

## Curriculum Standard for Plant Systems: Horticultural Science Technology

**Career Cluster:** Agriculture, Food, and Natural Resources \*\*

**Cluster Description:** The production, processing, marketing, distribution, financing, and development of agricultural commodities and resources including food, fuel, fiber, wood products, natural resources, horticulture, and other plant and animal products/resources.

**Pathway:** Plant Systems

**Effective Term:** Fall 2014 (2014\*03)

### Program Majors Under Pathway

Program Major / Classification of Instruction Programs (CIP) Code	Credential Level(s) Offered	Program Major Code
Golf Course Management Technology	CIP Code 31.0302	AAS/Diploma/Certificate A15230
Horticulture Technology	CIP Code: 01.0601	AAS/Diploma/Certificate A15240
Landscape Gardening	CIP Code 01.0605	AAS/Diploma/Certificate A15260
Turfgrass Management Technology	CIP Code: 01.0607	AAS/Diploma/Certificate A15420

**Pathway Description:**

These curricula are designed to prepare individuals for various careers in horticulture. Classroom instruction and practical laboratory applications of horticultural principles and practices are included in the program of study.

Course work includes plant identification, pest management, plant science and soil science. Also included are courses in sustainable plant production and management, landscaping, and the operation of horticulture businesses.

Graduates should qualify for employment in a variety of positions associated with nurseries, garden centers, greenhouses, landscape operations, governmental agencies/parks, golf courses, sports complexes, highway vegetation, turf maintenance companies, and private and public gardens. Graduates should also be prepared to take the North Carolina Pesticide Applicator's Examination and/or the North Carolina Certified Plant Professional Examination.

*Program Major Description: Choose one of the following 4<sup>th</sup> paragraphs to use in conjunction with the first three paragraphs of the pathway description above for documentation used to identify each Program Major:*

**Golf Course Management Technology:** A program that prepares individuals to manage the operation of golf courses. Potential course work includes instruction in turf grass science and management, golf course design and construction, grounds equipment and operation, pest control, and grounds management.

**Horticulture Technology:** A program that focuses on the general production and management of cultivated plants, shrubs, flowers, foliage, trees, groundcovers, and related plant materials; the management of technical and business operations connected with horticultural services; and the basic scientific principles needed to understand plants and their management and care.

**Landscape Gardening:** A program that prepares individuals to manage and maintain indoor and/or outdoor ornamental and recreational plants and groundcovers and related conceptual designs established by landscape architects, interior designers, enterprise owners or managers, and individual clients. Potential course work includes instruction in applicable principles of horticulture, gardening, plant and soil irrigation and nutrition, turf maintenance, plant maintenance, equipment operation and maintenance, personnel supervision, and purchasing.

**Turfgrass Management Technology:** A program that focuses on turfgrasses and related groundcover plants and prepares individuals to develop ornamental or recreational grasses and related products; plant, transplant, and manage grassed areas; and to produce and store turf used for transplantation. Potential course work includes instruction in applicable plant sciences, genetics of grasses, turf science, use analysis, turf management, and related economics.

\*Within the degree program, the institution shall include opportunities for the achievement of competence in reading, writing, oral communication, fundamental mathematical skills, and basic use of computers.

Approved by the State Board of Community Colleges on August 16, 2012; Editorial Revision 10/17/12; Editorial Revision 11/07/12; Editorial Revision 12/14/12; SBCC Revised 07/19/13; Editorial Revision 08/21/13; Editorial Revision 01/14/14; Prefix Addition 08/01/15: SBCC Revised 03/17/17; CCRC Revised--Electronic Only (RISE Initiative) 10/24/19.

## I. General Education Academic Core

[Curriculum Requirements for associate degree, diploma, and certificate programs in accordance with 1D SBCCC 400.10]: Degree programs must contain a minimum of 15 semester hours including at least one course from each of the following areas: humanities/fine arts, social/behavioral sciences, and natural sciences/mathematics. Degree programs must contain a minimum of 6 semester hours of communications. Diploma programs must contain a minimum of 6 semester hours of general education; 3 semester hours must be in communications. General education is optional in certificate programs.

