COLLIN COLLEGE

Program: Diagnostic Medical Sonography

Discipline Making Request: Diagnostic Medical Sonogprahy

Program CIP: 51.0910

Effective Term: Fall 2017

Rationale:

This program will prepare students to be eligible to successfully achieve credentialling as general medical diagnostic sonographers to meet regional workforce demands. This field has a Bright Outlook designation by O*NET with a 14% projected growth rate by 2024. This Bright Outlook occupation is expected to grow rapidly in the next several years and will have large numbers of job openings.

New Program

AAS - Diagnostic Medical Sonography

New Courses

DMSO 1202, DMSO 1210, DMSO 1251, DMSO 1242, DMSO 1341, DMSO 1360, DMSO 2230, DMSO 2253, DMSO 2254, DMSO 2341, DMSO 2342, DMSO 2362,

DMSO 2367, DMSO 2405, DSVT 1103, HPRS 1206

Will not be taught online

Authorized Signature (Proposer) 2nd Signature (if applicable) 3rd Signature (if applicable)

☐ CAB Recommended

☐ CAB Not Recommended (Give Explanation Below)

Comments:

CAB Chair

☐ Administrative Approved

☐ Administrative Not Approved (Give Explanation Below)

Comments:

Designated Academic Officer Signature

COLLIN COLLEGE

New Program

Background and Certifications

Table of Contents

Academic Services

Table of Contents

1. **Letter of Intent to Apply for New Workforce Education Program**
2. **Documentation for New Program Development**
    a. Documentation of Workforce Demand for the Program
    b. Assurance of Basic and Workforce Skills
    c. Enrollment Management Plan
    d. Program Linkages and Demonstration of Non-Duplication
    e. External Agency Approval, Certification, and Accreditation
    f. Assurance of Adequate Funding
    g. Advisory Committee Minutes

1. Letter of Intent to Apply for New Workforce Education Program

November 14, 2016

Joe Butler
Chair, Metroplex Higher Education Regional Council
Associate Vice President of Academic Outreach
3452 Spur 399
McKinney, Texas 75069

Dear Mr. Butler:
Please be advised that Collin County Community College District intends to apply for four new workforce education programs, each leading to an associate of applied science degree: HVAC, Diagnostic Medical Sonography, Supply Chain Management, and Welding. The Diagnostic Medical Sonography program will require new clinical opportunities.
Our plan is to submit applications for approval to the Texas Higher Education Coordinating Board staff in January 2017. If approved, we anticipate a fall 2017 implementation of the programs.

If members of the Metroplex Higher Education Regional Council or the Local Workforce Development Board have questions about our intent to offer these programs, please inform us as soon as possible.

Sincerely,
Brenda Kihl, Ph.D.
Executive Vice President/Chief Academic Officer

cc: Mr. Mickey Hillock,
Chair, Workforce Solutions Development Board for North Central Texas

2. Documentation for New Program Development

2a. Documentation of Workforce Demand for the Program

State and National Trends

United States	Employment		Percent Change	Projected Annual Job Openings [1]
	2014	2024		
Diagnostic Medical Sonographers	60,700	76,700	+26%	2,750
Texas	**Employment**		**Percent Change**	**Projected Annual Job Openings [1]**
	2014	**2024**		
Diagnostic Medical Sonographers	4,570	6,650	+46%	290

[1]Projected Annual Job Openings refers to the average annual job openings due to growth and net replacement.

Occupations by Location

Diagnostic Medical Sonographers in All Regions

Emsi Q3 2016 Data Set

October 2016

Collin College

Code	Description
29-2032	Diagnostic Medical Sonographers

Timeframe: 2015 - 2016

Datarun

2016.3 – QCEW Employees, Non-QCEW Employees, and Self-Employed

State	Annual Openings	Regional Completions (2013)	2015 Jobs	2016 Jobs	2015 - 2016 Change	2015 - 2016 % Change	Avg. Hourly Earnings	2016 Location Quotient
Texas	310	913	4,714	4,931	217	5%	$36.35	0.91

Appendix A - Data Sources and Calculations

Completers Data

The completers data in this report is taken directly from the national IPEDS database published by the U.S. Department of Education's National Center for Education Statistics.

Institution Data

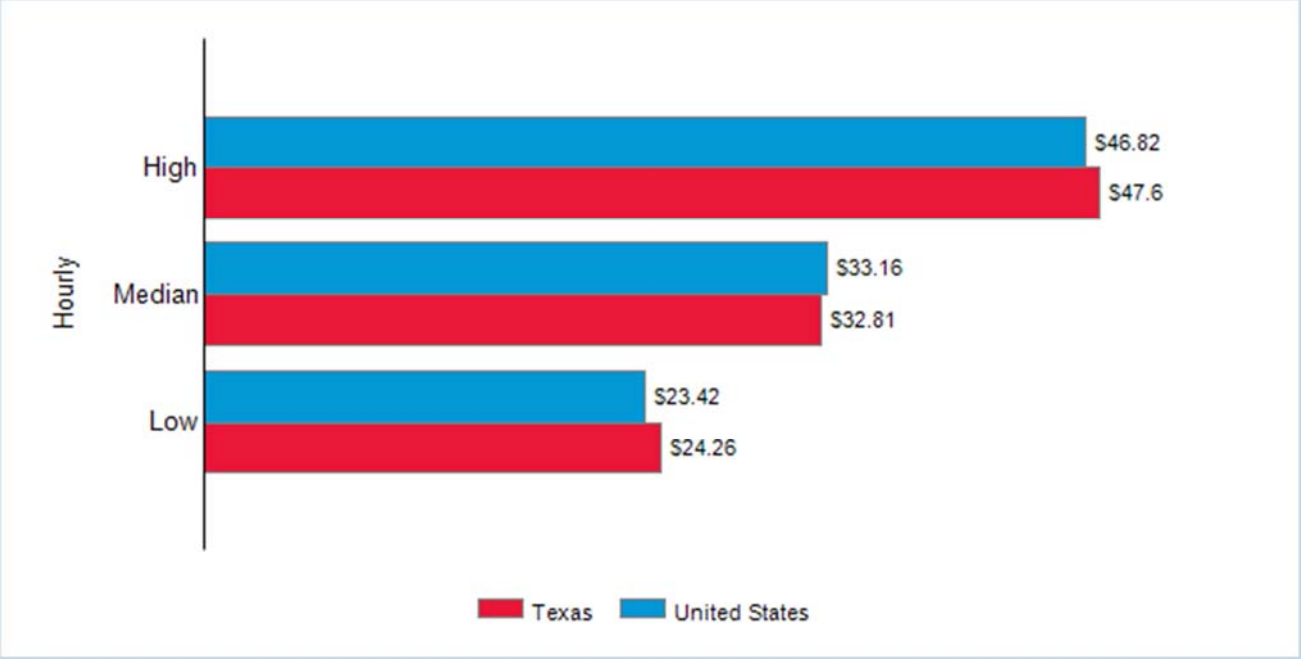
The institution data in this report is taken directly from the national IPEDS database published by the U.S. Department of Education's National Center for Education Statistics.

Occupation Data

Emsi occupation employment data are based on final Emsi industry data and final Emsi staffing patterns. Wage estimates are based on Occupational Employment Statistics (QCEW and Non-QCEW Employees classes of worker) and the American Community Survey (Self-Employed and Extended Proprietors). Occupational wage estimates also affected by county-level Emsi earnings by industry.

Wages & Employment Trends

Wages for Diagnostic Medical Sonographers in TEXAS



Occupation Description

Diagnostic Medical Sonographers
Produce ultrasonic recordings of internal organs for use by physicians.

Median wages (2015)	$33.16 hourly, $68,970 annual
Employment (2014)	61,000 employees
Projected growth (2014-2024)	▪▪▪▪Much faster than average (14% or higher)
Projected job openings (2014-2024)	27,500
Top industries (2014)	Health Care and Social Assistance

Source: Bureau of Labor Statistics 2015 wage data and 2014-2024 employment projections. "Projected growth" represents the estimated change in total employment over the projections period (2014-2024). "Projected job openings" represent openings due to growth and replacement.

Career Video

Sources of Additional Information

Disclaimer: Sources are listed to provide additional information on related jobs, specialties, and/or industries. Links to non-DOL Internet sites are provided for your convenience and do not constitute an endorsement.

- Diagnostic medical sonographers and cardiovascular technologists and technicians, including vascular technologists. Bureau of Labor Statistics, U.S. Department of Labor. *Occupational Outlook Handbook, 2016-17 Edition*.
- American Registry of Diagnostic Medical Sonographers (ARDMS), 51 Monroe St., Plaza East One, Rockville, MD 20850-2400. Phone: (301) 738-8401. Fax: (301) 738-0312.

2b. Assurance of Basic and Workforce Skills

Advisory Council Minutes show that the employer members vetted the competencies addressed by the proposed AAS Diagnostic Medical Sonography curriculum. In addition, a content expert was hired to review the compliance of the proposed curriculum with the standards of the Commission on Accreditation of Allied Health Education Programs (CAAHEP).

O*NET Occupational Summary Report for: 29-2032.00 - Diagnostic Medical Sonographers

Produce ultrasonic recordings of internal organs for use by physicians.

