



**NORTH CAROLINA COMMUNITY COLLEGE SYSTEM**

*Mr. George Fouts*  
*Interim President*

April 18, 2016

**MEMORANDUM**

TO: Presidents  
Chief Academic Officers

FROM: Wesley E. Beddard, Associate Vice President  
Programs

SUBJECT: State Board Action on April 15, 2016  
New Career and College Promise College Transfer Pathway (Engineering)  
Revised Curriculum Standards

On April 15, 2016, the State Board of Community Colleges approved the following new, attached Career and College Promise Transfer Pathway:

Career and College Promise College Transfer Pathway  
Leading to the Associate in Engineering (P1052C)

Colleges must have approval for the Associate in Engineering Pathway in order to file an electronic program of study for the new pathway which is effective Fall 2016.

In addition, the State Board of Community Colleges approved the requested revision to the following curriculum standards:

Aquaculture Technology (A15120)  
Aviation Electronics (Avionics) Technology (A60150)  
Early Childhood Education (A55220)

Please be aware that you must implement the revised curriculum standards 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.

An outline of the specific curriculum standards revision is 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 April State Board action items listed above, please contact Jennifer Frazelle at 919.807.7120 or [frazellej@nccommunitycolleges.edu](mailto:frazellej@nccommunitycolleges.edu).

WB/JF/gr

Attachments

c: Dr. Lisa M. Chapman  
Ms. Elizabeth Self  
Ms. Jennifer Frazelle  
Program Coordinators

**CC16-018**  
**Email**

Outline of Curriculum Standard Revision  
State Board of Community Colleges  
April 15, 2016

**Aquaculture Technology (A15120)**

**Revisions:**

Added the following set of courses as an option to *CHM 151 General Chemistry I* in the Technical Core:

- *CHM 131 Introduction to Chemistry* and  
*CHM 131A Introduction to Chemistry Lab*

**Early Childhood Education (A55220)**

**Revisions:**

Revised current standard to cluster standard format.  
Removed the following course from the Technical Core Area:

- *EDU 271 Educational Technology*

**Aviation Electronics (Avionics) Technology (A60150)**

**Revisions:**

Removed the following course from the core:

- *AVI 110 Aviation Maintenance – General*

Added the following course to the core:

- *AET 110 Avionics – General*

Revised the curriculum description to reflect the change in emphasis from aviation maintenance to avionics.

*\*AET 110 Avionics – General is a new course approved by the Curriculum Review Committee at their February 25, 2016 meeting.*

**Career and College Promise College Transfer Pathway  
Leading to the Associate in Engineering (P1052C)**

The College Transfer Pathway (CCP) leading to the Associate in Engineering is designed for high school juniors and seniors who wish to begin study toward the Associate in Engineering degree and a baccalaureate degree in a STEM or technical major.

**GENERAL EDUCATION (28 SHC)**

The general education requirement includes study in courses selected from the Universal General Education Transfer Component (UGETC).

**English Composition (6 SHC)**

*The following two English composition courses are required.*

|         |                                     |         |
|---------|-------------------------------------|---------|
| ENG 111 | Writing and Inquiry                 | (3 SHC) |
| ENG 112 | Writing/Research in the Disciplines | (3 SHC) |

**Humanities, Fine Arts and Communications**

*Select one course from the following (3 SHC):*

|         |                        |         |
|---------|------------------------|---------|
| ART 111 | Art Appreciation       | (3 SHC) |
| ART 114 | Art History Survey I   | (3 SHC) |
| ART 115 | Art History Survey II  | (3 SHC) |
| COM 231 | Public Speaking        | (3 SHC) |
| ENG 231 | American Literature I  | (3 SHC) |
| ENG 232 | American Literature II | (3 SHC) |
| ENG 241 | British Literature I   | (3 SHC) |
| ENG 242 | British Literature II  | (3 SHC) |
| MUS 110 | Music Appreciation     | (3 SHC) |
| MUS 112 | Introduction to Jazz   | (3 SHC) |
| PHI 215 | Philosophical Issues   | (3 SHC) |
| PHI 240 | Introduction to Ethics | (3 SHC) |

