STATE BOARD OF COMMUNITY COLLEGES

CURRICULUM PROGRAM APPLICATION
(New to the System)

The State Board of Community Colleges is asked to approve the curriculum program at the listed college on the condition that equipment funds are available to the college and operating funds generated by the budget formula will permit the offering of the program without any special allocation of funds.

South Piedmont Community College
Musculoskeletal Sonography (Certificate) (C45xxx)

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PROGRAM APPLICATION
SUMMARY EVALUATION REPORT
South Piedmont Community College
Musculoskeletal Sonography (Certificate) (C45xxx)

I. Program Planning
South Piedmont Community College is seeking approval for the Musculoskeletal Sonography (Certificate) (C45xxx) program to begin Fall 2015. The planning area is defined as the college’s service area of Anson and Union counties. All colleges were notified of the planning process for this program.

The proposed program was approved by the Board of Trustees at South Piedmont Community College on October 14, 2014. Minutes from this Board meeting were attached to the program application. The President and the Board of Trustees of South Piedmont Community College have certified the following:

- The proposed program will enhance the workforce of North Carolina, will provide educational and training opportunities consistent with the mission of the college, and will not duplicate the opportunities currently offered.
- They have assessed the need for the proposed program and the resources required to maintain a viable program and certify that the college can operate the proposed program efficiently and effectively within the resources available to the college.
- The college will complete a program accountability report including student success measures, enrollment trends, completion rates, and employment data three years after implementation of the program.

II. Program Rationale
South Piedmont Community College (SPCC) indicates the following:

- Currently, South Piedmont Community College offers Medical Sonography (A45440) and Cardiovascular Sonography (A45160).
- Over the last eleven years, the Medical Sonography program at SPCC has graduated one hundred and fourteen students. Ninety-seven percent of their graduates obtained jobs within their field of study.
- The U.S. Bureau of Labor Statistics projects the need for credentialed sonographers to grow by forty-four percent between 2010 and 2020.
- The MSK modality is so new that the U.S. Department of Labor does not distinguish it as a separate profession. In 2012, the median annual salary for sonographers was $60,350. According to SimplyHired the average salary for Musculoskeletal Sonographers is $68,000.
- Musculoskeletal Sonography (MSK) is a rapidly growing specialty in sonography. MSK sonography may be utilized in the evaluation of tendon tears, abnormalities of the muscles, localization of bleeding and fluid collections, evaluation of tumors, early changes of rheumatoid arthritis, joint dislocations in infants, and lumps in the neck muscles of infants. Historically, these abnormalities could only be evaluated with radiologic imaging such as fluoroscopic procedures, Computed Tomography and Magnetic Resonance Imaging. *(Society of Diagnostic Medical Sonography News Wave, 2010)*
Mark Hartman, Ultrasound Sales Manager for ESAOTE North America, Inc., noted, *I’m currently covering NC, SC, VA and Maryland. MSK ultrasound is by far the fastest growing application I’m seeing. We are seeing pain management clinics, orthopedic clinics, sport rehabilitation clinics, and chiropractic offices inquiring about MSK ultrasound. In addition, we are hearing from administrators in hospitals and clinics who are inquiring about sonographers who have MSK experience. Mr. Hartman also stated he had been working with a regional mobile ultrasound company that will be looking to hire a minimum of twenty newly credentialed MSK sonographers in the future.*

Dr. Peter Hindel, the Medical Director for SPCC’s Diagnostic Medical Sonography program and a radiologist at Carolinas Medical Center (CMC) shared, *physicians are now asking for the studies; however, there are very few “trained” sonographers that can perform the exams.* He noted that *he and his colleagues must perform the exams.*

MSK Sonography is a completely new modality; therefore limited data is available from employers. SPCC surveyed their current 17 clinical sites for their Medical Sonography program. Thirteen (76 %) of the clinical sites indicated a potential need for MSK interventional studies. Ninety-six full-time sonographers and thirty-four part-time sonographers are employed by these agencies.

An electronic survey completed by SPCC determined that eighteen current sonographers and/or alumni were interested in this program.

