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 **4th 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.*

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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
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 <u>not</u> be included in associate degree programs.*					
Communication:					
*COM	101	Workplace Communication	3 SHC		
COM	110	Introduction to Communication	3 SHC	**6 SHC**	**3-6 SHC**	**Optional**
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		
Humanities/Fine Arts:					
*HUM	101	Values in the Workplace	2 SHC		
HUM	110	Technology and Society	3 SHC		
HUM	115	Critical Thinking	3 SHC	**3 SHC**	**0-3 SHC**	**Optional**
HUM	230	Leadership Development	3 SHC		
PHI	230	Introduction to Logic	3 SHC		
PHI	240	Introduction to Ethics	3 SHC		
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	**3 SHC**	**0-3 SHC**	**Optional**
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		
Natural Sciences/Mathematics:					
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	**3 SHC**	**0-3 SHC**	**Optional**
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		

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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.

Agribusiness Systems: Agricultural Science Technology	**AAS**	**Diploma**	**Certificate**
Minimum Major Hours Required:	**49 SHC**	**30 SHC**	**12 SHC**
A. Technical Core:	**28-34 SHC**	**12-18 SHC**	
#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			
B. Program Major(s):			
Agribusiness Technology			
AGR 212 Farm Business Management 3 SHC			
AGR 213 Ag Law & Finance 3 SHC			
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.			
Agriculture Education			
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			
Sustainable Agriculture			
#AGR 111 Basic Farm Maintenance 2 SHC			
#AGR 160 Plant Science 3 SHC			
#AGR 265 Organic Crop Prod: Spring 3 SHC or			
#AGR 266 Organic Crop Prod: Fall 3 SHC			
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 #			

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C. Other Major Hours. T*o be selected from the following prefixes:*

ACC, ACM, AGR, ANS, BIO, BTC, BUS, CHM, CIS, CSC, DFT, ECO, EDU, 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.

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 or http://www.careertech.org.*

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

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

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