



**NORTH CAROLINA COMMUNITY COLLEGE SYSTEM**

*Ms. Jennifer Haygood*

*Acting President*

November 20, 2017

**MEMORANDUM**

TO: Presidents  
Chief Academic Officers

FROM: Wesley E. Beddard, Associate Vice President  
Programs

SUBJECT: State Board Action on November 17, 2017  
New and Revised Curriculum Standards

On November 17, 2017, the State Board of Community Colleges approved the following new curriculum standard:

**Healthcare Simulation Technology (A45980)**

A Tier 1B funding classification for the new Healthcare Simulation Technology curriculum course prefix (SIM) has been approved. A copy of the new Healthcare Simulation Technology curriculum standard and courses are attached.

In addition, the State Board of Community Colleges approved revision of the following attached curriculum standard:

**Digital Media Technology (A25210)**

Please be aware that you must implement the revised curriculum standard 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 program.

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

WB/JF/gr

Attachments

c: Dr. Lisa M. Chapman  
Ms. Jennifer Frazelle

Ms. Elizabeth Self  
Program Coordinators

CC17-056

Email

**Outline of Curriculum Standard Revision  
State Board of Community Colleges  
November 17, 2017**

**Digital Media Technology (A25210)**

**Revisions:**

- Revised the curriculum core by making the following changes:
  - Removed the “Basic Computer Skills” subject area containing the following two courses:
    - CIS 110 Introduction to Computers*
    - CIS 111 Basic PC Literacy*
  - Created a new pick list with the following courses:
    - *Moved CIS 115 Intro to Programming & Logic and WEB 210 Web Design from the required courses to the pick list.*
    - *Added CTI 110 Web, Pgm, & Db Foundation*

*Note: The addition of the CTI 110 course to the core resulted in the addition of the “CTI” prefix to the “Other Major” area.*

*Note: As a result of the proposed revisions, the number of required hours changed from 20-21 SHC to 15 SHC.*

# CURRICULUM STANDARD

Effective Term  
Fall 2018  
[2018\*03]

Curriculum Program Title	<b>Healthcare Simulation Technology</b>	Program Code	<b>A45980</b>
Concentration	<b>(not applicable)</b>	CIP Code	<b>51.9999</b>

## Curriculum Description

This curriculum is designed to prepare individuals to teach, remediate, and evaluate healthcare providers using different forms of healthcare simulation.

Course work includes the day-to-day operations of a multidisciplinary healthcare simulation lab. Students will learn how to operate low, mid, and high-fidelity simulation mannequins, various task trainers, audiovisual tools used in simulation, and managing standardized patient programs.

Graduates of the Healthcare Simulation Technology program will be eligible for employment opportunities at hospitals, public and private educational institutions, emergency medical services agencies, and simulation centers. Qualifying graduates may be eligible for the national Certified Healthcare Simulation Educator exam.

## 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 in Program</b>	<b>64-76</b>	<b>36-48</b>	<b>12-18</b>

\*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 of 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.

