



NORTH CAROLINA COMMUNITY COLLEGE SYSTEM

Jennifer Haygood

Acting President

March 14, 2018

MEMORANDUM

To: Presidents
Chief Academic Officers

From: Wesley Beddard, Associate Vice President, Programs

Subject: Curriculum Course Review Committee Course Approvals

The Curriculum Course Review Committee (CCRC) has the responsibility for maintaining the curriculum courses in the *Combined Course Library* (CCL). The approved course requests from the Spring 2018 CCRC meeting, held on February 13, 2018, are attached for your information. *Course revisions may involve the removal of required prerequisites or corequisites. Please note that colleges may add local prerequisites and/or corequisites if they determine a need exists.*

Course Revision Impact to Curriculum Standards

The CCRC approved requests to revise the **course description, prerequisite(s), corequisite(s), and/or class/lab hours** of core courses found on the curriculum standard listed below. Please note that the only change indicated on the printed standard will be the inclusion of the statement “*CCRC Revised-Electronic Only 02/13/18*”, since only the electronic version of the standard in Colleague will be revised.

Biotechnology (A20100)

The State Board of Community Colleges has delegated authority to the Senior Vice President to approve curriculum standard changes involving **core course title and/or credit hour changes** resulting from CCRC action. The standard listed below has been revised as a result of CCRC approved changes to one or more core courses.

Cytotechnology (Certificate) (C45220)

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The following curriculum standards will be submitted to the State Board of Community College for additional action.

Associate in Engineering (A10500)
Associate in Fine Arts in Music (A10700)
Medical Dosimetry (Diploma) (D45450)
Ophthalmic Medical Assistant (Diploma) (D45510)

The following five new courses were approved by the CCRC and have also been approved by the Transfer Advisory Committee for addition to the Comprehensive Articulation Agreement transfer course list:

EGR 214	Num Methods for Engineers	MUS 125	Aural Skills I
MUS 126	Aural Skills II	MUS 225	Aural Skills III
MUS 226	Aural Skills IV		

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

Curriculum standards, curriculum courses and procedures for submitting requests to the CCRC are available on the Academic Programs home page at:

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

If you need assistance or clarification concerning CCRC action, please contact Ms. Jennifer Frazelle, Director of Academic Programs at frazellej@nccommunitycolleges.edu or (919) 807-7120.

WB/dm

Attachments

c: Curriculum Course Review Committee
Dr. Lisa M. Chapman
Mr. Wesley Beddard
Ms. Jennifer Frazelle
Program Coordinators

**Curriculum Course Requests Approved By the Curriculum Course Review Committee (CCRC)
February 13, 2018**

Course Prefix #	Title	Approved Request	Effective Semester	Curriculum Standard Core Course
ARC 251	Adv Survey of Architecture	New Course	Summer 2018	NA
ATR 120	Intro to Autonomous Vehicles	New course	Summer 2018	NA
ATR 128	Autonomous Vehicle Comm	New course	Summer 2018	NA
ATR 158	AV Assembly and Servicing	New course	Summer 2018	NA
BTC 285	Cell Culture	Change prerequisite from "BIO 275 or BIO 175" to "BIO 275, BIO 175 or BTC 275	Early Implement Fall 2018	Biotechnology (A20100)
CSC 111	Intro to Ethical Hacking	New course	Summer 2018	NA
CSC 118	Swift Programming I	New course	Summer 2018	NA
CSC 211	Ethical Hacking with Python I	New course	Summer 2018	NA
CSC 212	Ethical Hacking with Python II	New course	Summer 2018	NA
CSC 218	Swift Programming II	New course	Summer 2018	NA
CSC 222	Eth Hack Mob Dev Using Python	New course	Summer 2018	NA
CYT 210	Intro to Clinical Cyto	Change course description	Early Implement Fall 2018	Cytotechnology (Certificate) (C45220)
CYT 214	Gynecologic Cytology	Change course description	Early Implement Fall 2018	Cytotechnology (Certificate) (C45220)
CYT 216	Clin and Diag Interp I	Change course description	Early Implement Fall 2018	Cytotechnology (Certificate)(C45220)
CYT 220	Non-Gynecological Cytology	Change course description	Early Implement Fall 2018	Cytotechnology (Certificate)(C45220)