**Social/Behavioral Sciences**

*The following course is required (3 SHC):*

|         |                              |         |
|---------|------------------------------|---------|
| ECO 251 | Principles of Microeconomics | (3 SHC) |
|---------|------------------------------|---------|

**Mathematics (8 SHC)**

The following courses are required (8 SHC):

Calculus I is the lowest level math course that will be accepted by the engineering programs for transfer as a math credit. Students who are not calculus-ready will need to take additional math courses.\*

|         |             |         |
|---------|-------------|---------|
| MAT 271 | Calculus I  | (4 SHC) |
| MAT 272 | Calculus II | (4 SHC) |

**High school students in the CCP College Transfer Pathway Leading to the Associate in Engineering must complete the entire pathway before taking additional courses in the Associate in Engineering degree with the following exception: Students may take additional math courses beyond MAT 272 that are required for the Associate in Engineering degree.**

Please see CC15-017 at <http://www.nccommunitycolleges.edu/search/content/numbered%20memos> for direct placement criteria for MAT 271 Calculus I.

**Natural Sciences (8 SHC)**

Select 8 SHC from the following course(s):

|         |                     |         |
|---------|---------------------|---------|
| CHM 151 | General Chemistry I | (4 SHC) |
| PHY 251 | General Physics I   | (4 SHC) |
| PHY 252 | General Physics II  | (4 SHC) |

**Other Required Hours (6 SHC)****Academic Transition (1 SHC)**

The following course is required:

|         |                          |         |
|---------|--------------------------|---------|
| ACA 122 | College Transfer Success | (1 SHC) |
|---------|--------------------------|---------|

**Engineering (5 SHC)**

The following courses are required:

|         |                             |         |
|---------|-----------------------------|---------|
| EGR 150 | Introduction to Engineering | (2 SHC) |
| DFT 170 | Engineering Graphics        | (3 SHC) |

**\*PREREQUISITE GENERAL EDUCATION HOURS (0-8 SHC)**

- MAT 171 Pre-Calculus Algebra
- MAT 172 Pre-Calculus Trigonometry

Students who do not place directly into MAT 271 must complete MAT 171 and MAT 172 prior to enrolling in MAT 271 Calculus I.

**\*OPTIONAL GENERAL EDUCATION HOURS (0-8 SHC)****Foreign Language:**

A student may take up to 8 SHC of foreign language courses and accompanying labs, in a single language, designated as General Education in the CAA as a part of this pathway. These courses are not a part of the Universal General Education Transfer Component. Students who complete these courses with a grade of "C" or better will receive transfer credit. The receiving university will determine whether the courses will count as general education, pre-major, or elective credit.

**Total Semester Hours Credit (SHC) in Pathway: 34-50**

## Curriculum Standard for Animal Systems: Aquaculture 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 2017 (2017\*03)

### Program Majors Under Pathway

| Program Major / Classification of Instruction Programs (CIP) Code | Credential Level(s) Offered | Program Major Code                |
|---|-----------------------------|-----------------------------------|
| Aquaculture Technology  | CIP Code 01.0303            | AAS/Diploma/Certificate<br>A15120 |

**Pathway Description:**

The Aquaculture Technology curriculum prepares individuals for careers in aquaculture and management of aquatic ecosystems. It provides a broad background in science and math as well as specialized course work and practical experience in fish, shellfish, and aquatic plant production and management.

Course work includes biology, chemistry, and math, as well as water quality and limnology, nutrition and feeding, genetics and breeding, facilities construction, and business. Students will spend time working in the industry through the cooperative work experience or conducting an individualized study through the aquaculture project.

Graduates may find employment on private farms and government hatcheries or at public aquariums. Graduates may also start new businesses in fish, shellfish, or aquatic plant farming; pond and lake management services; or home/office aquarium or water garden management services.

*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:*

**Aquaculture Technology.** A program that prepares individuals to select, culture, propagate, harvest, and market domesticated fish, shellfish, and marine plants, both freshwater and saltwater. Potential course work includes instruction in the basic principles of aquatic and marine biology; health and nutrition of aquatic and marine life; design and operation of fish farms, breeding facilities, culture beds, and related enterprises; and related issues of safety, applicable regulations, logistics, and supply.

