



Program Proposal

for

Greenville Technical College

Associate Degree in Health Science  
Major: Diagnostic Medical Sonography

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Thomas E. Barton, Jr., President  
Submitted:

## **Classification**

Name of Proposed Program: Diagnostic Medical Sonography

Academic Unit: Health Science Division

Designation, Type and Level of Degree: Associate Degree in Health Science

Proposed Date of Implementation: Fall 2007

CIP Code: 51.0910

Identification of program: New

Program Location: Barton Campus  
226 South Pleasantburg Drive, Greenville, South Carolina 29606

## Justification

Greenville Technical College (GTC) proposes to offer an Associate Degree in Health Science with a major in Diagnostic Medical Sonography (DMS). Diagnostic medical sonographers, also known as ultrasound and/or vascular technologists, use high frequency sound waves to image organs, masses, and fluid accumulations within the human body. Sonography is becoming an increasingly attractive alternative to radiologic procedures as patients seek safer treatment methods. Unlike most diagnostic imaging methods, sonography does not involve radiation, so harmful side effects and complications from repeated use are less common for both the patient and the sonographer (<http://www.collegegrad.com/careers/proft92.shtml#emp>). Sonographic technology is expected to evolve rapidly and to spawn many new sonography procedures, such as 3D- and 4D-sonography for use in obstetric and ophthalmologic diagnosis (<http://www.bls.gov/oco/ocos273.htm#outlook>). Physicians rely on quality images provided by highly skilled sonographers in order to properly diagnose patients' conditions and to ensure the best health care possible.

Employment opportunities in the field of DMS continue to increase as hospitals and outpatient care centers expand to meet the needs of the Upstate area's population growth. Diagnostic medical sonographers and registered vascular technologists (RVT), a specialty within the DMS field, find positions in hospitals, medical clinics, and physician's private practice offices. Employment in DMS is projected to grow at a faster rate than the average for all occupations through 2014 as the population grows and ages, which will create an increased demand for diagnostic imaging and therapeutic technology (<http://www.collegegrad.com/careers/proft92.shtml#emp>). In addition to job openings created by population growth and aging, employment opportunities will arise from the need to replace sonographers who retire or change careers (<http://www.bls.gov/oco/ocos273.htm#outlook>). Currently, a registered sonographer with an associate degree is one of the top ten paid professions, with an entry salary range of \$40,000 to \$60,000 annually (<http://www.cnn.com/2006/US/Careers/05/04/cb.associates/>).

The South Carolina Hospital Association reported that 37% of hospitals report a workforce challenge regarding sonographers. Additionally, more than 35% of the hospitals reported that it took more than 120 days to fill positions in ultrasound ([http://www.scha.org/document.asp?document\\_id=40,4569,47](http://www.scha.org/document.asp?document_id=40,4569,47)). A recent employment needs survey reveals a shortage of diagnostic medical sonographers and RVTs in the Upstate area, which is affecting local health care facilities' ability to meet local needs.

GTC currently offers a Diploma in Health Science with a major in DMS. However, based on the recommendations from the College's Medical Imaging Advisory Committee, various medical facilities and former students, there is a need to incorporate vascular technology training and a strong need for including additional clinical hours in diagnostic imaging in the program. These additional competencies cannot be incorporated into the current diploma program without exceeding the credit hour limit (52

semester credit hours) for such programs. Therefore, the college is seeking to offer the program at the associate degree level.

**Anticipated Program Demand and Productivity**

The Employment Needs Survey conducted in the five counties of the Upstate area with written permission from Tri-County Technical College (TCTC), Piedmont Technical College (PTC), and Spartanburg Community College (SCC) revealed the following openings:

	<b>2007</b>	<b>2008</b>	<b>2009</b>
Full Time	27	22	16
Part Time	2	1	1
Total	29	23	17

**Centrality to the College’s Mission**

GTC’s Institutional Mission states the purpose of the institution is “to provide a quality, post-secondary program and services primarily to the citizens of Greenville County through exceptional post-secondary programs and services.” The College pursues this based on seven Fundamental Beliefs; one of these is innovation: “The College initiates and promotes new programs and services to provide state-of-the-art education to meet the changing needs of the community.” GTC currently offers a diploma program in Diagnostic Medical Sonography and seeks to expand this program to include vascular specialization and clinical training. To accomplish this, the College proposes to replace the diploma program with an associate degree program.

