



**NORTH CAROLINA COMMUNITY COLLEGE SYSTEM**  
*Dr. R. Scott Ralls, President*

January 27, 2014

**MEMORANDUM**

TO: Presidents  
Chief Academic Officers

FROM: Wesley E. Beddard, Associate Vice President  
Student Learning and Success

SUBJECT: State Board Action on January 17, 2014  
New and Revised Curriculum Standards

On January 17, 2014 the State Board of Community Colleges approved the requested revisions to the following curriculum standard:

**Sustainable Agriculture (A15410)**

Please be aware that you must implement the revised standard no later than one year after the effective term. You must update your college's electronic programs of study and receive approval from the System Office prior to implementation of the revised programs.

In addition, the State Board of Community Colleges approved curriculum courses and a curriculum standard for the following new curriculum program:

**Medical Product Safety/Pharmacovigilance (A45810)**

*A Tier I funding classification for the new Medical Product Safety/Pharmacovigilance (MSP) curriculum prefix has been approved.*

If you have any questions concerning the State Board action items, please contact Ms. Jennifer Frazelle at 919.807.7120 or [frazellej@nccommunitycolleges.edu](mailto:frazellej@nccommunitycolleges.edu). An outline of the specific curriculum standard revisions, revised standard, new courses, new curriculum standard are attached for your convenience. You may view all curriculum standards and courses by visiting the Programs website at:

<http://www.nccommunitycolleges.edu/Programs/index.html>

WB/JF/gr

Attachments

c: Dr. Sharon E. Morrissey  
Ms. Jennifer Frazelle  
Ms. Elizabeth Self  
Program Coordinators

CC14-002  
Email

## 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 2014 (2014\*03)

### Program Majors Under Pathway

Program Major / Classification of Instruction Programs (CIP) Code	CIP Code	Credential Level(s) Offered	Program Major Code
Agribusiness Technology	01.0102	AAS/Diploma/Certificate	A15100
Sustainable Agriculture	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.

**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.

**I. General Education Academic Core**

[Curriculum Requirements for associate degree, diploma, and certificate programs in accordance with 1D SBCCC 400.97(3)]: 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				
<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 not be included in associate degree programs.</i></p>							
<b>Communication:</b>							
*COM 101 Workplace Communication	3 SHC	<b>6 SHC</b>	<b>3-6 SHC</b>	<b>Optional</b>			
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						
<b>Humanities/Fine Arts:</b>							
*HUM 101 Values in the Workplace	2 SHC				<b>3 SHC</b>	<b>0-3 SHC</b>	<b>Optional</b>
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						
<b>Social /Behavioral Sciences:</b>							
ECO 151 Survey of Economics	3 SHC	<b>3 SHC</b>	<b>0-3 SHC</b>	<b>Optional</b>			
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						
<b>Natural Sciences/Mathematics:</b>							
BIO 140 Environmental Biology	3 SHC				<b>3 SHC</b>	<b>0-3 SHC</b>	<b>Optional</b>
BIO 160 Introductory Life Science	3 SHC						
*MAT 101 Applied Mathematics I	3 SHC						
MAT 110 Mathematical Measurement	3 SHC						
MAT 115 Mathematical Models	3 SHC						
MAT 120 Geometry and Trigonometry	3 SHC						
MAT 121 Algebra/Trigonometry I	3 SHC						
MAT 140 Survey of Mathematics	3 SHC						
MAT 151 Statistics I	3 SHC						
MAT 155 Statistical Analysis	3 SHC						
PHY 110 Conceptual Physics	3 SHC						
PHY 121 Applied Physics I	4 SHC						