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Course Prefix #	Title	Approved Request	Effective Semester	Curriculum Standard Core Course
CYT 222	Cytopreparation Technique	Change course description	Early Implement Fall 2018	Cytotechnology (Certificate)(C45220)
CYT 224	Gyn Cyto Clinical Practicum I	Change course description	Early Implement Fall 2018	Cytotechnology (Certificate)(C45220)
CYT 226	Clin & Diag Interp II	Change course description	Early Implement Fall 2018	Cytotechnology (Certificate)(C45220)
CYT 230	NG Cyto Clinical Pract	Change course description	Early Implement Fall 2018	Cytotechnology (Certificate)(C45220)
CYT 234	Gyn Cyto Clin Pract II	Change course description	Early Implement Fall 2018	Cytotechnology (Certificate)(C45220)
CYT 236	Cytology Literature Rev	Change course description	Early Implement Fall 2018	Cytotechnology (Certificate)(C45220)
CYT 238	Cyt Professional Issues	Change course description. Change course title to "Ancillary Studies in Cytopath."	Early Implement Fall 2018	Cytotechnology (Certificate)(C45220)
DAN 133	Intermediate Ballet II	Reactivation of Archived Course	Summer 2018	NA
DAN 225	Choreography I	Reactivation of Archived Course	Summer 2018	NA
DAN 226	Choreography II	Reactivation of Archived Course	Summer 2018	NA
DAN 236	Advanced Ballet I	Reactivation of Archived Course	Summer 2018	NA

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Course Prefix #	Title	Approved Request	Effective Semester	Curriculum Standard Core Course
DAN 237	Advanced Ballet II	Reactivation of Archived Course	Summer 2018	NA
DAN 262	Dance Performance	Reactivation of Archived Course (Central Piedmont CC)	Summer 2018	NA
DEA 133	DEA Foundation Studio I	New course	Summer 2018	NA
DEA 134	DEA Foundation Studio II	New course	Summer 2018	NA
DEA 233	DEA Foundation Studio III	New course	Summer 2018	NA
DOS 210	Introduction to Dosimetry	Change course description, Change course hours from "2-0-0-2" to 2-3-0-3" (Pitt CC)	Early Implement Fall 2018	Medical Dosimetry (Diploma)(D45450) Proposed
DOS 280	Clinical Education I	New course (Pitt CC)	Summer 2018	Medical Dosimetry (Diploma)(D45450) Proposed
DOS 240	Clinical Education I	Archive Course (Pitt CC)	EndTerm Spring 2019	Medical Dosimetry (Diploma)(D45450) Proposed
DOS 281	Clinical Education II	New course (Pitt CC)	Summer 2018	Medical Dosimetry (Diploma)(D45450) Proposed
DOS 282	Clinical Education III	New course (Pitt CC)	Summer 2018	Medical Dosimetry (Diploma)(D45450) Proposed
DOS 241	Clinical Education II	Archive Course (Pitt CC)	EndTerm Spring 2019	Medical Dosimetry (Diploma)(D45450) Proposed
DOS 283	Clinical Education IV	New course (Pitt CC)	Summer 2018	Medical Dosimetry (Diploma)(D45450) Proposed

Curriculum Course Requests Approved By the Curriculum Course Review Committee (CCRC)

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Course Prefix #	Title	Approved Request	Effective Semester	Curriculum Standard Core Course
DOS 284	Clinical Education V	New course (Pitt CC)	Summer 2018	Medical Dosimetry (Diploma)(D45450) Proposed
DOS 242	Clinical Education III	Archive Course (Pitt CC)	EndTerm Spring 2019	Medical Dosimetry (Diploma)(D45450) Proposed
DMA 065	Algebra for Precalculus	Change course hours from "1.5-1-0-2" to "2.25-1.5-0-3"	Early Implement Summer 2018	NA
EGR 214*	Num Methods for Engineers	New Course	Summer 2018	Associate in Engineering (A10500)(Proposed)
HRM 180	The Business of Tourism	New course	Summer 2018	NA
MAT 252	Statistical Methods II	Change prerequisite from "MAT 152 and MAT 121; or MAT 152 and MAT 171" to "MAT 152"	Spring 2019	NA
MUS 125*	Aural Skills I	New course	Fall 2018	Associate in Fine Arts in Music (A10700)(Proposed)
MUS 126*	Aural Skills II	New course	Fall 2018	Associate in Fine Arts in Music (A10700)(Proposed)
MUS 225*	Aural Skills III	New course	Fall 2018	Associate in Fine Arts in Music (A10700)(Proposed)
MUS 226*	Aural Skills IV	New course	Fall 2018	Associate in Fine Arts in Music (A10700)(Proposed)
MUS 121	Music Theory I	Change course hours from "3-2-4" to "3-0- 0-3", Change course description	Fall 2018	Associate in Fine Arts in Music (A10700)(Proposed)
MUS 122	Music Theory II	Change course hours from "3-2-0-4" to "3- 0-0-3", Change course description	Fall 2018	Associate in Fine Arts in Music (A10700)(Proposed)
MUS 221	Music Theory III	Change course hours from "3-2-0-4" to "3- 0-0-3", Change course description	Fall 2018	Associate in Fine Arts in Music (A10700)(Proposed)
MUS 222	Music Theory IV	Change course hours from "3-2-0-4" to "3- 0-0-3", Change course description	Fall 2018	Associate in Fine Arts in Music (A10700)(Proposed)
NUR 216	Transition to Civilian Nursing	New course	Summer 2018	NA