Sample of reported job titles: Cardiac Sonographer, Cardiac/Vascular Sonographer, Diagnostic Medical Sonographer, Medical Sonographer, Registered Diagnostic Medical Sonographer (RDMS), Sonographer, Staff Sonographer, Ultrasonographer, Ultrasound Technician (Ultrasound Tech), Ultrasound Technologist (Ultrasound Tech)

Tasks

- Observe screen during scan to ensure that image produced is satisfactory for diagnostic purposes, making adjustments to equipment as required.
- Observe and care for patients throughout examinations to ensure their safety and comfort.
- Provide sonogram and oral or written summary of technical findings to physician for use in medical diagnosis.
- Select appropriate equipment settings and adjust patient positions to obtain the best sites and angles.
- Operate ultrasound equipment to produce and record images of the motion, shape, and composition of blood, organs, tissues, or bodily masses, such as fluid accumulations.

Tools & Technology

Tools used in this occupation:

- **Blood pressure cuff kits** — Sphygmomanometers
- **Medical radiological positioning aids for general radiological use** — Immobilization and positioning devices; Sandbags
- **Medical ultrasound or doppler or echo monitors** — Ultrasound monitors; Ultrasound video equipment
- **Medical ultrasound or doppler or echo transducers or accessories** — High frequency transducers; Transducers

- **Medical ultrasound or doppler or pulse echo or echography units for general diagnostic use** — A-Mode ultrasound machines; M-mode ultrasound machines; Pulsed-wave Doppler ultrasound units; Two-dimensional doppler ultrasound equipment

Technology used in this occupation:

- **Data base user interface and query software** — Database software
- **Electronic mail software** — Email software
- **Medical software** — Medical procedure coding software; MEDITECH software; Patient medical record software
- **Spreadsheet software** — Microsoft Excel
- **Word processing software**

Hot Technology — a technology requirement frequently included in employer job postings.

Knowledge

- **Customer and Personal Service** — Knowledge of principles and processes for providing customer and personal services. This includes customer needs assessment, meeting quality standards for services, and evaluation of customer satisfaction.
- **English Language** — Knowledge of the structure and content of the English language including the meaning and spelling of words, rules of composition, and grammar.
- **Physics** — Knowledge and prediction of physical principles, laws, their interrelationships, and applications to understanding fluid, material, and atmospheric dynamics, and mechanical, electrical, atomic and sub- atomic structures and processes.
- **Medicine and Dentistry** — Knowledge of the information and techniques needed to diagnose and treat human injuries, diseases, and deformities. This includes symptoms, treatment alternatives, drug properties and interactions, and preventive health-care measures.
- **Clerical** — Knowledge of administrative and clerical procedures and systems such as word processing, managing files and records, stenography and transcription, designing forms, and other office procedures and terminology.

Skills

- **Active Listening** — Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.
- **Reading Comprehension** — Understanding written sentences and paragraphs in work related documents.
- **Social Perceptiveness** — Being aware of others' reactions and understanding why they react as they do.
- **Speaking** — Talking to others to convey information effectively.
- **Critical Thinking** — Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.

Abilities

- **Oral Comprehension** — The ability to listen to and understand information and ideas presented through spoken words and sentences.
- **Near Vision** — The ability to see details at close range (within a few feet of the observer).
- **Oral Expression** — The ability to communicate information and ideas in speaking so others will understand.
- **Problem Sensitivity** — The ability to tell when something is wrong or is likely to go wrong. It does not involve solving the problem, only recognizing there is a problem.
- **Written Comprehension** — The ability to read and understand information and ideas presented in writing.

Work Activities

- **Assisting and Caring for Others** — Providing personal assistance, medical attention, emotional support, or other personal care to others such as coworkers, customers, or patients.
- **Getting Information** — Observing, receiving, and otherwise obtaining information from all relevant sources.
- **Updating and Using Relevant Knowledge** — Keeping up-to-date technically and applying new knowledge to your job.
- **Documenting/Recording Information** — Entering, transcribing, recording, storing, or maintaining information in written or electronic/magnetic form.
- **Communicating with Supervisors, Peers, or Subordinates** — Providing information to supervisors, co-workers, and subordinates by telephone, in written form, e-mail, or in person.

Detailed Work Activities

- Communicate test or assessment results to medical professionals.
- Record patient medical histories.
- Create advanced digital images of patients using computer imaging systems.
- Analyze test data or images to inform diagnosis or treatment.
- Operate diagnostic imaging equipment.

Work Context

- **Importance of Being Exact or Accurate** — 89% responded “Extremely important.”
- **Contact With Others** — 90% responded “Constant contact with others.”
- **Physical Proximity** — 85% responded “Very close (near touching).”
- **Spend Time Using Your Hands to Handle, Control, or Feel Objects, Tools, or Controls** — 80% responded “Continually or almost continually.”
- **Indoors, Environmentally Controlled** — 93% responded “Every day.”
-

Job Zone

Title	Job Zone Three: Medium Preparation Needed
Education	Most occupations in this zone require training in vocational schools, related on-the-job experience, or an associate's degree.
Related Experience	Previous work-related skill, knowledge, or experience is required for these occupations. For example, an electrician must have completed three or four years of apprenticeship or several years of vocational training, and often must have passed a licensing exam, in order to perform the job.
Job Training	Employees in these occupations usually need one or two years of training involving both on-the-job experience and informal training with experienced workers. A recognized apprenticeship program may be associated with these occupations.
Job Zone Examples	These occupations usually involve using communication and organizational skills to coordinate, supervise, manage, or train others to accomplish goals. Examples include food service managers, travel guides, electricians, agricultural technicians, barbers, nannies, and medical assistants.
SVP Range	(6.0 to < 7.0)

Education

Percentage of Respondents	Education Level Required
47	Associate's degree
19	Post-secondary certificate
17	Bachelor's degree

Work Styles

- **Attention to Detail** — Job requires being careful about detail and thorough in completing work tasks.
- **Dependability** — Job requires being reliable, responsible, and dependable, and fulfilling obligations.
- **Independence** — Job requires developing one's own ways of doing things, guiding oneself with little or no supervision, and depending on oneself to get things done.
- **Integrity** — Job requires being honest and ethical.

- **Concern for Others** — Job requires being sensitive to others' needs and feelings and being understanding and helpful on the job.

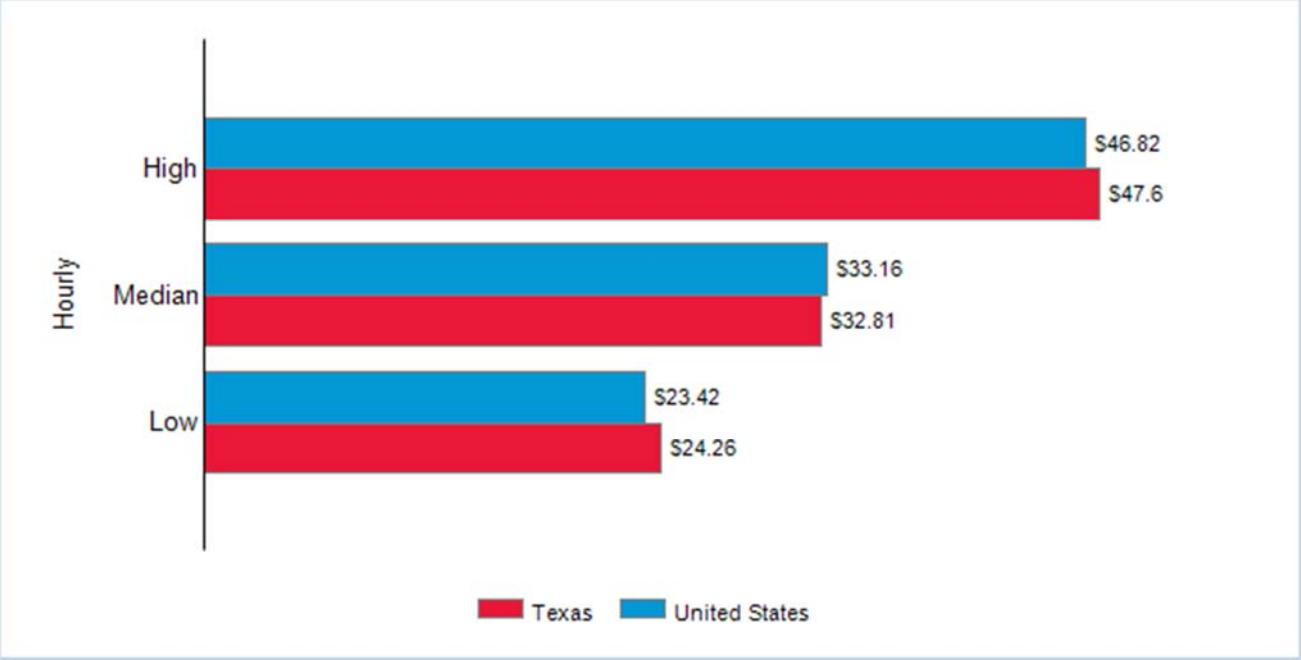
Work Values

- **Relationships** — Occupations that satisfy this work value allow employees to provide service to others and work with co-workers in a friendly non-competitive environment. Corresponding needs are Co-workers, Moral Values and Social Service.
- **Support** — Occupations that satisfy this work value offer supportive management that stands behind employees. Corresponding needs are Company Policies, Supervision: Human Relations and Supervision: Technical.
- **Achievement** — Occupations that satisfy this work value are results oriented and allow employees to use their strongest abilities, giving them a feeling of accomplishment. Corresponding needs are Ability Utilization and Achievement.

