



DMS-524: CLINICAL EXPERIENCE II (FORMERLY DMS-124)

Effective Term

Fall 2024

BOT Approval Date

01/11/2024

Discipline

DMS - Diagnostic Medical Sonography

Course Number

524

Course Title

Clinical Experience II (formerly DMS-124)

Short Title

Clinical Experience II

Credit Status (CB 04)

D - Credit - Degree applicable

Units**Lab Units**

10.00

Total Units

10.00

Hours**Lab Contact Hours**

480-540

Out of Class Hours Lab

0.00

Total Contact Hours

480 - 540

Total Out of Class Hours

0 - 0

Total Student Learning Hours

480 - 540

Is this an existing Extensive Lab?

No

Do you want to propose this for Extensive Lab?

No

Distance Education

No

Catalog Description

This course is the third semester, after a prior summer semester, of a clinical externship/internship where students continue to observe staff Sonographers in the clinical environment, scan with assistance, and begin to complete ultrasound exams unassisted with preceptor review of the final exam images. Clinical training provides the student with an opportunity to gain hands-on experience



under the guidance of a trained preceptor in a sonography department at an affiliated hospital or medical center. The student will learn through observation, scanning with assistance, and scanning unassisted: the functions, procedures, and protocols of an ultrasound department. This clinical course will also include reviewing physician orders, comparing prior imaging exams, lab results, exam protocols, observing a sonographer complete an ultrasound examination, completing the requested examination with sonographer assistance, or completing an ultrasound examination unassisted. The student will demonstrate proper sterile technique, universal precautions, and patient centered care. (formerly DMS-124)

Requisites

Prerequisite(s)

Prerequisite(s) (must be taken before)

DMS-514 (with a grade of C or better).

Codes

TOP Code (CB 03)

1227.00* - *Diagnostic Medical Sonography

CIP Code

51.0910 - Diagnostic Medical Sonography/Sonographer and Ultrasound Technician.

Student Accountability Model (SAM) Priority Code (CB 09)

C - Clearly Occupational

Noncredit Category (CB 22)

Y - Credit Course

Repeatability Code

No

Grading Option

Letter grade OR P/NP

Minimum Qualifications

Minimum Qualifications	And/Or
Diagnostic Medical Technology	End

CSU Area(s)

IGETC Area(s)

Learning Objectives

Learning Objectives

Learning Objective

1. Differentiate and identify sonographic appearance of normal anatomic structures of the abdomen and superficial structures, such as, thyroid, breast, scrotum and testicles, and the female pelvis and maternal/fetal anatomy.
2. Document established imaging protocol for each exam.
3. Produce images of all anatomy in transverse and sagittal planes.
4. Distinguish and appropriately document any pathology seen while performing examinations on the abdomen, superficial structures, female pelvis and maternal/fetal anatomy.
5. Critique sonograms to determine diagnostic quality.
6. Evaluate ultrasound images and identify any artifacts caused by improper scanning techniques.
7. Modify scanning protocol based on sonographic findings and differential diagnosis.
8. Consider appropriate communication skills when working with demanding, anxious, combative or uncooperative patients.

9. Investigate lab values for comparison of differential diagnosis based on patient symptoms, lab values and diagnostic imaging examinations.

10. Demonstrate punctuality, professionalism and proper ethics while working at the assigned clinical training site.

Learning Outcome Information

Course Learning Outcomes

Learning Outcome

1. The student will complete a patient history using proper medical terminology."
2. The student will demonstrate a working knowledge of the knobology on the equipment used in the clinical affiliation department.
3. The student will recognize abdominal anatomy as seen on an abdominal ultrasound. "
4. The student will develop an understanding of cultural, racial, and ethnic diversity in a patient centered care setting.

Program Learning Outcomes

Learning Outcome

Apply knowledge of proper use of ultrasound equipment and demonstrate image improvement through manipulating the instrumentation of the equipment.

Complete the American Registry of Diagnostic Medical Sonographers Physics and Instrumentation exam and one or more specialty exams of Abdomen and Obstetrics/Gynecology.