Curriculum Course Requests Approved By the Curriculum Course Review Committee (CCRC)

February 13, 2018

Course Prefix #	Title	Approved Request	Effective Semester	Curriculum Standard Core Course
OPH 103	Intro to Diseases of the Eye	Change course number to "113", Change course description	Early Implement Fall 2018	NA
OPH 104	Basic Ophthalmic Pharma	Change course number to "114", Change course description	Early Implement Fall 2018	Ophthalmic Medical Assistant (Diploma) (D45510) (Proposed)
OPH 105	Ophthalmic Clin Proc I	Change course number to "115", Change course description	Early Implement Fall 2018	Ophthalmic Medical Assistant (Diploma) (D45510) (Proposed)
OPH 106	Ophtha Med Assist Pract I	Change course number to "116", Change hours from "0-0-21-7 to "0-0-18-6" Change course description	Early Implement Fall 2018	Ophthalmic Medical Assistant (Diploma) (D45510) (Proposed)
OPH 107	Ophthalmic Clin Proc II	Change course number to "117", Change course description	Early Implement Fall 2018	Ophthalmic Medical Assistant (Diploma) (D45510) (Proposed)
OPH 108	Ophthalmic Patient Care	Change course number to "118"	Early Implement Fall 2018	Ophthalmic Medical Assistant (Diploma) (D45510) (Proposed)
OPH 109	Ophtha Optics & Basic Refract	Change course number to "119"	Early Implement Fall 2018	Ophthalmic Medical Assistant (Diploma) (D45510) (Proposed)
OPH 110	Op Med Assist Practicum II	Change course number to "120", Change hours from 0-0-21-7" to "0-0-18-6", Change course description Change course title to "Ophtha Med Assist Pract II	Early Implement Fall 2018	Ophthalmic Medical Assistant (Diploma) (D45510) (Proposed)
OPH 150	Intro to Ophth Med Assist	Change course description	Early Implement Fall 2018	Ophthalmic Medical Assistant (Diploma) (D45510) (Proposed)
OPH 217	Ophthalmic Clin Proc III	New Course	Summer 2018	Ophthalmic Medical Assistant (Diploma) (D45510) (Proposed)
OPH 218	Adv. Ophtha Patient Care	New Course	Summer 2018	Ophthalmic Medical Assistant (Diploma) (D45510) (Proposed)
OPH 219	Ophtha Optics and Refract II	New Course	Summer 2018	Ophthalmic Medical Assistant (Diploma) (D45510) (Proposed)
OPH 220	Ophtha Med Assist Pract III	New Course	Summer 2018	Ophthalmic Medical Assistant (Diploma) (D45510) (Proposed)
PRN 171	Introduction to BPACT	New course	Summer 2018	NA
PRN 271	Graphic Imaging for BPACT	New course	Summer 2018	NA
PRN 272	BPACT Implementation	New course	Summer 2018	NA
UAS 115	Small UAS Certification	New course	Summer 2018	NA

Curriculum Standard for Science and Math: Biotechnology

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 2013 (2013*03)

Program Majors Under Pathway

Program Major / Classification of Instruction Programs (CIP) Code	Credential Level(s) Offered	Program Major Code
Agricultural Biotechnology	CIP Code 26.0308	AAS/Diploma/Certificate
Biotechnology	CIP Code: 26.1201	AAS/Diploma/Certificate
Marine Biotechnology	CIP Code: 26.1304	AAS/Diploma/Certificate

Pathway Description:

The Biotechnology curriculum, which has emerged from molecular biology and chemical engineering, is designed to meet the increasing demands for skilled laboratory technicians in various fields of biological and chemical technology.

