



NORTH CAROLINA COMMUNITY COLLEGE SYSTEM
Dr. R. Scott Ralls, President

July 20, 2009

MEMORANDUM

TO: Presidents
Chief Academic Officers

FROM: Delores A. Parker
Senior Vice President
Chief Academic Officer

SUBJECT: State Board Action on July 17, 2009
New and Revised Curriculum Standards

On July 17, 2009, the State Board of Community Colleges approved new CTI (Computer Technology Integration) courses and the following new curriculum standard:

Computer Technology Integration (A25500)

The State Board of Community Colleges also approved the request to revise the following curriculum standard which will allow the creation of a local diploma:

Cardiovascular Sonography (A45160)

The revised and new curriculum standards are attached for your convenience. You may view all curriculum standards by visiting the Programs website at:

http://www.nccommunitycolleges.edu/Programs/curriculum_standards.htm

If you have any questions concerning these State Board action items, please contact Dr. Judith C. Mann at 919-807-7108 or mannj@nccommunitycolleges.edu.

DAP/JF/swj
Attachments
c: Dr. Judith C. Mann
Dr. John Pettitt
Ms. Jennifer Frazelle
Program Coordinators

CC09-021
Email

CURRICULUM STANDARD

Effective Term
Fall 2009
[2009*03]

Curriculum Program Title

Computer Technology Integration

Code

A25500

Concentration

Curriculum Description

The Computer Technology Integration (CTI) curriculum prepares graduates for employment as designers, testers, support technicians, administrators, developers, or programmers with organizations that use computers to design, process, manage, and communicate information, depending on the technical path selected within this curriculum.

Course work includes development of a student's ability to communicate and solve technical issues related to information support and services, interactive media, network systems, programming and software development, and other emerging technologies based on the selected area of study.

Graduates should qualify for employment in entry-level positions with businesses, educational systems, and governmental agencies which rely on computer systems to design and manage information. The program will incorporate the competencies of industry-recognized certification exams.

Curriculum Requirements*

[for associate degree, diploma, and certificate programs in accordance with 23 NCAC 02E.0204(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 experience, including cooperative education, practicums, and internships, 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

[ref. 23 NCAC 02E.0204 (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 experience, including cooperative education, practicums, and internships, 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.

Computer Technology Integration A25500

	AAS	Diploma	Certificate
Minimum Major Hours Required	49 SHC	30 SHC	12 SHC
A. CORE <i>Courses required for the diploma are designated with *</i> Required Courses: * CTS 115 Info Sys Business Concept 3 SHC * CTI 110 Web, Pgm, & DB Foundation 3 SHC * CTI 120 Network & Sec Foundation 3 SHC * Select one set: CTI 130 OS and Device Foundation 6 SHC <i>or</i> NOS 110 Operating System Concepts 3 SHC <i>and</i> CTS 120 Hardware/Software Support 3 SHC <i>or</i> CET 111 Computer Upgrade/Repair I 3 SHC <i>and</i> CET 211 Computer Upgrade/Repair II 3 SHC <i>or</i> CTS 120 Hardware/Software Support 3 SHC <i>and</i> CTS 220 Adv Hard/Software Support 3 SHC Required Subject Areas: <i>Select one course from one of the five (5) subject areas and an additional (9) credit hours from prefixes within the same subject area selected:</i> Information Support and Services CIS 110 Introduction to Computers 3 SHC CIS 111 Basic PC Literacy 2 SHC OST 122 Office Computations 2 SHC	26-27 SHC	26-27 SHC	
<i>Continued on next page</i>			

Computer Technology Integration A25500 (Continued)

<p>Interactive Media</p> <p>DEA 111 Introduction to DEAT 3 SHC DME 110 Intro to Digital Media 3 SHC GRD 110 Typography I 3 SHC SGD 111 Introduction to SGD 3 SHC WEB 110 Internet/Web Fundamentals 3 SHC</p> <p>Network Systems</p> <p>NET 110 Networking Concepts 3 SHC NET 125 Networking Basics 3 SHC NOS 110 Operation Systems Concepts 3 SHC TNE 111 Campus Networks I 3 SHC</p> <p>Programming and Software Development</p> <p>CIS 115 Intro to Prog & Logic 3 SHC CSC 133 C Programming 3 SHC CSC 134 C+ + Programming 3 SHC CSC 135 COBOL Programming 3 SHC CSC 139 Visual BASIC Prog 3 SHC CSC 141 Visual C+ + Prog 3 SHC CSC 142 Visual COBOL Prog 3 SHC CSC 151 JAVA Programming 3 SHC CSC 153 C# Programming 3 SHC DBA 110 Database Concepts 3 SHC</p> <p>Emerging Information Technology:</p> <p>CCT 110 Intro to Cyber Crime 3 SHC EGR 115 Intro to Technology 3 SHC GIS 111 Introduction to GIS 3 SHC HPC 110 Intro to HPC 3 SHC SEC 110 Security Concepts 3 SHC</p>			
<p>B. CONCENTRATION</p>			
<p>C. OTHER MAJOR HOURS <i>To be selected from the following prefixes:</i></p> <p>ACC, BUS, CCT, CET, CIS, CJC, COE, CSC, CTS, DBA, DEA, DES, DME, ECM, ECO, EGR, ELN, GIS, GRA, GRD, HIT, HPC, ISC, MIT, MKT, NET, NOS, OMT, OST, SEC, SGD, SGR, TNE and WEB</p> <p><i>Foreign language courses (including ASL) that are not designated as approved other major hours may be included in all programs up to a maximum of 3 semester hours of credit.</i></p>			