Demonstrate professional and ethical behavior in the workplace.

Document proper imaging of the abdomen, small parts, obstetrics and gynecology ultrasound exams. Show discretion with and implement HIPPA laws for all patients.

Show discretion with and implement HIPPA laws for all patients.

Use effective communication with patients, staff, and physicians.

Institutional Learning Outcomes

Aesthetic Awareness: The student will identify and evaluate how aesthetic expression leads to an appreciation of social and cultural context as well as the values of art and nature.

Communication: The student will effectively express and exchange ideas through listening, speaking, reading, writing, visual works, and other modes of interpersonal expression.

Critical Thinking: The student will analyze problems, gather and synthesize relevant information, evaluate ideas, information, and evaluate alternative points of view to create, innovate and implement effective solutions.

Cultural Awareness and Humility: The student will demonstrate knowledge of and sensitivity toward individuals of diverse ethnicity, age, gender, sexual orientation, and religious affiliations, as well as toward those individuals with diverse abilities and socio-economic classes to respectfully interact with individuals of diverse perspectives, beliefs and values while being mindful of the limitation of their own cultural frameworks.

Information and Technology Literacy: The student will access, interpret, evaluate, and apply relevant information sources and digital media effectively, and in an ethical and legal manner.

Scientific Awareness: The student will apply the scientific method of inquiry to assess potential solutions for real-life challenges by employing science-based knowledge and methodologies in daily life.

Social Awareness: The student will recognize and analyze the interconnectedness of global, national, and local concerns, analyzing cultural, political, social, and environmental issues from multiple perspectives and appreciate similarities and differences among cultures.

Civic

Personal

and Professional Responsibility

Content

Course Lab Content

I. Students will continue to improve scanning skills learned in DMS 514 through continued training at their assigned clinical affiliation site.

II. Perform ultrasound examinations on patients

III. Use proper protocols for scanning the abdominal and small parts structures

A. Liver

B. Gallbladder

- C. Biliary tract
- D. Kidneys and adrenal glands
- E. Pancreas
- F. Spleen
- G. Color flow and doppler of vascular structures
 - 1. Abdominal Arterial
 - 2. Venous
- 8. Small parts exams
 - 1. Breast
 - 2. Thyroid
 - 3. Testicular/Scrotal examinations.
- IV. Completion of examination worksheets
 - A. Include patient signs and symptoms, laboratory values, previous imaging examination findings
 - B. Presentation of the examination to the radiologist
 - C. All images sent via established protocols set up at the clinical affiliation site.
 - D. Examination order and sonographer worksheet to be included with the images
 - E. Discuss examination findings with radiologist.
 - F. Follow strict protocols set by the clinical affiliation site for patients with urgent requests or findings.
- V. Begin scanning Pelvic ultrasound exams on patients at the clinical affiliation site using proper protocols for scanning:
 - A. Uterus
 - B. Endometrium
 - C. Ovaries
 - D. Adnexa structures
 - E. Pelvic muscles
 - F. Identify abnormal structures found during the pelvic ultrasound examination
- VI. Begin scanning first trimester obstetric examinations using proper protocols for scanning:
 - A. Gestational sac
 - B. Yolk sac
 - C. Fetal pole
 - D. Number of fetuses
 - E. Fetal heart rate/ using M Mode
 - F. Uterus
 - G. Ovaries
 - H. Adnexa structure
 - I. Identify abnormal structures found during the first trimester ultrasound examination
- VII. Begin scanning 2nd and 3rd trimester obstetric patients using proper protocols for scanning:
 - A. Uterus
 - B. Cervix length
 - C. Ovaries
 - D. Placenta appearance and location
 - E. Fetal position
 - F. Fetal anatomy
 - 1. Spine
 - 2. Fetal Heart/with M mode measurement of heart rate
 - 3. Fetal abdominal structures
 - a. stomach
 - b. kidneys
 - c. bladder
 - d. diaphragm

