NORTH CAROLINA COMMUNITY COLLEGE SYSTEM
Mr. Peter Hans
President

July 23, 2018

MEMORANDUM

TO: Presidents
Chief Academic Officers

FROM: Wesley E. Beddard, Associate Vice President
Programs

SUBJECT: State Board Action on July 20, 2018
Revised Curriculum Standards

On July 20, 2018, the State Board of Community Colleges approved revisions to the following curriculum standards:

Air Conditioning, Heating and Refrigeration Technology (A35100)
Aquarium Science Technology (A20260)
Equine Business Technology (A15170)
Physical Therapist Assistant (1+1) (A45640)
Zoological Science Technology (A20250)

To implement the revised programs, you must update your college's electronic programs of study and receive approval from the System Office prior to implementation. An outline of the specific curriculum standard revisions are attached for your convenience. You may view all curriculum standards and courses by visiting the Academic Programs website at:

http://www.nccommunitycolleges.edu/academic-programs

If you have any questions concerning the July State Board action items listed above, please contact Ms. Jennifer Frazelle at 919.807.7120 or frazellej@nccommunitycolleges.edu.

WB/JF/gr
Attachments
c: Dr. Lisa M. Chapman
Ms. Elizabeth Self
Ms. Jennifer Frazelle
Program Coordinators

Outline of Curriculum Standard Revision
State Board of Community Colleges
July 20, 2018

Air Conditioning, Heating and Refrigeration Technology (A35100):

Revision:

- Added a Building Automation Systems track as an option under *Required Subject Area*.

Equine Business Technology (A15170)

Revision:

- The requirement of the following core courses:

  BUS 230 Small Business Management
  MKT 120 Principles of Marketing

- The requirement of one of the following core courses:

  BUS 135 Principles of Supervision
  BUS 137 Principles of Management

Physical Therapist Assistant (1+1) (A45640)

Revision:

- Revised the curriculum core by making the following change:

  Removed the Anatomy and Physiology pick list which requires the selection of the following:

  BIO 165 and BIO 166 (Anatomy and Physiology I and II) or
  BIO 168 and BIO 169 (Anatomy and Physiology I and II)

Note: As a result of the proposed revision, the number of required hours will change from 52-54 SHC to 44-46 SHC

Science and Math: Zoo and Aquarium Science Technology:
Zoological Science Technology (A20250)
Aquarium Science Technology (A20260)

Revision:

- Revised the curriculum description.
- Removed the following course from the technical core:

  ZAS 120 Zoonotic Diseases

- *Added the following course to the Zoological Science Technology program major:*

  ZAS 271 Zoo Pathophysiology

The addition and deletion of courses to the core will result in a change of core hours from 31 SHC to 28 SHC for the program.

Note: The proposed curriculum standard revision includes revised and reactivated courses, which were presented to the Curriculum Course Review Committee (CCRC) on May 24, 2018

CC18-029
Email

Curriculum Standard for Air Conditioning, Heating, and Refrigeration Technology

Career Cluster: Architecture and Construction**

Cluster Description: Programs that prepare individuals to apply technical knowledge and skills related to the fields of architecture, construction, and associated professions. Includes instruction that can be applied to a variety of careers in the design-construction industry, including employment with architectural and engineering firms, residential and commercial builders/contractors, and other construction related occupations.

Pathway: Construction	**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
Air Conditioning, Heating, and Refrigeration Technology	CIP Code 47.0201	AAS/Diploma/Certificate	A35100

Pathway Description:

The Air Conditioning, Heating, and Refrigeration Technology curriculum provides the basic knowledge to develop skills necessary to work with residential and light commercial systems.
Topics include mechanical refrigeration, heating and cooling theory, electricity, controls, and safety. The diploma program covers air conditioning, furnaces, heat pumps, tools and instruments. In addition, the AAS degree covers residential building codes, residential system sizing, and advanced comfort systems.
Diploma graduates should be able to assist in the start up, preventive maintenance, service, repair, and/or installation of residential and light commercial systems. AAS degree graduates should be able to demonstrate an understanding of system selection and balance and advanced systems.

Program 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:***

N/A

**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 11/15/12; Editorial Revision 12/14/12; Editorial Revision 08/21/13; Editorial Revision 02/26/15; Editorial Revision 07/20/15; Prefix Addition 08/01/15; SBCC Revised 03/17/17; (GenEd MAT); Prefix Addition 04/11/18; SBCC Revised 07/20/18.

