LINCOLN UNIVERSITY

DI 261 – Advanced Abdomen and Small Parts Scanning (Lab) Course Syllabus

Instructor: Seyed A. Sadatian

Credit: 3 units (90 lab hours)

Class Hours: Tue, Wed & Thur 9:00 – 11:45 AM; Fri 9:00AM – 12:15 PM

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Office Hours: Fridays 1-3 PM with appointment

COURSE MATERIALS:

1. Hagen-Ansert: Textbook of Diagnostic Ultrasonography, 7th edition (2011), Vol #1&2
   ISBN-13: **978-0323073011**; ISBN-10: **0323073018**
2. Fundamentals of Musculoskeletal Ultrasound (Fundamentals of Radiology), 2nd edition (2012), Jon A. Jacobson, MD
   ISBN-13: **978-1455738182**; ISBN-10: **1455738182**
3. The Practice of Breast Ultrasound: Techniques, Findings, Differential Diagnosis 2nd edition (2008), Helmut Madjar, Ellen Mendelson
   ISBN-13: **978-3131243423**; ISBN-10: **3131243422**
4. Pediatric Ultrasound: How, Why and When, 2nd edition (2010) Rose de Bruyn, MBBCh, DMRD, FRCR
   ISBN-13: **978-0443069178**; ISBN-10: **0443069174**

PREREQUISITE: DI 251

COURSE DESCRIPTION:
This course is the completion of courses on anatomy and pathology of the abdominal and superficial structures in ultrasound imaging. Areas include: thyroid, parathyroid, breast, neck, gastrointestinal tract, musculoskeletal system, pediatric abdominal ultrasound, and neonatal brain. (3 units) Prerequisite: DI 251

LEARNING OBJECTIVES:
Upon satisfactory completion of this course, students will be able to:

- Understand physical principles and instruments of ultrasound and how these principles apply to clinical practice
- Understand transducers, sonographic instruments, the Doppler effect, color Doppler instruments, spectral Doppler instruments, artifacts, performance, and safety
- Describe the major types of ultrasound contrast agents currently in use or in clinical evaluation
- Describe the role of ultrasound in the assessment of organ transplants
- Discuss the typical ultrasound findings of organ transplant complications
- Identify normal imaging characteristics of the breast
- EFAST exam
- Identify normal anatomy of salivary glands & cervical lymph nodes
- Use pattern recognition to diagnose abdominal diseases in children
- Understanding the images associated with standard protocol for neonatal brain sonography
- Identify normal anatomy musculoskeletal ultrasound images
- Identify normal neonatal brain anatomy

INSTRUCTIONAL METHODS:
Instructional methods will include the in-class hands-on learning activities. Classroom activities are collaborative —– students may and should help each other. The instructor will be available to help students with all tutorials and other assignments.
The previously described topics will be presented through the aid of the following activities:

- Assigned text readings and other course materials (handouts)
- Recommended study guide activities
- Internet resources
- Group discussions and ultrasound case analyses
- Working with ultrasound machines
- Hands-on ultrasound laboratory training (protocols handouts) and examination
- Ultrasound laboratory live & video demonstrations
- Students' ultrasound hands-on self-study trainings

REQUIREMENTS:

- This is a lab course in which the topics are presented by the instructor and the ultrasound hands-on lab practice is explained and demonstrated by the lab instructor (explaining and demonstrations by lab instructor).
- Students are expected to be prepared in advance before the class sessions.
- Being prepared includes the following: having read course materials assigned for that day's activities and bringing required work materials (e.g., textbook, handouts, writing supplies, etc.) to the session.

- Students are expected to attend and participate in all the lab sessions and activities, and complete the final examination and the presentation on time. Therefore an attendance and being on time are crucial to your final grade.
- Students must budget time efficiently and be realistic about all personal and professional commitments that consume time.

Academical Honesty

The University maintains a strict policy concerning academic dishonesty, which includes cheating, plagiarism, giving assistance on an examination or paper when expressly forbidden by the instructor, and any other practices which demonstrate a lack of academic integrity. It is the responsibility of the students to know and to adhere to principles of academic honesty. A student found guilty of academic dishonesty will be subject to academic sanctions ranging from failure on the assignment to failure in the course too.

Ultrasound Hands-on Laboratory Training

Ultrasound hands-on laboratory will involve primarily students' demonstration of the knowledge presented during the lab sessions. Practical experience will be gained under the guidance of the instructor. Students are expected to arrive at the class on time, and stay through the end of the ultrasound laboratory class.

ATTENDANCE AND PARTICIPATION:

- Students who are tardy, who arrive after roll is taken or leave before the end of class, will receive only half-credit for attendance.
- Students are not allowed to be late more than 10 minutes.
- If you are late or absent, a valid excuse such as illness, family emergency, unforeseen heavy traffic or natural disaster is expected. Oversleeping, and working on films are not considered valid excuses.
- No requirements to make up any work missed as a result of an absence. However, it is your responsibility to obtain class notes; you may have missed, from other class members.

