

## Curriculum Standard for Agribusiness: Agricultural 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:** Agribusiness Systems

**Effective Term:** Fall 2018 (2018\*03)

### Program Majors Under Pathway

Program Major / Classification of Instruction Programs (CIP) Code	Credential Level(s) Offered	Program Major Code
Agribusiness Technology	CIP Code 01.0102	AAS/Diploma/Certificate A15100
Agriculture Education	CIP Code: 13.1301	AAS/Diploma/Certificate A15330
Sustainable Agriculture	CIP Code: 01.0308	AAS/Diploma/Certificate A15410

**Pathway Description:**

These curriculum are designed to provide the entrepreneurial and technical skills necessary to manage a profitable, environmentally sound, community based small farm or agricultural business. The objective is the development of a workforce knowledgeable in sustainable agriculture practices.

Students will learn the fundamentals of agriculture, focusing on crop production and business. Emphasis is placed on entrepreneurial and field training. Students will also learn the basic principles of our economic system and government policies and programs relating to agriculture.

Graduates should qualify for a variety of jobs in agricultural businesses such as equipment, feed, and agricultural supply sales; store management; farm operations; wholesale and retail produce management; nursery operations; and environmental and agricultural education.

*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**:*

**Agribusiness Technology:** A program that prepares individuals to manage agricultural businesses and agriculturally related operations within diversified corporations. Potential course work includes instruction in agriculture, agricultural specialization, business management, accounting, finance, marketing, planning, human resources management, and other managerial responsibilities.

**Agriculture Education:** A program that is designed to provide students with agriculture and education foundation courses. Course work focuses on the foundational aspects of agriculture and education theory. Students will be introduced to classroom theory and management as well as soil, plant, and animal science. This curriculum will provide students with the knowledge and skills to be eligible to become extension agents, farm management specialists, 4-H specialists, crop service representatives, agri-tourism tour guides or work in agriculture sales, or environmental community education programs. Successful completion of the program will provide students with an opportunity to articulate their coursework to university programs in Agriculture Education.

**Sustainable Agriculture:** A program that focuses on agricultural principles and practices that, over the long term, enhance environmental quality, make efficient use of nonrenewable resources, integrate natural biological cycles and controls, and are economically viable and socially responsible; and that may prepare individuals to apply this knowledge to the solution of agricultural and environmental problems. Potential course work includes instruction in principles of agroecology, crop and soil sciences, entomology, horticulture, animal science, weed science and management, soil fertility and nutrient cycling, applied ecology, agricultural economics, and rangeland ecology and watershed management.

*\*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 12/12/12; Editorial Revision 02/07/13; SBCC Revised 07/19/13; Editorial Revision 08/21/13; SBCC Revised 01/17/14; Editorial Revision 01/20/15; Prefix Addition 08/01/15; SBCC Revised (15330) 05/19/17; Editorial Revision 03/15/18; SBCC Revised (15330) 03/16/18; Prefix Addition 07/24/18; CCRC Revised--Electronic Only (RISE Initiative) 10/24/19; CCRC Revised – Electronic Only (15330) 05/25/2022; Editorial Revision 02/17/2023*

## 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.

### Agribusiness Systems: Agricultural Science Technology

Recommended General Education Academic Core	AAS	Diploma	Certificate
<b>Minimum General Education Hours Required:</b>	<b>15 SHC</b>	<b>6 SHC</b>	<b>0 SHC</b>
<p><i>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.</i></p> <p><i>*Recommended certificate and diploma level curriculum courses. These courses may <u>not</u> be included in associate degree programs.</i></p> <p><b>Communication:</b></p> <p>*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 &amp; Reporting 3 SHC            ENG 115 Oral Communication 3 SHC            ENG 116 Technical Report Writing 3 SHC</p> <p><b>Humanities/Fine Arts:</b></p> <p>*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</p> <p><b>Social /Behavioral Sciences:</b></p> <p>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</p> <p><b>Natural Sciences/Mathematics:</b></p> <p>BIO 140 Environmental Biology 3 SHC            BIO 160 Introductory Life Science 3 SHC            MAT 110 Mathematical Measurement 3 SHC            MAT 121 Algebra/Trigonometry I 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</p>	<p><b>6 SHC</b></p> <p><b>3 SHC</b></p> <p><b>3 SHC</b></p> <p><b>3 SHC</b></p>	<p><b>3-6 SHC</b></p> <p><b>0-3 SHC</b></p> <p><b>0-3 SHC</b></p> <p><b>0-3 SHC</b></p>	<p><b>Optional</b></p> <p><b>Optional</b></p> <p><b>Optional</b></p> <p><b>Optional</b></p>

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**II. Major Hours.** AAS, diploma, and certificate programs must include courses which offer specific job knowledge and skills. Work-based learning may be included in associate in applied science degrees up to a maximum of 8 semester hours of credit; in diploma programs up to a maximum of 4 semester hours of credit; and in certificate programs up to a maximum of 2 semester hours of credit. Below is a description of each section under Major Hours.

- A. Technical Core.** The technical core is comprised of specific courses which are required for all Program Majors under this Curriculum Standard. A diploma program offered under an approved AAS program standard or a certificate which is the highest credential level awarded under an approved AAS program standard must include a minimum of 12 semester hours credit derived from the curriculum core courses or core subject area of the AAS program.
- B. Program Major(s).** The Program Major must include a minimum of 12 semester hours credit from required subjects and/or courses. The Program Major is in addition to the technical core.
- C. Other Major Hours.** Other major hours must be selected from prefixes listed on the curriculum standard. A maximum of 9 semester hours of credit may be selected from each prefix listed, with the exception of prefixes listed in the core.