Related Occupations

5 of 10 displayed
29-1124.00 Radiation Therapists
29-2031.00 Cardiovascular Technologists and Technicians
29-2034.00 Radiologic Technologists
29-2054.00 Respiratory Therapy Technicians
29-2099.01 Neurodiagnostic Technologists Bright Outlook

Wages for Diagnostic Medical Sonographers in TEXAS



Occupation Description

Diagnostic Medical Sonographers

Produce ultrasonic recordings of internal organs for use by physicians.

Median wages (2015)	$33.16 hourly, $68,970 annual
Employment (2014)	61,000 employees
Projected growth (2014-2024)	▪▪▪▪Much faster than average (14% or higher)
Projected job openings (2014-2024)	27,500
Top industries (2014)	Health Care and Social Assistance

Source: Bureau of Labor Statistics 2015 wage data and 2014-2024 employment projections. "Projected growth" represents the estimated change in total employment over the projections period (2014-2024). "Projected job openings" represent openings due to growth and replacement.

Sources of Additional Information

Disclaimer: Sources are listed to provide additional information on related jobs, specialties, and/or industries. Links to non-DOL Internet sites are provided for your convenience and do not constitute an endorsement.

- Diagnostic medical sonographers and cardiovascular technologists and technicians, including vascular technologists. Bureau of Labor Statistics, U.S. Department of Labor. *Occupational Outlook Handbook, 2016-17 Edition*.
- American Registry of Diagnostic Medical Sonographers (ARDMS), 51 Monroe St., Plaza East One, Rockville, MD 20850-2400. Phone: (301) 738-8401. Fax: (301) 738-0312.

Program Outcomes and Course Alignment

Program Name AAS - Diagnostic Medical Sonography

Program Outcomes

Program Learning Outcomes	Measure	Standard	Course(s) where it will be
1. Record and analyze patient history and diagnostic data and other pertinent observations for presentation to the interpreting physicians	Practicum evaluation	Pass on clinical/practicum	DMSO 2367
2. Perform appropriate procedures following protocols	Practicum evaluation	Pass on clinical/practicum	DMSO 2367
3. Demonstrate appropriate communication skills with colleagues and patients, including patient education related to the delivery of any medical procedures.	Practicum evaluation	Pass on clinical/practicum	DMSO 2367
4. Act in a professional and ethical manner.	Practicum evaluation	Pass on clinical/practicum	DMSO 2367

Program Map

Program Courses	**Program Outcome 1** Data	**Program Outcome 2** Procedures	**Program Outcome 3** Communications	**Program Outcome 4** Professional Ethical Manner
PRE-REQUISITES				
BIOL 2404	I		I	
HPRS 1204	I	I	I	I
MATH 1314	I			
HPRS 1206	I		I	
PHYS 1405	I	I		
REQUIRED COURSES				
ENGL 1301			E	
PSYC 2301			E	
DMSO 1202		I, E		
DMSO 1210	I	I, E		
DSVT 1103	I	I		
DMSO 1341	P, E	P, E	P, E	
DMSO 1251	P, E	P, E	P, E	
DMSO 1242	P	P		
DMSO 1360	P, A	P, A	P, A	P, A
SPCH 1311			P, E	P, E
DMSO 2254	I, E, P	I, E, P	I, E, P	I, E, P
DMSO 2341	E, P	E, P	E, P	E, P
DMSO 2362	P, A	P, A	P, A	P, A
DMSO 2405	E, P	E, P	E, P	E, P
DMSO 2253	E, P	E, P	E, P	E, P
PHIL 2306			E	E
DMSO 2342	E, P	E, P	E, P	E, P
DMSO 2367	P, A	P, A	P, A	P, A
DMSO 2230	P, A	P, A	P, A	P, A

I = Introduced **P** = Practiced **E** = Emphasized **A** = Assessed

Program: Diagnostic Medical Sonography								Credential:
LIST OF ALL COURSES REQUIRED AND IDENTIFIED COMPETENCIES								
SCANS COMPETENCIES							**Course**	**Course Title**
1	**2**	**3**	**4**	**5**	**6**	**7**		
			X				BIOL 2404	Anatomy and Physiology Basic
X	X		X			X	HPRS 1204	Basic Health Profession Skills
				X			MATH 1314	College Algebra
			X				HRPS 1206	Essentials of Medical Terminology
		X					PHYS 1405	Conceptual Physics
	X						ENGL 1301	Composition
X	X						PSYC 1405	General Psychology
		X	X		X	X	DMSO 1202	Basic Ultrasound Physics
			X		X	X	DMSO 1210	Introduction to Sonography
			X		X	X	DSVT 1103	Introduction to Vascular Technology
	X		X	X	X	X	DMSO 1341	Abdominopelvic Sonography
	X		X	X	X	X	DMSO 1251	Sonographic Sectional Anatomy
		X	X		X	X	DMSO 1242	Intermediate Ultrasound Physics
X	X		X	X	X	X	DMSO 1360	Clinical – Diagnostic Medical Sonography/Sonographer and Ultrasound Technician
X	X						SPCH 1311	Introduction to Speech Communication
X		X	X		X	X	DMSO 2254	Neurosonography
	X		X		X	X	DMSO 2341	Sonography of Abdominopelvic Pathology
X	X		X	X	X	X	DMSO 2362	Clinical – Diagnostic Medical Sonography/Sonographer and Ultrasound Technician
	X		X	X	X	X	DMSO 2405	Sonography of Obstetrics/Gynecology
	X		X	X	X	X	DMSO 2253	Sonography of Superficial Structures
X	X						PHIL 2306	Introduction to Ethics
	X		X	X	X	X	DMSO 2342	Sonography of High Risk Obstetrics
X	X		X	X	X	X	DMSO 2367	Practicum (or Field of Experience) – Diagnostic Medical Sonography/Sonographer & Ultrasound Technician
			X		X	X	DMSO 2230	Advanced Ultrasound and Review
							PROGRAM COMPETENCIES (as determined by advisory committee)	
						7. BASIC USE OF WORKPLACE EQUIPMENTS		
					6. WORKPLACE COMPETENCIES			
				5. CLERICAL RESPONSIBILITIES				
			4. MEDICAL TECHNIQUES AND TERMINOLOGY					
		3. PHYSICS						
	2. COMMUNICATION							
1. PATIENT SERVICE AND CARE								

2c. Enrollment Management Plan

ENROLLMENT PLAN
Program Name: Medical DiagnosticSonography

ENROLLMENT PLAN

The plan is a replicable sequence of actions to bring about a goal defined, in part, by targets.
Be specific. Include sufficient detail in an enrollment plan so that another person could execute it.

Address three elements in an Enrollment Plan:

1. Recruitment, including Special Populations
2. Retention
3. Completion

A fourth element, **4. Placement**, is desired because the US Department of Education requires colleges to post placement rates for each workforce program. Placement rates may be viewed as a recruiting tool.

RECRUITMENT, INCLUDING SPECIAL POPULATIONS

Find out how many students are needed to offer a full complement of scheduled classes. This is your optimum enrollment number: _____15_____ How you get there depends on recruitment, conversion to enrollment, retention and completion.

- For each subpopulation, complete steps 1-7.

1. Identify each subpopulation that you believe to be a potential source of program prospects. i.e. graduating high school students, incumbent workers, members in special interest groups Note: Do not include in your enrollment plan Collin College students who are currently enrolled in another program. The aim of new programs is to serve employers and to attract new populations of prospective students.

Use this table to document your recruitment subpopulations.

Sub population	Subpopulation size	Recruitment Target
Dual Credit Health Science Academy		8
McKinney ISD Dual Credit Health Professions		6
High School students in other Health programs		3
Hospital employees		2
Veterans		2
Latino		2
General population/transfers		1

Total Recruited/Enrollment Projection		24

2. Include special populations appropriate for the program; choose as many as apply:
   X racial/ethnic group – Latino high school students
   X veterans -- medics;
   □ students with disabilities;
   □ displaced workers;
   □ gender disparities by occupation;
   □ nontraditional students;
   □ women returning to workforce after children and/ or divorce;
   □ people recently released from incarceration;
   □ underemployed,
   □ recent immigrants
   □ Others : describe_____
3. Describe how you *will identify* who is in the subpopulation:
   •
4. Describe *how you intend to contact* members of each subpopulation.