**Assessment of Extent to Which Proposed Program Duplicates Existing Programs in the State**

GTC is the first technical college in the state to propose offering an associate degree program in DMS. As noted earlier, GTC currently has the only diploma program in DMS in the technical college system. This program is accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP) and is recognized as being in compliance with nationally established standards. This accreditation indicates that the DMS diploma program has an appropriate curriculum, which includes the competencies needed for success in the field upon completion. Also, the CAAHEPP accreditation provides graduates the opportunity to sit for certification and licensure exams and obtain employment in accredited medical facilities.

## **Relationship of Proposed Program to Existing Programs at Proposing Institution**

The diploma program in DMS is a fairly new program, implemented at GTC in the Fall of 2002. Enrollment in the program has grown steadily and was reported as being 37 students in the 2005-2006 South Carolina Technical College System (SCTCS) program evaluation report. Reported graduate placement rates for that year are also excellent – 100%. Growth in graduates has been slower, in part due to the sudden loss of a DMS instructor mid-semester in the 2005-2006 academic year. The DMS diploma program was placed on probation due to low graduation numbers in the SCTCS program evaluation report for 2005-2006. A new instructor has been hired, and the program is expected to graduate sufficient students in the 2006-2007 program evaluation year to meet SCTCS program evaluation productivity standards. The College plans to close the DMS diploma program upon approval of the associate degree program. Students who are presently enrolled in the DMS diploma program will be allowed to graduate from the diploma program or may chose to transfer into the proposed DMS associate degree program.

GTC has an established record for conducting successful health care programs. The College operates associate degree programs in Dental Hygiene, Radiologic Technology, Nursing (ADN), Emergency Medical Technology, Medical Laboratory Technology, Health Information Management, Respiratory Care, Physical Therapist Assistant, and Occupational Therapy Assistant. The 2005 SCTCS program evaluation data indicate that all of these programs have good enrollment, graduation, and placement numbers. The wide array of health care programs offered at GTC will complement the proposed program. All of the general education courses required for the proposed program currently exist within the College's course offerings. This will give the College the benefit of economies of scale in offering those courses that are applicable to other related health care professional programs. The proposed program will provide additional course selections for students in other health science programs. Additionally, the College has expertise in dealing with health care education accreditation agencies and licensure requirements. The proposed program is designed primarily as a terminal degree.

## **Enrollment**

Admission to the Associate Degree in Health Science with a major in DMS will be based on the following:

- Possession of a high school diploma (or equivalent)
- Documentation of acceptable scores (ASSET or COMPASS) to place into MAT 109 and ENG 101 or 920 on SAT or 19 on ACT
- Submission of official transcripts from all high school and colleges attended

Students who are unable to meet admission requirements will be counseled and advised to upgrade their skills through developmental courses until admission requirements are met. Persons possessing a degree (associate or higher) from a SACS accredited

institution may be considered to have met academic admission requirements. Transfer students must meet the college transfer student admission requirements.

Projected enrollment in the following tables is based on generalized assessment of regional interest in the program and the Employment Needs Survey. The charts reflect new freshman and continuing sophomore enrollment. Estimated first year enrollment in the new degree program is 24 full-time students for Fall 2007; 12 students will be new to the institution and 12 will transfer from other programs. With consideration to recent attrition in health sciences programs, it is anticipated that the annual attrition rate will be approximately ten percent for 2007-2008 due to poor performance and/or life challenges (transportation problems, employment conflicts, family responsibilities, and so forth). GTC anticipates graduating 13 students from the program annually. Program enrollment for 2008 and 2009 is estimated at 16 sophomores and 20 freshmen for a total of 36.