<b>Agribusiness Systems: Agricultural Science Technology</b>	<b>AAS</b>	<b>Diploma</b>	<b>Certificate</b>																																																																																								
<b>Minimum Major Hours Required:</b>	<b>49 SHC</b>	<b>30 SHC</b>	<b>12 SHC</b>																																																																																								
<p><b>A. Technical Core:</b></p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 10%;">#AGR</td> <td style="width: 10%;">139</td> <td style="width: 60%;">Intro to Sustainable Agriculture</td> <td style="width: 20%;">3 SHC</td> </tr> <tr> <td>#AGR</td> <td>170</td> <td>Soil Science</td> <td>3 SHC</td> </tr> <tr> <td>AGR</td> <td>214</td> <td>Agricultural Marketing</td> <td>3 SHC</td> </tr> <tr> <td>ANS</td> <td>110</td> <td>Animal Science</td> <td>3 SHC</td> </tr> <tr> <td colspan="4">Work-Based Learning. Choose one:</td> </tr> <tr> <td>#WBL</td> <td>111</td> <td>Work-Based Learning I</td> <td>1 SHC</td> </tr> <tr> <td>WBL</td> <td>112</td> <td>Work-Based Learning I</td> <td>2 SHC</td> </tr> <tr> <td>WBL</td> <td>113</td> <td>Work-Based Learning I</td> <td>3 SHC</td> </tr> <tr> <td colspan="4">Pesticides/Alternatives. Choose one:</td> </tr> <tr> <td>#AGR</td> <td>121</td> <td>Biological Pest Mgmt</td> <td>3 SHC</td> </tr> <tr> <td>AGR</td> <td>140</td> <td>Agricultural Chemicals</td> <td>3 SHC</td> </tr> </table> <p><b>B. Program Major(s):</b></p> <p><b>Agribusiness Technology</b></p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 10%;">AGR</td> <td style="width: 10%;">212</td> <td style="width: 60%;">Farm Business Management</td> <td style="width: 20%;">3 SHC</td> </tr> <tr> <td>AGR</td> <td>213</td> <td>Ag Law &amp; Finance</td> <td>3 SHC</td> </tr> </table> <p><i>Select additional courses from the AGR prefix for a minimum of 12 SHC for the Agribusiness Technology AAS program. An Agribusiness Technology diploma requires a minimum of 12 SHC extracted from the required technical/program major core of the AAS degree.</i></p> <p><b>Agriculture Education</b></p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 10%;">AGR</td> <td style="width: 10%;">110</td> <td style="width: 60%;">Agricultural Economics</td> <td style="width: 20%;">3 SHC</td> </tr> <tr> <td>AGR</td> <td>160</td> <td>Plant Science</td> <td>3 SHC</td> </tr> <tr> <td>AGR</td> <td>212</td> <td>Farm Business Management</td> <td>3 SHC</td> </tr> <tr> <td>EDU</td> <td>163</td> <td>Classroom Mgt and Instruction</td> <td>3 SHC</td> </tr> <tr> <td>EDU</td> <td>216</td> <td>Foundations of Education</td> <td>3 SHC</td> </tr> </table> <p><b>Sustainable Agriculture</b></p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 10%;">#AGR</td> <td style="width: 10%;">111</td> <td style="width: 60%;">Basic Farm Maintenance</td> <td style="width: 20%;">2 SHC</td> </tr> <tr> <td>#AGR</td> <td>160</td> <td>Plant Science</td> <td>3 SHC</td> </tr> <tr> <td>#AGR</td> <td>265</td> <td>Organic Crop Prod: Spring</td> <td>3 SHC</td> </tr> <tr> <td>#AGR</td> <td>266</td> <td>Organic Crop Prod: Fall</td> <td>3 SHC</td> </tr> </table> <p><i>Select additional courses from the AGR prefix for a minimum of 12 SHC for the Sustainable Agriculture AAS program. Courses required for the Sustainable Agriculture Diploma are designated with #</i></p>	#AGR	139	Intro to Sustainable Agriculture	3 SHC	#AGR	170	Soil Science	3 SHC	AGR	214	Agricultural Marketing	3 SHC	ANS	110	Animal Science	3 SHC	Work-Based Learning. Choose one:				#WBL	111	Work-Based Learning I	1 SHC	WBL	112	Work-Based Learning I	2 SHC	WBL	113	Work-Based Learning I	3 SHC	Pesticides/Alternatives. Choose one:				#AGR	121	Biological Pest Mgmt	3 SHC	AGR	140	Agricultural Chemicals	3 SHC	AGR	212	Farm Business Management	3 SHC	AGR	213	Ag Law & Finance	3 SHC	AGR	110	Agricultural Economics	3 SHC	AGR	160	Plant Science	3 SHC	AGR	212	Farm Business Management	3 SHC	EDU	163	Classroom Mgt and Instruction	3 SHC	EDU	216	Foundations of Education	3 SHC	#AGR	111	Basic Farm Maintenance	2 SHC	#AGR	160	Plant Science	3 SHC	#AGR	265	Organic Crop Prod: Spring	3 SHC	#AGR	266	Organic Crop Prod: Fall	3 SHC	<b>28-34 SHC</b>	<b>12-18 SHC</b>	
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**C. Other Major Hours. To be selected from the following prefixes:**

ACC, ACM, AGR, ANS, BIO, BTC, BUS, CHM, CIS, CSC, DFT, ECO, EDU, ELC, EQU, ETR, FOR, GCM, GIS, HET, HOR, IVS, LAR, LSG, PED, PSY, TRF, VEN, WBL, WLD, and ZAS

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

*Three semester hour credits may be selected from PTE.*

*Up to three semester hour credits may be selected from the following prefixes: ARA, ASL, CHI, FRE, GER, IRI, 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>