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.*

Air Conditioning, Heating, and Refrigeration 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.							
Communication:					**6 SHC**	**3-6 SHC**	**Optional**
*	COM	101	Workplace Communication	3 SHC			
	COM	110	Introduction to Communications	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	114	Prof Research & Reporting	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	Technology and Society	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			
*	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**
	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			

**Recommended certificate and diploma level curriculum courses. These courses may <u>not</u> be included in associate degree programs.*

Approved by the State Board of Community Colleges on August 16, 2012; Editorial Revision 11/15/12; Editorial Revision 12/14/12; Editorial Revision 08/21/13; Editorial Revision 02/26/15; Editorial Revision 07/20/15; Prefix Addition 08/01/15; SBCC Revised 03/17/17 (GenEd MAT); Prefix Addition 04/11/18; SBCC Revised 07/20/18.

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.

Air Conditioning, Heating, and Refrigeration Technology

	AAS	Diploma	Certificate
Minimum Major Hours Required:	**49 SHC**	**30 SHC**	**12 SHC**

A. Technical Core:

*Courses required for the diploma are designated with **

32-34 SHC | **20-22 SHC**

Required Courses:

*	AHR	110	Intro to Refrigeration	5 SHC
*	AHR	112	Heating Technology	4 SHC
*	AHR	113	Comfort Cooling	4 SHC
*	AHR	114	Heat Pump Technology	4 SHC

* **Electricity. Select one:**

AHR	111	HVACR Electricity	3 SHC
ELC	111	Intro to Electricity	3 SHC
ELC	112	DC/AC Electricity	5 SHC

Required Subject Areas. Select one.

For AAS degree, select one subject area plus additional courses from the prefixes listing within the same subject area for a minimum of (12) semester hours of credit:

Air Conditioning, Heating, & Refrigeration

AHR	211	Residential System Design	3 SHC
AHR	212	Advanced Comfort Systems	4 SHC
AHR	213	HVACR Building Code	2 SHC

Building Automation Systems

BAT	111	Building Automation Systems	2 SHC
BAT	221	BAS Networking	3 SHC
BAT	251	Building Automation Controls	3 SHC

Solar Thermal Systems

AHR	240	Hydronic Heating	2 SHC
ALT	250	Thermal Systems	3 SHC
PLU	111	Intro to Basic Plumbing	2 SHC

B. Program Major(s): Not Applicable

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

AHR and no more than 21 SHC selected from ALT, ARC, BAT, BPR, BUS, CIS, CMT, CSC, CST, EGR, ELC, ELN, EUS, HYD, ISC, MAT, PCI, PHY, PLU, REF, SST, WBL, WLD and WOL

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.

Approved by the State Board of Community Colleges on August 16, 2012; Editorial Revision 11/15/12; Editorial Revision 12/14/12; Editorial Revision 08/21/13; Editorial Revision 02/26/15; Editorial Revision 07/20/15; Prefix Addition 08/01/15; SBCC Revised 03/17/17 (GenEd MAT); Prefix Addition 04/11/18; SBCC Revised 07/20/18.

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**

Approved by the State Board of Community Colleges on August 16, 2012; Editorial Revision 11/15/12; Editorial Revision 12/14/12; Editorial Revision 08/21/13; Editorial Revision 02/26/15; Editorial Revision 07/20/15; Prefix Addition 08/01/15; SBCC Revised 03/17/17 (GenEd MAT); Prefix Addition 04/11/18; SBCC Revised 07/20/18.

Curriculum Standard for Science and Math: Zoo and Aquarium Science Technology

Career Cluster: Science, Technology, Engineering, and Math **

Cluster Description: Planning, managing, and providing scientific research and professional and technical services (e.g., physical science, social science, engineering) including laboratory and testing services, and research and development services.

Pathway: Science and Mathematics	**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
Zoological Science Technology	CIP Code: 26.0709	AAS/Diploma/Certificate	A20250
Aquarium Science Technology	CIP Code: 26.0799	AAS/Diploma/Certificate	A20260

Pathway Description:

The Science and Math: Zoo and Aquarium Science Technology curriculum prepares students for employment in zoological parks, aquaria, or other settings requiring animal care, breeding, education, conservation, or health of exotic animals.