**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.*

\*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 09/08/12; Editorial Revision 12/14/12; SBCC Revised 07/19/13; Editorial Revision 08/21/13; CRC Revised—05/29/2014; Editorial Revision 12/10/14; Prefix Addition 08/01/15; SBCC Revised 04/15/16.

| <b>Animal Systems: Aquaculture Technology</b>  |               |                |                    |
|--|---------------|----------------|--------------------|
| <b>Recommended General Education Academic Core</b>   | <b>AAS</b>    | <b>Diploma</b> | <b>Certificate</b> |
| <b>Minimum General Education Hours Required:</b>   | <b>15 SHC</b> | <b>6 SHC</b>   | <b>0 SHC</b>       |
| <p>Courses listed below are <i>recommended</i> general education courses for this curriculum standard. Colleges may choose to include additional or alternative general education courses to meet local curriculum needs.</p> <p>*Recommended certificate and diploma level curriculum courses. These courses may <u>not</u> be included in associate degree programs.</p> |               |                |                    |
| <b>Communication:</b>  |               |                |                    |
| *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         |                |                    |
| <b>Humanities/Fine Arts:</b>   |               |                |                    |
| ART 111 Art Appreciation   | 3 SHC         |                |                    |
| *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         |                |                    |
| <b>Social /Behavioral Sciences:</b>  |               |                |                    |
| ECO 151 Survey of Economics  | 3 SHC         |                |                    |
| ECO 251 Prin of Microeconomics   | 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         |                |                    |
| 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         |                |                    |
| MAT 171 Precalculus Algebra  | 3 SHC         |                |                    |
| PHY 110 Conceptual Physics   | 3 SHC         |                |                    |
| PHY 121 Applied Physics I  | 4 SHC         |                |                    |
|  | <b>6 SHC</b>  | <b>3-6 SHC</b> | <b>Optional</b>    |
|  | <b>3 SHC</b>  | <b>0-3 SHC</b> | <b>Optional</b>    |
|  | <b>3 SHC</b>  | <b>0-3 SHC</b> | <b>Optional</b>    |
|  | <b>3 SHC</b>  | <b>0-3 SHC</b> | <b>Optional</b>    |

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**II. Major Hours.** AAS, diploma, and certificate programs must include courses which offer specific job knowledge and skills. Work-based learning may be included in associate in applied science degrees up to a maximum of 8 semester hours of credit; in diploma programs up to a maximum of 4 semester hours of credit; and in certificate programs up to a maximum of 2 semester hours of credit. Below is a description of each section under Major Hours.

- A. Technical Core.** The technical core is comprised of specific courses which are required for all Program Majors under this Curriculum Standard. A diploma program offered under an approved AAS program standard or a certificate which is the highest credential level awarded under an approved AAS program standard must include a minimum of 12 semester hours credit derived from the curriculum core courses or core subject area of the AAS program.
- B. Program Major(s).** The Program Major must include a minimum of 12 semester hours credit from required subjects and/or courses. The Program Major is in addition to the technical core.
- C. Other Major Hours.** Other major hours must be selected from prefixes listed on the curriculum standard. A maximum of 9 semester hours of credit may be selected from each prefix listed, with the exception of prefixes listed in the core.

