

Program Title: **Diagnostic Medical Sonography**

Degree/Certificate: **Associate in Applied Science**

Options:

Delivery Site(s): **North Central Missouri College and Hillyard Technical Center**

CIP Classification: **51.0910**

Implementation Date: **Fall 2012**

Cooperative Partners: **Hillyard Technical Center**

Expected Date of First Graduation: **December 2013**

AUTHORIZATION

<u>Name/Title of Institutional Officer</u>	<u>Signature</u>	<u>Date</u>
Joyce Cutsinger Person to Contact for More Information	<u>660-359-3948 ext 1284</u> Telephone	

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JAMES GARNER - VT  5-15-12

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STUDENT ENROLLMENT PROJECTIONS

After the first year, ten new students will be admitted each year to the Diagnostic Medical Sonography Program. Beginning the second year, two classes will be running simultaneously.

Year	1	2	3	4	5
Full-Time (core at HTC)	8	10/10	10/10	10/10	10/10
Part-Time (General Education at NCMC)	10	10/10	10/10	10/10	10/10
TOTAL	18	20/20	20/20	20/20	20/20

MARKET DEMAND

According to the data obtained from the U.S. Department of Labor, Bureau of Labor Statistics, Occupational Outlook Handbook employment of Diagnostic Medical Sonographers is expected to grow 18 percent through 2018. This projected growth ranks sonographers among the fastest growing occupations, as healthcare providers increasingly utilize ultrasound imaging as a safer and more cost-effective alternative to radiological procedures. Ultrasound imaging technology is expected to evolve rapidly and spawn many new sonography procedures, enabling sonographers to scan and image areas of the body where ultra-sound has not traditionally been used.

SOCIETAL NEED

Job opportunities should be favorable according to the Society of Diagnostic Medical Sonography (<http://www.sdms.org>). In addition to job openings from growth, some openings will arise from the need to replace sonographers who retire or leave the occupation permanently. However, job opportunities will vary by geographic area. Sonographers willing to relocate will have the best job opportunities. Sonographers with multiple specialties or multiple credentials also will have good prospects.

Beginning 2005, the Registry only allows students who graduate from an accredited school with an AAS or BS degree to sit for national exams. The national exams certify the students have successfully achieved specific competencies. The Diagnostic Medical Sonography program at HTC recently became accredited by The Commission on Accreditation of Allied Health Education Programs (CAAHEP).

According to the CAAHEP website: "Accreditation is granted when a program is in substantial compliance with the accreditation Standards and remains in effect until due process has demonstrated cause for its withdrawal. Only the CAAHEP Board of Directors has the authority to remove accreditation. Accreditation Standards: are qualitative and quantitative measures used in assessing a health science education program's compliance with established national norms. . ."

METHODOLOGY USED TO DETERMINE B & C

The closest Diagnostic Medical Sonography programs are in Kansas City, St. Louis, Springfield, Rolla, and Columbia, Missouri. Offering the Diagnostic Medical Sonography AAS as a joint venture between NCMC and HTC,

will provide student's the opportunity to expand their skills by specializing in Sonography. Diagnostic Medical Sonographers usually specialize in one of six areas: abdominal sonography, cardiac sonography, neuro sonography, obstetric and gynecologic sonography, ophthalmologic sonography, and vascular technology.

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DUPLICATION AND COLLABORATION

The closest program that offers the AAS in Diagnostic Medical Sonography is in Fenton, Missouri. As this program is over 200 miles from north central/north west Missouri, there is no duplication. There are currently four certificate programs in the state of Missouri: Rolla, St. Louis, Kansas City, and Hillyard, and there is one diploma program in Springfield, Missouri.

NCMC has provided quality education for 87 years. By articulating the resources of all educational divisions, as well as the curriculum from HTC, we will provide a cost effective, quality program that prepares individuals to become diagnostic medical sonographers. The program will provide the avenue for professional development and/or continued education, which in turn, leads to an individual reaching his/her full earning potential.

The program design is not only cost effective through utilization of many existing resources but also offers an opportunity that does not otherwise exist in northern Missouri. Taking general education classes at NCMC will minimize expense for the student in the Green Hills area.

the grandfathered position the individual will be required to meet all of the qualification standards in order to qualify as a Program Director at another institution.