Course work emphasizes biology, ethology, husbandry and conservation of animals that are on exhibit for education and/or conservation purposes. Students have practical experiences with basic husbandry skills and animal management techniques. Course work also includes technical skills to educate the public about animal well-being and conservation.

Graduates of the curriculum should qualify for entry-level employment opportunities in a variety of settings, including zoos, aquaria, nature science centers, and animal research facilities.

*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:***

Zoo Science Technology: A program that focuses on the application of technical skills in the fields of animal management, conservation and education in a zoo setting. Potential course work includes instruction in animal behavior, principles of zoo sciences, and animal enrichment. Specialized coursework in mammalogy, ornithology, herpetology and zoo pathophysiology are also included.

Aquarium Science Technology: A program that focuses on the application of technical skills in the fields of animal management, conservation and education in an aquarium setting. Potential course work includes instruction in animal behavior, aquarium science, life support systems and water quality testing and management. Specialized coursework in marine biology, aquatic pathophysiology, ichthyology, and aquatic invertebrates are also included.

**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 09/13/12; Editorial Revision 12/14/12; Editorial Revision 08/21/13; CRC Revised 11/07/13; CRC Revised 10/14/14; Prefix Addition 08/01/15; SBCC Revised 03/17/17; SBCC Revised 07/20/18.

I. General Education Academic Core

[*Curriculum Requirements for associate degree, diploma, and certificate programs in accordance with 1 D 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.*

Science and Math: Zoo and Aquarium 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.						
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		
	PHY	110	Conceptual Physics	3 SHC		
	PHY	121	Applied Physics I	4 SHC		

Approved by the State Board of Community Colleges on August 16, 2012; Editorial Revision 09/13/12; Editorial Revision 12/14/12; Editorial Revision 08/21/13; CRC Revised 11/07/13; CRC Revised 10/14/14; Prefix Addition 08/01/15; SBCC Revised 03/17/17; SBCC Revised 07/20/18.

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.

Science and Math: Zoo and Aquarium Science Technology				**AAS**	**Diploma**	**Certificate**
Minimum Major Hours Required:				**49 SHC**	**30 SHC**	**12 SHC**
A. Technical Core:				**28 SHC**		
BIO	111	General Biology I	4 SHC			
BIO	112	General Biology II	4 SHC			
ZAS	112	Intro to Zoo/Aquarium Science	1 SHC			
ZAS	113	Animal Exhibits	1 SHC			
ZAS	130	Introduction to Ethology	3 SHC			
ZAS	234	Zoo Herpetology	3 SHC			
B. Program Major(s).						
Zoological Science Technology						
Select a minimum of 12 SHC from the following courses for the Zoological Science Technology AAS program:						
ZAS	110	Intro to Zookeeping	5 SHC			
ZAS	131	Applied Animal Psych	3 SHC			
ZAS	232	Zoo Invertebrates	3 SHC			
ZAS	235	Zoo Ornithology	3 SHC			
ZAS	236	Zoo Mammalogy	3 SHC			
ZAS	271	Zoo Pathophysiology	3 SHC			
Aquarium Science Technology						
Select a minimum of 12 SHC from the following courses for the Aquarium Science Technology AAS program:						
BIO	243	Marine Biology	3 SHC			
MSC	174	Marine Invertebrate Zoo	4 SHC			
ZAS	210	Intro to Aquarium Science	4 SHC			
ZAS	233	Zoo Ichthyology	3 SHC			
ZAS	243	Prin of Aquarium Science	3 SHC			
ZAS	272	Aquatic Pathophysiology	3 SHC			

C. Other Major Hours.

T*o be selected from the following prefixes:*

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

Approved by the State Board of Community Colleges on August 16, 2012; Editorial Revision 09/13/12; Editorial Revision 12/14/12; Editorial Revision 08/21/13; CRC Revised 11/07/13; CRC Revised 10/14/14; Prefix Addition 08/01/15; SBCC Revised 03/17/17; SBCC Revised 07/20/18.

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**

Approved by the State Board of Community Colleges on August 16, 2012; Editorial Revision 09/13/12; Editorial Revision 12/14/12; Editorial Revision 08/21/13; CRC Revised 11/07/13; CRC Revised 10/14/14; Prefix Addition 08/01/15; SBCC Revised 03/17/17; SBCC Revised 07/20/18.