| <b>Animal Systems: Aquaculture 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>*AQU 111 Aquaculture I 3 SHC</p> <p>*AQU 220 Aquaculture Facilities 3 SHC</p> <p>*BIO 111 General Biology I 4 SHC</p> <p>*CHM 151 General Chemistry I 4 SHC<br/>OR</p> <p>*CHM 131 Introduction to Chemistry 3 SHC and<br/>CHM 131A Introduction to Chemistry Lab 1 SHC</p> <p><b>B. Program Major(s):<br/>Aquaculture Technology</b></p> <p>*Culture Techniques. Choose one.</p> <p style="padding-left: 20px;">AQU 112 Aquaculture II 3 SHC</p> <p style="padding-left: 20px;">AQU 260 Aquariology 3 SHC</p> <p>* Business. Choose one:</p> <p style="padding-left: 20px;">AQU 120 Aquabusiness 3 SHC</p> <p style="padding-left: 20px;">BUS 110 Introduction to Business 3 SHC</p> <p style="padding-left: 20px;">BUS 280 REAL Small Business 4 SHC</p> <p>* Culture Environment. Choose one:</p> <p style="padding-left: 20px;">AQU 210 Limnology &amp; Water Quality 3 SHC</p> <p style="padding-left: 20px;">AQU 270 Water Gardens 3 SHC</p> <p style="padding-left: 20px;">BIO 243 Marine Biology 4 SHC</p> <p style="padding-left: 20px;">FWL 234 Aquatic Ecology 3 SHC</p> <p>Other. Choose one:</p> <p style="padding-left: 20px;">AQU 280 Aquaculture Project 2 SHC</p> <p style="padding-left: 20px;">WBL 112 Work-Based Learning I 2 SHC</p> <p style="padding-left: 40px;"><i>Select additional "Other" courses from the AQU, BIO, BUS, or FWL prefix for a minimum of 12 SHC for the Aquaculture Technology AAS program.</i></p> <p><i>Courses required for the Aquaculture Technology Diploma are designated with *</i></p> | <b>35-37 SHC</b> | <b>23-25 SHC</b> |                    |

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

ACC, AGR, AQU, ART, BIO, BTC, BUS, CHM, CIS, CSC, ECO, EGR, ETR FWL, GIS, HOR, MAT, MKT, PHY, TRF, SRV, 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](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:

|  | <b>AAS</b>   | <b>Diploma</b> | <b>Certificate</b> |
|--|--------------|----------------|--------------------|
| 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>       |

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# CURRICULUM STANDARD

*Effective Term*  
Fall 2016  
[2016\*03]

|                          |   |              |                |
|--------------------------|---|--------------|----------------|
| Curriculum Program Title | <b>Aviation Electronics (Avionics) Technology</b> | Program Code | <b>A60150</b>  |
| Concentration            | (not applicable)                                  | CIP Code     | <b>47.0609</b> |

## ***Curriculum Description***

This curriculum provides individuals with the basic knowledge and skills required to enter the avionics career field as a technician and prepares students for the current avionics licensing agency examination.

Course work includes general avionics, sheet metal, airframe systems, electrical and electronic systems, practical wiring, navigation equipment, flight management and flight control systems, flight line testing and troubleshooting, and Federal Aviation Administration (FAA) regulations.

Graduates should be prepared for the current avionics licensing agency examination and for entry-level employment as an avionics technician in an avionics repair station, an airfield fixed base operator's avionics facility, or an independent repair facility.

## ***Curriculum Requirements\****

***[for associate degree, diploma, and certificate programs in accordance with 1D SBCCC 400.97 (3)]***

- 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.

|  | <b>AAS</b>   | <b>Diploma</b> | <b>Certificate</b> |
|--|--------------|----------------|--------------------|
| 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>       |

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\*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

[ref. 1D SBCCC 400.97 (3)]

- 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 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.