IITC will provide faculty and instructional staff as described below.

Faculty and Instructional Staff

If the key personnel do not have all of the appropriate credentials for the learning concentrations offered, then there must be another faculty member with the appropriate credentials who will assume the didactic instruction and clinical evaluation responsibilities specific to that concentration.

All faculty must be familiar with program goals, be able to demonstrate the ability to develop an organized plan of instruction and evaluation, and have appropriate credentials for the learning areas they teach.

Didactic Instructor(s)

Responsibilities

The instructional staff must be responsible for providing didactic content, evaluating students, reporting progress, and for the periodic review and updating of course material.

Qualifications

The instructors must be individually credentialed if a credentialing examination is offered in the concentration that the instructor is teaching and the program is seeking initial or continuing accreditation in the concentration. They must also be qualified by education and experience, and be effective in teaching the subjects assigned.

Clinical Instructor(s)

A clinical instructor must be identified for each clinical affiliate/clinical education center.

Responsibilities

A clinical instructor must be available to students whenever he or she is assigned to a clinical setting, provide appropriate clinical supervision, and be responsible for student clinical evaluation. The program must provide a position description for a clinical instructor to carry out educational responsibilities.

Qualifications

Clinical instructors must have the appropriate credential for the concentration they are teaching.

C. Curriculum

The curriculum must ensure the achievement of program goals and learning domains. Instruction must be an appropriate sequence of classroom, laboratory, and clinical activities. Instruction must be based on clearly written course syllabi that include course description, course objectives, methods of evaluation, topic outline, and competencies required for graduation.

A desirable program-length goal for the core curriculum and one learning concentration, excluding pre-requisites, is 18 months. Each additional learning concentration should encompass an additional six months of education.

Faculty: For General Education Classes at NCMC

- Full time faculty must possess the educational credentials established by NCMC to teach the individual courses.

Enrollment Projections

- Ten full time students will be admitted each summer. Beginning with the second year, two classes will be concurrently in session.
- Ten part time students will be enrolled per year taking general education classes.

Student and Program Outcomes

The addition of this program provides a learning opportunity to improve job potential and earning power for graduates, while at the same time meeting the needs of Diagnostic Medical Sonography in the northwest and north central areas of

Missouri. Furthermore, addition of this program fulfills the mission of the College by helping individuals attain their educational goals; therefore, the program faculty, and staff contributes to the quality and well being of the community it serves. Successful completion of the program will result in an Associate in Applied Science degree. The following program and student outcomes are consistent with the Strategic Plan of North Central Missouri College.

Program Outcomes:

The program will:

- graduate ten qualified, competent individuals ready to assume the responsibilities of the Diagnostic Medical Sonographer, per year.
- foster positive relationships with business and industry through meeting the needs of area health care industries.
- fulfill the area facilities' need for Diagnostic Medical Sonographers in a cost effective manner.
- anticipate 80% placement for all graduates.
- teach students to utilize oral and written communication skills.

Student Outcomes:

The student will:

- enter the workforce as a Diagnostic Medical Sonographer in a physician's office, hospital, outpatient imaging center, or in other professional areas after graduation.
- provide basic patient care and comfort during clinical training.
- demonstrate knowledge and understanding of human gross anatomy and sectional anatomy.
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- employ professional judgment and discretion.
- understand the fundamental elements for implementing a quality assurance and improvement program, and the policies, protocols, and procedures for the general function of the ultrasound laboratory.
- recognize the importance of continuing education.
- recognize the importance of, and employ, ergonomically correct scanning techniques.
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Sonographers are not required at this time to obtain a state or national license, however this is strongly encouraged. A passing score on The American Registry for Diagnostic Medical Sonography (ARDMS) examination is equivalent to a national license and is recognized nationwide. A few states require that a sonographer obtain a state license, but Missouri is not one of those states.

Program Accreditation

Under the auspices of North Central Missouri College, the program will be accredited by the Missouri Coordinating Board for Higher Education and The Higher Learning Commission, a member of the North Central Association.

The Diagnostic Medical Sonography program, General and Vascular concentrations are accredited through The Commission on Accreditation of Allied Health Education Programs (CAAHEP).