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- 4. Fetal chest
 - 5. Fetal facial structures
 - 6. Umbilical cord insertion and number of vessels
 - 7. Fetal extremities
 - 8. Structures of the fetal brain
 - 9. Nuchal fold
 - G. Amniotic fluid volume
 - H. Fetal biometry
 - 1. biparietal diameter
 - 2. abdomen circumference
 - 3. femur length
 - 4. humeral length
 - VIII. Professional behavior demonstrated using
 - A. Communication skills with preceptors, hospital staff, physicians, and all patients within a diverse patient population.
 - B. Following all HIPPA laws
 - C. Productivity
 - D. Keeping ultrasound rooms stocked and cleaned
 - E. Using universal precautions
 - F. Displaying professional appearance and uniform

Methods of Instruction

Method

Papers and Reports

Integration

The instructor will post the assignment in Canvas for completing six CME's (continuing medical education) units. Students will be directed as to where these credits can be found such as the AIUM journal of Ultrasound in Medicine (printed journal or online), SDMS online, conferences such as UCLA Fetal Echo Symposium and how to complete any CME tests at the end of the readings or conferences. CME unit hours can be obtained through online Sonography websites, webinars, journal articles, online trainings, seminars and sonography conferences.

Method

Observation and Demonstration

Integration

Students will build on didactic foundational knowledge of proper exam protocols and prior clinical experience. The instructor or preceptor will demonstrate these protocols in clinical practice: evaluation of physician's orders, documentation of patient history, and completing appropriate paperwork to document the examination findings.

Method

Observation and Demonstration

Integration

In the hospital imaging exam room, while scanning a hospital patient, the instructor or preceptor will demonstrate proper use of machine knobology during each ultrasound exam using: TGC, depth, gain, focus, measurement cursors, color doppler, power doppler, pulse-wave doppler, dynamic range, dual screen, annotation, patient demographics, review images, delete images, and zoom images.

Method

Observation and Demonstration

Integration

In the hospital imaging exam room, the instructor or preceptor will demonstrate proper probe cover use for sterile procedures and transvaginal exams. Proper use will include standard and aseptic technique of placement on the transducer, removal from the transducer, and disinfection procedure using the Trophon sterilizer or Cidex soak solution.

Method

Observation and Demonstration

Integration

The instructor or preceptor will perform an ultrasound exam or assist the student with protocols and image optimization, then review abdomen and/or superficial anatomy structures with the student after leaving the exam room and viewing images from the PACS archive in the work area. The preceptor will also teach the student the methods of examination write up used at their clinical site.

Method

Papers and Reports

Integration

Instructions will be given in class and written in the CMS on how to keep paper clinical time logs and exam logs. Instructions for Trajecsys will be demonstrated in class and written instructions posted within the CMS on how to clock in and out using the cloud-based Trajecsys

Method

Discussion

Integration

Instructors and preceptors are typically faced with a diverse patient population on any given day in a hospital environment. Students will have had three semesters of full-time clinical to base their experience on. The article "Seven Steps to Become a More Culturally Sensitive Nurse" will be re-posted in the CMS. Students will revisit and read the article and post a written response to discuss patient demographics for their hospital or imaging center. They will be instructed to describe and give examples of how their understanding has evolved, remained the same, and/or increased through clinical experiences.

Methods of Evaluation**Method**

Exams/Tests

Integration

1. The CME units must be approved by the American Registry of Diagnostic Medical Sonographers. CME unit hours obtained through online or journal units will have an associated CME quiz or exam and certificate of completion. Webinars, seminars, online trainings or conferences will have a certificate of completion. Students will upload the CME certificates, email, or personally hand them to the instructor. The instructor will enter the appropriate points for the students grade into the Canvas gradebook.

Method

Other

Integration

2. The instructor or preceptor will observe the student performance on evaluation of: physician's orders, documentation of patient history, and completing appropriate paperwork for documentation of the examination findings. The student will be graded at the end of the semester on competency #2: Student demonstrates accuracy with room preparation and paperwork and #6: Student properly prepares exam paperwork.