**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> <p>#AGR 139 Intro to Sustainable Agriculture      3 SHC</p> <p>#AGR 170 Soil Science      3 SHC</p> <p>AGR 214 Agricultural Marketing      3 SHC</p> <p>ANS 110 Animal Science      3 SHC</p> <p>Work-Based Learning. Choose one:</p> <p>#WBL 111 Work-Based Learning I      1 SHC</p> <p>WBL 112 Work-Based Learning I      2 SHC</p> <p>WBL 113 Work-Based Learning I      3 SHC</p> <p>Pesticides/Alternatives. Choose one:</p> <p>#AGR 121 Biological Pest Mgmt      3 SHC</p> <p>AGR 140 Agricultural Chemicals      3 SHC</p> <p><b>B. Program Major(s):</b></p> <p><b>Agribusiness Technology</b></p> <p>AGR 212 Farm Business Management      3 SHC</p> <p>AGR 213 Ag Law &amp; Finance      3 SHC</p> <p><i>Select additional courses from the AGR prefix for a minimum of 12 SHC for the Agribusiness Technology AAS program.</i></p> <p><i>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>Sustainable Agriculture</b></p> <p>#AGR 111 Basic Farm Maintenance      2 SHC</p> <p>#AGR 160 Plant Science      3 SHC</p> <p>#AGR 265 Organic Crop Prod: Spring      3 SHC    or</p> <p>#AGR 266 Organic Crop Prod: Fall      3 SHC</p> <p><i>Select additional courses from the AGR prefix for a minimum of 12 SHC for the Sustainable Agriculture AAS program.</i></p> <p><i>Courses required for the Sustainable Agriculture Diploma are designated with #</i></p>	<b>28-30 SHC</b>	<b>12-18 SHC</b>	

### C. Other Major Hours.

To be selected from the following prefixes:

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

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:

	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
<b>Total Semester Hours Credit (SHC)</b>	<b>64-76</b>	<b>36-48</b>	<b>12-18</b>

## **MEDICAL PRODUCT SAFETY and PHARMACOVIGILANCE**

### **MSP 110 Intro to Medical Product Safety**

Class: 3      Lab: 0      Clinical: 0      Credit: 3

Prerequisites:    None

Corequisites:    None

This course provides a comprehensive introduction to medical product safety and pharmacovigilance. Topics include an overview of the key components of product safety, product safety terminology, the processes for monitoring product safety, and the regulations that govern product safety and pharmacovigilance. Upon completion, students should be able to describe the processes for monitoring the safety of drugs, diagnostics, medical devices, and biologics throughout a product's life cycle.

### **MSP 115 Med Product Safety Regulations**

Class: 3      Lab: 0      Clinical: 0      Credit: 3

Prerequisites:    None

Corequisites:    None

This course provides an overview of national and global regulations governing the safety of medical products including drugs, diagnostics, medical devices, and biologics. Topics include a review of the regulatory agencies; regulations for pre-clinical, clinical, and post-market production safety; and regulations governing the process for monitoring product safety. Upon completion, students should be able to demonstrate a basic understanding of regulatory processes associated with clinical research and describe effective means of compliance.

### **MSP 120 Safety Reporting**

Class: 3      Lab: 0      Clinical: 0      Credit: 3

Prerequisites:    None

Corequisites:    None

This course provides an overview of the criteria utilized in determining how safety data are reported. Emphasis is placed on learning the purpose, content, and format of the various reports that include safety information. Upon completion, students should be able to describe the difference between expedited and periodic reporting, the criteria used in this determination, as well as the purpose and content of each type of safety report.

### **MSP 130 Safety Systems and Processes**

Class: 3      Lab: 3      Clinical: 0      Credit: 4

Prerequisites:    None

Corequisites:    None

This course provides an introduction to product safety systems, the collection and processing of safety data, and data coding. Emphasis is placed on the importance of quality data, the steps in case processing, and experience in entering case data. Upon completion, students should be able to discuss and perform the essential steps in processing a case from beginning to end for both pre-marketing and post-marketing cases.

### **MSP 150 Med Product Safety Fieldwork I**

Class: 0      Lab: 0      Clinical: 15      Credit: 5

Prerequisites:    MSP 110, MSP 115, MSP 120, and MSP 130

Corequisites:    None

This course provides supervised work experience and observations in a medical product safety research setting. Emphasis is placed on the enhancement of professional skills and the practical application of curriculum concepts in a research setting. Upon completion, students should be able to describe research theory effectively to medical product safety/pharmacovigilance research practices.

### **MSP 220 Signal Detection and Risk Assess**

Class: 3      Lab: 3      Clinical: 0      Credit: 4

Prerequisites:    None

Corequisites:    None

This course provides a basic understanding of the analysis of data to identify safety signals and to determine a product's risk profile to ensure a medical product has a favorable benefit-risk balance through its life cycle. Topics include the rationale and methods used in analyzing single cases versus aggregate data. Upon completion, students should be able to synthesize work in case processing, safety systems, safety reporting and regulations to assess a product's benefit-risk, as well as to identify the issues in ongoing benefit-risk assessments and demonstrate a basic understanding of how signaling and risk assessments are done.