### Aviation Electronics (Avionics) Technology (A60150)

|   | AAS           | Diploma       | Certificate   |
|---|---------------|---------------|---------------|
| <b>Minimum Major Hours Required</b>   | <b>49 SHC</b> | <b>30 SHC</b> | <b>12 SHC</b> |
| <b>A. CORE</b><br><b>Required Courses:</b><br><br><div style="display: flex; justify-content: space-between; padding-left: 20px;"> <div style="width: 10%;">AET</div> <div style="width: 10%;">110</div> <div style="width: 40%;">Avionics-General</div> <div style="width: 30%; text-align: right;">15 SHC</div> </div> <div style="display: flex; justify-content: space-between; padding-left: 20px;"> <div style="width: 10%;">AET</div> <div style="width: 10%;">120</div> <div style="width: 40%;">Sheet Mtl Acft Structures</div> <div style="width: 30%; text-align: right;">2 SHC</div> </div> <div style="display: flex; justify-content: space-between; padding-left: 20px;"> <div style="width: 10%;">AET</div> <div style="width: 10%;">122</div> <div style="width: 40%;">Airframe Electrical</div> <div style="width: 30%; text-align: right;">4 SHC</div> </div> <div style="display: flex; justify-content: space-between; padding-left: 20px;"> <div style="width: 10%;">AET</div> <div style="width: 10%;">126</div> <div style="width: 40%;">Electronics/Instruments</div> <div style="width: 30%; text-align: right;">2 SHC</div> </div> <div style="display: flex; justify-content: space-between; padding-left: 20px;"> <div style="width: 10%;">AET</div> <div style="width: 10%;">210</div> <div style="width: 40%;">Practical Wiring/Factors</div> <div style="width: 30%; text-align: right;">2 SHC</div> </div> <div style="display: flex; justify-content: space-between; padding-left: 20px;"> <div style="width: 10%;">AET</div> <div style="width: 10%;">212</div> <div style="width: 40%;">Aviation Comm Systems</div> <div style="width: 30%; text-align: right;">2 SHC</div> </div> <div style="display: flex; justify-content: space-between; padding-left: 20px;"> <div style="width: 10%;">AET</div> <div style="width: 10%;">214</div> <div style="width: 40%;">Avia Navigation Systems</div> <div style="width: 30%; text-align: right;">2 SHC</div> </div> <div style="display: flex; justify-content: space-between; padding-left: 20px;"> <div style="width: 10%;">AET</div> <div style="width: 10%;">220</div> <div style="width: 40%;">Flight Management</div> <div style="width: 30%; text-align: right;">2 SHC</div> </div> <div style="display: flex; justify-content: space-between; padding-left: 20px;"> <div style="width: 10%;">AET</div> <div style="width: 10%;">222</div> <div style="width: 40%;">Avia System Interconnect</div> <div style="width: 30%; text-align: right;">2 SHC</div> </div> <div style="display: flex; justify-content: space-between; padding-left: 20px;"> <div style="width: 10%;">AET</div> <div style="width: 10%;">224</div> <div style="width: 40%;">Adv Wire/Troubleshooting</div> <div style="width: 30%; text-align: right;">4 SHC</div> </div> <div style="display: flex; justify-content: space-between; padding-left: 20px;"> <div style="width: 10%;">AET</div> <div style="width: 10%;">226</div> <div style="width: 40%;">Flight Line Testing</div> <div style="width: 30%; text-align: right;">2 SHC</div> </div> | <b>39 SHC</b> |               |               |
| <b>B. CONCENTRATION</b> <i>(Not applicable)</i>   |               |               |               |
| <b>C. OTHER MAJOR HOURS</b><br><i>To be selected from the following prefixes:</i><br><br>AET, AVI, CIS, CSC, and WBL<br><br><i>Up to two semester hour credits may be selected from ACA.</i><br><br><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>   |               |               |               |

## Curriculum Standard for Teaching/Training: Early Childhood Education

**Career Cluster:** Education and Training\*\*

**Cluster Description:** Planning, managing, and providing education and training services, and related learning support services.

**Pathway:** Teaching/Training

**Effective Term:** Spring 2017  
(2017\*01)

### Program Majors Under Pathway

| Program Major / Classification of Instruction Programs (CIP) Code | Credential Level(s) Offered | Program Major Code                |
|---|-----------------------------|-----------------------------------|
| Early Childhood Education   | CIP Code 13.1210            | AAS/Diploma/Certificate<br>A55220 |

### Curriculum Description

The Early Childhood Education curriculum prepares individuals to work with children from birth through eight in diverse learning environments. Students will combine learned theories with practice in actual settings with young children under the supervision of qualified teachers.

Course work includes child growth and development; physical/nutritional needs of children; care and guidance of children; and communication skills with families and children. Students will foster the cognitive/language, physical/motor, social/emotional, and creative development of young children.

Graduates are prepared to plan and implement developmentally appropriate programs in early childhood settings. Employment opportunities include child development and child care programs, preschools, public and private schools, recreational centers, Head Start Programs, and school-age programs.