Method

Final Performance

Integration

In the hospital imaging exam room, while scanning a hospital patient, the instructor or preceptor will observe the student as they demonstrate proper use of machine knobology as a cumulative, end of the semester evaluation, during ultrasound exams using: TGC, depth, gain, focus, measurement cursors, color doppler, power doppler, pulse-wave doppler, dynamic range, dual screen, annotation, patient demographics, review images, delete images, and zoom images. Each competency will be evaluated using the following rubric:

5 = Grade A Excellent; Student is on time, takes initiative in the department, understands and properly uses equipment knobology. Student is professional, follows instruction and demonstrated proficiency in all required tasks.

4 = Grade B Above Average; Student on time, has begun to take initiative in the department, and is beginning to properly use equipment knobology. Student is professional, follows instruction, and has demonstrated 90% of all the required tasks.

3 = Grade C Average; Student on time, is working on but not taking initiative in the department, is professional in learning to follow instructions and demonstrates willingness to learn, and has demonstrated at least 80% of required tasks.

2 = Grade D Below Average; Student is often tardy, has multiple absences, shows no interest in taking Initiative within the department, appearance and behavior is not professional, and is not following instruction.

1 = Grade F Poor; Student is not meeting objectives. Student is not making acceptable progress.

Method

Other

Integration

In the hospital imaging exam room, the instructor or preceptor will observe the student performing an interventional procedure or endovaginal exam. The student will be evaluated on proper probe cover use for sterile procedures and transvaginal exams. Proper use will include standard and aseptic technique of placement on the transducer, removal from the transducer, and disinfection procedure using the Trophon sterilizer or Cidex soak solution. A competency will be signed off as pass or fail. Any student who fails the competency will be put on probationary period using a SPS- Student Plan for Success. If the student fails the competency for proper probe cover use, the student may be dismissed from the program for patient safety concern.

Method

Other

Integration

Throughout the semester clinical course, after completing each ultrasound exam that the student scanned with assistance, the instructor or preceptor will discuss the ultrasound case with the student. The student will visually point to the screen to identify abdomen, superficial anatomy structures, pelvis, and OB. Then verbalize scanning protocols for the abdomen and small parts examination using proper sonographic terminology.

Method

Final Performance

Integration

A final, summative evaluation will be completed at the end of the semester by the clinical preceptor to ascertain student's progress in scanning abdomen, superficial structures, pelvis, and obstetric examinations. using the following competency rubric:

5 = Grade A Excellent (Student is meeting and or exceeding objectives 91-100% of the time)

4 = Grade B Above average (Student is meeting objectives 80-90% of the time)

3 = Grade C Average (Student is meeting objectives 70-79% of the time)

2 = Grade D Below average (Needs Improvement- not meeting acceptable standards or progressing at an adequate rate, student is meeting the objectives 60-69% of the time)

1 = Grade F Poor (Student is not making acceptable progress. Student is meeting the objectives less than 60% of the time)

Is student able to identify the following anatomy on the monitor as the sonographer is scanning or as assisted by the sonographer preceptor:

Liver
Gallbladder/CBD
Pancreas
Spleen
Kidneys
Great Vessels
Non-cardiac chest
Thyroid
Scrotum
Uterus
Endometrium
Ovaries

Does the student demonstrate basic scanning skills in 1st trimester obstetrics:

Gestational sac
Fetal pole
Yolk sac
Heart rate
Placenta
Uterus/Adnexa

Does the student demonstrate basic scanning skills in 2nd & 3rd trimester obstetrics:

Fetal Anatomy:

1. Spine
2. Stomach
3. Kidneys
4. Bladder
5. Heart
6. Head/Face
7. Extremities
8. Cord Insertion
9. 3V cord
Placenta location
Fetal position
Cervix

Fetal Biometric Measuring:

BPD
HC
AC
FL
AFI
Heart rate

Maternal Anatomy:

Uterus
Cervix
Ovaries

Note to Preceptor: When you evaluate your student, please keep in mind that they have completed 872 hours of clinical experience. They will have completed lab practical's for OB, GYN, Carotid, Arterial with ABIs, and Venous exams at the end of this semester.