PROJECTED TOTAL ENROLLMENT - FRESHMEN						
YEAR	FALL		SPRING		SUMMER	
	HEADCOUNT	TOTAL CREDIT HOURS	HEADCOUNT	TOTAL CREDIT HOURS	HEADCOUNT	TOTAL CREDIT HOURS
2007-08	20	320	19	266	18	180
2008-09	20	320	18	252	16	160
2009-10	20	320	18	252	16	160

PROJECTED TOTAL ENROLLMENT - SOPHOMORE						
YEAR	FALL		SPRING		SUMMER	
	HEADCOUNT	TOTAL CREDIT HOURS	HEADCOUNT	TOTAL CREDIT HOURS	HEADCOUNT	TOTAL CREDIT HOURS
2007-08	4	60	3	39	2	16
2008-09	16	240	14	182	13	104
2009-10	16	240	14	182	13	104

PROJECTED TOTAL ENROLLMENT						
YEAR	FALL		SPRING		SUMMER	
	HEADCOUNT	CREDIT HOURS	HEADCOUNT	CREDIT HOURS	HEADCOUNT	CREDIT HOURS
2007-08	24	380	22	305	20	196
2008-09	36	560	32	434	29	264
2009-10	36	560	32	434	29	264

ESTIMATED ADDITIONAL ENROLLMENT - FRESHMEN						
YEAR	FALL		SPRING		SUMMER	
	HEADCOUNT	TOTAL CREDIT HOURS	HEADCOUNT	TOTAL CREDIT HOURS	HEADCOUNT	TOTAL CREDIT HOURS
2007-08	12	192	11	154	10	100
2008-09	12	192	11	154	10	100
2009-10	12	192	11	154	10	100

ESTIMATED ADDITIONAL ENROLLMENT - SOPHOMORE						
YEAR	FALL		SPRING		SUMMER	
	HEADCOUNT	TOTAL CREDIT HOURS	HEADCOUNT	TOTAL CREDIT HOURS	HEADCOUNT	TOTAL CREDIT HOURS
2007-08	0	0	0	0	0	0
2008-09	8	120	7	91	6	48
2009-10	8	120	7	91	6	48

ESTIMATED ADDITIONAL ENROLLMENT						
YEAR	FALL		SPRING		SUMMER	
	HEADCOUNT	CREDIT HOURS	HEADCOUNT	CREDIT HOURS	HEADCOUNT	CREDIT HOURS
2007-08	12	192	11	154	10	100
2008-09	20	312	18	245	16	148
2009-10	20	312	18	245	16	148

Associate in Health Science  
Major: Diagnostic Medical Sonography  
Total Credit Hours 76

Courses				
1 <sup>st</sup> Semester: Fall		Lecture	Lab	Credits
ENG 101	English Composition I	3.0	0.0	3.0
BIO 210	Anatomy & Physiology I	3.0	3.0	4.0
PSY 201	General Psychology	3.0	0.0	3.0
CPT 101	Introduction to Computers	3.0	0.0	3.0
AHS 102	Medical Terminology	3.0	0.0	3.0
Total Hours		15.0	3.0	16.0

Courses				
2 <sup>nd</sup> Semester: Spring		Lecture	Lab	Credits
SPC 200/205/209	Speech Course	3.0	0.0	3.0
BIO 211	Anatomy & Physiology II	3.0	3.0	4.0
MAT 109	College Algebra/Modeling	3.0	0.0	3.0
College Transferable Humanities Elective <small>Recommend: REL 201</small>		3.0	0.0	3.0
RAD 104	Intro to Physics	0.0	3.0	1.0
Total Hours		12.0	6.0	14.0