*Program Major Description: The following 4<sup>th</sup> paragraphs is used in conjunction with the first three paragraphs of the pathway description above for documentation used to identify the **Program Major**:*

**Early Childhood Education:** A program that prepares individuals to promote child development and learning, work with diverse families and children, observe, document and assess to support young children and families, use content knowledge to build meaningful curriculum, and use developmentally effective approaches in collaboration with other early childhood professionals. Potential course work includes instruction in all areas of child development such as emotional/social/health/physical/language/communication, approaches to play and learning, working with diverse families, and related observations/student teaching experiences.

\*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.

**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.

**Teaching/Training: Early Childhood Education**

| <b>Recommended General Education Academic Core</b>  | <b>AAS</b>  | <b>Diploma</b>  | <b>Certificate</b>  |
|---|---|---|---|
| <b>Minimum General Education Hours Required:</b>  | <b>15 SHC</b>   | <b>6 SHC</b>  | <b>0 SHC</b>  |
| <p>Courses listed below are recommended general education courses for this curriculum standard. Colleges may choose to include additional or alternative gen education courses to meet local curriculum needs.</p> <p><b>Communication:</b></p> <p>COM 231 Public Speaking <b>U</b> 3 SHC<br/>           ENG 111 Writing and Inquiry <b>U</b> 3 SHC<br/>           ENG 112 Writing/Research in the Disc <b>U</b> 3 SHC</p> <p><b>Humanities/Fine Arts:</b></p> <p>ART 111 Art Appreciation 3 SHC<br/>           ART 114 Art History Survey I <b>U</b> 3 SHC<br/>           ART 115 Art History Survey II <b>U</b> 3 SHC<br/>           ENG 231 American Literature I <b>U</b> 3 SHC<br/>           ENG 232 American Literature II <b>U</b> 3 SHC<br/>           MUS 110 Music Appreciation <b>U</b> 3 SHC<br/>           MUS 112 Introduction to Jazz <b>U</b> 3 SHC<br/>           PHI 215 Philosophical Issues <b>U</b> 3 SHC<br/>           PHI 240 Introduction to Ethics <b>U</b> 3 SHC</p> <p><b>Social /Behavioral Sciences:</b></p> <p>ECO 251 Prin of Microeconomics <b>U</b> 3 SHC<br/>           ECO 252 Prin of Macroeconomics <b>U</b> 3 SHC<br/>           HIS 111 World Civilizations I <b>U</b> 3 SHC<br/>           HIS 112 World Civilizations II <b>U</b> 3 SHC<br/>           HIS 131 American History I <b>U</b> 3 SHC<br/>           HIS 132 American History II <b>U</b> 2 SHC<br/>           POL 120 American Government <b>U</b> 3 SHC<br/>           PSY 150 General Psychology <b>U</b> 3 SHC<br/>           SOC 210 Introduction to Sociology <b>U</b> 3 SHC</p> <p><b>Natural Sciences/Mathematics:</b></p> <p>AST 111 Descriptive Astronomy <b>U</b> 3 SHC<br/>           AST 111A Descriptive Astronomy Lab <b>U</b> 1 SHC<br/>           AST 151 General Astronomy I <b>U</b> 3 SHC<br/>           AST 151A General Astronomy I Lab <b>U</b> 1 SHC<br/>           BIO 110 Principles of Biology <b>U</b> 4 SHC<br/>           BIO 111 General Biology I <b>U</b> 4 SHC<br/>           BIO 112 General Biology II <b>U</b> 4 SHC<br/>           CHM 151 General Chemistry I <b>U</b> 4 SHC<br/>           CHM 152 General Chemistry II <b>U</b> 4 SHC<br/>           GEL 111 Introductory Geology <b>U</b> 4 SHC<br/>           MAT 143 Quantitative Literacy <b>U</b> 3 SHC<br/>           MAT 152 Statistical Methods I <b>U</b> 4 SHC<br/>           MAT 171 Precalculus Algebra <b>U</b> 4 SHC<br/>           MAT 172 Precalculus Trigonometry <b>U</b> 4 SHC<br/>           MAT 263 Brief Calculus <b>U</b> 4 SHC<br/>           MAT 271 Calculus I <b>U</b> 4 SHC<br/>           PHY 110 Conceptual Physics <b>U</b> 3 SHC<br/>           PHY 110A Conceptual Physics Lab <b>U</b> 1 SHC</p> | <p><b>6 SHC</b></p> <p><b>3 SHC</b></p> <p><b>3 SHC</b></p> <p><b>3 SHC</b></p> | <p><b>3-6 SHC</b></p> <p><b>0-3 SHC</b></p> <p><b>0-3 SHC</b></p> <p><b>0-3 SHC</b></p> | <p><b>Optional</b></p> <p><b>Optional</b></p> <p><b>Optional</b></p> <p><b>Optional</b></p> |

