

STATE BOARD OF COMMUNITY COLLEGES

**CURRICULUM PROGRAM APPLICATION
FOR CAPTIVE/CO-OPTED GROUPS
(For Action)**

The State Board will be asked to approve the curriculum program listed below on the condition that equipment funds are available to the college and operating funds generated by the budget formula will permit the offering of this program without any special allocation of funds.

Stanly Community College

Albemarle Correctional Institution (4580)

Air Conditioning, Heating, and Refrigeration Technology (A35100)

Contact Person:

Ms. Tracy McPherson

Director, Public Safety Training Programs

**PROGRAM APPLICATION
SUMMARY EVALUATION REPORT
Stanly Community College
Air Conditioning, Heating, and Refrigeration (A35100)
Captive/Co-opted: Albemarle Correctional Institution (4580)**

Program Planning: Stanly Community College (SCC) is seeking approval for the Air Conditioning, Heating, and Refrigeration Associate of Applied Science degree program (A35100) to begin Fall 2016 at Albemarle Correctional Institution, a state correctional facility in the college's service area. The proposed program was approved by the college Board of Trustees on April 14, 2016. The President and the Board of Trustees have certified the following:

- They are supportive of providing this proposed program to inmate students at Albemarle Correctional Institution as part of the Prison Education Program (PEP) partnership with the state's Division of Adult Correction and Juvenile Justice (DACJJ) of the NC Department of Public Safety.
- They have assessed the need for the proposed program and the resources required to maintain a viable program and certify that the college can operate the proposed program efficiently and effectively within the resources available to the college.
- They understand that the proposed program will require a program accountability report that will include items such as student success measures, enrollment trends, and completion rates three years after implementation of the program.
- College and prison officials have jointly planned the program to align with the NCCCS curriculum standard for the Heating, Air Conditioning, and Refrigeration program, and prison officials have committed to providing appropriate classroom space, tools, textbooks, and instructional equipment and a sufficient number of students who meet the admissions requirements.
- DACJJ has identified this as a high-priority educational offering and has committed to paying the inmates' tuition for classes in this program.

Program Rationale: Stanly Community College indicates the following:

- The proposed program is an expansion of already successful Air Conditioning, Heating, and Refrigeration certificate and diploma programs at this prison. The college is seeking associate-degree approval to provide the next level of stackable credential for students in this program.
- According to data from Economic Modeling Specialists, Intl (EMSI), there were 13,264 jobs in North Carolina in 2015 for Heating, Air Conditioning, and Refrigeration Mechanics and Installers. Job growth from 2009-2020 is anticipated to be 10.9 %, with median hourly earnings projected at \$18.22. Nationwide, the projected growth rate is 14.8% for the same time period.

Impact of the Proposed Program on Other Programs: The program is restricted to inmates housed in a prison facility within Stanly Community College's service area, so it will not impact other colleges' programs.

Implementation of Collaborative Plan: Not Applicable

Curriculum Design: The proposed program of study is in compliance with the State Board approved curriculum standard.

Contact: Ms. Tracy McPherson, Director, Public Safety Training Programs

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 2013 (2013*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.

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.

<i>Air Conditioning, Heating, and Refrigeration Technology</i>	AAS	Diploma	Certificate
Minimum Major Hours Required:	49 SHC	30 SHC	12 SHC
<p>A. Technical Core: <i>Courses required for the diploma are designated with *</i></p> <p>Required Courses:</p> <ul style="list-style-type: none"> * 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: <ul style="list-style-type: none"> AHR 111 HVACR Electricity 3 SHC ELC 111 Intro to Electricity 3 SHC ELC 112 DC/AC Electricity 5 SHC <p>Required Subject Areas. Select one. <i>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:</i></p> <p>Air Conditioning, Heating, & Refrigeration</p> <ul style="list-style-type: none"> AHR 211 Residential System Design 3 SHC AHR 212 Advanced Comfort Systems 4 SHC AHR 213 HVACR Building Code 2 SHC <p>Solar Thermal Systems</p> <ul style="list-style-type: none"> AHR 240 Hydronic Heating 2 SHC ALT 250 Thermal Systems 3 SHC PLU 111 Intro to Basic Plumbing 2 SHC 	32-34 SHC	20-22 SHC	
B. Program Major(s): Not Applicable			
<p>C. Other Major Hours: To be selected from the following prefixes: AHR and no more than 21 SHC selected from ALT, BAT, BPR, BUS, CIS, CMT, CSC, CST, EGR, ELC, ELN, EUS, HYD, ISC, MAT, PCI, PHY, PLU, REF, SST, WBL, WLD and WOL</p> <p><i>Up to two semester hour credits may be selected from ACA.</i></p> <p><i>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.</i></p>			

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