Students should be evaluated at an intermediate-advanced level. They should be doing many exams assisted or independently. Please feel comfortable to grade them according to their progress and not as a final determination of their abilities. Be frank about areas that can be improved and please include the areas your student excels!

If there are exams that the student has not performed, please leave that column blank and put N/A.



**Students will be turning in mid-semester exam logs. Typically, students are planned to rotate to a different hospital for Spring in order to complete areas that may have a low number of specific exams.

Method

Final Performance

Integration

Evaluation percentage x10 100

Total hours 512

Sim. or CME's 6 x 10 pts each 60

Total points /672

Grade %

Method

Self-Evaluation

Integration

Online: Students will post a response to the prompt from a view of patient centered care. Students should identify from their clinical experience and give examples of the patient needs of specific cultural, racial, and ethnic diversity in a patient centered care setting (Language; Cultural Traditions; Health Literacy; Cultural Assumption). How has your understanding of cultural sensitivity evolved, remained the same, and/or increased from clinical experience?

In clinical: Instructors and preceptors will observe how students interact with all patients. Students will be evaluated by how they communicate effectively with both hospital personnel and patients who have a different cultural, racial, or ethnic diversity than they do. A patient centered care setting is always the goal in healthcare.

Patient communication competency will be signed off on the end of the semester evaluation.

Assignments**Assignment Type**

Reading

In-class and/or outside of class

Outside of class

Formative or Summative

Formative

Assignment

Six Continuing Medical Education units are required to be completed by each student and turned in to the instructor by the end of the semester. These units are equivalent to 1 hour of instruction, training, or education. The CME units must be approved by the American Registry of Diagnostic Medical Sonographers. CME unit hours can be obtained through online Sonography websites, Webinars, and Sonography conferences. The units can be completed through webinars, journal articles, seminars, or online training's.

Assignment Type

Other

In-class and/or outside of class

Outside of class

Formative or Summative

Formative



Assignment

Evaluate physician's orders, document patient history, and complete appropriate paperwork for documentation of the examination findings.

Assignment Type

Other

In-class and/or outside of class

Outside of class

Formative or Summative

Summative

Assignment

In the hospital imaging exam room, demonstrate use of machine knobology using: TGC, depth, gain, focus, measurement cursors, color doppler, power doppler, pulse-wave doppler, dynamic range, dual screen, annotation, patient demographics, review images, delete images, and zoom images.

Assignment Type

Other

In-class and/or outside of class

Outside of class

Formative or Summative

Formative

Assignment

In the hospital imaging exam room, demonstrate proper probe cover use for sterile procedures and transvaginal exams. Proper use will include standard and aseptic technique of placement on the transducer, removal from the transducer, and disinfection procedure using the Trophon sterilizer or Cidex soak solution.

Assignment Type

Other

In-class and/or outside of class

Outside of class

Formative or Summative

Formative

Assignment

While observing the preceptor perform an ultrasound exam or scanning with assistance, the student will identify abdomen, Pelvic, OB, and/or superficial anatomy structures. In addition, observe or scan with assistance, scanning protocols for the abdomen and/or small parts examinations. Discuss these patient cases with your clinical faculty using proper sonographic terminology.

Assignment Type

Writing

In-class and/or outside of class

Outside of class



Formative or Summative

Formative

Assignment

The student will maintain a paper and cloud-based Trajecsys examination log keeping track of all exams observed, preformed with assistance or performed without assistance. Each type of examination will be tracked on separate forms. This will enable the clinical coordinator to review student experience and areas that need more work. Mt. San Jacinto College Student Name: _____ Diagnostic Medical Sonography Facility: _____ Clinical Experience Exam Log Exam Type: _____ A=Assisted U= Unassisted O= Observed Date A U O Amount of student Scan Time in Minutes Student Images Included YES/NO Detailed Description of Exam findings & patient Medical record number Clinical Instructor Initial

Assignment Type

Writing

In-class and/or outside of class

Outside of class

Formative or Summative

Formative

Assignment

Document daily time logs on paper log and in Trajecsys to meet the American Registry of Diagnostic Medical Sonographers requirements for eligibility.