Clinical, Alumni, and Employer Survey

- Clinical evaluations are sent to all sites after each rotation.
- 180 day graduate follow surveys will be sent.
- Employer follow up surveys will be sent

Exhibit A
Advisement Sheet

NORTH CENTRAL MISSOURI COLLEGE
AAS in Medical Diagnostic Sonography

Name: _____
ID #: _____
Phone: _____

Pre-requisites

BI240 Anatomy	4			
**BI242 Physiology	4			
**PS 108 Introduction to Physics	4			
BT 160 Microcomputer Applications	3			
AH 160 Basic Medical Terminology	3			
*MT122 College Algebra	3			
SP175 Speech	3			
* BI 100 Biology	5			

Test Scores

English	ACT	Compass
_____	_____	_____
Math	_____	_____
Reading	_____	_____

Other required general education classes

*EN101 English I	3	
*HI103 American History to 1877 OR *PL216 National Government	3	
PY121 General Psychology	3	
BT240 Employment Strategies	1	

Other Classes

Total: 39 credit hours

Hillyard's Contact Information:

Tabatha Hatfield 816-671-4170 or Tabatha.Hatfield@sjsd.k12.mo.us
Applications due Jan. 15th Classes begin in June

*Testing Required
**Pre-Requisite Required

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FORM PS

PROGRAM STRUCTURE

- A. Total credits required for graduation: 69 credit hours
- B. Residency requirements, if any: 15 credit hours
- C. General education: Total credits: 39 credit hours

GENERAL REQUIREMENTS:

Taken at NCMC

COMMUNICATIONS

6 CREDIT HOURS

English I
Speech

3 credit hours
3 credit hours

SOCIAL SCIENCE

6 CREDIT HOURS

American History to 1877 or National Government
General Psychology

3 credit hours
3 credit hours

MATHEMATICS

3 CREDIT HOURS

College Algebra

3 credit hours

MANAGING INFORMATION

3 CREDIT HOURS

Microcomputer Applications

3 credit hours

D. Major requirements: Total credits:

21 credit hours

Biology

5 credit hours

Anatomy

4 credit hours

Physiology

4 credit hours

Introduction to Physics

4 credit hours

Basic Medical Terminology

3 credit hours

Employment Strategies

1 credit hours

Courses to be taken at HTC:

30 credit hours

Pathophysiology

Fundamentals of Ultrasound

Abdomen I&II

OB/GYN I&II

Vascular Technology I&II

Ultrasound Physics and Instrumentation I&II

Small Parts

Advanced Sonographic Imaging

Physics Registry Review

Senior Seminar Review Course

Clinical I&II&III

E. Free elective credits: none required

F. Requirements for thesis, internship or other capstone experience:

The core sonography program offered at HTC is designed to provide didactic education and simulated lab scanning for the first six months. After the first six months, the students participate in clinical training part time

and in didactic education part time. During the last eight months of the program, the student attends clinical training full time and takes an online registry review course.

G. Any unique features such as interdepartmental cooperation:

The following departments from NCMC will be working with Hillyard Technical Center to deliver this program:

- Allied Health Sciences Department
- Biological Science Department
- Chemistry Department
- Physical Sciences Department
- Mathematics Department
- Communications Department
- Information Management
- Political Science Department

HTC houses a state of the art Diagnostic Medical Sonography classroom and lab. The classroom is equipped with 12 computers for student use. HTC also has a scanning lab with three fully operational sonography machines (Siemens Elegra, Accuson Antares, & Siemens Aspen). They also have a simulation machine that works with a scanning phantom and a non-invasive vascular machine.

Online libraries/resources will be available for students to experience researching the current standard of care, including: philosophies, products and treatment modalities at both HTC and NCMC.

Teamwork among all students and faculty will also be a program philosophy that will be strongly encouraged. It is the belief that any work environment can be more successful and the work environment improved by using the teamwork approach.

Form PG

PROGRAM CHARACTERISTICS AND PERFORMANCE GOALS

Institution Name	North Central Missouri College
Program Name	Associate in Applied Science in Diagnostic Medical Sonography
Date	Program Start Date Projected for fall 2012

(Although all of the following guidelines may not be applicable to the proposed program, please carefully consider the elements in each area and respond as completely as possible in the format below. Quantification of performance goals should be included wherever possible.)

