MEMORANDUM

TO: Presidents
    Chief Academic Officers

FROM: Wesley E. Beddard, Associate Vice President
      Programs

SUBJECT: State Board Action on August 21, 2015
         New and Revised Curriculum Standards

On August 21, 2015, the State Board of Community Colleges approved curriculum courses and a curriculum standard for the following new program:

Breast Sonography (Certificate) (C45490)

A Tier IA classification was approved for the new BST curriculum course prefix.

In additional action, the State Board of Community Colleges approved the requested revision to the following curriculum standard:

Business Analytics (A25350)

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 programs of study and receive approval from the System Office prior to implementation of the revised program.

An outline of the specific curriculum standard revisions, revised curriculum standard, new courses, and new curriculum standard are 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 August State Board action items listed above, please contact Ms. Jennifer Frazelle at 919.807.7120 or frazellej@nccommunitycolleges.edu.

WB/JF/gr
Attachments
  c: Dr. Lisa M. Chapman  Ms. Elizabeth Self
     Ms. Jennifer Frazelle  Program Coordinators

Email
Business Analytics (A25350)

Revisions:

- Added the following courses to the “Required Courses” area:
  
  \[
  \begin{align*}
  &BAS 221 \quad \text{Intro to Predictive Analytics} \\
  &BAS 240 \quad \text{Data Structures for Analytics}
  \end{align*}
  \]

- Removed the following courses from the “Required Courses” area:
  
  \[
  \begin{align*}
  &CTS 130 \quad \text{Spreadsheet} \\
  &DBA 110 \quad \text{Database Concepts}
  \end{align*}
  \]

- Removed the “Data Management” subject area.

*Please note, the revisions result in a decrease of required core hours for the AAS degree from 32-34 SHC to 29-31 SHC.
Breast Sonography Courses

**BST 101 Breast Pathophysiology**
Class: 1 Lab: 0 Clinical: 0 Credit: 1
Prerequisites: None
Corequisites: None

This course provides a comprehensive study of pathophysiology of the breast. Topics include anatomy, pathophysiology, surgical/treatment changes, benign and malignant pathology, related to breast sonographic images in correlation to mammographic images. Upon completion, students should be able to demonstrate a detailed knowledge of breast pathophysiology.

**BST 102 BST Physics & Equipment**
Class: 2 Lab: 0 Clinical: 0 Credit: 2
Prerequisites: None
Corequisites: None

This course provides a comprehensive study of physics and equipment for breast sonography. Topics include the principles of breast sonography physics, equipment and system components including accessories, image display and storage, and maintenance for breast sonography equipment. Upon completion, students should be able to demonstrate a detailed knowledge of the physics and equipment used in breast sonography.

**BST 103 BST Image Production & Eval**
Class: 1 Lab: 3 Clinical: 0 Credit: 2
Prerequisites: None
Corequisites: None

This course provides the fundamentals of breast sonography image production, patient care, and image analysis. Topics include patient communication, breast education and assessment, image production, and evaluation and selection of representative images. Upon completion, students should be able to produce and analyze breast sonography images.

**BST 104 BST Procedures**
Class: 1 Lab: 0 Clinical: 0 Credit: 1
Prerequisites: None
Corequisites: None

This course provides the fundamentals of interventional breast sonography procedures. Topics include positioning, patient care, informed consent and time out procedures, selection and preparation of equipment, infection control, and post-procedure care. Upon completion, students should be able to perform interventional breast sonography procedures.
**BST 105 Clinical Education**

Class: 0  Lab: 0  Clinical: 30  Credit: 10
Prerequisites: None  Corequisites: None

This course provides the opportunity to apply knowledge gained from classroom instruction to the breast sonography clinical setting. Emphasis is placed on breast sonography procedures, interventional examinations, image production and evaluation in correlation with mammographic procedures and equipment operation. Upon completion, students should be able to demonstrate successful completion of clinical objectives.

**BST 106 BST Clinical Ed Supplement**

Class: 0  Lab: 0  Clinical: 6  Credit: 2
Prerequisites: None  Corequisites: None

This course provides the opportunity to enhance knowledge of breast sonography procedures, interventional examinations, image production and evaluation. Emphasis is placed on strengthening acquired clinical skills. Upon completion, students should be able to demonstrate mastery of breast sonography in the role of the entry level breast sonographer.

**BST 107 BST Capstone**

Class: 2  Lab: 0  Clinical: 0  Credit: 2
Prerequisites: None  Corequisites: None

This course provides an overview of breast sonography topics as practiced in the didactic and clinical settings. Emphasis is placed on critical thinking and integration of didactic and clinical components. Upon completion, students should be able to demonstrate the comprehensive knowledge required to be an entry-level breast sonographer.
**Curriculum Program Title**
Breast Sonography (Certificate)

**Concentration**
(not applicable)

**Program Code**
C45490

**CIP Code**
51.0919

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**Curriculum Description**
The Breast Sonography curriculum provides registered mammographers the didactic and clinical experience necessary to become registered breast sonographers.