Computer Technology Integration

*Effective Term –Fall 2009 [2009*03] – SBCC 07/17/09*

CTI 110	Web, Pgm, & DB Foundation	2	2	3
Prerequisites:	None			
Corequisites:	None			

This course covers the introduction of the tools and resources available to students in programming, mark-up language and services on the Internet. Topics include standard mark-up language Internet services, creating web pages, using search engines, file transfer programs; and database design and creation with DBMS products. Upon completion students should be able to demonstrate knowledge of programming tools, deploy a web-site with mark-up tools, and create a simple database table.

*Effective Term –Fall 2009 [2009*03] – SBCC 07/17/09*

CTI 120	Network & Sec Foundation	2	2	3
Prerequisites:	None			
Corequisites:	None			

This course introduces students to the Network concepts, including networking terminology and protocols, local and wide area networks, and network standards. Emphasis is placed on securing information systems and the various implementation policies. Upon completion, students should be able to perform basic tasks related to networking mathematics, terminology, media and protocols.

*Effective Term –Fall 2009 [2009*03] – SBCC 07/17/09*

CTI 130	OS and Device Foundation	4	4	6
Prerequisite:	None			
Corequisites:	None			

This course covers the basic hardware and software of a personal computer, including installation, operations and interaction with popular microcomputer operating systems. Topics include components identification, memory-system, peripheral installation and configuration, preventive maintenance, hardware diagnostics/repair, installation and optimization of system software, commercial programs, system configuration, and device-drivers. Upon completion, students should be able to select appropriate computer equipment and software, upgrade/maintain existing equipment and software, and troubleshoot/repair non-functioning personal computers.

CURRICULUM STANDARD

Effective Term
Fall 2009
[2009*03]

Curriculum Program Title

Cardiovascular Sonography

Code

A45160

Concentration

(not applicable)

Curriculum Description

The Cardiovascular Sonography curriculum provides the individual with the knowledge and skills necessary to acquire, process, and evaluate the human heart and vascular structures. A cardiovascular sonographer uses high frequency sound waves to produce images of the heart and vascular structures.

Course work includes effective communication and patient care skills combined with a knowledge of physics, human anatomy, physiology, and pathology, all of which are essential to obtaining high quality sonographic images.

Graduates may be eligible to apply to the American Registry of Diagnostic Medical Sonographers for examinations in physics, cardiovascular physics, vascular physics, and adult echocardiography. Graduates may find employment in hospitals, physicians' offices, mobile services, and educational institutions.

Curriculum Requirements*

[for associate degree, diploma, and certificate programs in accordance with 23 NCAC 02E.0204(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 experience, including cooperative education, practicums, and internships, 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

[ref. 23 NCAC 02E.0204 (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 experience, including cooperative education, practicums, and internships, 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.

Cardiovascular Sonography A45160

	AAS	Diploma	Certificate
Minimum Major Hours Required	49 SHC	30 SHC	12 SHC
A. CORE <i>A diploma offered under this AAS degree requires a minimum of 12 SHC extracted from the required subject/course core of the AAS degree.</i> Required Courses: CVS 160 CVS Clinical Education I 5 SHC CVS 161 CVS Clinical Education II 8 SHC CVS 162 CVS Clinical Education III 5 SHC CVS 163 Echo I 4 SHC CVS 164 Echo II 4 SHC CVS 260 CVS Clinical Education IV 8 SHC CVS 261 CVS Clinical Education V 8 SHC SON 111 Sonographic Physics 4 SHC SON 250 Vascular Sonography 2 SHC Required Subject Areas: Anatomy and Physiology. Select one: BIO 163 Basic Anatomy & Physiology 5 SHC BIO 166 Anatomy and Physiology II 4 SHC BIO 169 Anatomy and Physiology II 4 SHC	52-53 SHC	12 SHC	
B. CONCENTRATION <i>(Not applicable)</i>			
C. OTHER MAJOR HOURS <i>To be selected from the following prefixes:</i> BIO, BUS, CHM, CIS, COE, COM, CSC, CVS, ENG, HSC, MAT, PHY, PSY, SOC, and SON <i>Foreign language courses (including ASL) that are not designated as approved other major hours may be included in all programs up to a maximum of 3 semester hours of credit.</i>			