Courses				
3 <sup>rd</sup> Semester: Summer		Lecture	Lab	Credits
DMS 101	Ultrasound Physics & Instrumentation	2.0	0.0	2.0
DMS 105	Sonographic Anatomy of the Abdomen	2.0	6.0	4.0
DMS 164	Introduction to Clinical Education	0.0	6.0	2.0
DMS 100	Patient Care for Sonography	1.0	3.0	2.0
		5.0	15.0	10.0
4 <sup>th</sup> Semester: Fall				
DMS 102	Ultrasound Physics & Instrumentation II	3.0	0.0	3.0
DMS 116	Abdominal Ultrasound	2.0	0.0	2.0
DMS 117	Gynecology	2.0	0.0	2.0
DMS 165	Clinical Education II	0.0	24.0	8.0
		7.0	24.0	15.0
5 <sup>th</sup> Semester: Spring				
DMS 118	Embryology and First Trimester Ultrasound	2.0	0.0	2.0
DMS 130	Selected Topics in Sonography	2.0	0.0	2.0
DMS 124	OB/Gyn Sonography II	2.0	0.0	2.0
DMS 166	Advanced Clinical Education	0.0	21.0	7.0
		6.0	21.0	13.0
6 <sup>th</sup> Semester: Summer				
DMS 167	Imaging Practicum	0.0	24.0	8.0
		0.0	24.0	8.0



**Courses Recently Added to the Catalog of Approved Courses:**

COURSE	CREDIT HOURS
<b>Patient Care for Sonography</b>	2
<b>Sonographic Anatomy of the Abdomen Gynecology</b>	4
<b>Embryology and First Trimester Ultrasound</b>	2
<b>Introduction to Clinical Education</b>	2
<b>Advanced Clinical Education</b>	7
<b>Imaging Practicum</b>	8

**Course descriptions for new courses:**

**Patient Care for Sonography**

This course is a study of the techniques of proper patient care, including communication, patient assessment, infection control, patient confidentiality, cultural diversity, body mechanics, and other skills required within a sonographic lab.

**Sonographic Anatomy of the Abdomen**

This course is a study of the abdominal structures with emphasis on sonographic imaging methods and procedures.

**Gynecology**

This course is the study of anatomy, physiology, and pathology of the female reproductive system with an emphasis on sonographic imaging methods and procedures.

**Embryology and First Trimester Ultrasound**

This course is the study of anatomy, physiology, and pathology associated with first trimester ultrasound including an in-depth study of the reproductive process with an emphasis on sonographic imaging methods and procedures.

**Introduction to Clinical Education**

This course is a supervised clinical experience and practice designed to introduce the student to the Diagnostic Ultrasound Department.

**Advanced Clinical Education**

This course is a supervised clinical experience and practice designed to continue and advance the student's ultrasound scanning skills and techniques.

**Imaging Practicum**

This course is a supervised clinical experience and practice designed to continue and advance the student's ultrasound scanning skills and techniques. This clinical course also provides an opportunity for students to explore advancements in sonography.

## Clinical Affiliations

Students in the Diagnostic Medical Sonography program will complete clinical training in one or more of the following clinical education centers. Signed affiliation agreements clearly stating each party's responsibilities are on file at the college.