### Plant Systems: Horticultural Science Technology

#### Recommended General Education Academic Core

AAS

Diploma

Certificate

#### Minimum General Education Hours Required:

15 SHC

6 SHC

0 SHC

Courses listed below are recommended general education courses for this curriculum standard. Colleges may choose to include additional or alternative general education courses to meet local curriculum needs.

\*Recommended certificate and diploma level curriculum courses. These courses may not be included in associate degree programs.

#### Communication:

*COM	101	Workplace Communication	3 SHC
COM	110	Introduction to Communication	3 SHC
COM	120	Intro Interpersonal Com	3 SHC
COM	231	Public Speaking	3 SHC
*ENG	101	Applied Communications I	3 SHC
*ENG	102	Applied Communications II	3 SHC
ENG	110	Freshman Composition	3 SHC
ENG	111	Expository Writing	3 SHC
ENG	112	Argument-Based Research	3 SHC
ENG	114	Prof Research & Reporting	3 SHC
ENG	115	Oral Communication	3 SHC
ENG	116	Technical Report Writing	3 SHC

6 SHC

3-6 SHC

Optional

#### Humanities/Fine Arts:

*HUM	101	Values in the Workplace	2 SHC
HUM	110	Technology and Society	3 SHC
HUM	115	Critical Thinking	3 SHC
HUM	230	Leadership Development	3 SHC
PHI	230	Introduction to Logic	3 SHC
PHI	240	Introduction to Ethics	3 SHC

3 SHC

0-3 SHC

Optional

#### Social /Behavioral Sciences:

ECO	151	Survey of Economics	3 SHC
ECO	251	Prin of Microeconomics	3 SHC
GEO	110	Introduction to Geography	3 SHC
GEO	111	World Regional Geography	3 SHC
*PSY	101	Applied Psychology	3 SHC
*PSY	102	Human Relations	2 SHC
PSY	118	Interpersonal Psychology	3 SHC
PSY	135	Group Processes	3 SHC
PSY	150	General Psychology	3 SHC
*SOC	105	Social Relationships	3 SHC
SOC	210	Introduction to Sociology	3 SHC
SOC	215	Group Processes	3 SHC

3 SHC

0-3 SHC

Optional

#### Natural Sciences/Mathematics:

BIO	140	Environmental Biology	3 SHC
BIO	160	Introductory Life Science	3 SHC
MAT	110	Math Measurement & Literacy	3 SHC
MAT	121	Algebra/Trigonometry	3 SHC
MAT	143	Quantitative Literacy	3 SHC
MAT	152	Statistical Methods I	4 SHC
MAT	171	Precalculus Algebra	4 SHC
PHY	110	Conceptual Physics	3 SHC
PHY	121	Applied Physics I	4 SHC

3 SHC

0-3 SHC

Optional



**B. Program Major(s)(Continued)****Horticulture Technology**

HOR 162 Applied Plant Science 3 SHC  
 HOR 168 Plant Propagation 3 SHC

Operations. Choose one:

HOR 124 Nursery Operations 3 SHC  
 HOR 134 Greenhouse Operations 3 SHC  
 LSG 121 Fall Gardening Lab 2 SHC

*Select additional courses from the HOR or LSG prefix for a minimum of 12 SHC for the Horticulture Technology AAS program.*

*A Horticulture Technology diploma requires a minimum of 12 SHC extracted from the required technical/program major core of the AAS degree.*

**Landscape Gardening**

*Select a minimum of 12 SHC from the following courses for the Landscape Gardening AAS program:*

WBL 111 Work-Based Learning I 1 SHC  
 +HOR 114 Landscape Construction 3 SHC  
 +HOR 134 Greenhouse Operations 3 SHC  
 +LSG 111 Basic Landscape Technique 2 SHC  
 +LSG 121 Fall Gardening Lab 2 SHC  
 +LSG 122 Spring Gardening Lab 2 SHC  
 LSG 123 Summer Gardening Lab 2 SHC  
 LSG 231 Landscape Supervision 4 SHC

