

# DMS 72A: DIAGNOSTIC MEDICAL SONOGRAPHY PROCEDURES & APPLICATIONS

## Foothill College Course Outline of Record

Heading	Value
Units:	11.5
Hours:	1 lecture, 32 laboratory per week (396 total per quarter)
Prerequisite:	BIOL 40A, 40B and 40C.
Corequisite:	DMS 50A, 50B and 60A.
Degree & Credit Status:	Degree-Applicable Credit Course
Foothill GE:	Non-GE
Transferable:	CSU
Grade Type:	Letter Grade Only
Repeatability:	Not Repeatable

## Student Learning Outcomes

- Produce diagnostic sonographic images, optimizing technical factors.
- Acquire and analyze data obtained using ultrasound and related diagnostic technologies.

## Description

Instruction to develop the fundamental skills, procedures and applications for sonographic image acquisition. Includes instruction in establishing technical quality, interpretation, analysis, and case presentation. Includes hands-on participation in a structured lab setting with emphasis on simulation and live scanning exercises plus clinical preceptorship. Intended for students in the Diagnostic Medical Sonography Program; enrollment is limited to students accepted in the program.

## Course Objectives

The student will be able to:

- recognize commonly obtained scan planes, recognized landmarks.
- define and apply standards for image acquisition.
- recognize and correlate anatomical structures.
- operate sonography equipment with supervision.
- explain and use key control functions of ultrasound equipment.
- obtain patient clinical information in a simulated medical setting.
- present clinical cases using interpretative analysis.
- perform the duties and tasks according to the description of the DMS Assistant.
- perform accurately the application and obtainment of vital signs, as well as patient transfers.

## Course Content

- recognize commonly obtained scan planes, recognized landmarks.
  - sagittal
  - transverse
  - coronal

- intercostal
- define and apply standards for image acquisition.
  - contrast quality standards with suboptimal cases from files
  - interpretative skills along with case analysis
- recognize and correlate anatomical structures.
  - obtain images with targeted anatomical structures as indicated by instructor
  - cite relationship of organs and blood vessels
- operate sonography equipment with supervision.
  - keyboard information
  - annotate date
  - TGC
  - gain
  - tissue harmonics
  - field of view
  - measurements
  - relationships of body position to monitor display
- explain and use key control functions of the lab's ultrasound equipment.
  - obtain patient clinical information in a simulated medical setting.
    - from the waiting room to the examination room
    - describe the sonographic procedure to take place
    - ascertain examination relevant information
- present a clinical case using Interpretative analysis.
  - research information for clinical case presentation
  - include clinical information
  - include lab data
  - include sonographic findings
  - correlate with pathology findings
- perform the duties and tasks according to the description of the DMS Assistant.
  - differentiate patient preparation for.
    - abdominal examinations
    - gynecology examinations
    - obstetrical examinations
    - superficial examinations
    - vascular examinations
    - invasive procedures
    - cite protocols for the above examinations and procedures
  - perform vital signs and additional required tasks
    - blood pressure
    - pulse
    - respiration
    - perform safely patient transfer, including wheelchair, gurney, lifts, locks, etc.

## Lab Content

- Lab exercises and demonstrations in the DMS lab.
  - Each lab exercise may be individual or group activities and covers assigned reading, lecture topics, and clinical experiences.
  - Each lab exercise will incorporate simulation training, individual tasks, interactivity with interactive case analysis and CD/DVD media.

## Special Facilities and/or Equipment

- DVD/TV-monitor, view boxes, computer stations, medical sonography equipment.

## Method(s) of Evaluation

Methods of Evaluation may include but are not limited to the following:

A. Demonstration of mastery of material and technical skills through oral, practical laboratory exercises, clinical experience, written forms.

## Method(s) of Instruction

Methods of Instruction may include but are not limited to the following:

- A. Lecture presentations
- B. Cooperative learning exercises
- C. Demonstration
- D. Internship/preceptorship
- E. Clinical lab

## Representative Text(s) and Other Materials

Curry, R., and B. Tempkin. Ultrasonography: An Introduction to Normal Structures and Functional Anatomy. 4th ed. St. Louis, MO: Elsevier, 2016.

Curry, R., and B. Tempkin. Ultrasonography: An Introduction to Normal Structures and Functional Anatomy. Workbook. 4th ed. St. Louis, MO: 2016.

## Types and/or Examples of Required Reading, Writing, and Outside of Class Assignments

- A. Reading materials from texts and website research on patient pathology - approximately 40 pages per week.
- B. Critical analysis of patient examinations and findings.
- C. Review of relevant published data as related to sonographic evidence of pathology and/or variants.
- D. Report writing per patient case.

## Discipline(s)

Diagnostic Medical Technology