

# DMS-2950: FIELD EXPERIENCE IV

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## Cuyahoga Community College

**Viewing: DMS-2950 : Field Experience IV**

**Board of Trustees:**

January 2023

**Academic Term:**

Fall 2023

**Subject Code**

DMS - Diagnostic Medical Sonography

**Course Number:**

2950

**Title:**

Field Experience IV

**Catalog Description:**

Supervised practical application of sonography scanning techniques in clinical setting under direct supervision of registered diagnostic medical sonographer or qualified physician. Independent scanning of all levels of procedures with emphasis on accuracy and exam duration. Student focuses skill development of professional and technical accuracy and speed. Clinical experience in an ultrasound lab.

**Credit Hour(s):**

1

**Other Hour(s):**

192

**Other Hour Details:**

Field Experience: 192 hours per semester

## Requisites

**Prerequisite and Corequisite**

DMS-2940 Field Experience III.

## Outcomes

**Course Outcome(s):**

Demonstrate cooperation and collaboration within the health care environment.

**Objective(s):**

- a. Exhibit proper communication skills with diverse populations in the clinical environment.
- b. Seek to assist and cooperate when opportunity arises.
- c. Display a work ethic that is considerate to their fellow peers.
- d. Demonstrate professionalism in the clinical environment.
- e. Model behavior of a professional health care provider.

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**Course Outcome(s):**

Recognize the importance of the patient.

**Objective(s):**

1. Adhere to infectious control policies and standard precautions.
2. Respect and protect the confidentiality of acquired patient information and patient rights.
3. Engage in clear, effective communication with diverse populations.
4. Provide for patient needs.

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**Course Outcome(s):**

Perform all levels of technical functions within the scope of practice of a Sonographer.

**Objective(s):**

- a. Follow principles of good body mechanics and ergonomics.
  - b. Demonstrate continuous improvement in skills and behaviors.
  - c. Identify and produce quality examinations by using appropriate equipment capabilities while maintaining safety.
  - d. Recognize normal vs. abnormal anatomy while scanning a patient.
  - e. Perform sonographic procedures indicated in the Diagnostic Medical Sonography Clinical Manual using proper protocols.
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**Methods of Evaluation:**

- a. Observation
- b. Oral quizzing
- c. Image interpretation
- d. Student clinical evaluation
- e. Exam competency
- f. of all clinical requirements

**Course Content Outline:**

- a. Concepts
  - i. Exam specific protocols
    1. Abdomen-OB/GYN according to American Institute of Ultrasound in Medicine (AIUM) Clinical Guidelines
      - a. Abdominal Doppler
      - b. Breast
      - c. 2nd/3rd Trimester gravid
      - d. Elective exams - specified in Diagnostic Medical Sonography (DMS) Student Clinical manual dependent upon clinical site.
    2. Cardiac according to American Society of Echocardiography (ASE) Guidelines and Standards without assistance
      - a. parasternal views
      - b. apical views
      - c. subcostal views
      - d. suprasternal
    3. Vascular according to Society for Vascular Ultrasound (SVU) Positions and Guidelines
      - a. Abdominal Doppler
      - b. Arterial duplex upper extremity
      - c. Arterial duplex lower extremity
      - d. Peripheral bypass graft
      - e. Venous incompetence
  - ii. Scope of practice
  - iii. Professionalism
  - iv. Cooperation and collaboration
  - v. Quality
  - vi. Work flow
  - vii. Facility policies and procedures
  - viii. Exam protocols
  - ix. Workplace politics
- b. Skills
  - i. Using independent judgment when scanning a patient
  - ii. Working as a functional member of the team
  - iii. Performing a technical scan of organs specific to the option:
    1. Abdomen-OB/GYN according to AIUM Clinical Guidelines without assistance
      - a. Abdominal Doppler
      - b. Breast
      - c. 2nd/3rd Trimester gravid
      - d. Elective exams - specified in DMS Student Clinical Manual dependent upon clinical site