Course work emphasizes biology, chemistry, mathematics, and technical communications. The curriculum objectives are designed to prepare graduates to serve in three distinct capacities: research assistant to a biologist or chemist, laboratory technician/instrumentation technician, and quality control/quality assurance technician.

Graduates should be qualified for employment in various areas of industry and government, including research and development, manufacturing, sales, and customer service.

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:

Agricultural Biotechnology: A program that focuses on the application of molecular biology, biochemistry, and biophysics to the study of biomolecular structures, functions, and processes specific to plants and plant substances. Potential course work includes instruction in the biochemistry of plant cells, nuclear-cytoplasmic interactions, molecular cytostructures, photosynthesis, plant molecular genetics, and the molecular biology of plant diseases.

Biotechnology: A program that focuses on the application of the biological sciences, biochemistry, and genetics to the preparation of new and enhanced agricultural, environmental, clinical, and industrial products, including the commercial exploitation of microbes, plants, and animals. Potential course work includes instruction in general biology, general and organic chemistry, physics, biochemistry, molecular biology, immunology, microbiology, genetics, and cellular biology.

Marine Biotechnology: A program that focuses on the scientific study of the ecology and behavior of microbes, plants, and animals inhabiting aquatic environments. Potential course work includes instruction in geology and hydrology; aquatic ecosystems; microbiology; mycology; botany; ichthyology; mammalogy; population biology and biodiversity; studies of specific species, phyla, and habitats; and applications to fields such as natural resources conservation, fisheries science, and biotechnology.

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.

*Within the degree program, the institution shall include opportunities for the achievement of competence in reading, writing, oral communication, fundamental mathematical skills, and basic use of computers.

Approved by the State Board of Community Colleges on August 16, 2012; Editorial Revision 12/14/12; Editorial Revision 12/17/12; Editorial Revision 08/21/13; CRC Revised – Electronic Only 02/27/14; Editorial Revision 07/01/14; Prefix Addition 08/01/15; SBCC Archived (A20150, A20160) 07/15/16; Editorial Revision 01/09/17; SBCC Revised 03/17/17; CCRC Revised—Electronic Only (A20110) 02/13/18.

Science and Math: Biotechnology

Recommended General Education Academic Core	AAS	Diploma	Certificate
Minimum General Education Hours Required:	15 SHC	6 SHC	0 SHC
<p><i>Courses listed below are recommended general education courses for this curriculum standard. Colleges may choose to include additional or alternative general education courses to meet local curriculum needs.</i></p> <p><i>*Recommended certificate and diploma level curriculum courses. These courses may <u>not</u> be included in associate degree programs.</i></p>			
<p>Communication:</p> <ul style="list-style-type: none"> * 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 	6 SHC	3-6 SHC	Optional
<p>Humanities/Fine Arts:</p> <ul style="list-style-type: none"> * 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 	3 SHC	0-3 SHC	Optional
<p>Social /Behavioral Sciences:</p> <ul style="list-style-type: none"> 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 	3 SHC	0-3 SHC	Optional
<p>Natural Sciences/Mathematics:</p> <ul style="list-style-type: none"> BIO 140 Environmental Biology 3 SHC BIO 160 Introductory Life Science 3 SHC BIO 175 General Microbiology 3 SHC BIO 275 Microbiology 4 SHC CHM 131 Introduction to Chemistry 3 SHC CHM 131A Intro to Chemistry Lab 1 SHC CHM 151 General Chemistry I 4 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 	3 SHC	0-3 SHC	Optional