Mt. San Jacinto College Student Name: _____

Diagnostic Medical Sonography Facility: _____

Time Sheet Date Arrival Time

Depart Time

Total Time

Assignment Type

Writing

In-class and/or outside of class

Outside of class

Formative or Summative

Summative

Assignment

Continued Development in understanding cultural, racial, and ethnic diversity in a patient centered care setting. Follow up on your knowledge and clinical experience over the last two semesters. Using the CMS Discussion, read the following article and write a paragraph or more on how your understanding has evolved, remained the same, and/or increased through clinical experiences?:

<https://www.usatoday.com/story/opinion/2020/10/07/why-diversity-training-medical-schools-can-save-patients-lives-column/3635406001/>

Course Materials**Textbooks**

Saunders, C. RDMS; Francis, T. BA RDMS, RVT (2023). Diagnostic Medical Sonography Program- Clinical Manual. Mt. San Jacinto College. ISBN: N/A. updated 2023

Class Size Information

Class Size

30

Class Size Category

F - Individualized, skills#based instruction/field practice 30

Diversity and Inclusion

Explain how diversity and inclusion(e.g., gender, culture/race, sexuality, etc.) is infused into the course.

Students put prior patient care and didactic knowledge into practice in this clinical course. The inherent active learning in a clinical internship enables students to gain experience caring for diverse patient populations where gender, culture, race, and disabilities have an impact on patient care. Course objectives and learning outcomes are supported through observation and practice within the hospital environment. Prior foundational knowledge of patient care scenarios and case studies are also put into practice that seeks to foster knowledge, empathy, and patient advocacy in developing future healthcare professionals. Sonography students and graduates will encounter scanning patients from diverse populations, disabilities, and patients who may appear one gender, but have unaltered reproductive organs or have had surgical alterations.

Describe how assignments, instruction, evaluation, course content, and interactions are contextualized for diverse learners promoting an equitable course.

The course resources are offered in multiple forms to offer diverse learning methods to students. Audio learners can utilize voice-over lectures; Visual learners can utilize power-point diagrams, textbook, lab demonstrations, and videos; Hands-on learners can utilize lab simulation and practice concepts or protocols in the campus lab.

Interactions

Explain how the course will incorporate student-to-student interaction.

Typically DMS students are the only student within the Imaging department, so student-student interaction at the clinical site is rare. Opportunities for student to student interaction are provided within the Discussion resource where students can share experiences, thoughts, and mentor each other.

Explain how the course will incorporate instructor-to-student interaction.

This course provides opportunities for students to observe preceptors or clinical instructor demonstrations of patient care and scanning protocols, then practice what was observed. Instructors/Preceptors interact through observation and scanning opportunities for students where students may ask questions at the end of the exam, during the worksheet write up and review with the radiologist. The CMS houses announcements, syllabi, voice-over lectures, and course schedule through modules. Instructors and Preceptors use real-life experience stories during clinical experiences to enhance student learning. The instructor encourages use of office hours or meeting after class if student needs assistance or guidance.

Explain how the course will incorporate student-to-content interaction.

This course has a clinical manual that students can print or view digitally. This manual contains clinical objectives and a list of competencies so that students know what is expected and how they will be evaluated and graded. Students are encouraged to review didactic learning that is taken concurrently with this course and to explore excellent video content online.

Explain how the course will incorporate student-to-self interaction (metacognitive).

This course provides opportunities for students to think about how they will make a plan that provides the best patient care and diagnostic interpretation from beginning to end of their interaction with each patient they care for. Students are encouraged to reflect real-life clinical experiences in this process and share in the online discussion forum.

Key: 1226