2. Sub population	3 Method of Identification	4 Method of Contact
Dual Credit Health Science Academy	Collin can identify students enrolled in Dual Credit courses;	In-class presentation; Embedded Career Counselor
McKinney ISD Dual Credit Health Professions	High School administrators will identify high school students in general health programs;	In-class presentation; Embedded Career Counselor
High School students in other Health programs	Veterans with medical service-related positions will be identified by Texas Workforce Commission and through walk-ins to Collin's Veterans Center and Career Center.	In-class presentation; Embedded Career Counselor
Hospital employees	• A marketing program is being developed to reach employees of Collin hospitals and at Collin College clinical sites.	PR marketing campaign for all Collin Health Science programs at hospitals, clinical sites (posting of notice on staff bulletin boards)

Veterans	• Veterans with medical service-related positions will be identified by Texas Workforce Commission and through walk-ins to Collin's Veterans Center and Career Center.	Letter with follow-up phone invitation
Latino	• Latino high school students in health programs will be specifically invited; we will look into development of a designated scholarship for a Latino student interested in Medical Diagnostic Sonography	Working with advisors; embedded Collin Career Counselors & HS science teachers to invite prospective students to inquire and apply; School presentations at Latino student clubs
General population/transfers	• General population transfers, walk-ins to College Fairs, Career Center	Collin Advisors will invite prospective students who are eligible

5. Of the number contacted, *what number of students do you think will inquire or begin the enrollment* process?
6. What number of students do you think *will convert to enrolled status for your program*? (This is your conversion rate. For example, you contact 100 students for an event. 30 respond. Of these 2 enroll. Your conversion rate is 2%. In the future, you should use 2% to help you predict how many enrollees you will get from your contact pool. You may also take action to increase the effectiveness of your recruitment strategies. If you add a new activity, determine the number of responses and the number of students from the respondents who progress to

enrollment. If it is higher than your expected number, based on your prior conversion rate, the strategy was effective.)

- Add up all the recruitment targets from each subpopulation (identified in repeating steps 1-7) to arrive at a fairly realistic total number of projected program enrollees.

- Is the Total Recruitment Target number at or greater than the optimum enrollment target? If not, go back and review your subpopulations. Have you omitted a potential pool of prospective students? 24 is greater than 15, the minimum. Retention is expected to remain at or above 20 out of the 24 (83% +)

  Can you take additional actions ?
  X designate program specific scholarships (health sciences and looking into one for Latino student)
  X invite students on campus to participate in a program-related event Dual Credit students invite family to Open House
  □ approach a local employer of your graduates or one who frequently posts job openings in occupations related to the program?
  X Other: ___Campaign at clinical sites for any Collin health program_____

{ RETENTION }

What actions will you take:

1. To **track the progress** of your recruits?
2. To **mitigate signs of risk**; check all that apply:
   X absenteeism
   X failure to turn in assignments
   X poor academic performance (75% or above is passing) below
   X lack of engagement
   □ Other: _____
3. To **motivate students;** check all that apply:
   □ stackable credentials
   □ encourage students to run degree audits
   X tours of facilities of major regional employers or other contact
   X introduction to LinkedIn,
   X student membership in professional associations;
   X guided participation in professional opportunities;
   □ ambassador program to mentor new recruits;
   X□ Clinicals,
   X meet and greet functions: Health Programs Open House for families
   □ celebrations/recognitions of milestone achievements
   X Other: __Pinning ceremony_____
4. What is the minimum number of students that enables offering a full schedule of slated courses? ____15_____What percentage is this of your recruitment / enrollment? _62.5%
5. What percentage of students are you targeting for retention? _83%+_____ (this number impacts your ability to offer a complete schedule of courses in the latter semesters of the degree or certificate. Follow through with your target retention from semester to semester,

identifying places where there are barrier courses that reduce enrollment and places where the employment siren calls your students away before completion. Make sure that you will have sufficient enrollment during the last semester to offer required courses that enable student completion.

COMPLETION

Given the demographics of your program, what actions will you take to support completion? Check all that apply.

NA **Analyze the program points** where students leave for employment or face curriculum barriers, prior to completing credential (consider crafting certificates that recognize these employment entry points).

NA What **curricular changes might be needed to enable students to progress normally** through the curriculum?

NA Is the **curriculum designed in load and sequence** so that part-time students can succeed? Could you use self-check online modules that don't impact the course grade to let students monitor their progress and ensure readiness for the next learning outcome(s)?

NA **Notify students of approaching completion** of award (i.e. only 12 SCHs remaining; only 6 SCHs remaining, etc.)

NA **Momentum actions** – Consider building a matrix of Intentional engagement actions that build momentum toward graduation , including Tours of facilities of major regional employers or other contacts; introduction to LinkedIn, student membership in professional associations; guided participation in professional opportunities; ambassador program to mentor new recruits; co-ops, meet and greet functions; invitation to participate in college fairs to partner with a faculty to represent the program opportunities

NA **Celebrations** – Intentional identification of success points - could be linked to degree audit showing attainment of milestones. Could be through email or a program-level or class event.

X Other: __Program is delivered to 24 person cohort; curriculum is block scheduled in advance_____

PLACEMENT (optional)

Actions to support Placement:

- How will the program support placement? Check all that apply.
- Some suggested actions to support placement:

X Create pipelines to regional employers – Clinicals

□ Send lists of upcoming graduates to employers;

□ Provide a meet and greet for students and Advisory Committee employers;

X Establish co-op or internship opportunities - Clinicals

X Provide letters of reference;

X Create a Linked in program site or job posting site for local employers hiring in your program area

2d. Program Linkages and Demonstration of Non-Duplication

There are no other programs in Collin County. Dallas CCCD has a Diagnostic Medical Sonography AAS but the distance and traffic in the metroplex render this a non-competitive scenario.

AAS to BAAS Guided Pathways

AAS: Diagnostic Medical Sonography
You will need to earn your associate's degree at your community college. Contact your advisor there for more information.

Third Year - Texas A&M University -Commerce	
FIRST SEMESTER	SECOND SEMESTER
c ENG 1302 GLB/US Written Argument/Research	c HIST 1302 U.S. History from 1865
c HIST 1301 U.S. History to 1877	c PSCI 2302 US/TX Government; Institutions & Policies2
c PSCI 2301- Principles of US and Texas Government2	c ANY CREATIVE ARTS CORE
c SPCH 1315 - Fundamentals of Public Speaking OR c SPCH 1321-Business/Professional Speaking	c ANY DEGREE PATHWAY OPTION
BAAS 301 - Principles of Applied Sciences	BAAS 326 Tech Techniques & Solutions
Fourth Year - Texas A&M University -Commerce	
TMGT 458 - Project Management	TMGT 350 Principles of Technology Management
BAAS 345 Leadership Techniques	BAAS 445 Ethical Decision Making
BAAS 408 Advanced Problem Solving (Pre-Req BAAS 326)	Upper level Elective
BAAS 351 Financial Tools for Mgrs (Pre Req BAAS 326)	Upper level Elective
BAAS 443 - Professional Standards	TMGT 303 Technical Communications

This is not an official degree plan. Check with an advisor; degree plans may change in later catalogs. Part-time students may also follow this sequence. Developmental coursework may be required.
* You may take a different course to meet this requirement. A specific list is available from your advisor.
C This course counts for the Core Curriculum at any public college or university in Texas.
2 Taking both GOVT courses at Collin College creates a better alignment.

2e. External Agency Approval, Certification, and Accreditation

Collin College will apply for Commission on Accreditation of Allied Health Education Programs (CAAHEP) accreditation for the Diagnostic Medical Sonography.

2f. Assurance of Adequate Funding

Diagnostic Medical Sonography Program

Anticipated Enrollment, Retention and Completers

We are projecting 8 -10 students enrolled in the first year; expanding to 20 enrolled students by year 5 for the AAS program. Our retention/completion rate will be 95% or better. We anticipate our AAS completers to be 10 in year two of the program and growing to 20 by year 5.

Recruitment

Sonography recruitment will be included in any marketing efforts of Collin College's health programs such as the Health Fair, Dual Credit, Health Academy advising, college night, and program level-web pages.

Projected number of completers by award per academic years 1-5

AWARD	COMPLETERS					5 Years
	Year 1	Year 2	Year 3	Year 4	Year 5	Cumulative Total
AAS – Diagnostic Medical Sonography	0	10	13	16	20	59

Funding

1. **Faculty**: One full time director and two part-time faculty will be hired in year 1; add 1 faculty member/clinical coordinator in year 2. The table below shows the base pay for the 1st year with 3% increase beginning second year until 5 years.

2. **Equipment:** We have been budgeted $196,000 for the purchase of two GE Ultrasound machines ($98,000 for each machine).

3. **Facilities**: We have 3 classrooms and two labs for the Diagnostic Medical Sonography program in the Health Sciences building at CPC, with additional lab space available in our ER and in the Simulation Lab.