## **MSP 250 Med Product Safety Research Fieldwork II**

Class: 0      Lab: 0      Clinical: 24      Credit: 8

Prerequisites:    MSP 110, MSP 115, MSP 120, MSP 130, and MSP 150

Corequisites:    None

This course provides advanced work experience in a medical product safety/pharmacovigilance research setting. Emphasis is placed on the refinement of professional skills and the practice of curriculum concepts in diverse medical product safety research areas. Upon completion, students should be able to apply research theory to medical product safety/ pharmacovigilance practices.



**Outline of Curriculum Standard Revisions  
State Board of Community Colleges – January 17, 2014**

**Sustainable Agriculture (A15410)**

- Added the following course as an option to *AGR 265 Organic Crop Prod: Spring*:

*AGR 266 Organic Crop Prod: Fall*

## **MEDICAL PRODUCT SAFETY and PHARMACOVIGILANCE**

### **MSP 110 Intro to Medical Product Safety**

Class: 3      Lab: 0      Clinical: 0      Credit: 3

Prerequisites:    None

Corequisites:    None

This course provides a comprehensive introduction to medical product safety and pharmacovigilance. Topics include an overview of the key components of product safety, product safety terminology, the processes for monitoring product safety, and the regulations that govern product safety and pharmacovigilance. Upon completion, students should be able to describe the processes for monitoring the safety of drugs, diagnostics, medical devices, and biologics throughout a product's life cycle.

### **MSP 115 Med Product Safety Regulations**

Class: 3      Lab: 0      Clinical: 0      Credit: 3

Prerequisites:    None

Corequisites:    None

This course provides an overview of national and global regulations governing the safety of medical products including drugs, diagnostics, medical devices, and biologics. Topics include a review of the regulatory agencies; regulations for pre-clinical, clinical, and post-market production safety; and regulations governing the process for monitoring product safety. Upon completion, students should be able to demonstrate a basic understanding of regulatory processes associated with clinical research and describe effective means of compliance.

### **MSP 120 Safety Reporting**

Class: 3      Lab: 0      Clinical: 0      Credit: 3

Prerequisites:    None

Corequisites:    None

This course provides an overview of the criteria utilized in determining how safety data are reported. Emphasis is placed on learning the purpose, content, and format of the various reports that include safety information. Upon completion, students should be able to describe the difference between expedited and periodic reporting, the criteria used in this determination, as well as the purpose and content of each type of safety report.

### **MSP 130 Safety Systems and Processes**

Class: 3      Lab: 3      Clinical: 0      Credit: 4

Prerequisites:    None

Corequisites:    None

This course provides an introduction to product safety systems, the collection and processing of safety data, and data coding. Emphasis is placed on the importance of quality data, the steps in case processing, and experience in entering case data. Upon completion, students should be able to discuss and perform the essential steps in processing a case from beginning to end for both pre-marketing and post-marketing cases.

### **MSP 150 Med Product Safety Fieldwork I**

Class: 0      Lab: 0      Clinical: 15      Credit: 5

Prerequisites:    MSP 110, MSP 115, MSP 120, and MSP 130

Corequisites:    None

This course provides supervised work experience and observations in a medical product safety research setting. Emphasis is placed on the enhancement of professional skills and the practical application of curriculum concepts in a research setting. Upon completion, students should be able to describe research theory effectively to medical product safety/pharmacovigilance research practices.

### **MSP 220 Signal Detection and Risk Assess**

Class: 3      Lab: 3      Clinical: 0      Credit: 4

Prerequisites:    None

Corequisites:    None

This course provides a basic understanding of the analysis of data to identify safety signals and to determine a product's risk profile to ensure a medical product has a favorable benefit-risk balance through its life cycle. Topics include the rationale and methods used in analyzing single cases versus aggregate data. Upon completion, students should be able to synthesize work in case processing, safety systems, safety reporting and regulations to assess a product's benefit-risk, as well as to identify the issues in ongoing benefit-risk assessments and demonstrate a basic understanding of how signaling and risk assessments are done.

## **MSP 250 Med Product Safety Research Fieldwork II**

Class: 0      Lab: 0      Clinical: 24      Credit: 8

Prerequisites:    MSP 110, MSP 115, MSP 120, MSP 130, and MSP 150

Corequisites:    None

This course provides advanced work experience in a medical product safety/pharmacovigilance research setting. Emphasis is placed on the refinement of professional skills and the practice of curriculum concepts in diverse medical product safety research areas. Upon completion, students should be able to apply research theory to medical product safety/ pharmacovigilance practices.