### Healthcare Simulation Technology (A45980)

	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> <b>Required Courses:</b>  <table style="width: 100%; border-collapse: collapse;"> <tr><td style="width: 10%;">SIM</td><td style="width: 10%;">110</td><td style="width: 60%;">Intro to Healthcare Sim Tech</td><td style="width: 20%;">6 SHC</td></tr> <tr><td>SIM</td><td>120</td><td>Sim Tech Maintenance</td><td>4 SHC</td></tr> <tr><td>SIM</td><td>130</td><td>Simulation Pharmacology</td><td>4 SHC</td></tr> <tr><td>SIM</td><td>140</td><td>Medical Equipment in Sim</td><td>3 SHC</td></tr> <tr><td>SIM</td><td>150</td><td>Healthcare Simulation Lab I</td><td>2 SHC</td></tr> <tr><td>SIM</td><td>160</td><td>Sim Program Fundamentals</td><td>4 SHC</td></tr> <tr><td>SIM</td><td>210</td><td>Environmental Designs in Sim</td><td>4 SHC</td></tr> <tr><td>SIM</td><td>220</td><td>Healthcare Simulation Lab II</td><td>2 SHC</td></tr> <tr><td>SIM</td><td>230</td><td>ALS Scenario Development</td><td>5 SHC</td></tr> <tr><td>SIM</td><td>240</td><td>Peds, Ob, and Specialty Simulators</td><td>5 SHC</td></tr> <tr><td>SIM</td><td>250</td><td>Management Systems for Sim</td><td>4 SHC</td></tr> <tr><td>SIM</td><td>260</td><td>Healthcare Simulation Lab III</td><td>2 SHC</td></tr> <tr><td>SIM</td><td>270</td><td>Sim Capstone</td><td>4 SHC</td></tr> </table>	SIM	110	Intro to Healthcare Sim Tech	6 SHC	SIM	120	Sim Tech Maintenance	4 SHC	SIM	130	Simulation Pharmacology	4 SHC	SIM	140	Medical Equipment in Sim	3 SHC	SIM	150	Healthcare Simulation Lab I	2 SHC	SIM	160	Sim Program Fundamentals	4 SHC	SIM	210	Environmental Designs in Sim	4 SHC	SIM	220	Healthcare Simulation Lab II	2 SHC	SIM	230	ALS Scenario Development	5 SHC	SIM	240	Peds, Ob, and Specialty Simulators	5 SHC	SIM	250	Management Systems for Sim	4 SHC	SIM	260	Healthcare Simulation Lab III	2 SHC	SIM	270	Sim Capstone	4 SHC	<b>49 SHC</b>		
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<b>C. OTHER MAJOR HOURS</b> <i>To be selected from the following prefixes:</i>  BIO, CIS, COM, HUM, MED, and SIM  <i>Up to two semester hour credits may be selected from ACA.</i>																																																							

## Healthcare Simulation Technology Courses

### **SIM 110 Intro to Healthcare Sim Tech**

Class: 3      Lab: 2      Clinical: 0      Credit: 4

Prerequisites:    None

Corequisites:    None

This course covers basic concepts of healthcare simulation technologies focusing on simulation theory as it relates to the application of simulation equipment, software applications, simulation design, evaluation methodologies, audiovisual utilization and environmental staging within healthcare simulation programs. Topics include identifying various uses for low, mid, and high-fidelity simulation equipment, utilizing simulation hardware and software, maximizing audiovisual tools, debriefing and evaluating simulation performance, and staging basics to setup simulation environments. Upon completion, students should be able to identify uses for simulation equipment to train healthcare providers, differentiate types of task-trainers, demonstrate basic hardware and software utilization for simulation equipment, compare audiovisual tools, construct instructional videos, construct simulation environments, and apply simulation design frameworks to meet best practices for simulation.

### **SIM 120 Sim Tech Maintenance**

Class: 2      Lab: 4      Clinical: 0      Credit: 4

Prerequisites:    None

Corequisites:    None

This course covers the functionality of simulation equipment while focusing on equipment management and error prevention. Topics include general and preventative maintenance of low, mid, and high-fidelity simulators and task trainers, troubleshooting healthcare simulators and task trainers, internet technology services basics, and simulation support equipment maintenance and troubleshooting. Upon completion, students should be able to create preventive maintenance plans for simulation equipment and task trainers, troubleshoot common mechanical problems, apply internet technology basics, formulate purchase requests for education/industry procurement, develop purchase request for equipment and supply orders, and organize instructional supplies and equipment used in healthcare simulation.

### **SIM 130 Simulation Pharmacology**

Class: 2      Lab: 2      Clinical: 0      Credit: 3

Prerequisites:    None

Corequisites:    None

This course is designed to provide students opportunities to apply pharmacology principles in the simulated patient environment and to record the effects of medication administration. Topics include the introduction to pharmacology basics, medication preparation and administration in simulation, identifying and utilizing routes of administration, protocol and formulary development, and understanding common disease and traumatic physiology. Upon completion, students should be able to apply pharmacology basics in healthcare simulation, identify discipline specific medications, protocols, and standard of care, design and manage medication kits and dispensary systems, calculate common medication dosages and flow-rates, and summarize medical and traumatic scenarios used in healthcare simulation.