In 2013, the American Registry of Diagnostic Medical Sonographers (ARDMS) surveyed 277 currently registered sonographers in the U.S. to determine their interest level in learning more about the new MSK credential. Ninety-four percent of the respondents expressed interest. [www.ardms.org](http://www.ardms.org).

### III. Impact of the Proposed Program on Other Programs
This program would be new to the community college system. Seven colleges are currently approved to offer the Medical Sonography (A45440) program, including South Piedmont Community College. An impact assessment was sent to the colleges currently approved to offer the Medical Sonography (A45440) program. No negative impact responses were received.

### IV. Implementation of Collaborative Plan
Not Applicable

### V. Curriculum Design
The proposed program of study is in compliance with the proposed curriculum standard.

**Coordinator:** Ms. Renee Batts
C. Institutional Certification: Complete the following form and obtain required signatures. Form with original signatures should be included in the application.

Institutional Certification

This curriculum program _Musculoskeletal Sonography__ C45XXX
(Program Title) (Program Code)

will enhance the workforce of North Carolina, will provide educational and training opportunities consistent with the mission of the college, and will not duplicate the opportunities currently offered.

South Piedmont Community College
(Community College Name)

has assessed the need for this program and the resources required to maintain a viable program and certifies that the college can operate this program efficiently and effectively within the resources available to the college.

The college understands that this proposed program will require a program accountability report that will include items such as student success measures, enrollment trends, completion rates, and employment data three years after implementation if the program is approved by the State Board.

(A copy of the minutes from the Board of Trustees meeting(s) where the proposed program was discussed and approved must be attached to the application.)

Signature, President of College

Date

Signature, Board of Trustees Chair

Date
Curriculum Program Title: Musculoskeletal Sonography (Certificate)  
Concentration: (not applicable)  

Code: C45xxx  
CIP Code: 51.0910

**Curriculum Description**

The Musculoskeletal Sonography curriculum provides sonographers the didactic and clinical experience necessary to perform entry level musculoskeletal (MSK) sonography.

Course work includes introduction to normal and abnormal anatomy and physiology of the upper and lower extremities, sonographic physical principles, and the production of sonographic images of the musculoskeletal system using state of the art equipment.

Graduates may be eligible to apply to the American Registry of Diagnostic Medical Sonography (ARDMS) for national registry in Musculoskeletal Sonography. Graduates may find employment in clinics, hospitals, physicians’ offices, mobile services, and educational institutions.

*Individuals entering this curriculum must be registered or registry-eligible for the American Registry of Diagnostic Medical Sonography (ARDMS) or American Registry for Radiologic Technology (ARRT) exam for sonography.*

**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>Minimum General Education Hours</th>
<th>AAS</th>
<th>Diploma</th>
<th>Certificate</th>
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</thead>
<tbody>
<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>
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</tbody>
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**Total Semester Hours Credit (SHC)**  
AAS: 64-76  
Diploma: 36-48  
Certificate: 12-18

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*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.*
**Proposed Major Hours**
[ref. ID 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.

<table>
<thead>
<tr>
<th>Musculoskeletal Sonography (Certificate) C45xxx</th>
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<tbody>
<tr>
<td><strong>Minimum Major Hours Required</strong></td>
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<tr>
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<tr>
<td>**A. <strong>CORE</strong></td>
</tr>
<tr>
<td><strong>Required Courses:</strong></td>
</tr>
<tr>
<td>MSK 110  Musculoskeletal Sonography I</td>
</tr>
<tr>
<td>MSK 111  Musculoskeletal Sonography II</td>
</tr>
<tr>
<td>MSK 112  Musculoskeletal Sonography III</td>
</tr>
<tr>
<td>MSK 189  Musculoskeletal Topics</td>
</tr>
<tr>
<td>SON 111  Sonographic Physics</td>
</tr>
<tr>
<td>**B. <strong>CONCENTRATION</strong> (Not applicable)</td>
</tr>
<tr>
<td>**C. <strong>OTHER MAJOR HOURS</strong></td>
</tr>
</tbody>
</table>

To be selected from the following prefixes:

MED, MSK, and SON

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 2 semester hours of credit.
Musculoskeletal Sonography Courses

**MSK 110 Musculoskeletal Sonography I**
Class: 2  Lab: 2  Clinical: 3  Credit: 4  
Prerequisites: None  
Corequisites: None  
This course introduces musculoskeletal (MSK) sonography. Emphasis is placed on the sonographic anatomy of the upper and lower extremities with correlated laboratory exercises. Upon completion, students should be able to recognize and acquire basic MSK images and correlate with normal anatomical structures.