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: Biotechnology	AAS	Diploma	Certificate
Minimum Major Hours Required:	49 SHC	30 SHC	12 SHC
A. Technical Core: BIO 111 General Biology I 4 SHC BIO 112 General Biology II 4 SHC CHM 132 Organic and Biochemistry 4 SHC B. Program Major(s). Agricultural Biotechnology *BIO 280 Biotechnology 3 SHC *BTC 150 Bioethics 3 SHC *BTC 285 Cell Culture 3 SHC *Agriculture. Select 6 SHC: AGR 160 Plant Science 3 SHC AGR 261 Agronomy 3 SHC ANS 110 Animal Science 3 SHC ANS 150 Animal Health Management 3 SHC HOR 134 Greenhouse Operations 3 SHC HOR 168 Plant Propagation 3 SHC AGR 170 Soil Science 3 SHC <i>Courses required for the Agricultural Biotechnology diploma are designated with *</i> Program Major(s) Biotechnology + Biotechnology Lab. Choose one. BTC 181 Basic LabTechniques 4 SHC BTC 288 Biotech Lab Experience 2 SHC + Microbiology. Choose one. BIO 175 General Microbiology 3 SHC BIO 275 Microbiology 4 SHC BTC 275 Industrial Microbiology 4 SHC + Chemistry. Choose one: CHM 131 Introduction to Chemistry 3 SHC <i>and</i> CHM 131A Introduction to Chemistry Lab 1 SHC CHM 151 General Chemistry I 4 SHC	24-28 SHC	12-16 SHC	

+ Genetics. Choose one:

BIO 250	Genetics	4 SHC
BTC 250	Principles of Genetics	3 SHC

Courses required for the Biotechnology diploma are designated with +

Marine Biotechnology

Select a minimum of 12 SHC from the following courses for the Marine Biotechnology AAS program:

AQU 215	Algae Culture	3 SHC
AQU 230	Fish Genetics & Breeding	3 SHC
AQU 255	Invert Culture	3 SHC
BTC 260	Marine Biotechnology	4 SHC
BTC 181	Basic LabTechniques	4 SHC

A Marine Biotechnology diploma requires a minimum of 12 SHC extracted from the required technical/program major core of the AAS degree.

C. Other Major Hours.

To be selected from the following prefixes:

ACC, AGR, ALT, ANS, AQU, BIO, BTC, BUS, CHM, CIS, CIV, COM, CSC, CTC, EHS, ENV, FOR, GEL, GIS, HEA, HOR, ISC, LBT, LID, MAT, MSC, NAN, PHS, PHY, SCI, SST, VEN, WAT, WBL, and WEB

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

CURRICULUM STANDARD

Effective Term
Fall 2018
[2018*03]

Curriculum Program Title	Cytotechnology (Certificate)	Program Code	C45220
Concentration	(not applicable)	CIP Code	51.1002

Curriculum Description

Cytotechnology is an advanced allied health career which prepares the individual to use specialized equipment to study cells for detecting cancer, hormonal abnormalities, and other pathological disease processes. *Individuals entering this curriculum must have earned a Bachelor's degree with a concentration in the Biological Sciences.*

Course work includes entry-level knowledge and skills in cell collection and preparation and microscopic use to interpret specimens. Graduates work in conjunction with pathologists to perform special diagnostic procedures.

Upon successful completion of the program, graduates receive a certificate in cytotechnology and may be eligible to take the National Registry Examination of the American Society of Clinical Pathologists. Cytotechnologists may find employment in hospital laboratories, universities, and private laboratories.

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.

Cytotechnology (Certificate) C45220**

	AAS	Diploma	Certificate
Minimum Major Hours Required	49 SHC	30 SHC	12 SHC
A. CORE Required Courses: CYT 210 Introduction to Clinical Cytology 4 SHC CYT 212 Introduction to Cytological Techniques 4 SHC CYT 214 Gynecological Cytology 14 SHC CYT 216 Clinical and Diagnostic Interpretation I 4 SHC CYT 220 Non-Gynecological Cytology 12 SHC CYT 222 Cytopreparation Techniques 2 SHC CYT 224 Gynecological Cytological Clinical Practicum I 4 SHC CYT 226 Clinical and Diagnostic Interpretation II 4 SHC CYT 230 Non-Gynecological Cytological Clinical Practicum 2 SHC CYT 232 Clinical Cytology Practicum 1 SHC CYT 234 Gynecological Cytological Clinical Practicum II 3 SHC CYT 236 Cytology Literature Review 1 SHC CYT 238 Ancillary Studies in Cytopath. 2 SHC Required Subject Areas: None			57 SHC**
B. CONCENTRATION (<i>Not applicable</i>)			NA
C. OTHER MAJOR HOURS (<i>Not applicable</i>)			NA
D. OTHER REQUIRED HOURS (<i>Not applicable</i>)			NA

** This program is approved by the State Board of Community Colleges to exceed maximum standard hours for a certificate program. [ref. 23 NCAC 02E.0202(d)].