

LINCOLN UNIVERSITY

COLLEGE OF GRADUATE, UNDERGRADUATE AND PROFESSIONAL STUDIES

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SYLLABUS

DI 110 – ULTRASOUND PRINCIPLES AND PROTOCOLS

SPRING 2010

DATA: 1/25/2010 – 05/17/2010

COURSE TITLE: Ultrasound Principles & Protocols

COURSE CODE: DI 110

CREDIT HOURS: 3 units lecture, 1 unit lab

TIME: 9:00 am – 11:45 am; T & Th

PROFESSOR: Dr. Jahan Orazova

CONTACT INFORMATION: email: jorazova@lincolnuca.edu

COURSE DESCRIPTION

This course included introduction to abdomen and small parts, OB/GYN and vascular.

PREREQUISITES:

SCI 31- Human Biology.
DI 20 - Medical Terminologies.
DI 30 - Anatomy & Physiology.
DI 120 – Physical Principles of Ultrasound

TEXTBOOKS AND OTHER ASSIGNED INSTRUCTIONAL MATERIALS

Textbook of Diagnostic Ultrasonography: 1st & 2nd Volume, Sandra L. Hagen Ansert, 2006

ISBN-10: 0323028039

ISBN-13: 978-0323028035

Recommended:

1. Ultrasound Scanning: Principles & Protocols, by Betty Bates Tempkin, 3rd edition.

ISBN-10: 0721606369

ISBN-13: 978-0721606361

2. . Ultrasonography: an introduction and functional anatomy. Volume 1, 5th ed. Reva A. Carry, Betty Bates Temkin, 1st ed

3. Appleton & Lange Review for the Ultrasonography Examination (Appleton & Lange Review Book Series) by Carol A. Krebs, Charles S. Odwin, Arthur C. Fleischer, 3 edition (April 2, 2004)

COURSE OBJECTIVES AND STUDENT LEARNING OUTCOMES

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

- Assist patients to and from the exam area
- Explain the methods for identifying the patient
- Explain the examination and instruct the patient properly
- Describe a scanning survey and explain the importance of a survey prior to taking images
- Explain the selection of the proper transducer for the exam
- Explain the elements of film labeling
- Describe optimal techniques related to field size, power, gain, and contrast for interpretable images
- Demonstrate knowledge of presenting films in a logical sequence, justifying
- Define plane (planar) anatomy
- Define sagittal plane of the body
- Define transverse plane of the body
- Describe the most basic protocol for scanning and labeling pathology

INSTRUCTIONAL METHODS:

Instructional methods will include instructor lecture and 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 lecture outlines (printed handouts);
- ❖ Demonstrations class lectures by using Power Point Computer presentations
- ❖ recommended study guide activities;
- ❖ Internet resources;
- ❖ Blackboard
- ❖ Transparencies
- ❖ Group discussions
- ❖ Working with ultrasound machines.
- ❖ Quizzes and examinations;

EVALUATION OF OBJECTIVE ACHIEVEMENT

REQUIREMENTS: Included are attendance, participation in activities, homework, quizzes, a midterm exam, the final exam and hands-on ultrasound imaging (laboratory) examination.

HOMEWORK: Homework will include reading the text ahead of time (see schedule below). Completing the questions and problems, selected questions and the odd-numbered problems will normally be discussed in class.

ATTENDANCE AND PARTICIPATION: Students have freely chosen this course and should be in attendance. Students are here to learn; persons engaging in disruptive behavior in class will be asked to leave and may be subject to other penalties if the behavior continues. In order to get credit in this class you have to be present 70% of the time. It gives you **1 allowed absence.**

Note: If you are not present when attendance is taken and arrive no more than 15 minutes late, it is your responsibility to see me after class in order to be counted as present.

If you are absent I need a proof of your absence if you want to be excused.

QUIZZES/TESTS. The student **will take 11-12 tests 10-15 quizzes each (1 point each question).** These quizzes will address the detailed content and major concepts presented in the lectures, lecture outlines, text readings, and study guide activities. If the student takes more than ten quizzes, only the best ten quiz scores will be used in calculating the student's total points and each quiz will be timed, the student having only **1 minute** for every question to complete. No make-up quizzes for missed quizzes will be administered (the student will receive no score for missed quizzes).

EXAMINATIONS. The student **will take midterm test (60 points) and final examination (100 points)** to demonstrate understanding of information presented primarily during lectures. These proctored exams will be closed-book exams and students will not be allowed to refer to texts, notes, nor other materials while taking the exam. **NO RETESTS will be given.** The student must take the exam during the scheduled time period. A student missing an exam because of an illness or legitimate emergency may take a make-up exam as soon as possible after the student returns from the illness and as determined by the instructor. In such a circumstance, the student should make every reasonable attempt to contact the instructor before the exam period is over (or as soon as possible). While make-up exams will cover the same content area as a missed exam, the exam format and specific questions may be different.

STUDENT RESPONSIBILITIES

The student is expected to attend and actively participate in all course lectures and activities, and complete all quizzes, examinations and course assignments on time.