<b><u>HOSPITAL</u></b>	<b><u>CLINICAL INSTRUCTOR</u></b>
<b>ALLEN BENNETT MEMORIAL HOSPITAL</b> 313 Memorial Drive Greer, SC 29650	<b>Tammy Belcher, RDMS</b> <b>Gina Miers, RDMS</b> (864) 848 – 8706 FAX: (864) 848-8714
<b>ANDERSON AREA MEDICAL CENTER</b> 800 North Fant Street Anderson, SC 29621	<b>Tracie Robinson, RDMS</b> <b>Gaye Smith, RDMS</b> (864) 261-1419 FAX: (864) 261-1415
<b>ANMED HEALTH CAMPUS</b> 2000 East Greenville Street Anderson, SC 29621	<b>Tracie Robinson, RDMS</b> <b>Gaye Smith, RDMS</b> (864) 716-6553 FAX: (864) 716-6741
<b>CLEVELAND REGIONAL OUTPATIENT RADIOLOGY</b> 805 North Morgan Street Shelby, NC 28150	<b>Jamisa Russell, RDMS</b> (704) 482-8353 FAX: (704) 484-9303
<b>GREENVILLE MEMORIAL MEDICAL CENTER (GHS)</b> 701 Grove Road Greenville, SC 29605-5601	<b>Kate Davie, RDMS</b> <b>Beth Darby, RDMS</b> (864) 455-4917 FAX (864) 455-4318
<b>HEALTHSOUTH DIAGNOSTIC CENTER</b> 1 Cannon Drive Greenville, SC 29607	<b>Tatsiana Makarchyk</b> (864) 242-4011 Fax (864) 233-2677
<b>HILLCREST HOSPITAL</b> 729 Main Street Simpsonville, SC 29681	<b>Tanya Jacobi, RDMS</b> (864) 454-6184 FAX: (864) 454-6141
<b>LAURENS COUNTY HOSPITAL</b> P. O. Drawer 976 Clinton, SC 29325	<b>Melissa Gilstrap, RDMS</b> (864) 833-9433 FAX (864) 833-9488
<b>MARY BLACK HOSPITAL</b> 1700 Skylyn Drive Spartanburg, SC 29307	<b>Gail Caldwell, RDMS</b> (864) 573-3863 FAX: (864) 573-3160 Women's Pavillion 573-3452
<b>OCONEE MEMORIAL HOSPITAL</b> 298 Memorial Drive Seneca, SC 29672	<b>Grace Underwood, RDMS</b> <b>Lisa Lowery, RDMS</b> (864) 885-7110 FAX: (864) 885-7385

**HOSPITAL****CLINICAL INSTRUCTOR**

<b>PALMETTO BAPTIST MEDICAL CENTER</b> PO Box 2129 Easley, SC 29641	<b>Tammy Childs, RDMS</b> (864) 442-7681 FAX: (864) 552-7594
<b>PIEDMONT HEALTHCARE SYSTEM</b> 222 South Herlong Avenue Rock Hill, SC 29732	<b>Rebecca Paese, RDMS</b> <b>Nancy Adams, RDMS</b> (803) 329-6820 FAX: (803) 329-6812
<b>PRESBYTERIAN HOSPITAL</b> 200 Hawthorne Lane Charlotte, NC 28204	<b>Niles Fitzherbert, RDMS</b> (704) 384-4915 FAX: (704) 384-5693
<b>IMAGING AT MIDTOWN (Presbyterian)</b> <b>Formerly RANDOLPH RADIOLOGY</b> 1918 Randolph Road Charlotte, NC 28207	<b>Sandra Simmons, RDMS</b> (704) 342-8153 FAX: (704) 344-2615
<b>SAINT FRANCIS HOSPITAL</b> 1 St. Francis Drive Greenville, SC 29605	<b>Tom Shock, RDMS</b> <b>Candice Evans, RDMS</b> (864) 255-1800 Ext. 2363 FAX: (864) 255-1596
<b>SAINT FRANCIS WOMEN'S AND FAMILY HOSPITAL</b> 125 Commonwealth Drive Greenville, SC 29605	<b>Tom Shock, RDMS</b> <b>Candice Evans, RDMS</b> (864) 675-4031 FAX: (864) 675-4129
<b>SELF REGIONAL HEALTHCARE SYSTEM</b> 1325 Spring Street Greenwood, SC 29646	<b>Dolores Simpson, RDMS</b> (864) 227-4189 (864) 330-7168 (Imaging Center) FAX: (864) 227-4905
<b>SPARTANBURG REGIONAL MEDICAL CENTER</b> 101 East Wood Street Spartanburg, SC 29303	<b>Beatrice Kelly, RDMS</b> <b>Lynda Vassy, RDMS</b> (864) 560-6807 FAX: (864) 560-7354
<b>TY COBB HEALTHCARE SYSTEM</b> 577 Franklin Springs Street Royston, GA 30662	<b>Becky Bryant, RDMS</b> (706) 245-1475 FAX: (706) 245-1462