Costs:						
Personnel	1st Year	2nd Year 3% increase	3rd Year 3% increase	4th Year 3% increase	5th Year 3% increase	5 Years Cumulative Total
Director – FT	$74,360	$76,590.8	$78,888.52	$81,255.18	$83,692.84	$394,787.34
Part-time Adjunct (2)	$825/lec*3 + $660/lab * 1 =$3135/course * 2 sem = $6,270/yr * 2 adjunct = $12,540	$12,916.20	$13,303.69	$13,702.80	$14,113.88	$66,576.56

Clinical Coordinator /Faculty Member	$50,000	$51,500	$53,045	$54,636.35	$56,275.44	$265,456.79
Benefits						
Medical Insurance	$9,300	$9,300	$9,300	$9,300	$9,300	$46,500
Dental Insurance	$319	$319	$319	$319	$319	$1,595
TRS Benefits	$5,056	$5,056	$5,056	$5,056	$5,056	$25,280
Medicate – District Match	$1,078	$1,078	$1,078	$1,078	$1,078	$5,390
Other Employee Benefits	$425	$425	$425	$425	$425	$2,125
1% of ERS Eligible Salaries	$744	$744	$744	$744	$744	$3,720
TOTAL	$153,822	$157,929	$162,159.33	$166,516.33	$171,004.16	**$811,430.69**
Equipment:						
Equipment (2 GE Ultrasound machines)	$98,000/each *2 = $196,000					$196,000
Equipment dep (over 10 yrs)	(-$18,294)	(-$18,294)	(-$18,294)	(-$18,294)	(-$18,294)	(-$91,470)
Equipment/Furniture Non-Depreciable	$1,900					$1,900
TOTAL						**$106,430**
Miscellaneous (Supplies, Software, Materials, etc)						
Classroom Supplies	$500	$500	$500	$500	$500	$2,500
Division Books & Booklets	$350	$350	$350	$350	$350	$1,750
Tests & Testing Services (PSB, background checks for 30 applicants)	$1,500	$1,500	$1,500	$1,500	$1,500	$7,500
Software for Simulation Exercise	$4,000	$4,000	$4,000	$4,000	$4,000	$20,00
Printing Brochures & Handbook	$500	$500	$500	$500	$500	$2,500
Printing – other	$300	$300	$300	$300	$300	$1,500
Postage	$100	$100	$100	$100	$100	$500
Miscellaneous	$100	$100	$100	$100	$100	$500
TOTAL	$7,350	$7,350	$7,350	$7,350	$7,350	**$36,750**
Other (Travel, Professional Development, Marketing, Meeting Expenses, Accreditation, etc)						
Accreditation & site visit	$10,000	$10,000	$10,000	$10,000	$10,000	$50,000
Meeting expense - Adv Committee, etc	$500	$500	$500	$500	$500	$2,500
Local Travel – clinical sites	$1,500	$1,500	$1,500	$1,500	$1,500	$7,500
Clinical Travel	$1,500	$1,500	$1,500	$1,500	$1,500	$7,500
Professional Development / Travel/CEU	$3,500	$3,500	$3,500	$3,500	$3,500	$17,500
Promotional Activities	$750	$750	$750	$750	$750	$3,750
TOTAL	$17,750	$17,750	$17,750	$17,750	$17,750	**$88,750**
GRAND TOTAL COSTS						**$1,043,360.69**

Funding and Revenue:					
Credit Hours	**In State Funding**	**In Tuition Funding**	**Total Funding Per Student**	**Projected Completers for 5 Years**	**Cumulative 5 Years Total**
60 SCH per AAS	$6,249.76	$2,688.00	$8,937.76	59	$527,327.84
TOTAL REVENUE					**$527,327.84**

Total Revenue was based on 59 completers (5 years cumulative total).

2g. Advisory Committee Minutes

COLLIN COLLEGE
Curriculum Outline

Health Science Cluster

AAS - Diagnostic Medical Sonography **FICE 023614** **CIP 51.0910**

64 credit hours

Prerequisites			**Lecture**	**Lab**	**External**	**Contact Hours**	**Credit Hours**
BIOL	2404	Anatomy and Physiology Basic	3	4	0	112	4
PHYS	1405	Conceptual Physics	3	3	0	96	4
HPRS	1204	Basic Health Profession Skills	1	3	0	64	2
MATH	*1314*	*College Algebra* [1]	3	1	0	64	3
HPRS	1206	Essentials of Medical Terminology	1	3	0	64	2
		Total Hours	11	14	0	400	15

FIRST YEAR

First Semester			**Lecture**	**Lab**	**External**	**Contact Hours**	**Credit Hours**
ENGL	*1301*	*Composition I*	3	1	0	64	3
PSYC	*2301*	*General Psychology* [2]	3	0	0	48	3
DMSO	1202	Basic Ultrasound Physics	2	1	0	48	2
DMSO	1210	Introduction to Sonograpy	2	0	0	32	2
DSVT	1103	Introduction to Vascular Technology	1	0	0	16	1
		Total Hours	11	2	0	208	11

Second Semester			**Lecture**	**Lab**	**External**	**Contact Hours**	**Credit Hours**
DMSO	1341	Abdominopelvic Sonography	3	1	0	64	3
DMSO	1251	Sonographic Sectional Anatomy	2	1	0	48	2
DMSO	1242	Intermediate Ultrasound Physics	2	1	0	48	2
DMSO	1360	Clinical - Diagnostic Medical Sonography /Sonographer and Ultrasound Technician	0	0	16	256	3
SPCH	*1311*	*Introduction to Speech Communication* [3]	3	0	0	48	3
		Total Hours	10	3	16	464	13

SECOND YEAR

First Semester			**Lecture**	**Lab**	**External**	**Contact Hours**	**Credit Hours**
DMSO	2254	Neorosonology	2	1	0	48	2
DMSO	2341	Sonography of Abdominopelvic Pathology	2	2	0	64	3
DMSO	2362	Clinical - Diagnostic Medical Sonography / Sonographer and Ultrasound Technician	0	0	16	256	3
DMSO	2405	Sonography of Obstetrics/Gynecology	3	1	0	64	4
DMSO	2253	Sonography of Superficial Structures	2	1	0	48	2
		Total Hours	9	5	16	480	14

Second Semester			**Lecture**	**Lab**	**External**	**Contact Hours**	**Credit Hours**
PHIL	*2306*	*Introduction to Ethics* [4]	3	0	0	48	3
DMSO	2342	Sonography of High Risk Obstetrics	3	1	0	64	3
DMSO	2367	Practicum (or Field of Experience) - Diagnostic Medical Sonography/Sonographer & Ultrasound Technician	0	0	16	256	3
DMSO	2230	Advanced Ultrasound and Review	2	1	0	48	2
		Total Hours	8	2	16	416	11
		GRAND TOTAL HOURS	49	26	48	***1968***	***64***

1. May substitute MATH 1324, MATH 1342, MATH 1414, or MATH 2312
2. May substitute ANTH 2302, ANTH 2346, ANTH 2351, ECON 1301, ECON 2301, ECON 2302, GOVT 2305, GOVT 2306, HIST 1301, HIST 1302, HIST 2301, SOCI 1301, or SOCI 1306
3. May substitute SPCH 1315, or SPCH 1321
4. Select one of the following: ARTS 1301, ARTS 1303, ARTS 1304, ARTS 1313, DANC 2303, DRAM 1310, DRAM 2361, DRAM 2362, DRAM 2366, DRAM 2367, ENGL 2322, ENGL 2323, ENGL 2327, ENGL 2328, ENGL 2332, ENGL 2333, ENGL 2342, ENGL 2343, HIST 2311, HIST 2312, HIST 2321, HIST 2322, HUMA 1301, MUSI 1306, MUSI 1307, MUSI 1310, PHIL 1301, PHIL 1304, PHIL 2303, PHIL 2307, or PHIL 2321

COLLIN COLLEGE
COURSE SYLLABUS

Course Information

Course Number: DMSO 1202

Course Title: Basic Ultrasound Physics

Course Description: Basic acoustical physics and acoustical waves in human tissue. Emphasis on ultrasound transmission in soft tissues, attenuation of sound energy, parameters affecting sound transmission, and resolution of sound beams.

Course Credit Hours: **2**
Lecture Hours: 2
Lab Hours: 1

Student Learning Outcomes:

- **State Mandated Outcomes:** Upon successful completion of this course, students will:
  1. Describe the interaction of sound and soft tissues.
  2. Explain sound production and propagation.
  3. Summarize the basic principles and techniques of ultrasound.

Secretary's Commission on the Acquisition of Necessary Skills (SCANS) - SCANS skills are a group of foundational skills and workplace competencies that the Secretary's Commission on the Acquisition of Necessary Skills established as vitally important for workplace success in the 21st century. In Collin's workforce programs, the SCANS skills are developed and reinforced throughout the curriculum to provide students with an opportunity to hone these skills/competencies in the context of their education. Over the course of an entire degree program, the successful student is expected to demonstrate all of the SCANS skills and competencies as part of their education. The SCANS Foundation Skills and Workplace Competencies are described at:

http://www.collin.edu/academics/programs/Workforce_SCANS_Skills_Syllabi_Code_Key.pdf

Withdrawal Policy: See the current *Collin Registration Guide* for last day to withdraw.

Collin College Academic Policies: See the current *Collin Student Handbook*

Americans with Disabilities Act Statement: Collin College will adhere to all applicable federal, state and local laws, regulations and guidelines with respect to providing reasonable accommodations as required to afford equal educational opportunity. It is the student's responsibility to contact the ACCESS office, SCC-D140 or 972.881.5898 (V/TTD: 972.881.5950) to arrange for appropriate accommodations. See the current *Collin Student Handbook* for additional information.

COLLIN COLLEGE
COURSE SYLLABUS

Course Information

Course Number: DMSO 1210

Course Title: Introduction to Sonography

Course Description: An introduction to the profession of sonography and the role of the sonographer. Emphasis on medical terminology, ethical/legal aspects, written and verbal communication, and professional issues relating to registry, accreditation, professional organizations and history of the profession.

Course Credit Hours: **2**
Lecture Hours: 2

Student Learning Outcomes:

- **State Mandated Outcomes:** Upon successful completion of this course, students will:
  1. Describe the historical development of ultrasound.
  2. List related professional organizations.
  3. Identify registry and lab accreditation requirements and process.
  4. Discuss clinical practice guidelines for sonographers.
  5. Explain medical, legal, and ethical aspects of the profession.