**MSK 111 Musculoskeletal Sonography II**
Class: 1  Lab: 2  Clinical: 3  Credit: 3  
Prerequisites: None  
Corequisites: MSK 110  
This course covers musculoskeletal (MSK) pathology recognizable on sonograms. Emphasis is placed on abnormal MSK sonograms with correlated sonographic cases. Upon completion, students should be able to recognize pathological processes seen in sonographic examinations.

**MSK 112 Musculoskeletal Sonography III**
Class: 2  Lab: 2  Clinical: 0  Credit: 3  
Prerequisites: None  
Corequisites: MSK 110  
This course provides additional musculoskeletal (MSK) sonography applications which may include pediatrics and interventional studies. Emphasis is placed on interventional and pediatric applications. Upon completion, students should be able to recognize and acquire MSK images used in interventional and pediatric applications.

**MSK 189 Musculoskeletal Topics**
Class: 2  Lab: 0  Clinical: 0  Credit: 2  
Prerequisites: None  
Corequisites: MSK 110  
This course provides an overview of musculoskeletal (MSK) sonography. Emphasis is placed on registry preparation. Upon completion, students should be able to demonstrate comprehensive knowledge of musculoskeletal sonography and may be eligible to take the American Registry of Diagnostic Medical Sonography MSK registry exam.
STATE BOARD OF COMMUNITY COLLEGES

NEW CURRICULUM PREFIX - TIERED FUNDING FORMULA RECOMMENDATIONS

The State Board of Community Colleges is asked to assign the following new curriculum prefix to the North Carolina Community College System Tiered Funding Formula:

**Tier 1A**

MSK – Musculoskeletal Sonography

Rationale: The MSK curriculum prefix is in the area of health care. Individuals enrolled in MSK courses must be registered or registry-eligible for the American Registry of Diagnostic Medical Sonography (ARDMS) or American Registry for Radiologic Technology (ARRT) exam for sonography. The SON curriculum course prefix for Medical Sonography is a Tier 1A classification.

**Background:**
On August 15, 2014, the State Board of Community Colleges adopted the 2014-2015 State Aid Allocations and Budget Policies, which included the implementation of a four-tiered funding model. To implement the Tiered Funding Formula Model, all existing curriculum and continuing education course prefixes were assigned to one of four funding levels as defined below:

**Tier 1A:** Includes curriculum budget FTE in health care and technical education courses that train North Carolinians for immediate employment in priority occupations that have documented skills gaps and pay higher wages. This tier also includes FTE in a limited number of continuing education courses that train students for the exact same third-party certification as curriculum courses in Tier 1A.

**Tier 1B:** Includes curriculum budget FTE in other high cost areas of health care, technical education, lab-based science, and college-level math courses. With the implementation of Closing the Skills Gap, Tier 1B also includes FTE in short-term, workforce continuing education courses that help prepare students for jobs in priority occupations and lead to competency-based industry credentials.

**Tier 2:** Includes

a) all other curriculum budget FTE,

b) all Basic Skills budget FTE, and

c) budget FTE associated with other continuing education courses that are scheduled for 96 hours or more and are mapped to a third-party credential, certification, or industry-designed curriculum.

**Tier 3:** Includes all other continuing education budget FTE. This weighted allocation model is designed to provide a funding differential between each tier. Tier 1A is funded at a level equal to 30% higher than Tier 2, while Tier 1B is funded at a level that is 15% higher than Tier 2. Tier 3 is funded at a rate that is 15% less than Tier 2.

**Contact Person:**
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