LINCOLN UNIVERSITY
DI 144 / UT 144 – Vascular Scanning (Lab)
Course Syllabus

Semester: Fall 2012
Instructor: Dr. Oguljahan Orazova / Ms. Victoria Malinowskaya
Units: 3-unit lab (90 lab hours)
Class Hours: Wednesday & Friday, 12:30 PM – 4:15 PM
Contact: Dr. Orazova <jorazova@lincolnuca.edu>
Ms. Malinowskaya <vmalinowskya@lincolnucasf.edu>
Office Hours: TBA

RESOURCE OF MATERIALS:
1. Vascular Technology: An Illustrated Review, Fourth Edition [Paperback]
Claudia Rumwell, Michalene McPharlin
ISBN-10: 0941022730; ISBN-13: 978-0941022736

2. Introduction to Vascular Scanning: A Guide for the Complete Beginner
(Introductions to Vascular Technology) (3rd Edition) [Paperback]
Donald P. Ridgway
ISBN-10: 0941022706; ISBN-13: 978-0941022705

PRE-REQUISITES:
DI/UT 124 – Peripheral Vascular Doppler, and DI/UT 134 – Abdominal Vascular Doppler

COURSE DESCRIPTION:

The focuses of this course are Peripheral and Abdominal Doppler scanning. Laboratory sessions are provided to acquire intermediate scanning skills necessary to succeed in the clinical setting.

LEARNING OBJECTIVES:

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

- Utilize the principles of instrumentation to set up the ultrasound equipment for scanning
- Identify normal and abnormal anatomy peripheral and abdominal arteries and an adequate veins

- Apply appropriate measurements scanning techniques
- Perform by standard protocols Peripheral and Abdominal blood vessels Vascular Doppler scanning
- Determine the hemodynamic status of blood vessels and to detect the presence of pathology
- Perform physiological studies of lower extremity: Ankle-Brachial testing
- Perform an oral or written summary of preliminary findings to the interpreting physician
- Demonstrate the ability to optimize use of the ultrasound equipment controls, regardless of brand of instrumentation used: pulsed Color Doppler sample gate/region size; angle correct factor; beam steering; wall filter; Doppler gain and scale (and specifically for optimization of color Doppler); baseline; sector width (where applicable)
- Demonstrate appropriate technique in obtaining a Doppler study of the entire abdominal arterial system, and identify the separate and combined characteristics of high and low resistance, laminar, and turbulent flow

STUDENT RESPONSIBILITIES:

Students are expected to be prepared in advance before the class sessions. Being prepared includes the following: don't use cell phones in class, attend all classes, be on time to class, participate in scanning lab, ask questions, memorize protocols, bring appropriate materials to class (e.g. notebook, writing utensils, handouts) having read texted materials (e.g. textbooks lectures & outlines), collect images for review, retrieve instructors signature to sign off organs & small-parts protocols, use class time effectively and efficiently, and PRACTICE, PRACTICE, PRACTICE scanning during lab hours and self lab hours.

SCANNING LAB RULES:

Lab hours:

- **Lab hours are posted front door & bulletin board** (please respect class time, do not enter when class time is in session)
- **Each student has a maximum time of 20 min. (times may vary according to instructor or # of students waiting)**
- **Timer is used to track accurate time**
- **Use student subjection envelope for questions or concerns**
- **Sign in on preferred machine** (see clipboards) (with your name, start time & finish time) (after finish must resign in if you want to continue to scan)

Respect Others and Lab:

- **No eating or drinking in lab** (only water)
- **No cell phones** (exit room if must use phone)
- **Clean up after yourself** (table, transducer, putting chairs away, moving equipment, trash etc.)
- **Inform instructor or staff of needed supplies or equipment broken**
- **Keep a low tone of voice** (lab room is small, speaking loudly can be very **disruptive** to students who need their concentration for scanning

- **Don't interrupt student scanning time** (ask the student is it okay to asked them questions while their scanning?)
- **Lecture scanning** (ask questions at appropriate time only ask instructor not other students)
- **Personal property** (never leave your personal property unattended, Lincoln University is not responsible for lost or stolen items. Although, Lincoln University does have a zero tolerance for theft, any student(s) caught stealing will be prosecuted)
- **Please don't remove any objects from lab room** (books, study materials)
- **Leave personal conversation outside lab room**
- **Outside patients** (please inform your outside patients to only bring 1 person with them, due to lab size, and number of students present)
- **No children allowed unless being scanned**

Machines (Acuson & Mindray):