Secretary's Commission on the Acquisition of Necessary Skills (SCANS) - SCANS skills are a group of foundational skills and workplace competencies that the Secretary's Commission on the Acquisition of Necessary Skills established as vitally important for workplace success in the 21st century. In Collin's workforce programs, the SCANS skills are developed and reinforced throughout the curriculum to provide students with an opportunity to hone these skills/competencies in the context of their education. Over the course of an entire degree program, the successful student is expected to demonstrate all of the SCANS skills and competencies as part of their education. The SCANS Foundation Skills and Workplace Competencies are described at:

http://www.collin.edu/academics/programs/Workforce_SCANS_Skills_Syllabi_Code_Key.pdf

Withdrawal Policy: See the current *Collin Registration Guide* for last day to withdraw.

Collin College Academic Policies: See the current *Collin Student Handbook*

Americans with Disabilities Act Statement: Collin College will adhere to all applicable federal, state and local laws, regulations and guidelines with respect to providing reasonable accommodations as required to afford equal educational opportunity. It is the student's responsibility to contact the ACCESS office, SCC-D140 or 972.881.5898 (V/TTD: 972.881.5950) to arrange for appropriate accommodations. See the current *Collin Student Handbook* for additional information.

COLLIN COLLEGE
COURSE SYLLABUS

Course Information

Course Number: DMSO 1242

Course Title: Intermediate Ultrasound Physics

Course Description: Continuation of Basic Ultrasound Physics. Includes interaction of ultrasound with tissues, mechanics of ultrasound production and display, various transducer designs and construction, quality assurance, bioeffects, and image artifacts. May introduce methods of Doppler flow for analysis.

Course Credit Hours: **2**
Lecture Hours: 2
Lab Hours: 1

Student Learning Outcomes:

- **State Mandated Outcomes:** Upon successful completion of this course, students will:
  1. Describe plus-echo principles and actions.
  2. Identify instrument options and transducer selection.
  3. Identify common image artifacts.
  4. Describe potential bioeffects.

Secretary's Commission on the Acquisition of Necessary Skills (SCANS) - SCANS skills are a group of foundational skills and workplace competencies that the Secretary's Commission on the Acquisition of Necessary Skills established as vitally important for workplace success in the 21st century. In Collin's workforce programs, the SCANS skills are developed and reinforced throughout the curriculum to provide students with an opportunity to hone these skills/competencies in the context of their education. Over the course of an entire degree program, the successful student is expected to demonstrate all of the SCANS skills and competencies as part of their education. The SCANS Foundation Skills and Workplace Competencies are described at:

http://www.collin.edu/academics/programs/Workforce_SCANS_Skills_Syllabi_Code_Key.pdf

Withdrawal Policy: See the current *Collin Registration Guide* for last day to withdraw.

Collin College Academic Policies: See the current *Collin Student Handbook*

Americans with Disabilities Act Statement: Collin College will adhere to all applicable federal, state and local laws, regulations and guidelines with respect to providing reasonable accommodations as required to afford equal educational opportunity. It is the student's responsibility to contact the ACCESS office, SCC-D140 or 972.881.5898 (V/TTD: 972.881.5950) to arrange for appropriate accommodations. See the current *Collin Student Handbook* for additional information.

COLLIN COLLEGE
COURSE SYLLABUS

Course Information

Course Number: DMSO 1251

Course Title: Sonographic Sectional Anatomy

Course Description: Sectional anatomy of the male and female body. Includes anatomical relationships of organs, vascular structures, and body planes and quadrants.

Course Credit Hours: **2**
Lecture Hours: 2
Lab Hours: 1

Student Learning Outcomes:

- **State Mandated Outcomes:** Upon successful completion of this course, students will:
  1. Identify organs and structures of the body in sectional planes.
  2. Describe anatomical relationships.
  3. Identify anatomical structures in standard and non-standard imaging planes.

Secretary's Commission on the Acquisition of Necessary Skills (SCANS) - SCANS skills are a group of foundational skills and workplace competencies that the Secretary's Commission on the Acquisition of Necessary Skills established as vitally important for workplace success in the 21st century. In Collin's workforce programs, the SCANS skills are developed and reinforced throughout the curriculum to provide students with an opportunity to hone these skills/competencies in the context of their education. Over the course of an entire degree program, the successful student is expected to demonstrate all of the SCANS skills and competencies as part of their education. The SCANS Foundation Skills and Workplace Competencies are described at:

http://www.collin.edu/academics/programs/Workforce_SCANS_Skills_Syllabi_Code_Key.pdf

Withdrawal Policy: See the current *Collin Registration Guide* for last day to withdraw.

Collin College Academic Policies: See the current *Collin Student Handbook*

Americans with Disabilities Act Statement: Collin College will adhere to all applicable federal, state and local laws, regulations and guidelines with respect to providing reasonable accommodations as required to afford equal educational opportunity. It is the student's responsibility to contact the ACCESS office, SCC-D140 or 972.881.5898 (V/TTD: 972.881.5950) to arrange for appropriate accommodations. See the current *Collin Student Handbook* for additional information.

COLLIN COLLEGE
COURSE SYLLABUS

Course Information

Course Number: DMSO 1341

Course Title: Abdominopelvic Sonography

Course Description: Normal anatomy and physiology of the abdominal and pelvic cavities as related to scanning techniques, transducer selection, and scanning protocols.

Course Credit Hours: **3**
Lecture Hours: 3
Lab Hours: 1

Student Learning Outcomes:

- **State Mandated Outcomes:** Upon successful completion of this course, students will:
  1. Identify the sonographic appearances of normal abdominal and pelvic structures.
  2. Explain physiology of abdominal and pelvic organs.
  3. Describe the appropriate scanning techniques according to standard protocol guidelines.

Secretary's Commission on the Acquisition of Necessary Skills (SCANS) - SCANS skills are a group of foundational skills and workplace competencies that the Secretary's Commission on the Acquisition of Necessary Skills established as vitally important for workplace success in the 21st century. In Collin's workforce programs, the SCANS skills are developed and reinforced throughout the curriculum to provide students with an opportunity to hone these skills/competencies in the context of their education. Over the course of an entire degree program, the successful student is expected to demonstrate all of the SCANS skills and competencies as part of their education. The SCANS Foundation Skills and Workplace Competencies are described at:

http://www.collin.edu/academics/programs/Workforce_SCANS_Skills_Syllabi_Code_Key.pdf

Withdrawal Policy: See the current *Collin Registration Guide* for last day to withdraw.

Collin College Academic Policies: See the current *Collin Student Handbook*

Americans with Disabilities Act Statement: Collin College will adhere to all applicable federal, state and local laws, regulations and guidelines with respect to providing reasonable accommodations as required to afford equal educational opportunity. It is the student's responsibility to contact the ACCESS office, SCC-D140 or 972.881.5898 (V/TTD: 972.881.5950) to arrange for appropriate accommodations. See the current *Collin Student Handbook* for additional information.

COLLIN COLLEGE
COURSE SYLLABUS

Course Information

Course Number: DMSO 1360

Course Title: Clinical – Diagnostic Medical Sonography/Sonographer and Ultrasound Technician

Course Description: A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional.

Course Credit Hours: **3**
Clinical Hours: 16

Student Learning Outcomes:

- **State Mandated Outcomes:** Upon successful completion of this course, students will:
  1. As outlined in the learning plan, apply the theory, concepts, and skills involving specialized materials, tools, equipment, procedures, regulations, laws, and interactions within and among political, economic, environmental, social, and legal systems associated with the occupation and the business/industry.
  2. Demonstrate legal and ethical behavior, safety practices, interpersonal and teamwork skills, and appropriate written and verbal communication skills using the terminology of the occupation and the business/industry.

Secretary's Commission on the Acquisition of Necessary Skills (SCANS) - SCANS skills are a group of foundational skills and workplace competencies that the Secretary's Commission on the Acquisition of Necessary Skills established as vitally important for workplace success in the 21st century. In Collin's workforce programs, the SCANS skills are developed and reinforced throughout the curriculum to provide students with an opportunity to hone these skills/competencies in the context of their education. Over the course of an entire degree program, the successful student is expected to demonstrate all of the SCANS skills and competencies as part of their education. The SCANS Foundation Skills and Workplace Competencies are described at:

http://www.collin.edu/academics/programs/Workforce_SCANS_Skills_Syllabi_Code_Key.pdf

Withdrawal Policy: See the current *Collin Registration Guide* for last day to withdraw.

Collin College Academic Policies: See the current *Collin Student Handbook*

Americans with Disabilities Act Statement: Collin College will adhere to all applicable federal, state and local laws, regulations and guidelines with respect to providing reasonable accommodations as required to afford equal educational opportunity. It is the student's responsibility to contact the ACCESS office, SCC-D140 or 972.881.5898 (V/TTD: 972.881.5950) to arrange for appropriate accommodations. See the current *Collin Student Handbook* for additional information.

COLLIN COLLEGE
COURSE SYLLABUS

Course Information

Course Number: DMSO 2230

Course Title: Advanced Ultrasound Review

Course Description: Knowledge, skills, and professional values within a legal and ethical framework addressing emerging technologies and professional development.

Course Credit Hours: **2**
Lecture Hours: 2
Lab Hours: 1

Student Learning Outcomes:

- **State Mandated Outcomes:** Upon successful completion of this course, students will:
  1. Apply problem solving and critical thinking skills in the context of professional transition.
  2. Demonstrate registry preparedness.
  3. Examine sonography practice within a collaborative ethical and legal framework.