2. Cardiac according to ASE Guidelines and Standards without assistance
  - a. aortic stenosis with pedoff
  - b. aortic regurgitation
  - c. mitral stenosis
  - d. mitral regurgitation
  - e. tricuspid regurgitation
  - f. pulmonary hypertension
  - g. left ventricular systolic function
  - h. left ventricular diastolic function with tissue Doppler imaging
  - i. all 2D and M-mode measurements
3. Vascular according to SVU positions and guidelines without assistance
  - a. abdominal Doppler
  - b. arterial duplex upper extremity
  - c. arterial duplex lower extremity
  - d. peripheral bypass graft
  - e. venous incompetence
- iv. Correlating exam findings with patient medical information
- v. Taking appropriate safety precautions in the lab environment
- vi. Reinforce proper student demonstration of patient care skills
- vii. Using proper body mechanics while scanning and positioning patients
- viii. Using ergonomic features of the equipment to your benefit
- ix. Preparing the exam room and equipment for the exam
  - x. Manipulating equipment controls for a quality exam
  - xi. Communicating to a diverse population
  - xii. Selecting the proper equipment to perform a procedure
- c. Issues
  - i. Ethics
  - ii. Legal
  - iii. Standards of practice
  - iv. Diversity
  - v. Standard precautions
  - vi. Safety
  - vii. Quality
  - viii. Scope of practice
  - ix. Workplace politics

#### Topical Outline

- a. Clinical site orientation (see clinical site orientation checklist)
- b. Equipment instrumentation
  - i. Safe operation
  - ii. Maintenance for quality assurance and safety
  - iii. Equipment capabilities and inabilities
    1. Probes
    2. Doppler
    3. 3D and 4D imaging
    4. Harmonics
    5. PACS - Picture archiving and communications system
    6. Measurement reports/worksheets
- c. Department processes
  - i. Information system
  - ii. Exam/report routing system
  - iii. Test results
  - iv. HIPAA and Patient Rights
  - v. Scan lab preparation and maintenance
- d. Progression of appropriate communication skills
  - i. Patient and visitors
  - ii. Medical site associates
  - iii. Medical professionals
- e. Progression of appropriate behavioral skills

- i. Patient and visitors
- ii. Medical site associates
- iii. Medical professionals
- iv. Workplace politics
- f. Infection control and prevention
  - i. Standards
  - ii. Techniques
  - iii. Reporting
- g. Exam protocols for procedures to be performed as indicated in the Diagnostic Medical Sonography Clinical Manual
- h. Performance of clinical procedures
  - i. Progressive development of skills
    - 1. Professional
    - 2. Personal
    - 3. Technical
    - 4. Speed
  - ii. Scan techniques assessment
    - 1. Observance
    - 2. Assistance
    - 3. Independent
  - iii. Demonstration of sonographic anatomy
    - 1. Normal
    - 2. Anomaly
    - 3. Pathology
    - 4. Pathophysiology
  - iv. Normal vs. abnormal values
    - 1. Anatomical structure
    - 2. Doppler
    - 3. Laboratory values
  - v. Evaluation and analysis
    - 1. Patient medical history
    - 2. Supportive clinical data
    - 3. Sonographic exam information
  - vi. Accurate technical findings
    - 1. Oral
    - 2. Written

## Resources

Curry, Reva Arnez, and Betty Bates Tempkin. *Sonography: Introduction to Normal Structure and Function*. 5th ed. St Louis: Saunders, 2020.

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Otto, Catherine M. *Textbook of Clinical Echocardiography*. 6th ed. Philadelphia: Elsevier, 2018.

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Rumack, Carol M. and Deborah Levine. *Diagnostic Ultrasound*. 5th ed. Philadelphia: Elsevier, 2018.

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Rumwell, Claudia, and Michalene McPharlin. *Vascular Technology: An Illustrated Review*. 5th ed. Pasadena: Appleton Davies, 2014.

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Tempkin, Betty B. *Sonography Scanning: Principles and Protocols*. 4th ed. Philadelphia: Saunders, 2014.

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Harry, Mark J and Tess Behrends. *Essentials of Echocardiography: An Illustrative Guide*. 4th ed. Forney, Tx: Pegasus Lectures, 2014.

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Kupinski, Ann Marie. *Diagnostic Medical Sonography: The Vascular System*. 2nd ed. Baltimore: Wolters Kluwer, 2018.

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Armstrong, William F. and Thomas Ryan. *Feigenbaum's Echocardiography*. 8th ed. Philadelphia: Wolters Kluwer, 2019.

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