Curriculum Standard for Animal Systems: Equine 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 2018 (2018*03)

Program Majors Under Pathway

Program Major / Classification of Instruction Programs (CIP) Code		Credential Level(s) Offered	Program Major Code
Equine Business Technology	CIP Code 01.0307	AAS/Diploma/Certificate	A15170
Equine Training Technology	CIP Code 01.0507	AAS/Diploma/Certificate	A15190

Pathway Description:

This curriculum is designed to prepare students for positions within the horse industry. The curriculum is management oriented, preparing graduates for the widest range of available equine jobs; areas of specialization may be pursued during the internship.

Course work includes farm management, breeding, nutrition, selection/judging, and health. Training, teaching, and riding are also included. Students are assigned a horse and practice day-to-day management at an equine facility.

Graduates should qualify for jobs with many different types of equine operations: grooms to assistant managers; private to recreational and racing barns; breed to discipline-oriented farms.

*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:***

Equine Business Technology: A program that prepares individuals to manage the selection, breeding, care, and maintenance of work, athletic, and show horses; and to manage horse farms, stables, tracks and related equipment and operations. Potential course work includes instruction in applicable principles of animal science, care, and health; stable and track management; design and operation of facilities and equipment; and related issues such as regulations, business management; and logistics.

Equine Training Technology: A program that focuses on the horse, horsemanship, and related subjects and prepares individuals to care for horses and horse equipment; ride and drive horses for leisure, sport, show, and professional purposes; and manage the training of horses and riders. Potential course work includes instruction in horse breeding, nutrition, health, and safety; history of the horse and horsemanship; horse development and training; riding and equestrian technique; stable, paddock, and track management; and equipment maintenance and repair.

**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 09/13/12; Editorial Revision 12/14/12; Editorial Revision 08/21/13; CRC Revised—Electronic Only 05/29/14; Prefix Addition 08/01/15; Editorial Revision 03/09/16; SBCC Revised 03/17/17; SBCC Revised 07/20/18.

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: Equine 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	**6 SHC**	**3-6 SHC**	**Optional**
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:						
*HUM	101	Values in the Workplace	2 SHC	**3 SHC**	**0-3 SHC**	**Optional**
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:						
ECO	151	Survey of Economics	3 SHC	**3 SHC**	**0-3 SHC**	**Optional**
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:						
BIO	140	Environmental Biology	3 SHC	**3 SHC**	**0-3 SHC**	**Optional**
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			

Approved by the State Board of Community Colleges on August 16, 2012; Editorial Revision 09/13/12; Editorial Revision 12/14/12; Editorial Revision 08/21/13; CRC Revised—Electronic Only 05/29/14; Prefix Addition 08/01/15; Editorial Revision 03/09/16; SBCC Revised 03/17/17; SBCC Revised 07/20/18.

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 or other Major Areas.

Animal Systems: Equine Science Technology			**AAS**	**Diploma**	**Certificate**
Minimum Major Hours Required:			**49 SHC**	**30 SHC**	**12 SHC**
A. Technical Core:			**44 SHC**	**12 SHC**	
*Courses required for the Equine Technology Diploma are designated with *					
*EQU	111	Horse Science I	5 SHC		
*EQU	112	Horse Science II	5 SHC		
EQU	120	Horsemanship I	3 SHC		
*EQU	150	Equine Nutrition	2 SHC		
EQU	211	Horse Farm Management I	6 SHC		
EQU	212	Horse Farm Management II	6 SHC		
EQU	241	Equine Reproduction	4 SHC		
EQU	270	Equine Business Law	1 SHC		
B. Program Major(s):					
Equine Business Technology					
BUS	230	Small Business Management	3 SHC		
MKT	120	Principles of Marketing	3 SHC		
Choose one:					
BUS	135	Principles of Supervision	3 SHC		
BUS	137	Principles of Management	3 SHC		
Select additional courses from the BUS, EQU, or MKT prefix for a minimum of 12 SHC for the Equine Business Technology AAS program.					
Equine Training Technology					
EQU	121	Horsemanship II	2 SHC		
EQU	220	Horse Training I	2 SHC		
EQU	221	Horse Training II	2 SHC		
EQU	260	Basic Colt Training	2 SHC		
Select additional courses from the EQU prefix for a minimum of 12 SHC for the Equine Training Technology AAS program.					