Secretary's Commission on the Acquisition of Necessary Skills (SCANS) - SCANS skills are a group of foundational skills and workplace competencies that the Secretary's Commission on the Acquisition of Necessary Skills established as vitally important for workplace success in the 21st century. In Collin's workforce programs, the SCANS skills are developed and reinforced throughout the curriculum to provide students with an opportunity to hone these skills/competencies in the context of their education. Over the course of an entire degree program, the successful student is expected to demonstrate all of the SCANS skills and competencies as part of their education. The SCANS Foundation Skills and Workplace Competencies are described at:

http://www.collin.edu/academics/programs/Workforce_SCANS_Skills_Syllabi_Code_Key.pdf

Withdrawal Policy: See the current *Collin Registration Guide* for last day to withdraw.

Collin College Academic Policies: See the current *Collin Student Handbook*

Americans with Disabilities Act Statement: Collin College will adhere to all applicable federal, state and local laws, regulations and guidelines with respect to providing reasonable accommodations as required to afford equal educational opportunity. It is the student's responsibility to contact the ACCESS office, SCC-D140 or 972.881.5898 (V/TTD: 972.881.5950) to arrange for appropriate accommodations. See the current *Collin Student Handbook* for additional information.

COLLIN COLLEGE
COURSE SYLLABUS

Course Information

Course Number: DMSO 2253

Course Title: Sonography of Superficial Structures

Course Description: Detailed study of normal and pathological superficial structures as related to scanning techniques, patient history and laboratory data, transducer selection, and scanning protocols.

Course Credit Hours: **2**
Lecture Hours: 2
Lab Hours: 1

Student Learning Outcomes:

- **State Mandated Outcomes:** Upon successful completion of this course, students will:
  1. Identify sonographic appearance of normal and abnormal superficial structures.
  2. Identify appropriate scanning technique using standard protocol guidelines.
  3. Evaluate patient history and laboratory data as it relates to sonography.

Secretary's Commission on the Acquisition of Necessary Skills (SCANS) - SCANS skills are a group of foundational skills and workplace competencies that the Secretary's Commission on the Acquisition of Necessary Skills established as vitally important for workplace success in the 21st century. In Collin's workforce programs, the SCANS skills are developed and reinforced throughout the curriculum to provide students with an opportunity to hone these skills/competencies in the context of their education. Over the course of an entire degree program, the successful student is expected to demonstrate all of the SCANS skills and competencies as part of their education. The SCANS Foundation Skills and Workplace Competencies are described at:

http://www.collin.edu/academics/programs/Workforce_SCANS_Skills_Syllabi_Code_Key.pdf

Withdrawal Policy: See the current *Collin Registration Guide* for last day to withdraw.

Collin College Academic Policies: See the current *Collin Student Handbook*

Americans with Disabilities Act Statement: Collin College will adhere to all applicable federal, state and local laws, regulations and guidelines with respect to providing reasonable accommodations as required to afford equal educational opportunity. It is the student's responsibility to contact the ACCESS office, SCC-D140 or 972.881.5898 (V/TTD: 972.881.5950) to arrange for appropriate accommodations. See the current *Collin Student Handbook* for additional information.

COLLIN COLLEGE
COURSE SYLLABUS

Course Information

Course Number: DMSO 2254

Course Title: Neurosonology

Course Description: Normal and pathological intracranial structures.

Course Credit Hours: **2**
Lecture Hours: 2
Lab Hours: 1

Student Learning Outcomes:

- **State Mandated Outcomes:** Upon successful completion of this course, students will:
  1. Identify sonographic appearance of normal and abnormal intracranial structures.
  2. Identify appropriate scanning technique using standard protocol guidelines.
  3. Evaluate patient history and laboratory data as it relates to ultrasound.
  4. Identify techniques for transcranial Doppler.

Secretary's Commission on the Acquisition of Necessary Skills (SCANS) - SCANS skills are a group of foundational skills and workplace competencies that the Secretary's Commission on the Acquisition of Necessary Skills established as vitally important for workplace success in the 21st century. In Collin's workforce programs, the SCANS skills are developed and reinforced throughout the curriculum to provide students with an opportunity to hone these skills/competencies in the context of their education. Over the course of an entire degree program, the successful student is expected to demonstrate all of the SCANS skills and competencies as part of their education. The SCANS Foundation Skills and Workplace Competencies are described at:

http://www.collin.edu/academics/programs/Workforce_SCANS_Skills_Syllabi_Code_Key.pdf

Withdrawal Policy: See the current *Collin Registration Guide* for last day to withdraw.

Collin College Academic Policies: See the current *Collin Student Handbook*

Americans with Disabilities Act Statement: Collin College will adhere to all applicable federal, state and local laws, regulations and guidelines with respect to providing reasonable accommodations as required to afford equal educational opportunity. It is the student's responsibility to contact the ACCESS office, SCC-D140 or 972.881.5898 (V/TTD: 972.881.5950) to arrange for appropriate accommodations. See the current *Collin Student Handbook* for additional information.

COLLIN COLLEGE
COURSE SYLLABUS

Course Information

Course Number: DMSO 2341

Course Title: Sonography of Abdominopelvic Pathology

Course Description: Pathologies and disease states of the abdomen and pelvis as related to scanning techniques, patient history and laboratory data, transducer selection, and scanning protocols. Emphasizes endocavitary sonographic anatomy and procedures including pregnancy.

Course Credit Hours: **3**
Lecture Hours: 2
Lab Hours: 2

Student Learning Outcomes:

- **State Mandated Outcomes:** Upon successful completion of this course, students will:
  1. Identify abnormal abdominal and pelvic structures.
  2. Identify scanning techniques using standard protocol guidelines.
  3. Evaluate patient history and laboratory data as it relates to sonography.

Secretary's Commission on the Acquisition of Necessary Skills (SCANS) - SCANS skills are a group of foundational skills and workplace competencies that the Secretary's Commission on the Acquisition of Necessary Skills established as vitally important for workplace success in the 21st century. In Collin's workforce programs, the SCANS skills are developed and reinforced throughout the curriculum to provide students with an opportunity to hone these skills/competencies in the context of their education. Over the course of an entire degree program, the successful student is expected to demonstrate all of the SCANS skills and competencies as part of their education. The SCANS Foundation Skills and Workplace Competencies are described at:

http://www.collin.edu/academics/programs/Workforce_SCANS_Skills_Syllabi_Code_Key.pdf

Withdrawal Policy: See the current *Collin Registration Guide* for last day to withdraw.

Collin College Academic Policies: See the current *Collin Student Handbook*

Americans with Disabilities Act Statement: Collin College will adhere to all applicable federal, state and local laws, regulations and guidelines with respect to providing reasonable accommodations as required to afford equal educational opportunity. It is the student's responsibility to contact the ACCESS office, SCC-D140 or 972.881.5898 (V/TTD: 972.881.5950) to arrange for appropriate accommodations. See the current *Collin Student Handbook* for additional information.

COLLIN COLLEGE
COURSE SYLLABUS

Course Information

Course Number: DMSO 2342

Course Title: Sonography of High Risk Obstetrics

Course Description: Maternal disease and fetal abnormalities. Includes scanning techniques, patient history and laboratory data, transducer selection, and scanning protocols.

Course Credit Hours: **3**
Lecture Hours: 3
Lab Hours: 1

Student Learning Outcomes:

- **State Mandated Outcomes:** Upon successful completion of this course, students will:
  1. Identify and differentiate normal and abnormal fetal and maternal structures.
  2. Demonstrate pertinent measurement techniques and scanning techniques using standard protocols.
  3. Evaluate patient history and laboratory data as it relates to ultrasound.
  4. Select appropriate transducer for area of interest.

Secretary's Commission on the Acquisition of Necessary Skills (SCANS) - SCANS skills are a group of foundational skills and workplace competencies that the Secretary's Commission on the Acquisition of Necessary Skills established as vitally important for workplace success in the 21st century. In Collin's workforce programs, the SCANS skills are developed and reinforced throughout the curriculum to provide students with an opportunity to hone these skills/competencies in the context of their education. Over the course of an entire degree program, the successful student is expected to demonstrate all of the SCANS skills and competencies as part of their education. The SCANS Foundation Skills and Workplace Competencies are described at:

http://www.collin.edu/academics/programs/Workforce_SCANS_Skills_Syllabi_Code_Key.pdf

Withdrawal Policy: See the current *Collin Registration Guide* for last day to withdraw.

Collin College Academic Policies: See the current *Collin Student Handbook*

Americans with Disabilities Act Statement: Collin College will adhere to all applicable federal, state and local laws, regulations and guidelines with respect to providing reasonable accommodations as required to afford equal educational opportunity. It is the student's responsibility to contact the ACCESS office, SCC-D140 or 972.881.5898 (V/TTD: 972.881.5950) to arrange for appropriate accommodations. See the current *Collin Student Handbook* for additional information.

COLLIN COLLEGE
COURSE SYLLABUS

Course Information

Course Number: DMSO 2362

Course Title: Clinical – Diagnostic Medical Sonography/Sonographer and Ultrasound Technician

Course Description: A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional.