- Please kindly shut down the machine after scanning class
- Do not erase any information on machines (only instructors or lab assistants)
- Please inform lab assistants of needed supplies (baby wipes, paper towels, gel)
- Wipe down transducer after every patient using the Transeptic spray)
- Change paper after every patient , and place pillow under paper not on top
- Please be very careful when moving around equipment (ultrasound machines, patient tables)

IN-CLASS PRESENTATION

Students are to perform library research on a current topic in the field of Vascular Ultrasound and present their findings orally in a PowerPoint presentation (10 minute presentation; 5 minute question period). Students should include enough background information, ultrasound images, pictures and references for their peers to be able to understand the topic. The topic of each presentation will be chosen by the students with the approval of the teacher. Approvals must be obtained by **August 24th, 2012**. Presentation dates will be assigned on a first come, first served basis. You may do so in class, during office hours, by phone, or by E-mail. Student presentations will be spaced in every lab class throughout the semester. An oral presentation must be completed **AT LEAST TWO WEEK BEFORE your FINAL HANDS-ON ULTRASOUND LAB EXAMINATION** (see schedule below). In-class presentation will account for 10 percent of your final grade.

Evaluation Criteria for Presentation:

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

HANDS-ON LAB EXAM:

- Each student will be assigned a partner and time;
- Each partner will have his/her turn to perform parts of the Physical Exam covering any of the material taught during semester;
- All Vascular Doppler protocols will be demonstrated and trained students during semester;
- Student performs independently from lab instructor three Vascular Doppler protocols with limited time for every protocol;
- Student have to conduct and demonstrate finished ultrasound protocols with required to sonograms qualities: proper using transducers, scanning modes (B-scan, Color- , Power-, and Spectral Doppler), Color mapping, accurate measurements of anatomical structures, and proper labels on the images, and so on;
- Student have to submit final Performance of scanning all required by course Vascular Doppler protocols throughout of the semester;
- Student have to conduct **three Vascular Doppler protocols** in final lab exam:
    - **two Peripheral Vascular Doppler and one Abdominal Vascular Doppler protocols;**
- Final exam dates is scheduled in the syllabus (see schedule below);
- Student must pass the final exam with **AN AVERAGE OF 72-69% (grade "C") OR BETTER OR YOU WILL FAIL THE ENTIRE COURSE AND WILL NEED TO TAKE LAB CLASS AGAIN.**

GRADING:

Attendance	10%
Presentation	20%
Performance of scanning protocols	30%
Final exam- Performance of scanning protocols	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 SCANNINGS**
1 W	W	Extracranial Cerebrovascular Duplex hands-on demonstration
	F	Extracranial Cerebrovascular Duplex, preliminary report writing practice
2 W	W	Extracranial Cerebrovascular Duplex
	F	Upper Extremity Arterial Duplex Imaging hands-on demonstration
3 W	W	Upper Extremity Arterial Duplex Imaging, preliminary report writing practice
	F	Upper Extremity Arterial Duplex Imaging
4 W	W	Upper Extremity Arterial Duplex Imaging
	F	Upper Extremity Arterial Segmental Pressure Evaluation hands-on demonstration
5 W	W	Lower Extremity Arterial Segmental Pressure Evaluation, preliminary report writing practice
	F	Upper Extremity Arterial Segmental Pressure Evaluation
6 W	W	Lower Extremity Arterial Segmental Pressure Evaluation
	F	Lower Extremity Arterial Duplex Imaging hands-on demonstration
7 W	W	Lower Extremity Arterial Duplex Imaging, preliminary report writing practice
	F	Lower Extremity Arterial Duplex Imaging
8 W	W	Lower Extremity Arterial Duplex Imaging and ABI test demonstration
	F	Lower Extremity Venous Duplex Imaging, hands-on demonstration
9 W	W	Lower Extremity Venous Duplex Imaging, preliminary report writing practice
	F	Lower Extremity Venous Duplex Imaging
10 W	W	Mesenteric /Splanchnic Artery Duplex Imaging hands-on demonstration
	F	Mesenteric /Splanchnic Artery Duplex Imaging
11 W	W	Mesenteric /Splanchnic Artery Duplex Imaging
	F	Abdominal Aortic Iliac Duplex Imaging hands-on demonstration
12 W	W	Abdominal Aortic Iliac Duplex Imaging, preliminary report writing practice
	F	Abdominal Aortic Iliac Duplex Imaging
13 W	W	Evaluation of Portal Hypertension hands-on demonstration
	F	Evaluation of Portal Hypertension, preliminary report writing practice
14 W	W	Renal Artery Duplex Imaging hands-on demonstration
	F	Renal Artery Duplex Imaging, preliminary report writing practice
15 W	W	**Final hands-on examination**
	F	**Final hands-on examination**

The syllabus updated 08/22/2012

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