Course Description
SON2935L | Diagnostic Ultrasound Imaging: Advanced Techniques and Case Analysis | 1.00 credit
An extensive laboratory aimed at teaching the student to recognize quality images, anatomy, patient positioning, pathology, and scanning technique errors as well as artifacts. For each class, the student will present a case from their current rotation of the teaching file. The presentation will include all technical and clinical information as well as the final interpretation by the supervising physician. Prerequisite: SON2934L.

Course Competencies
Competency 1: The student will be able to recognize high- and low-quality diagnostic ultrasound studies by
1. Evaluating clinical cases and discussing critique about scanning techniques
2. Discuss the use of ultrasound machine controls. Discuss special techniques used to attain the images
3. Describe techniques employed to obtain the diagnostic ultrasound study
4. Discuss suggestions to correct or improve technique errors
5. Identify the various ultrasound planes

Competency 2: The student will be able to recognize what is needed to give a full report to the physician reading the study by:
1. Reporting the case to the class and the instructor
2. Describe the patient history, clinical data, labs, and prior surgeries
3. Reporting differential diagnosis and scanning techniques used to support final diagnosis
4. Discussing stat results
5. Discussing preliminary reports
6. Obtaining, evaluating, and documenting relevant information related to sonographic examination
7. Discuss examination findings that require an immediate clinical response and notification to the interpreting physician
8. Discuss changes from a previous examination (when applicable)

Competency 3: The student will be able to recognize the sonographic appearance of normal anatomy and pathology diagnosed with diagnostic medical sonography in the following modalities: Adult Echocardiography, Obstetrics and Gynecology, and Abdominal Ultrasound, and extended Abdominal Ultrasound by:
1. Discussing a differential diagnosis for pathology presented
2. Defining the pathology and listing associated findings
3. Describing normal and abnormal findings using medical and sonographic medical terminology
4. Describing the etiology of pathological cases
5. Obtaining, evaluate, document, and communicate relevant information related to sonographic examinations
6. Identifying the clinical signs and symptoms
7. Discussing clinical information and historical facts from the patient and the medical records, which may impact the diagnostic examination
8. Discuss laboratory tests relevant to the diagnosis
9. Listing other imaging and diagnostic procedures used to evaluate the pathology
10. Identifying the gold standard for identifying the pathology
11. Provide an Oral and written summary of sonographic findings
12. Discuss deviation from practice parameters for the sonographic examination as required by patient history or initial findings
13. Listing changes from a previous examination when applicable
14. Discussing Examination findings that require an immediate clinical response and notify the interpreting physician
15. Demonstrating and describing ultrasound images
16. Identifying and demonstrating normal vs. abnormal structures

Competency 4: The student will demonstrate knowledge and comprehension of scanning protocols by:
1. Listing protocols for each pathology presentation
2. Describing pitfalls in the diagnosis
3. Describing deviation from practice parameters for the sonographic examination as required by patient history or initial findings (when applicable)

Learning Outcomes:
- Communicate effectively using listening, speaking, reading, and writing skills
- Solve problems using critical and creative thinking and scientific reasoning
- Formulate strategies to locate, evaluate, and apply information
- Use computer and emerging technologies effectively