### **SIM 140 Medical Equipment in Sim**

Class: 2      Lab: 2      Clinical: 0      Credit: 3

Prerequisites:    None

Corequisites:    None

This course is designed to help students understand the human body systems in relationship to medical equipment utilized in healthcare as it applies to the healthcare simulation environment. Topics include incorporating diagnostic and treatment equipment used in healthcare simulation which includes: advanced airway tools, cardiovascular monitoring devices, vascular access devices, gastrointestinal devices, urinary evacuation devices and prioritizes maintenance activities for these devices. Upon completion, students should be able to demonstrate proficiency in the utilization of monitoring and treatment devices used in healthcare simulation, explain how these devices are utilized in healthcare, support maintenance activities, and evaluate educational technology tools used to support healthcare simulation.

### **SIM 150 Healthcare Simulation Lab I**

Class: 0      Lab: 0      Clinical: 3      Credit: 1

Prerequisites: None

Corequisites: None

This course provides practical application of skills taught in previous simulation courses as it applies to the healthcare simulation environment. Topics include operating a simulation lab while working with healthcare educators from different disciplines, performing as a Healthcare Simulation Technologist under faculty directed supervision, and assisting in the maintenance of equipment in the simulation laboratory environment. Upon completion, students should be able to design and implement basic healthcare simulations, troubleshoot common problems with simulators, operate low, mid, and high-fidelity simulators and task trainers, maintain and clean simulation equipment following scenarios, and participate in session debriefings.

### **SIM 160 Sim Program Fundamentals**

Class: 2      Lab: 2      Clinical: 0      Credit: 3

Prerequisites: None

Corequisites: None

This course covers the basic concepts of simulation hardware and software applications and its impact in the simulation environment. Topics include scenario development and execution using simulation software, developing simulation trends that represent human physiology, operating simulations in an “on-the-fly” mode, and participation in evaluation and debriefing sessions. Upon completion, students should be able to design basic scenarios using healthcare simulator software, write scenarios to meet specific stakeholder criteria for evaluation, compose simulation trends using human physiological criteria, produce an “on-the-fly” scenario for a basic life support scenario, and understand simulation evaluation and debriefing strategies.

### **SIM 210 Environmental Designs in Sim**

Class: 2      Lab: 4      Clinical: 0      Credit: 4

Prerequisites: None

Corequisites: None

This course covers the principles of instructional design and high-fidelity simulation standards to develop, pilot, revise, and implement new simulation scenarios. Topics include scenario development, simulator programming and operation, scenario evaluation, scene staging, patient moulage, and basic organization and utilization of standardized patients. Upon completion, students should be able to design high-fidelity scenarios for advanced providers, write programming code for high-fidelity simulators, independently operate high-fidelity simulators, participate in faculty led evaluation of student performance during debriefing sessions, stage the simulation lab, apply basic moulage and develop standardized patient protocols and policies.

### **SIM 220 Healthcare Simulation Lab II**

Class: 0      Lab: 0      Clinical 3      Credit: 1

Prerequisites: SIM 150

Corequisites: None

This course provides the practical application of skills taught in previous simulation courses as it applies to the healthcare simulation environment. Topics include operating a simulation lab while working with healthcare educators from different disciplines, performing as a Healthcare Simulation Technologist under faculty directed supervision, and assisting in the maintenance of equipment in the simulation laboratory environment. Upon completion, students should be able to design and implement **advanced** healthcare simulations, troubleshoot common problems with simulators, operate low, mid, and high-fidelity simulators and task trainers, maintain and clean simulation equipment following scenario, participate in session debriefings, **and create and manage video debriefing video portfolios.**



### **SIM 230 ALS Scenario Development**

Class: 3      Lab: 4      Clinical 0      Credit: 5

Prerequisites: None

Corequisites: None

This course covers the management and development of case-based advanced life support scenarios and focuses on the delivery of instruction to advanced providers. Topics include the delivery of advanced life support scenarios, coordinating emergency response teams during simulations, scenario development for the advanced life support provider, and intra-disciplinary coordination of team dynamics. Upon completion, students should be able to design advanced life support scenarios for the advanced provider, support American Heart Association standards of Advanced Cardiac Life Support through scenario implementation, develop evaluation tools to assist faculty during debriefing session, and coordinate intra-disciplinary medical teams during advanced life support scenarios.