Approved by the State Board of Community Colleges on August 16, 2012; Editorial Revision 09/13/12; Editorial Revision 12/14/12; Editorial Revision 08/21/13; CRC Revised—Electronic Only 05/29/14; Prefix Addition 08/01/15; Editorial Revision 03/09/16; SBCC Revised 03/17/17; SBCC Revised 07/20/18.

C. Other Major Hours. ***To be selected from the following prefixes:*** AGR, ANS, BUS, CIS, CSC, EQU, ETR, MKT 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 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**

Approved by the State Board of Community Colleges on August 16, 2012; Editorial Revision 09/13/12; Editorial Revision 12/14/12; Editorial Revision 08/21/13; CRC Revised—Electronic Only 05/29/14; Prefix Addition 08/01/15; Editorial Revision 03/09/16; SBCC Revised 03/17/17; SBCC Revised 07/20/18.

CURRICULUM STANDARD

Fall 2018
*{2018*03}*

Curriculum Program Title	**Physical Therapist Assistant (1+1)**	Program Code	**A45640**
Concentration	**(not applicable)**	CIP Code	***51.080***

Curriculum Description

The Physical Therapist Assistant curriculum prepares graduates to work in direct patient care settings under the supervision of physical therapists. Assistants work to improve or restore function by alleviation or prevention of physical impairment and perform other essential activities in a physical therapy department.

Course work includes normal human anatomy and physiology, the consequences of disease or injury, and physical therapy treatment of a variety of patient conditions affecting humans throughout the life span.

Graduates may be eligible to take the licensure examination administered by the NC Board of Physical Therapy Examiners. Employment is available in general hospitals, rehabilitation centers, extended care facilities, specialty hospitals, home health agencies, private clinics, and public school systems.

*Curriculum Requirements**

[for associate degree, diploma, and certificate programs in accordance with 1D SBCCC 400.10]

I. General Education. 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.

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. *(See second page for additional information.)*

III. Other Required Hours. A college may include courses to meet graduation or local employer requirements in a certificate, diploma, or associate in applied science 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.

	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**

**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.*

Major Hours

A. Core. The subject/course core is comprised of subject areas and/or specific courses which are required for each curriculum program. 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 subject/course core of the AAS program.

B. Concentration *(if applicable).* A concentration of study must include a minimum of 12 semester hours credit from required subjects and/or courses. The majority of the course credit hours are unique to the concentration. The required subjects and/or courses that make up the concentration of study are in addition to the required subject/course 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 any prefix listed, with the exception of prefixes listed in the core or concentration. 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.

Physical Therapist Assistant (1+1) A45640

	AAS	Diploma	Certificate
Minimum Major Hours Required	**49 SHC**	**30 SHC**	**12 SHC**
A. CORE	**44-46 SHC**	**NR**	
Required Courses:			
PTA 110 Introduction to Physical Therapy 3 SHC			
PTA 125 Gross and Functional Anatomy 5 SHC			
PTA 135 Pathology 4 SHC			
PTA 145 Therapeutic Procedures 4 SHC			
PTA 212 Health Care/Resources 2 SHC			
PTA 215 Therapeutic Exercise 3 SHC			
PTA 222 Professional Interactions 2 SHC			
PTA 225 Introduction to Rehabilitation 4 SHC			
PTA 235 Neurological Rehabilitation 5 SHC			
PTA 245 PTA Clinical III 4 SHC			
PTA 255 PTA Clinical IV 4 SHC			
Required Subject Areas:			
Clinical Education I. Select one:			
PTA 155 PTA Clinical I 2 SHC			
PTA 165 PTA Clinical I 3 SHC			
Clinical Education II. Select one:			
PTA 175 PTA Clinical II 2 SHC			
PTA 185 PTA Clinical II 3 SHC			
B. CONCENTRATION *(Not applicable)*			
C. OTHER MAJOR HOURS *To be selected from the following prefixes:* BIO, CIS, CSC, HSC, MED, PED, PHS, PHY, PTA, 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.*			

Approved by the State Board of Community Colleges on November 13, 1996; Revised 04/02/01; SBCC Revised 05/17/02; Revised 04/10/06; SBCC Revised 09/21/07; SBCC Template Revised 10/17/08; Prefix Addition 08/01/15; SBCC Revised 07/20/18.