Student Preparation

The student will:

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- successfully complete Anatomy, Physiology, Biology, Introduction to Physics, Basic Medical Terminology, Employment Strategies, English I, Speech, Psychology, Microcomputer Applications, College Algebra, and American History to 1877 OR National Government prior to starting the Diagnostic Medical Sonography program.
- maintain 2.5 cumulative GPA.
- complete all classes with a "C" or better.
- complete 15 credit hours at North Central Missouri College.
- submit graduation application to NCMC no later than the published deadline.
- take the required exit test at NCMC prior to graduation.

Faculty Characteristics

Program Administrator/Coordinator: For Medical Diagnostic Sonography Core Classes at HTC

- The program director must be responsible for the structure as well as the daily operation of the program, including organization, administration, periodic review and evaluation, continued development, and general effectiveness of program curricula. The program director must ensure that the effectiveness of all clinical affiliates/clinical education centers is maintained. The responsibilities of the program director must not be adversely affected by educationally unrelated functions.
- Qualifications: The program director must:
 - 1) be an appointed faculty member or institutional equivalent.
 - 2) must be an ARDMS registered sonographer.
- 3) possess a minimum of a Bachelor's Degree.
- 4) have course work in instructional methodologies, evaluation and assessment.
- 5) possess the appropriate credential(s) specific to one or more of the concentration(s) offered..
- 6) have proficiency in curriculum development.
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As of January 1, 2012, program directors at CAAHEP-accredited Diagnostic Medical Sonography programs will be grandfathered for the Bachelor's degree requirement in their current positions at their current institutions. Upon leaving

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Form FP

FINANCIAL PROJECTIONS

	Year 1	Year 2	Year 3	Year 4	Year 5
I. Expenditures					
A. One-time:					
New/renovated space					
Equipment	0	0	0	0	0
Library	0	0	0	0	0
Consultants	0	0	0	0	0
Other	0	0	0	0	0
ITV Classroom	0				
Accreditation	0				
Total for One-time Expenditures					
B. Recurring:					
Faculty	\$2,000	\$2,000	\$2,500	\$2,500	\$3,000
Staff	(advisor)	(advisor)	(advisor)	(advisor)	(advisor)
Benefits	0	0	0	0	0
Equipment	Will use	Will use	Will use	Will use	Will use
Library	existing	existing	existing	existing	existing
Other	faculty	faculty	faculty	faculty	faculty
Total for Recurring Expenditures	\$2,000	\$2,000	\$2,500	\$2,500	\$3,000
TOTAL (A + B)					
2. Revenues					
Tuition/Fees					
Institutional/Resources					
Other					
	General education classes 39 hours X 10 full time students X \$126 = \$49,140	General education classes 39 hours X 20 full time students X \$126 = \$98,280	\$98,280	\$98,280	\$98,280
	Plus 20 hours X 10 part time students X \$126 = \$25,200	Plus 20 hours X 10 part time students X \$126 = \$25,200	\$25,200	\$25,200	\$25,200

Form PG

PROGRAM CHARACTERISTICS AND PERFORMANCE GOALS

Institution Name North Central Missouri College
Program Name Associate in Applied Science in Diagnostic Medical Sonography
Date Program Start Date Projected for fall 2012

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*MT122 College Algebra	3 _____
SP175 Speech	3 _____
* BI 100 Biology	5 _____

Test Scores

	ACT	Compass
English	_____	_____
Math	_____	_____
Reading	_____	_____

Other Classes

Other required general education classes

*EN101 English 1	3 _____
*HI103 American History to 1877 OR	
*PL216 National Government	3 _____
PY121 General Psychology	3 _____
BT240 Employment Strategies	1 _____

Total: 39 credit hours

***Testing Required**
****Pre-Requisite Required**

Hillyard's Contact Information:

Tabatha Hatfield 816-671-4170 or Tabatha.Hatfield@sjsd.k12.mo.us
 Applications due Jan. 15th Classes begin in June

Started HTC: _____

Graduation Date: _____

Graduation Application: _____

Revised 4-12