LAB SESSION PROTOCOL:

- All students are expected to display professionalism, in preparation for hospital work. That means arriving on time, remaining quiet when others are speaking, and paying attention to whoever has the floor in the classroom.
- Students are expected to attend and be prepared for all regularly scheduled classes. If a student knows in advance that he or she will need to leave early, he or she should notify the instructor before the class period begins.
- Students are expected to treat faculty and fellow students with respect. For example, students must not disrupt class by leaving and reentering during class, must not distract class by making noise, and must be attentive to comments being made by the instructor and by peers.
- Never speak while the instructor is speaking.
- Always raise your hand to speak or to leave your seat, and wait for a response before speaking.

- **Disruptive behavior will not be tolerated**, including touching of other classmates or their belongings.
- Students engaging in disruptive behavior in class will be asked to leave and may be subject to other penalties if the behavior continues.
- No eating, sleeping or personal grooming is permitted during the ultrasound laboratory classes.
- Drinks only in closed container.
- Please turn off your cell phones, and refrain from activities that disrupt the class (such as eating and walking in and out of the room while class is in session).
- If you use a computer in class, please use it only to take notes, to access course materials from the course webpage, or to locate information relevant to the class discussion. Do not use your computer to surf the web, check emails, or send/receive text messages, as these activities are distracting to those around you (and decrease your chances of getting the most out of your time in class).
- To encourage the free flow of conversation, no part of any class may be recorded on audio or video media without the permission of the instructor. You may record notes by hand or by typing into a mobile computer.
- The presence of guests to listen to any part of a class requires the consent of the instructor.

HOMEWORK AND PRESENTATION:

Students will analyze images received during each lab session. Images containing anomalies should be selected and kept for the future presentation to others. Then each student will perform library research on a selected topic in the field of Advanced Abdomen and Small Parts Scanning, and present the findings during a lab class orally with a PowerPoint presentation consisting of a 15-minute presentation and a 5-minute question period. Students should include enough background information, ultrasound images received during classes, pictures and references for their peers to be able to understand the topic. Each student will choose the topic of his/her presentation with the instructor's approval. The approval must be obtained by June 30th, 2015. The presentation time for each student will be assigned on a first come, first served basis during class hours or instructor's office hours, by phone, or by E-mail. The oral presentation must be completed **at least one week before your final hands-on lab examination** (see schedule below).

Evaluation Criteria for Presentation:

- Clinical statement: 4%
- Background information: 4%
- Slide content: 4%
- Slide design: 2%
- Resolution of the problem: 4%
- Oral presentation: 2%

Total: 20% of all the course grading elements

TESTING:

Ultrasound Hands-on Laboratory Examination:

- During the final ultrasound hands-on examination, students will have to demonstrate understanding of information presented primarily during the hands-on laboratory trainings.
- Students have to perform Abdominal and Small part protocols and demonstrate scanning technique and images in B-, Color- Modes, and M-mode;
- Students will schedule time and date 2-3 weeks ahead of the ultrasound hands-on laboratory examination.
- Students need to be at the ultrasound lab — ready to start scanning at the exact time you scheduled for your exam. (It is recommended that you arrive about 15 minutes prior to your scheduled exam time.)
- If you are late for your scheduled exam time, your time **CANNOT** be changed and you will NOT get a full hour! If you are late, you will only have the remaining time left in your hour.
- On exam days, you may come to class, but it is not mandatory until your scheduled exam time.
- **Only one time RETEST will be given to students with a valid excuse** such as illness, family emergency, unforeseen heavy traffic or natural disaster.

GRADING:

Attendance	10%
Presentation	20%
Scanning Performance in the Lab Sessions	30%
Final Exam	40%
Total	100%

100-93	A
92-89	A-
88-85	B+
84-81	B
80-77	B-
76-73	C+

72-69	C
68-65	C-
64-61	D+
60-50	D
49≤	F

SCHEDULE:

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Weeks	Ultrasound Hands-on Scanning
Week 1	Emergent Abdominal Ultrasound Procedures (EFAST) Intercostal Approach to the Abdomen
Week 2	Abdominal Wall, GI & Posterior Approach to Retroperitoneal
Week 3	Salivary Glands & Cervical Lymph Nodes
Week 4	The Breast Ultrasound. Elastography. Sonography of Mammary Implants
Week 5	Introduction to Musculoskeletal system (Shoulder, Wrist, Knee, Ankle, Elbow)
Week 6	Neurosonography: Neonatal Brain, Peripheral Nerves, Presentation
Week 7	Review of the Lab Session Topics, **Final Exam**, and **Students' Presentations**

Makeup Exam: 07/27/2015

Syllabus Updated: June 8, 2015

Note: Instructor may change this syllabus and course schedule at any time according to the judgment as to what is best for the class. Any changes will be declared ahead of time in class.