	3
AOM 2012C	TYPES & SYSTEMS OF AGRICULTURE OPERATIONS	3
BOT 2010C	BOTANY *	4
BOT 2011C	PLANT DIVERSITY	4
BOT 2501C	PLANT PHYSIOLOGY	4
BOT 2800	ETHNOBOTANY	3
CHM 1020	CHEMISTRY IN EVERYDAY LIFE	3
CHM 1045C	GENERAL CHEMISTRY WITH QUALITATIVE ANALYSIS I	4

CGS 2100C	COMPUTER FUNDAMENTALS AND APPLICATIONS	3
ENY 1002C	PRINCIPLES OF ENTOMOLOGY *	3
ETD 1103C	ENGINEERING GRAPHICS WITH CAD	3
EVR 1001	INTRODUCTION TO ENVIRONMENTAL SCIENCE	3
FAS 2010C	PRINCIPLES OF AQUACULTURE	3
GEB 1011	INTRODUCTION TO BUSINESS	3
HOS 2005C	PRINCIPLES OF HYDROPONICS	3
HOS 2932	SELECTED TOPICS IN HORTICULTURE & LANDSCAPE TECHNOLOGY *	1-4
HOS 2941	INTERNSHIP EXPLORATION IN LANDSCAPE/HORTICULTURE *	1-4
HOS 2942	INTERNSHIP IN LANDSCAPE/HORTICULTURE *	1-4
IPM 1301C	PRINCIPLES OF INTEGRATED PEST MANAGEMENT	3
IPM 2011C	DIAGNOSTICS TECHNIQUES FOR PLANT PROBLEMS	4
LDE 1000C	LANDSCAPE DESIGN AND IMPLEMENTATION	3
ORH 1234C	ORNAMENTAL PLANT MAINTENANCE *	4
ORH 1510C	ORNAMENTAL PLANT MATERIALS	3
ORH 2251C	NURSERY OPERATION AND MANAGEMENT *	3
ORH 2260C	GREENHOUSE OPERATIONS AND MANAGEMENT *	3
ORH 2840C	LANDSCAPE CONSTRUCTION *	4
ORH 2241C	PRINCIPLES OF ARBORICULTURE *	3
OST 1755C	MICROSOFT WORD - INTRODUCTION	1
PLP 2001C	PLANT PATHOLOGY *	4
PLS 2220C	PLANT PROPAGATION *	3
PLS 2402C	PRINCIPLES OF AQUAPONICS	3
SBM 1000	SMALL BUSINESS MANAGEMENT	3
SLS 2940	SERVICE LEARNING	1-4
SWS 1530C	PRINCIPLES OF IRRIGATION	3
SWS 2102C	SOILS AND FERTILIZERS *	3
VEC 1201C	INTRODUCTION TO VEGETABLE GARDENING	3

\* This course has a prerequisite; check description in Valencia catalog.

**Note**

All certificate courses are offered on the West Campus.

Specialized courses may not be offered every session or on every campus.

This certificate program is eligible for Financial Aid.