Course work includes breast pathophysiology; physics, instrumentation, and equipment operation necessary to perform diagnostic and interventional breast sonography procedures; and clinical breast image production and evaluation.

Graduates may be eligible to apply to take the American Registry of Radiologic Technologists (ARRT) certification exam in Breast Sonography.

*Individuals entering this curriculum must be a registered Radiologic Technologist and a registered Mammographer.*

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**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.

<table>
<thead>
<tr>
<th></th>
<th>AAS</th>
<th>Diploma</th>
<th>Certificate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum General Education Hours</td>
<td>15</td>
<td>6</td>
<td>0</td>
</tr>
<tr>
<td>Minimum Major Hours</td>
<td>49</td>
<td>30</td>
<td>12</td>
</tr>
<tr>
<td>Other Required Hours</td>
<td>0-7</td>
<td>0-4</td>
<td>0-1</td>
</tr>
<tr>
<td><strong>Total Semester Hours Credit in Program</strong></td>
<td><strong>64-76</strong></td>
<td><strong>36-48</strong></td>
<td><strong>12-18</strong></td>
</tr>
</tbody>
</table>

*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.

<table>
<thead>
<tr>
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<tr>
<td><strong>Minimum Major Hours Required</strong></td>
<td>49 SHC</td>
<td>30 SHC</td>
<td>12 SHC</td>
</tr>
<tr>
<td><strong>A. CORE</strong></td>
<td></td>
<td></td>
<td>16 SHC</td>
</tr>
<tr>
<td><strong>Required Courses:</strong></td>
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</tr>
<tr>
<td>BST 101 Breast Pathophysiology</td>
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<td>BST 103 BST Image Production &amp; Eval</td>
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<td>10 SHC</td>
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### B. CONCENTRATION (if applicable)

### C. OTHER MAJOR HOURS

To be selected from the following prefixes:

BST

*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.*

Approved by the State Board of Community Colleges on August 21, 2015.
Curriculum Description
The Business Analytics curriculum is designed to provide students with the knowledge and the skills necessary for employment and growth in analytical professions. Business analysts process and analyze essential information about business operations and also assimilate data for forecasting purposes.

Students will complete course work in business analytics, including general theory, best practices, data mining, data warehousing, predictive modeling, project and operations management, statistical analysis, and software packages. Related skills include business communication, critical thinking and decision making.

Graduates should qualify for employment as data technicians, data scientists, business and data analytics engineers, and business analysts in the fields of finance, banking, logistics, marketing, healthcare, manufacturing, information technology, and government organizations.

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.

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Major Hours  
[ref. 1D SBCCC 400.97(3)]

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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.

<table>
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<tr>
<td>* BAS 120 Intro to Analytics</td>
<td>3 SHC</td>
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<td>* BAS 121 Data Visualization</td>
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<tr>
<td>* BAS 150 Intro to Analytical Program.</td>
<td>3 SHC</td>
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<tr>
<td>* BAS 220 Appl. Analytical Program.</td>
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<td>BAS 221 Intro to Predictive Analytics</td>
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<tr>
<td>BAS 240 Data Structures for Analytics</td>
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<td>BAS 270 Adv Analytical Tools &amp; Methods</td>
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<td>BUS 110 Introduction to Business</td>
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<td>Required Subject Areas:</td>
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<td>Basic Computer Skills (Select one):</td>
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<tr>
<td>CIS 110 Introduction to Computers</td>
<td>3 SHC</td>
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<td>CIS 111 Basic PC Literacy</td>
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<tr>
<td>OST 137 Office Software Applicat.</td>
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<td>*Statistics (Select one)</td>
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<tr>
<td>BUS 228 Business Statistics</td>
<td>3 SHC</td>
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<td>MAT 152 Statistical Methods I</td>
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<td>To be selected from the following prefixes:</td>
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<tr>
<td>ACC, AIB, BAF, BAS, BUS, CIS, CJC, CSC, CTI, CTS, DBA, ECM, ECO, ETR, GIS, HBI, HRM, INS, INT, ISC, ITN, LOG, MAT, MKT, OMT, OST, PAD, RLS, WBL, and WEB</td>
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Approved by the State Board of Community Colleges on February 17, 2012; Editorial Correction 03/15/12; CRC Revised – Electronic Only 01/25/13; CRC Revised 11/07/13; SBCC Revised 05/16/14; CRC Revised—Electronic Only 05/29/14; CRC Revised 05/27/15; SBCC 08/21/15.