Curriculum Standard for Animal Systems: Applied Animal 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: Animal 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
Applied Animal Science Technology	CIP Code 01.0302	AAS/Diploma/Certificate	A15280
Swine Management Technology	CIP Code: 01.0906	AAS/Diploma/Certificate	A15150

Pathway Description:

This curriculum is designed to prepare students for careers in the production, processing, and distribution of livestock, swine, and poultry and their products according to scientific principles essential to efficient and profitable operation.

Students should learn skills necessary for the operation of efficient and profitable livestock, swine, and poultry enterprises. Coursework includes production practices, animal health, nutrition, reproduction, and management.

Graduates should qualify for entry-level jobs as herd or flock managers, field service persons, feed salespersons, equipment salespersons, feed mill workers, buyers of poultry and livestock, owners/operators, farm managers, department supervisors, field service representatives, and waste management technicians.

*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:***

Applied Animal Science Technology: A program that prepares individuals to select, breed, care for, process, and market livestock and small farm animals. Potential course work includes instruction in basic animal science**,** animal nutrition, and animal health as applied to various species and breeds; design and operation of housing, feeding, and processing facilities; and related issues of safety, applicable regulations, logistics, and supply.

Swine Management Technology: A program that focuses on the application of biological and chemical principles to the production and management of swine animals and the production and handling of meat and other products. Potential course work includes instruction in animal sciences, range science, nutrition sciences, food science and technology, biochemistry, and related aspects of human and animal health and safety.

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.*

Animal Systems: Applied Animal 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.

					AAS	Diploma	Certificate
Communication:					**6 SHC**	**3-6 SHC**	**Optional**
*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				
Humanities/Fine Arts:					**3 SHC**	**0-3 SHC**	**Optional**
*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				
Social /Behavioral Sciences:					**3 SHC**	**0-3 SHC**	**Optional**
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				
Natural Sciences/Mathematics:					**3 SHC**	**0-3 SHC**	**Optional**
BIO	140	Environmental Biology	3 SHC				
BIO	160	Introductory Life Science	3 SHC				
MAT	110	Math Measurement & Literacy	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				

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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.

Animal Systems: Applied Animal Science	AAS	Diploma	Certificate
Minimum Major Hours Required:	**49 SHC**	**30 SHC**	**12 SHC**

A. Technical Core:
*ANS 110 Animal Science 3 SHC
*ANS 115 Animal Feeds and Nutrition 3 SHC
*ANS 120 Beef Production 3 SHC
*ANS 130 Poultry Production 3 SHC
 	
B. Program Major(s):
Applied Animal Science
*ANS 140 Swine Production 3 SHC
*ANS 150 Animal Health Management 3 SHC
Select additional courses from the ANS prefix for a minimum of 12 SHC
for the Applied Animal Science AAS program.
*Courses required for the Applied Animal Science diploma are designated with **
 	
Swine Management
Choose a minimum of 12 SHC from the following courses for the Swine
Management AAS program:
+ ANS 142 Swine Records and Analysis 3 SHC
+ ANS 143 Swine Health Management 3 SHC
+ ANS 144 Swine Housing & Waste Mgt 4 SHC
+ ANS 240 Swine Prod Issues 2 SHC
  BUS 137 Principles of Management 3 SHC *or*
  BUS 153 Human Resource Management 3 SHC
  WBL 113 Work-Based Learning I 3 SHC
 	
Courses required for the Swine Management diploma are designated with +
	24 SHC	**6-18 SHC**	

C. Other Major Hours.
T**o** *be selected from the following prefixes:*
  ACM, AGR, ANS, BUS, CIS, CSC, ETR, GIS, WBL, and WLD

  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**