*Courses required for the Landscape Gardening Diploma are designated with +*

**Turfgrass Management Technology**

TRF 152 Landscape Maintenance 3 SHC  
 ^TRF 210 Turfgrass Eqmt Mgmt 3 SHC  
 ^TRF 230 Turfgrass Mgmt Apps 2 SHC  
 TRF 260 Adv Turfgrass Mgmt 4 SHC

*Courses required for the Turfgrass Management Diploma are designated with ^*

**C. Other Major Hours.**

**To be selected from the following prefixes:**

ACC, AGR, ANS, ARC, BIO, BTC, BUS, CHM, CIS, CSC, CST, CUL, DFT, ECO, ETR, FLO, FOR, FWL, GCM, GIS, HET, HOR, IVS, LAR, LID, LSG, SEL, SST, TRF, VEN and WBL.

*Up to two semester hour credits may be selected from ACA.*

*Up to three semester hour credits may be selected from the following prefixes: ARA, ASL, CHI, FRE, GER, ITA, JPN, LAT, POR, RUS and SPA.*

### III. Other Required Hours

A college may include courses to meet graduation or local employer requirements in a certificate (0-1 SHC), diploma (0-4 SHC), or an associate in applied science (0-7 SHC) program. These curriculum courses shall be selected from the Combined Course Library and must be approved by the System Office prior to implementation. Restricted, unique, or free elective courses may not be included as other required hours.

### IV. Employability Competencies

Fundamental competencies that address soft skills vital to employability, personal, and professional success are listed below. Colleges are encouraged to integrate these competencies into the curriculum by embedding appropriate student learning outcomes into one or more courses or through alternative methods.

- A. Interpersonal Skills and Teamwork** – The ability to work effectively with others, especially to analyze situations, establish priorities, and apply resources for solving problems or accomplishing tasks.
- B. Communication** – The ability to effectively exchange ideas and information with others through oral, written, or visual means.
- C. Integrity and Professionalism** – Workplace behaviors that relate to ethical standards, honesty, fairness, respect, responsibility, self-control, criticism and demeanor.
- D. Problem-solving** – The ability to identify problems and potential causes while developing and implementing practical action plans for solutions.
- E. Initiative and Dependability** – Workplace behaviors that relate to seeking out new responsibilities, establishing and meeting goals, completing tasks, following directions, complying with rules, and consistent reliability.
- F. Information processing** – The ability to acquire, evaluate, organize, manage, and interpret information.
- G. Adaptability and Lifelong Learning** – The ability to learn and apply new knowledge and skills and adapt to changing technologies, methods, processes, work environments, organizational structures and management practices.
- H. Entrepreneurship** – The knowledge and skills necessary to create opportunities and develop as an employee or self-employed business owner.

*\*An **Employability Skills Resource Toolkit** has been developed by NC-NET for the competencies listed above. Additional information is located at: <http://www.nc-net.info/employability.php>*

*\*\*The North Carolina Career Clusters Guide was developed by the North Carolina Department of Public Instruction and the North Carolina Community College system to link the academic and Career and Technical Education programs at the secondary and postsecondary levels to increase student achievement. Additional information about Career Clusters is located at: [http://www.nc-net.info/NC\\_career\\_clusters\\_guide.php](http://www.nc-net.info/NC_career_clusters_guide.php) or <http://www.careertech.org>.*

*Summary of Required Semester Hour Credits (SHC) for each credential:*

	<b>AAS</b>	<b>Diploma</b>	<b>Certificate</b>
Minimum General Education Hours	15	6	0
Minimum Major Hours	49	30	12
Other Required Hours	0-7	0-4	0-1
<b>Total Semester Hours Credit (SHC)</b>	<b>64-76</b>	<b>36-48</b>	<b>12-18</b>