## Obstetrical Affiliates

### HOSPITAL

### CLINICAL INSTRUCTOR

<b>CENTER FOR WOMENS MEDICINE MFM (MMOB)</b> 890 West Faris Road Suite 450 Box 3 Greenville, SC 29605	<b>Krisee Hendricks, RDMS</b> (864) 455-5963 FAX: (864) 455-8904
<b>MARY BLACK MATERNAL FETAL MEDICINE</b> 1686 Skylyn Drive Spartanburg, SC 29304	<b>Jill Kirby, RDMS</b> <b>Lynn Gans, RDMS</b> (864) 573-3293 FAX: (864) 573-3446
<b>PERINATAL DIAGNOSTIC CENTER (Presbyterian)</b> 1718 E. Fourth Street Suite 604 Charlotte, NC 28204	<b>Anita Stewart, RDMS</b> (704) 384-5701 FAX: (704) 384-5642
<b>SPARTANBURG REGIONAL MATERNAL FETAL MEDICINE</b> 853 North Church Street Spartanburg, SC 29303	<b>Joyce Humphries, RDMS</b> (864) 560-1616 Fax: (864) 560-1669

## Faculty

<b>List Staff by Rank (e.g. Professor #1, Professor #2, Associate Professor, etc)</b>	<b>Highest Degree Earned</b>	<b>Field of Study</b>	<b>Teaching in Field (Yes/No)</b>
Instructor	A.S.	Radiology	Yes
Instructor, Part-time	B.S.	Radiology	Yes

The program will be administered through the Health Science Division, and additional administrators will not be required. The College currently has a full-time faculty member who will serve as the program director. This individual will be granted administrative release (one course) to conduct required administrative duties including, but not limited to, developing courses, scheduling classes, supervising faculty, facilitating student clinical opportunities, and managing program operations. The director will report to the Department Head/Associate Dean of Health Science who will dedicate 20% of her time to the program. In addition, the program will have a permanent part-time instructor (75%FTE) who will serve as clinical coordinator. This person is currently teaching in the diploma program. The program will share an administrative assistant with Medical Imaging Sciences. All faculty and staff are currently working for the college, and no additional faculty or staff will need to be hired.

<b>UNIT ADMINISTRATION/FACULTY/STAFF SUPPORT</b>						
<b>YEAR</b>	<b>NEW</b>		<b>EXISTING</b>		<b>TOTAL</b>	
	Headcount	FTE	Headcount	FTE	Headcount	FTE
<b>Administration</b>						
2007 – 08	0	0	1	0.2	1	0.2
2008 – 09	0	0	1	0.2	1	0.2
2009 – 10	0	0	1	0.2	1	0.2
<b>Faculty</b>						
2007 – 08	0	0	2	1.75	2	1.75
2008 – 09	0	0	2	1.75	2	1.75
2009 – 10	0	0	2	1.75	2	1.75
<b>Staff</b>						
2007 – 08	0	0	1	0.2	1	0.2
2008 – 09	0	0	1	0.2	1	0.2
2009 – 10	0	0	1	0.2	1	0.2

## Physical Plant

The Diagnostic Medical Sonography diploma program currently has a medical education and training facility located on the second floor of the Allied Health building on the Barton campus. The lab is designed to replicate a hospital environment and is equipped with a full range of ultrasound equipment (three units), sinks, stretchers, and imaging storage system. Classrooms are also located on the second floor and are equipped with instructional materials, desks, and all necessary audio-visual equipment. Renovation is not necessary for implementation of the proposed program.

