NORTH CAROLINA COMMUNITY COLLEGE SYSTEM
Peter Hans
President

March 28, 2019

<u>**MEMORANDUM**</u>

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 2019 CCRC meeting, held on February 28, 2019, 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), outcomes, and/or class/lab hours** of core courses found on the curriculum standards listed below. Please note that the only change indicated on the printed standard will be the inclusion of the statement *"CCRC Revised-Electronic Only 2/28/19",* since only the electronic version of the standard in Colleague will be revised.

Nondestructive Examination Technology (A50350)

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.

CC19-011
Email

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 Dr. Lisa Eads, Director of Academic Programs at eadsl@nccommunitycolleges.edu or (919) 807-7133.

WB/dm

Attachments
c: Curriculum Course Review Committee
     Mr. Wesley Beddard
     Dr. Lisa Eads
     Program Coordinators

Course Prefix #	Title	Approved Request	Effective Semester	Curriculum Standard Core Course
ART 171	Computer Art I	Change title to "Digital Design I" and change description.	Early Implement Fall 2019	NA
ART 271	Computer Art II	Change title to "Digital Design II" and change description.	Early Implement Fall 2019	NA
ART 218	Glass Blowing I	New Course	Summer 2019	NA
ART 219	Glass Blowing II	New Course	Summer 2019	NA
CJC 264	Policing in the 21st Century	New Course	Summer 2019	NA
GSM 232	Custom Handgun Technology	New Course	Summer 2019	NA
GSM 231	Handgun Repair Technology	New Course	Summer 2019	NA
HSE 170	Recovery Services	New Course	Summer 2019	NA
NDE 112	Materials and Processes	Archive Course	Early Implement Summer 2019	NA
NDE 131	Rad Safety & Prin of RT	Change prerequisite from "NDE-110, NDE 112 and MAT 121 to "NDE 110 and MAT 121"	Early Implement Summer 2019	A50350
NDE 153	Eddy Current Testing-1	Change hours from "3-3-4" to "2-2-3"	Early Implement Summer 2019	A50350
PFT 110	Introduction to Pipe fitting	New Course	Summer 2019	NA
PFT 210	Advanced Pipe Fitting	New Course	Summer 2019	NA

Course Prefix #	Title	Approved Request	Effective Semester	Curriculum Standard Core Course
RTT 250	Raditation Therapy Capstone	New Course	Summer 2019	NA
WLD 152	Wrought Metals I	New Course	Summer 2019	NA
WLD 252	Wrought Metals II	New Course	Summer 2019	NA
WLD 268	Robotic Gas Metal Arc Welding	New Course	Summer 2019	NA
WBL 110A	World of Work Lab	New Course	Summer 2019	NA
		1.		

Curriculum Standard for Quality Assurance: Nondestructive Examination Technology			
Career Cluster: Manufacturing**			
Cluster Description: Planning, managing, and performing the processing of materials into intermediate or final products and related professional and technical support activities such as production planning and control, maintenance and manufacturing/process engineering.			
Pathway: Quality Assurance		**Effective Term:** Spring 2018 (2018*01)	
Program Majors Under Pathway			
Program Major / Classification of Instruction Programs (CIP) Code		**Credential Level(s) Offered**	**Program Major Code**
Nondestructive Examination Technology	CIP Code: 41.0204	AAS/Diploma/Certificate	A50350
Pathway Description: This curriculum is designed to prepare students to use scientific principles and technical skills to the operation of industrial and research testing equipment. The course work includes mathematics, natural sciences, engineering sciences and technology. Graduates should qualify to obtain occupations such as technical service providers, materials and technologies testing services, process improvement technicians, engineering technicians, construction technicians and managers, industrial and technology managers, or research technicians.			
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: **Nondestructive Examination Technology:** This course of study prepares the students to apply technical skills in nondestructive testing of materials and component parts for flaws or defects jeopardizing structural integrity. Course work includes ultrasonics, radiography, liquid penetrant, magnetic particle eddy current and visual testing methods. Applied math and physics are an integral part of NDE and the curriculum. The NDE curriculum meets the initial training requirements of ASNT's SNT-TC-1A, permitting graduates to obtain NDE certification after a few months of on-the-job experience. Career opportunities exist in applied NDE, material sciences, technical sales, and quality control in many industries.			

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.*

Quality Assurance: Nondestructive Examination Technology

Recommended General Education Academic Core	AAS	Diploma	Certificate
Minimum General Education Hours Required:	**15 SHC**	**6 SHC**	**0 SHC**

Courses listed below are recommended general education courses for this curriculum standard. Colleges may choose to include additional or alternative general education courses to meet local curriculum needs.

