LINCOLN UNIVERSITY
DI 124
Peripheral Vascular
Spring 2015 Course Syllabus

Instructor: Dr. Khatia Mania
Credit: 4 units = 3-unit lecture and 1-unit lab
(75 total hours = 45 lecture hours + 30 lab hours)
Class Hours: Tuesday 9:00 – 11:45 am (Lecture), Tuesday 4:45 – 6:30 pm (Lab)
Contact: mania@lincolnuca.edu
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Office Hours: by appointment

REQUIRED TEXTBOOKS:

1. **Peripheral Vascular Sonography Joseph F. Polak**
   ISBN-13: **978-0-7817-4817-1**; ISBN-10: **0-7817-4871-2**
2. **Introduction to Vascular Ultrasonography, by William J. Zwiebel, John S. Pellerto**
   ISBN-13: **978-0-7216-0631-6**; ISBN-10: **0-7216-0631-8**

Suggested Textbook:
Vascular Technology: An illustrated Review, Fourth Edition, Claudia Rumwell, Michalene McPharlin
ISBN-13: **978-0941022736**; ISBN-10: **0941022730**

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

COURSE DESCRIPTION:

Ultrasound technologies including B-mode, Color, Power and Spectral Doppler imaging are used for examining peripheral arteries and veins. (4 units)
Prerequisite: DI 114

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 the anatomy, physiology and normal variations of peripheral arteries and veins
- Differentiate normal from abnormal blood flow patterns
- Apply the diagnostic criteria for carotid artery disease
- Optimize the use of color Doppler and pulsed wave Doppler
- Establish protocols for consistent performance of carotid examinations
- Recognize pitfalls of the carotid ultrasound study
- Diagnose complex and unusual cerebrovascular pathologies
- Link Doppler image information to the manifestations of cerebrovascular disease
- Apply the systemic protocol for physiologic assessment of the lower or upper extremity arterial tree by physiologic testing, using segmental pressures, volume pulse recording, and Doppler waveform analysis.

- Know a routine protocol for performing lower extremity arterial duplex/color and physiologic examination
- Describe standard measurements and diagnostic criteria or duplex/color evaluation of the lower extremity

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:

- Reading assigned textbooks 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 training (protocols handouts);
- Ultrasound laboratory live & video demonstrations;
- Students' Ultrasound Hands-on self-study training.

REQUIREMENTS:

- This is a lecture-lab course in which lecture topics are presented by the instructor and the ultrasound hands-on lab practice is explained and demonstrated by the lab instructor (explanations 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., reading textbooks and lecture outlines) assigned for that day's activities and bringing required work materials (e.g., textbook, handouts, writing supplies, etc.) to the session.
- Homework assignments 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. Students are expected to arrive at the class on time, and stay through the end of the 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 a student missed a class without a 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**, **if failed second time, the subject is considered failed.** Dictionaries can be used during the class time. No electronic devices during the test time. 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 devices, etc.) but no cheating is observed, will be warned. Once warned, any applicant found cheating on the written exam will be failed for the exam and prohibited from retaking the written exam without permission from the dean.

Students cannot leave the room during the test/exam. As soon as a student leaves, his/her 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 students to prepare for the course subjects.

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:**
  - During the final ultrasound hands-on examination, students will have to demonstrate understanding of information presented primarily during the lectures and hands-on laboratory training.
  - Students will have to perform different ultrasound protocols and demonstrate scanning technique and images in B-, Color-Modes, and M-mode.
  - Students will have to schedule the 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 scheduled time. (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.
  - **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:

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

Grading Scale	
94-100	A
90-93	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 the lecture and discussion, no matter who 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, the student 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:

01/20/2015 – Normal vascular anatomy. Arterial physiology.

01/27/2015 – The extracranial dupelx ultrasound examination – part 1.

02/03/2015 – The extracranial duplex ultrasound examination – part 2.

02/10/2015 – Uncommon pathology of carotid system. Ultrasound following Surgery and intervention.

02/17/2015 – Intracranial cerebrovascular examination.

02/24/2015 – Indirect assessment of arterial disease. Duplex ultrasound of lower extremity arteries.

03/03/2015 – Midterm examination.

03/10/2015 – Upper extremity arterial duplex scanning. Ultrasound assessment of arterial bypass graft. Ultrasound following interventional procedures.

03/24/2015 – Duplex imaging of the lower extremity venous system – part 1.

03/31/2015 – Duplex imaging of the lower extremity venous system – part 2.

04/07/2015 – Ultrasound evaluation and mapping of the superficial venous system.

04/14/2015 – Venous valvular insufficiency testing.

04/21/2015 – Duplex imaging of the upper extremity venous system. Special considerations in evaluating nonatherosclerotic arterial pathology.

04/28/2015 – Presentation and homework.

05/05/2015 – Review and final examination.

Due date for presentation: 04/28/2015

Syllabus was updated on 12/19/2014.
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.