Course Credit Hours: **3**
Clinical Hours: 16

Student Learning Outcomes:

- **State Mandated Outcomes:** Upon successful completion of this course, students will:
  1. As outlined in the learning plan, apply the theory, concepts, and skills involving specialized materials, tools, equipment, procedures, regulations, laws, and interactions within and among political, economic, environmental, social, and legal systems associated with the occupation and the business/industry.
  2. Demonstrate legal and ethical behavior, safety practices, interpersonal and teamwork skills, and appropriate written and verbal communication skills using the terminology of the occupation and the business/industry.

Secretary's Commission on the Acquisition of Necessary Skills (SCANS) - SCANS skills are a group of foundational skills and workplace competencies that the Secretary's Commission on the Acquisition of Necessary Skills established as vitally important for workplace success in the 21st century. In Collin's workforce programs, the SCANS skills are developed and reinforced throughout the curriculum to provide students with an opportunity to hone these skills/competencies in the context of their education. Over the course of an entire degree program, the successful student is expected to demonstrate all of the SCANS skills and competencies as part of their education. The SCANS Foundation Skills and Workplace Competencies are described at: http://www.collin.edu/academics/programs/Workforce_SCANS_Skills_Syllabi_Code_Key.pdf

Withdrawal Policy: See the current *Collin Registration Guide* for last day to withdraw.

Collin College Academic Policies: See the current *Collin Student Handbook*

Americans with Disabilities Act Statement: Collin College will adhere to all applicable federal, state and local laws, regulations and guidelines with respect to providing reasonable accommodations as required to afford equal educational opportunity. It is the student's responsibility to contact the ACCESS office, SCC-D140 or 972.881.5898 (V/TTD: 972.881.5950) to arrange for appropriate accommodations. See the current *Collin Student Handbook* for additional information.

COLLIN COLLEGE
COURSE SYLLABUS

Course Information

Course Number: DMSO 2367

Course Title: Practicum (or Field Experience) – Diagnostic Medical Sonography/Sonographer and Ultrasound Technician

Course Description: Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student.

Course Credit Hours: **3**
Clinical Hours: 16

Student Learning Outcomes:

- **State Mandated Outcomes:** Upon successful completion of this course, students will:
  1. As outlined in the learning plan, apply the theory, concepts, and skills involving specialized materials, tools, equipment, procedures, regulations, laws, and interactions within and among political, economic, environmental, social, and legal systems associated with the occupation and the business/industry.
  2. Will demonstrate legal and ethical behavior, safety practices, interpersonal and teamwork skills, and appropriate written and verbal communication skills using the terminology of the occupation and the business/industry.

Secretary's Commission on the Acquisition of Necessary Skills (SCANS) - SCANS skills are a group of foundational skills and workplace competencies that the Secretary's Commission on the Acquisition of Necessary Skills established as vitally important for workplace success in the 21st century. In Collin's workforce programs, the SCANS skills are developed and reinforced throughout the curriculum to provide students with an opportunity to hone these skills/competencies in the context of their education. Over the course of an entire degree program, the successful student is expected to demonstrate all of the SCANS skills and competencies as part of their education. The SCANS Foundation Skills and Workplace Competencies are described at: http://www.collin.edu/academics/programs/Workforce_SCANS_Skills_Syllabi_Code_Key.pdf

Withdrawal Policy: See the current *Collin Registration Guide* for last day to withdraw.

Collin College Academic Policies: See the current *Collin Student Handbook*

Americans with Disabilities Act Statement: Collin College will adhere to all applicable federal, state and local laws, regulations and guidelines with respect to providing reasonable accommodations as required to afford equal educational opportunity. It is the student's responsibility to contact the ACCESS office, SCC-D140 or 972.881.5898 (V/TTD: 972.881.5950) to arrange for appropriate accommodations. See the current *Collin Student Handbook* for additional information.

COLLIN COLLEGE
COURSE SYLLABUS

Course Information

Course Number: DMSO 2405

Course Title: Sonography of Obstetrics/Gynecology

Course Description: Detailed study of the pelvis and obstetrics/gynecology as related to scanning techniques, patient history and laboratory data, transducer selection, and scanning protocols.

Course Credit Hours: **4**
Lecture Hours: 3
Lab Hours: 1

Student Learning Outcomes:

- **State Mandated Outcomes:** Upon successful completion of this course, students will:
  1. Identify the sonographic appearances of normal and abnormal female pelvis.
  2. Identify normal and abnormal obstetrical findings.
  3. Demonstrate appropriate scanning techniques using standard protocols.
  4. Evaluate patient history and laboratory data as it relates to sonography.

Secretary's Commission on the Acquisition of Necessary Skills (SCANS) - SCANS skills are a group of foundational skills and workplace competencies that the Secretary's Commission on the Acquisition of Necessary Skills established as vitally important for workplace success in the 21st century. In Collin's workforce programs, the SCANS skills are developed and reinforced throughout the curriculum to provide students with an opportunity to hone these skills/competencies in the context of their education. Over the course of an entire degree program, the successful student is expected to demonstrate all of the SCANS skills and competencies as part of their education. The SCANS Foundation Skills and Workplace Competencies are described at:

http://www.collin.edu/academics/programs/Workforce_SCANS_Skills_Syllabi_Code_Key.pdf

Withdrawal Policy: See the current *Collin Registration Guide* for last day to withdraw.

Collin College Academic Policies: See the current *Collin Student Handbook*

Americans with Disabilities Act Statement: Collin College will adhere to all applicable federal, state and local laws, regulations and guidelines with respect to providing reasonable accommodations as required to afford equal educational opportunity. It is the student's responsibility to contact the ACCESS office, SCC-D140 or 972.881.5898 (V/TTD: 972.881.5950) to arrange for appropriate accommodations. See the current *Collin Student Handbook* for additional information.

COLLIN COLLEGE
COURSE SYLLABUS

Course Information

Course Number: DSVT 1103

Course Title: Introduction to Vascular Technology

Course Description: Introduction to basic non-invasive vascular theories. Emphasizes image orientation, transducer handling, and identification of anatomic structures.

Course Credit Hours: **1**
Lecture Hours: 1

Student Learning Outcomes:

- **State Mandated Outcomes:** Upon successful completion of this course, students will:
  1. Describe fundamental vascular concepts of duplex and non-imaging procedures including positioning the patient, equipment, and other devices.

Secretary's Commission on the Acquisition of Necessary Skills (SCANS) - SCANS skills are a group of foundational skills and workplace competencies that the Secretary's Commission on the Acquisition of Necessary Skills established as vitally important for workplace success in the 21st century. In Collin's workforce programs, the SCANS skills are developed and reinforced throughout the curriculum to provide students with an opportunity to hone these skills/competencies in the context of their education. Over the course of an entire degree program, the successful student is expected to demonstrate all of the SCANS skills and competencies as part of their education. The SCANS Foundation Skills and Workplace Competencies are described at:

http://www.collin.edu/academics/programs/Workforce_SCANS_Skills_Syllabi_Code_Key.pdf

Withdrawal Policy: See the current *Collin Registration Guide* for last day to withdraw.

Collin College Academic Policies: See the current *Collin Student Handbook*

Americans with Disabilities Act Statement: Collin College will adhere to all applicable federal, state and local laws, regulations and guidelines with respect to providing reasonable accommodations as required to afford equal educational opportunity. It is the student's responsibility to contact the ACCESS office, SCC-D140 or 972.881.5898 (V/TTD: 972.881.5950) to arrange for appropriate accommodations. See the current *Collin Student Handbook* for additional information.

COLLIN COLLEGE
COURSE SYLLABUS

Course Information

Course Number: HPRS 1206

Course Title: Essentials of Medical Terminology

Course Description: A study of medical terminology, word origin, structure, and application.

Course Credit Hours: **2**
Lecture Hours: 1
Lab Hours: 3

Student Learning Outcomes:

- **State Mandated Outcomes:** Upon successful completion of this course, students will:
  1. Define, pronounce, and spell medical terms with the use of medical references as resource tools.
  2. Utilize terms in context.
  3. Analyze medical terms.
  4. Examine word origin and structure through the introduction of prefixes, suffixes, root words, plurals, abbreviations and symbols.

Secretary's Commission on the Acquisition of Necessary Skills (SCANS) - SCANS skills are a group of foundational skills and workplace competencies that the Secretary's Commission on the Acquisition of Necessary Skills established as vitally important for workplace success in the 21st century. In Collin's workforce programs, the SCANS skills are developed and reinforced throughout the curriculum to provide students with an opportunity to hone these skills/competencies in the context of their education. Over the course of an entire degree program, the successful student is expected to demonstrate all of the SCANS skills and competencies as part of their education. The SCANS Foundation Skills and Workplace Competencies are described at:

http://www.collin.edu/academics/programs/Workforce_SCANS_Skills_Syllabi_Code_Key.pdf

Withdrawal Policy: See the current *Collin Registration Guide* for last day to withdraw.

Collin College Academic Policies: See the current *Collin Student Handbook*

Americans with Disabilities Act Statement: Collin College will adhere to all applicable federal, state and local laws, regulations and guidelines with respect to providing reasonable accommodations as required to afford equal educational opportunity. It is the student's responsibility to contact the ACCESS office, SCC-D140 or 972.881.5898 (V/TTD: 972.881.5950) to arrange for appropriate accommodations. See the current *Collin Student Handbook* for additional information.