### **SIM 240 Peds, OB, and Special Sim**

Class: 3      Lab: 4      Clinical 0      Credit: 5

Prerequisites: None

Corequisites: None

This course covers the design and implementation of case-based simulation scenarios using pediatrics, obstetrical, and other specialty simulators. Topics include pediatric advanced life support scenarios, obstetrical and gynecological emergencies, and other specialty simulators. Upon completion, students should be able to integrate pediatric advanced life support scenarios in simulation, design OB/GYN scenarios for the advanced providers, setup and operate specialty mannequins and simulators, and design simulation environments to support these scenarios.

### **SIM 250 Management Systems for Sim**

Class: 2      Lab: 2      Clinical 0      Credit: 3

Prerequisites: None

Corequisites: None

This course covers the management of electronic course records, operating learning management systems, online simulation support materials, and student documentation. Topics include the utilization of a variety of learning management systems available for healthcare simulations, integration of online support materials and student documentation protocols, and the management of cloud-based video portfolios for educators. Upon completion, students should be able to operate learning management systems, design and implement advanced simulations, creates student portfolios within learning management systems, manage cloud-based portfolios, develops student documentation protocols, and integrates online support materials.

### **SIM 260 Healthcare Simulation Lab III**

Class: 0      Lab: 0      Clinical 3      Credit: 1

Prerequisites: Sim 220

Corequisites: None

This course provides the practical application of skills taught in previous simulation courses as it applies to the healthcare simulation environment. Topics include operating a simulation lab while working with healthcare educators from different disciplines, performing as a Healthcare Simulation Technologist under faculty directed supervision, and assisting in the maintenance of equipment in the simulation laboratory environment. Upon completion, students should be able to design and implement advanced healthcare simulations, troubleshoot common problems with simulators, operate low, mid, and high-fidelity simulators and task trainers, maintain and clean simulation equipment following scenario, participate in session debriefings, and create and manage video debriefing video portfolios.

### **SIM 270 Sim Capstone**

Class: 3      Lab: 3      Clinical 0      Credit: 4

Prerequisites: None

Corequisites: None

This course provides an opportunity to demonstrate problem-solving skills as a Healthcare Simulation Technologist. Emphasis is placed on critical thinking, integration of didactic and psychomotor skills, and affective performance in simulation. Topics include, "Putting it All Together" simulation in the community, discipline specific scenario development, simulation systems administration, advanced AV systems, and advanced simulation moulage and scene staging. Upon completion, students should be able to create healthcare scenarios that reflect common patient presentations, compose and deliver advanced life support scenarios, produce debriefing videos, participates in faculty led simulation evaluations, and demonstrates ability to troubleshoot simulator errors.

# CURRICULUM STANDARD

Effective Term  
Fall 2018  
(2018\*03)

Curriculum Program Title	<b>Digital Media Technology</b>	Program Code	<b>A25210</b>
Concentration	<b>(not applicable)</b>	CIP Code	<b>11.0899</b>

## Curriculum Description

The Digital Media program prepares students for entry-level jobs in the digital design and multimedia industry. Students learn to synthesize multimedia, hypertext, computer programming, information architecture, and client/server technologies using both Internet and non-network-based media.

Students develop skills in communication, critical thinking, and problem solving as well as interface design, multimedia formats, application programming, data architecture, and client/server technologies. The program develops technical skills through practical applications that employ current and emerging standards and technologies.

Graduates should qualify for employment as web designers, graphic artists/designers, multimedia specialists, web developers, web content specialists, media specialists, information specialists, digital media specialists, animation specialists, interface designers, and many new jobs yet to be defined in this expanding field.

## 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>

\*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 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.

### Digital Media Technology A25210

	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>  <b>Required Courses:</b> DME 110 Intro to Digital Media 3 SHC DME 115 Graphic Design Tools 3 SHC DME 120 Intro to Multimedia Applications 3 SHC DME 130 Digital Animation I 3 SHC  <b>Select one:</b> CIS 115 Intro to Prog & Logic 3 SHC CTI 110 Web, Pgm, & Db Foundation 3 SHC WEB 210 Web Design 3 SHC	<b>15 SHC</b>		
<b>B. CONCENTRATION</b> <i>(not applicable)</i>			
<b>C. OTHER MAJOR HOURS</b> <i>To be selected from the following prefixes:</i>  ART, CIS, CSC, CTI, CTS, DBA, DEA, DME, FVP, GIS, GRA, GRD, ITN, SGD, WBL, and WEB  <i>Up to two semester hour credits may be selected from ACA.</i>  <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>			