LINCOLN UNIVERSITY
DI 110 / UT 110
Ultrasound Principles and Protocols
Spring 2013 Course Syllabus

Instructor: Dr. Khatia Mania
Units: 3-unit lecture and 1-unit lab (45 lecture hours + 30 lab hours)
Class Hours: Tuesday 3:30 - 6:15 pm
Contact: mania@lincolnuca.edu
Office Hours: Monday & Tuesday 9:00 am - 6:00 pm

REQUIRED TEXTBOOK:

1. **Ultrasound Scanning: Principles & Protocols** by Betty Bates Tempkin, 3rd edition (2009), ISBN-10: **0721606369**, ISBN-13: **978-0721606361**
2. **Sonography: Introduction to Normal Structure and Function** by Reva Arnez Curry, Betty Bates Tempkin, 3rd edition (2010)
   ISBN-10: **1416055568**, ISBN-13: **978-1416055563**
3. **Lange Review for the Ultrasonography Examination** (Lange Review Book Series) by Charles S. Odwin, Arthur C. Fleischer
   4th edition (2012), ISBN-10: **007163424X**, ISBN-13: **978-0071634243**
   3rd edition (2004), ISBN-10: **0071365168**, ISBN-13: **978-0071365161**

Additional recommended textbooks and instructional materials will be given during classes.

COURSE DESCRIPTION:

This course includes introduction to abdomen and small parts, OB/GYN and vascular scanning, basic study of the structure and function of the human body. Upon completion, students should be able to demonstrate basic understanding of the fundamental principles of scanning of different organs. (4 units) *Prerequisite: DI 30 / UT 30 or equivalent*

LEARNING OBJECTIVES:

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
- Describe the most basic protocol for scanning and labeling pathology

INSTRUCTIONAL METHODS:

Instructional methods will include lectures 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 (handouts);
- Demonstration of lectures by using the Power Point;
- Recommended study guide activities;
- Internet resources;
- Group discussions and ultrasound case analyses;
- Quizzes & examinations;
- Working with ultrasound machines;
- Hands-on ultrasound laboratory trainings (protocols-handouts);
- Ultrasound laboratory live & video demonstrations;
- Students' Ultrasound Hands-on self study trainings.

REQUIREMENTS:

- This is a lecture-lab course in which lecture topics are presented by the instructor (teacher) and the ultrasound hands-on lab practice is explained and demonstrated by the lab instructor (explaining and demonstrations by lab instructor).
- 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.
- Home works will include reading the topic (s) one week ahead of time.
- The student is expected to attend and participate in all course lectures and activities, and complete all quizzes, examinations and course assignments on time. Therefore an attendance and being on time are crucial to your final grade.
- The student should understand that "introductory" does not mean "easy".
- The student 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 student 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 lectures. Practical experience will gain under the guidance of the instructor. The syllabus set out includes a competency assessment sheet for training. This should be completed the course of training, as it will help to determine in which area(s) the student can practice independently. Students are expected to arrive to class on time, and stay through the end of Ultrasound laboratory class.

ATTENDANCE AND PARTICIPATION:

To successfully complete this course, the student must pass the quizzes, homework and final exam portions with a 70% or better. Students should attend all the class meetings (lectures and labs). However, considering possible urgent situations, students may be absent from maximum four class meetings with prior notice to the instructor. Three late arrivals would affect the grade.

The term grade is based on attendance, class activity, project, midterm and/or sum of quizzes, final examination and lab. Individual projects will be assigned at the beginning of the semester. Homework and project are due by the last meeting before the final examination. No project or homework will be accepted after the due date.

If student missed the class without valid reason no make-up for quizzes and presentations will be allowed. No make up for missed or failed midterm. Final examination if failed can be retaken only once. Dictionaries can be used during the class time. No electronic devices during the test time. Student will be allowed to re-take final exam one time only. A 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.

During the written exam, any student observed in a situation that could be considered suspicious (e.g., an open book within his/her field of vision, looking around or checking a cell phone or other wireless device, etc.) but no cheating is observed, will be warned. Once warned, any applicant found cheating on written exam will be failed for the exam and prohibited from retaking the written exam without permission from the dean.

Student cannot leave the room during the test/exam. As soon as student leaves, the exam is considered finished.

Lecture is not a substitute for textbooks. Students should read textbooks and use other sources to be prepared for the tests. Lecture is to guide the student for preparation to subject.

IN-CLASS PRESENTATION (PROJECT):

Each student can choose the topic for presentation or will be assigned one by the instructor. The presentation should be approximately 10 minutes long, 5 minutes discussion. The topics and format for the presentation will be discussed in class. A final draft of the presentation must be submitted for review one week prior to the presentation.

Evaluation Criteria for Presentation:

- Clinical statement
- Background information
- Slide content
- Slide design
- Resolution of the problem
- Oral presentation

TESTING:

- **Ultrasound Hands-on Laboratory Examination:**
  - Final ultrasound hands-on examination student have to demonstrate understanding of information presented primarily during lectures and hands-on laboratory trainings.
  - Students have to perform different ultrasound protocols and demonstrate scanning technique and images in B-, Color-Modes, and M-mode;
  - Student will schedule time and date 2-3 week ahead to Ultrasound hands-on laboratory examination.
  - Student(s) need to be at the Ultrasound Lab – ready to start scanning at the exact scheduled time. (It is recommended that you arrive about 15 minutes prior to your scheduled exam time.)
  - If a student is late for his / her scheduled exam time – time **CANNOT** be changed and student will NOT get a full hour! If student is late, he/she will only have the remaining time left in hour.
  - **Only one time RETESTS will be given to students with** a valid excuse such as illness, family emergency, unforeseen heavy traffic or natural disaster.

GRADING

Evaluation		%
Lecture	Attendance	**10%**
	Tests/Quizzes	**10%**
	Presentation	**10%**
	Midterm	**20%**
	Final Exam	**20%**
Laboratory	Attendance	**10%**
	Performance of Scanning	**20%**
Total		100%

Grading Scale

95-100	A
90-94	A-
87-89	B+
84-86	B
81-83	B-
78-80	C+
76-77	C
74-75	C-
72-73	D+
70-71	D
69≤	F

CLASSROOM 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.
- **Disruptive behavior will not be tolerated**.

- 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 lecture and 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.

SCHEDULE:

01/22/2013 – General Principles. Scanning Planes & Scanning Methods. Patient's Safety and Ultrasound Ergonometrics.

01/29/2013 – Ultrasound of the Liver

02/05/2013 – Ultrasound of the Gallbladder & Biliary Tract

02/12/2013 – Ultrasound of the Pancreas & Spleen

02/19/2013 – Ultrasound of the Kidneys & Adrenal Glands

02/26/2013 – Breast Sonography

03/05/2013 – Ultrasound of the Thyroid & Parathyroid Glands

03/12/2013 – Ultrasound of the Scrotum & Prostate Gland

03/26/2013 – Ultrasound of Blood Vessels. Abdominal Arteries & Veins

04/02/2013 – Pelvic Sonography: Gynecological protocol

04/09/2013 – Obstetrics Sonography: 1st trimester protocol

04/16/2013 – Obstetrics Sonography: 2nd & 3rd trimester protocol (part 1)

04/23/2013 – Obstetrics Sonography: 2nd & 3rd trimester protocol (part 2)

04/30/2013 – Presentation and homework

05/07/2013 – Review and final examination

Due date for presentation: 04/30/2013
Syllabus updated 12/12/2012
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.