## Equipment

Equipment is already on site and being used in the diploma program. This equipment includes ultrasound machines, stretchers, lab models, and all other necessary teaching media. No additional equipment needs to be purchased to implement the proposed program. All equipment is dedicated to the ultrasound program and is available for both scheduled lab sessions and additional practice scan time/assistance sessions requested by students as needed. Specific information about the ultrasound machines follows:

Equipment (Manufacturer, Model & Year)	Location
Acuson 128/XP10 (1998)	Main Campus AH 238
Acuson Aspen (1998)	Main Campus AH 238
GE Logic 700 (2000)	Main Campus AH 238
UltraSim Medical Imaging Simulator (2006)	Main Campus AH 238

## Library Resources

Library and learning resource services are available to all faculty and students at the Library on the Barton Campus. The three satellite campuses have PC access through the College broadband network to the Library Web page, where the online library catalog and periodical databases reside. Students are also able to request assistance from the library staff by asking questions or requesting resources via interlibrary loan or electronically. The Library Web site is as follows: <http://www.gtclibrary.org>

Upon request, librarians are available to instruct both classes and individuals on the use of information resources. Students on the satellite campuses are able to use open computer labs to access the Library resources. Any computer connected to the campus network at any of the campuses is capable of accessing library materials. Over 65 different online periodical databases are available, containing many thousands of articles or portions of reference books in full-text. The online library catalog contains records for nearly 60,000 print volumes

housed in the main Library and another 30,000 plus electronic books as well. Library holdings specific to sonography include:

An Atlas of Color Flow Imaging

Barry B. Goldberg, M.D.

ISBN: # 1853170631

Publisher: Mosby

Year: 1997

Breast Ultrasound

Mirta Lanfranchi, M.D.

ISBN: # 8471012472

Publisher: Thieme Medical Publishers

Year: 2000

Clinical Doppler Ultrasound

Allan, Dubbins, Pozniak, and McDicken

ISBN: #0443055491

Publisher: Churchill Livingstone

Year: 2000

Diagnostic Ultrasound

Carol A. Rumack

ISBN: #0815186835

Publisher: Mosby-Yearbook Medical Publishers

Year: 1998

Ethical and Legal Issues for Imaging Professionals

Doreen M. Towsley-Cook

ISBN: # 0815129661

Publisher: Mosby-Year Book

Year: 1999

Essentials of Ultrasound Physics

James Zagzebski

ISBN: # 0815198523

Publisher: Mosby-Year Book

Year: 1996

Guidelines and Gamuts in Musculoskeletal Ultrasound

Rethy Chhem

ISBN: # 0471197556

Publisher: Wiley-Liss

Year: 1999

Neurosonology

Charles H. Tegeler, MD; Viken L. Babikian, MD; and Camilio R. Gomez, MD

ISBN: # 0815187920

Publisher: Mosby

Year: 1996

Safety of Diagnostic Ultrasound

Barnett and Kossoff

ISBN: # 1850706468

Publisher: Parthenon Publishing Group

Year: 1998

Ultrasonography: An Introduction to Normal Structure and Functional Anatomy

Reva Curry and Betty Bates-Tempkin

ISBN: # 0721645852

Publisher: W.B. Saunders

Year: 1995

Ultrasound Atlas of Vascular Diseases

Krebs, Giyanani, and Eisenberg

ISBN: #0838592449

Publisher: McGraw-Hill Publishing

Year: 1999

Ultrasound Contrast Agents

Barry B. Goldberg, M.D.

ISBN: # 1853172839

Publisher: Mosby

Year: 1997

Ultrasound in Gynecology

Steven Goldstein, M.D.

ISBN:# 0443089574

Publisher: Churchill Livingstone

Year: 1995

The students also have use of the “Searchbank” from the internet. This health reference center searchbank combines indexing of approximately 205 periodicals, six reference books, and over 500 pamphlets; selective indexing for articles in approximately 1500 additional general interest titles; and full text for more than 150 periodicals, all reference books, and all pamphlets.



Numerous textbooks and current DMS magazines are available in the Program Coordinator's office for reference. In addition, articles relevant to the current subject matter are usually posted on the DMS bulletin board and updated bi-weekly.

The following instructional aids support the program's curriculum. It includes videotapes, slide sets, models, charts, phantoms, etc., that are available for student and/or faculty use.