|         |                             |       |  |  |
|---------|-----------------------------|-------|--|--|
| PHY 151 | College Physics I <b>U</b>  | 4 SHC |  |  |
| PHY 152 | College Physics II <b>U</b> | 4 SHC |  |  |
| PHY 251 | General Physics I <b>U</b>  | 4 SHC |  |  |
| PHY 252 | General Physics II <b>U</b> | 4 SHC |  |  |

**U** indicates a Universal General Education Transfer Component (UGETC) course included in the Comprehensive Articulation Agreement. UGETC courses are guaranteed to transfer to any of the sixteen University of North Carolina senior institutions as equivalent credit within defined distribution limits.

**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 hour credits 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>Teaching/Training: Early Childhood Education</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><br/> <i>Courses required for the diploma are designated with *</i></p> <ul style="list-style-type: none"> <li>* EDU 119 Intro to Early Child Education 4 SHC</li> <li>* EDU 131 Child, Family, &amp; Community 3 SHC</li> <li>* EDU 146 Child Guidance 3 SHC</li> <li>* EDU 151 Creative Activities 3 SHC</li> <li>* EDU 153 Health, Safety &amp; Nutrition 3 SHC</li> <li>* EDU 221 Children with Exceptional 3 SHC</li> <li>EDU 234 Infants, Toddlers &amp; Twos 3 SHC</li> <li>EDU 280 Language &amp; Literacy Experiences 3 SHC</li> <li>EDU 284 Early Child Capstone Practicum 4 SHC</li> </ul> <p><b>B. Program Major:</b><br/> <b>*Child Development. Select one set:</b><br/> EDU 144 Child Development I 3 SHC<br/> &amp; EDU 145 Child Development II 3 SHC<br/> OR<br/> PSY 244 Child Development I 3 SHC<br/> &amp; PSY 245 Child Development II 3 SHC</p> | <b>35 SHC</b> | <b>25 SHC</b>  |                    |
| <p><b>C. OTHER MAJOR HOURS</b> <i>The remaining other major hours may be chosen from the following prefixes:</i><br/> ACC, ANT, ART, ASL, AST, BIO, BUS, CHM, CIS, COM, CSC, CTS, DAN, DBA, DRA, ECO, EDU, ENG, FRE, GEO, GER, HEA, HIS, HUM, MUS, OST, PED, PHI, PHS, POL, PSY, REL, SCI, SOC, SPA, WBL, and WEB</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>   |               |                |                    |

Approved by the State Board of Community Colleges on November 13, 1996; Revised 09/26/00; SBCC Revised 05/17/02. SBCC Revised 05/21/04; Revised 06/19/06; Revised 11/15/06; SBCC Revised July 20, 2007; SBCC Revised 09/21/07; Revised 06/11/08; SBCC Revised 11/21/08, Corrected 02/04/09; CRC Revised-Electronic Only 03/26/09; SBCC Template Revised 10/17/08; Editorial Revision 12/19/12; CRC Revised—Electronic Only 05/29/13; Editorial Correction 06/14/13; SBCC Revised 11/15/13; SBCC Revised 04/15/16.

### 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:

|  | <b>AAS</b>   | <b>Diploma</b> | <b>Certificate</b> |
|--|--------------|----------------|--------------------|
| 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>       |