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

				AAS	Diploma	Certificate
Communication:				**6 SHC**	**3-6 SHC**	**Optional**
*COM	101	Workplace Communication	3 SHC			
COM	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	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			
GEO	131	Physical Geography I	4 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 and Trigonometry I	3 SHC			
MAT	143	Quantitative Literacy	3 SHC			
MAT	152	Statistical Methods I	4 SHC			
MAT	171	Precalculus Algebra	4 SHC			
MAT	223	Applied Calculus	3 SHC			

Approved by the State Board of Community Colleges on August 16, 2012; Editorial Revision 12/14/12. SBCC Revised: 05/17/13; Editorial Revision 08/21/13; Prefix Addition 08/01/15; SBCC Revised 03/17/17; CRC Revised 05/25/17; CCRC Revised 10/26/17; CCRC Revised—Electronic Only 02/28/19.

			AAS	Diploma	Certificate
MAT 271 Calculus 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.

Quality Assurance: Nondestructive Examination 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 an asterisk (*).*		**27 SHC**	**14 SHC**	
*N**DE** 110 Intro to Nondestr Exam	3 SHC			
*NDE 112 Materials and Processes	3 SHC			
*NDE 121 Prin of Ultrasonic Exam Lvl I	4 SHC			
*NDE 122 Angle Beam Examination	4 SHC			
NDE 131 Rad Safety & Prin of RT	4 SHC			
NDE 142 Visual Testing-1,2	2 SHC			
NDE 143 Liquid Penetrant Testing-1,2	2 SHC			
NDE 152 Magnetic Particle Testing-1,2	2 SHC			
NDE 153 Eddy Current Testing-1	3 SHC			
B. Program Major: Not Applicable				

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

    CIS, CSC, DFT, EGR, ELC, ISC, MAC, MAT, MEC, NDE, NUC, PHY, SST, WBL, and WLD

    Up to two semester hour credits may be selected from ACA.

    Up to three semester hour credits may be selected from the following prefixes: ARA, ASL, CHI, FRE, GER, ITA, JPN, LAT, POR, RUS and SPA.

III. **Other Required Hours**

A college may include courses to meet graduation or local employer requirements in a certificate (0-1 SHC), diploma (0-4 SHC), or an associate in applied science (0-7 SHC) program. These curriculum courses shall be selected from the Combined Course Library and must be approved by the System Office prior to implementation. Restricted, unique, or free elective courses may not be included as other required hours.

IV. **Employability Competencies**

Fundamental competencies that address soft skills vital to employability, personal, and professional success are listed below. Colleges are encouraged to integrate these competencies into the curriculum by embedding appropriate student learning outcomes into one or more courses or through alternative methods.

A. **Interpersonal Skills and Teamwork** – The ability to work effectively with others, especially to analyze situations, establish priorities, and apply resources for solving problems or accomplishing tasks.

B. **Communication** – The ability to effectively exchange ideas and information with others through oral, written, or visual means.

C. **Integrity and Professionalism –** Workplace behaviors that relate to ethical standards, honesty, fairness, respect, responsibility, self-control, criticism and demeanor.

D. **Problem-solving** – The ability to identify problems and potential causes while developing and implementing practical action plans for solutions.

E. **Initiative and Dependability** – Workplace behaviors that relate to seeking out new responsibilities, establishing and meeting goals, completing tasks, following directions, complying with rules, and consistent reliability.

F. **Information processing** – The ability to acquire, evaluate, organize, manage, and interpret information.

G. **Adaptability and Lifelong Learning –** The ability to learn and apply new knowledge and skills and adapt to changing technologies, methods, processes, work environments, organizational structures and management practices.

H. **Entrepreneurship –** The knowledge and skills necessary to create opportunities and develop as an employee or self-employed business owner.

*An **Employability Skills Resource Toolkit** has been developed by NC-NET for the competencies listed above. Additional information is located at:* http://www.nc-net.info/employability.php

**The *North Carolina Career Clusters Guide was developed by the North Carolina Department of Public Instruction and the North Carolina Community College system to link the academic and Career and Technical Education programs at the secondary and postsecondary levels to increase student achievement. Additional information about Career Clusters is located at:* http://www.nc-net.info/NC_career_clusters_guide.php *or* http://www.careertech.org.

Summary of Required Semester Hour Credits (SHC) for each credential:

	AAS	Diploma	Certificate
Minimum General Education Hours	15	6	0
Minimum Major Hours	49	30	12
Other Required Hours	0-7	0-4	0-1
Total Semester Hours Credit (SHC)	**64-76**	**36-48**	**12-18**