OB/GYN Sonography, Davis Publishing 2004  
Pathophysiology, Appleton & Lange 1998  
Essentials of Ultrasound Physics, Mosby 1996  
Vascular Technology, Davis Publishing 2000  
Peripheral Vascular Ultrasound How, Why and When, Churchill Livingstone 1999  
Abdominal Ultrasound How, Why, and When, Churchill Livingstone 1999  
Ultrasound of the Infant Brain, Spastics International Medical Publications 1985  
Clinical Sonography, Lippincott 1998  
Clinical Guide to Ultrasound, Mosby 2004  
Introduction to Ultrasonography and Patient Care, W.B. Saunders 1993  
Ethical and Legal Issues For Imaging Professionals, Mosby 1994  
Instructors and Their Jobs, American Technical Publishers, Inc. 1975  
A Manual of Laboratory & Diagnostic Tests, J.B. Lippincott Co. 1992  
Doppler Ultrasound Principles and Instruments, W.B. Saunders 1990  
The Merck Manual of Diagnosis and Therapy, Merck & Co. 1987  
Ultrasonography in Obstetrics and Gynecology, W.B. Saunders 2000  
Clinical Guide to Ultrasonography, Mosby 2004  
Ultrasound of Fetal Anomalies, Image Multimedia  
American College of Radiology Ultrasound/Abdominal CT Learning File, American College of Radiology Institute 1990  
Life Before Birth, Life Before Birth Slides, Mosby-Wolfe 1996  
The Sectional Anatomy Learning System Applications, W.B. Saunders 2002  
Atlas of Radiologic Anatomy, Lea & Febiger 1994  
Neonatal and Pediatric Ultrasonography, Churchill Livingstone Inc. 1989  
Ultrasonography in Obstetrics and Gynecology, W.B. Saunders 1988

### **Accreditation, Approval, Licensure, or Certification**

The Diagnostic Medical Sonography program is currently accredited through the Commission on Accreditation of Allied Health Education Programs through the Joint Review Commission for Diagnostic Medical Sonography. The JRC-DMS functions as a Committee on Accreditation within the Committee on Accreditation of Allied Health Education Programs (CAAHEP) system, and adheres to the CAAHEP policies and procedures. The DMS program at Greenville Technical College has completed an accreditation review, was judged to be in compliance with the nationally established standards and will not need further review until March 2011.

**Estimated Costs**

**NEW COSTS TO THE INSTITUTION AND SOURCES OF FINANCING**

<b>ESTIMATED COSTS BY YEAR</b>				
<b>CATEGORY</b>	<b>1<sup>st</sup></b>	<b>2<sup>nd</sup></b>	<b>3rd</b>	<b>TOTALS</b>
Program Administration	-	-	-	0
Faculty Salaries	-	-	-	0
Graduate Assistants	-	-	-	0
Clerical/Support Personnel	-	-	-	0
Supplies and Materials	-	-	-	0
Library Resources	-	-	-	0
Equipment	-	-	-	0
Facilities	-	-	-	0
Other (Identify)	-	-	-	0
<b>TOTALS</b>	-	-	-	0
<b>SOURCES OF FINANCING BY YEAR</b>				
Estimated FTE Revenue Generated from the State (See note on page 25.)	-	14,728	30,800	45,528
Tuition Funding (New students only)	105,270	129,195	129,195	363,660
Other State Funding (Legislative Approp.)	-	-	-	0
Reallocation of Existing Funds	-	-	-	0
Federal Funding	-	-	-	0
Other Funding (Endowment, Auxiliary etc.)	-	-	-	0
<b>TOTALS</b>	105,270	143,923	159,995	409,188

**Institutional Approval**

**Chief Instructional Officer's Approval:**

\_\_\_\_\_  
Mr. Steve Valand  
Vice President for Education

\_\_\_\_\_  
Date

**President's Approval:**

\_\_\_\_\_  
Dr. Thomas E. Barton, Jr.  
President

\_\_\_\_\_  
Date

**Area Commission Approval Date:** \_\_\_\_\_