The student is expected to be prepared in advance before the class sessions. Being prepared includes the following: having read text materials (e.g., textbook readings, and lecture outlines) assigned for that day's activities and bringing required work materials (e.g., textbook, handouts, writing supplies, etc.) to the session.

Any changes in the course schedule, such as examination dates, deadlines, etc., will be announced ahead of time in class or on the course. It is the student's responsibility to be informed of these changes.

It is the student's responsibility to be informed about deadlines critical to making registration changes (e.g., last day of erase period and last day for making an official withdrawal).

The student should understand that "introductory" does not mean "easy". The student should not assume that the lack of science prerequisites for this class ensures a low level of difficulty for this course. While the instructor assumes that students enrolled in **DI 110** have little or no science and medical background, the student should expect a level of difficulty comparable to other 100-level science classes. When difficult concepts and detailed information are presented, it is the student's responsibility to take the appropriate steps to learn and understand these concepts and information.

Ultrasound Principles & Protocols course generally require minimum three hours of independent private study time for each hour in class (depends upon the student's science background). It is the student's responsibility to allocate the appropriate time needed for study in an environment conducive to quality study. The student must budget time efficiently and be realistic about all personal and professional commitments that consume time.

EVALUATION

1. Homework and Quizzes – Written homework assignments will be given periodically; additionally, unannounced quizzes will be given during class time.
2. Final Examination (written)
Format: multiple choices, matching and true/false.
The final-written examination will include about 25% of previous material.
You will get your test back.
3. Presentation (Power Point presentation, 10-15 min)
4. Hands-on Ultrasound scanning (laboratory):
Format: ultrasound images (15-20 images) and preliminary report to the ultrasound protocol.

NOTE: Written exams, presentations and hands-on ultrasound imaging examinations are already scheduled (see course outline)

Grading Scale:

Class Participation	20%
Quizzes	20%
Lab	20%
Homework	10%
Final Exam	<u>30%</u>
	100%

METHOD OF GRADING

The assignment of points will be according to the following protocol:

Quizzes (Tests)	140 points
Midterm	60 points
Final examinations	<u>100 points</u>
TOTAL POINTS	<u>300 points</u>

90 -- 100	A
80 -- 89	B
70 -- 79	C
60 -- 69	D
60 < 0	F

To successfully complete this course, the student must pass the lectures, quizzes, homework and final exam portions with a 70% or better.

COURSE OUTLINE
DI 110 ULTRASOUND PRINCIPLES AND PROTOCOLS

Weeks#		DAYS	Date	Lecture#/Topics
Week 1	#1/Lecture	M	01/25/10	Abdominal scanning protocols.General Principles. Scanning planes. Pathology scanning protocol. Abdominal scanning protocols: the Liver (I)
	Lab -1	W	01/27/10	Hands-on Ultrasound scanning
Week 2	#2/Lecture	M	02/01/10	Abdominal scanning protocols: the Liver (II) Test#1
	Lab-2	W	02/03/10	Hands-on Ultrasound scanning
Week 3	#3/Lecture	M	02/08/10	The Gallbladder and Billiary Tract. Test#2
	Lab -3	W	02/10/10	Hands-on Ultrasound scanning
Week 4	Lab -4	W	02/17/10	Hands-on Ultrasound scanning
Week 5	#4/Lecture	M	02/22/10	Abdominal scanning protocols: The Pancreas Test#3
	Lab -5	W	02/24/10	Hands-on Ultrasound scanning
Week 6	#5/Lecture	M	03/01/10	AB scanning protocols: The Kidneys & AG Test#4
	Lab -6	W	03/03/10	Hands-on Ultrasound scanning
Week 7	#6/Lecture	M	03/08/10	Abdominal scanning protocols: the Spleen Test#5
	Lab-7	W	03/10/10	Hands-on Ultrasound scanning
Week 8	#7/Lecture	M	03/15/10	MIDTERM Small parts: The Thyroid & Parathyroid Glands. Test#6
Week 9	#8/Lecture	M	03/22/10	Small parts: Brest Sonography. Test#7
	Lab -8	W	03/24/10	Hands-on Ultrasound scanning
Week 10	#9/Lecture	M	03/29/10	Small parts: The Scrotum. Test#8
	Lab -9		03/31/10	Hands-on Ultrasound scanning
Week 11	#10/Lecture	M	04/05/10	Small parts: Prostate gland and surrounding Structure.Test#9
	Lab -10	W	04/07/10	Hands-on Ultrasound scanning
Week 12	#11/Lecture	M	04/12/10	Blood vessels. Abdominal arteries and veins. Peripheral arteries and veins. #10
Week 13	#12/Lecture	M	04/19/10	Pelvic Sonography: GY protocol. OB Sonography:1 st trimester protocol Test#11
Week 14	#13/Lecture	M	04/26/10	Pelvic Sonography. Obstetrics Sonography: 2 nd & 3 rd trimester protocol Test#12
Week 15	#14/Lecture	M	05/03/10	REVIEW
Week 16	#15	M	05/10/10	FINAL EXAM – WRITTEN
Week 17	#16	M	05/17/10	FINAL EXAM – MAKE UPS