

LINCOLN UNIVERSITY
Fall 2017 COURSE SYLLABUS

Course Number: DI 115
Course Title: ECG and Arrhythmias Interpretation
Course Credit: 3 Units (30 hours of lectures + 30 hours of lab)
Lecture Hours: Wednesday, 9:00 am to 11:45 am
Lab Hours: Wednesday, 12:30 pm to 3:15 pm
Instructors: Chris T. Nguyen, Ph.D. (*) & Frank Porter

COURSE DESCRIPTION

Students will learn the principles and procedures of 12-lead electrocardiography (ECG), arrhythmia interpretation and care, maintenance of equipment and exam area. (3 units)
Prerequisite: DI 30

This course introduces Electrocardiography principles and instrumentation. Topics include Basic ECG waves, Normal ECG, Abnormal ECG, Arrhythmias, ECG interpretation. Related topics such as Patient preparation, Safety, Quality, Accuracy, and ECG Reporting are also covered.

COURSE OBJECTIVES AND STUDENT LEARNING OUTCOMES

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

- Understand ECG principles and instrumentation
- Understand the Basic ECG waves, ECG leads, Normal ECG and Abnormal ECG
- Understand, Read and Interpret the following items: Electrical Axis, Axis Deviation, Atrial and Ventricular Enlargement, Ventricular Conduction Disturbances, Myocardial Ischemia and Infarction, Electrolyte Abnormalities and Metabolic Factors, Pericardial, Myocardial and Pulmonary Syndromes, Wolf-Parkinson-White Pre-excitation Patterns, Sinus Rhythm, Tachycardias and Bradycardias, Supraventricular Arrhythmias, Atrioventricular Heart Block, Cardiac Arrest and Sudden Death, Pacemakers and Implantable Cardioverter-Defibrillators, etc.
- Take and interpret an ECG
- Understand and apply Differential Diagnosis
- Understand the uses and limitations of ECG

INSTRUCTIONAL METHODS

Instructional methods will include Instructor lectures and educational material presentations. Classroom activities are collective – students may and should help each other. The Instructors will be available to help students with all tutorials, assignments, and Lab practices. Students are expected to attend 30 hours of Lectures and 30 hours of Lab.

EVALUATION

1. Weekly Homework and Quiz: Written homework assignments will be given, and additionally unannounced Review Quizzes will be given during class time.
2. Lab. Practice
3. Mid-Term Exam and Final Exam.

Grading Scale:

Class Attendance	10%
Homework	10%
Quizzes	10%
Lab. Practice	30%
Mid-Term Exam	10%
Final Exam	<u>30%</u>
	100%
90 - 100%	A
80 - 89%	B
70 - 79%	C
60 - 69%	D
Below 60%	F

To successfully complete this Course, the student must attend regularly the Lectures, pass the Quiz, Homework, Lab Practice, Mid-Term Exam and Final Exam portions with a total score of 70% or higher.

RESOURCE MATERIALS

- **Clinical Electrocardiography** by Ary L. Goldberger, MD, Mosby Publishing, 8th edition (2012), ISBN-10: **0323087868**, ISBN-13: **978-0323087865**
7th edition, ISBN-10: **0323040381**, ISBN-13: **978-0323040389**
- **12-Lead EKG Confidence** by Jacqueline M. Green, Anthony J. Chiaramida, MD, Springer Publishing, 2nd edition (2009), ISBN-10: **082610472X**, ISBN-13: **978-0826104724**
- **ECGs Made Easy** by Barbara Aehlert, Mosby Publishing, 4th edition (2009), ISBN-10: **032306924X**, ISBN-13: **978-0323069243**
- **EKG and Heart Murmurs** by Peter Q. Warinner, MD, Wysteria Publishing, ISBN-10: **1932412026**, ISBN-13: **978-1932412024**
- <http://www.cardiaceps.org/>

After successfully completed the Course, the students are strongly encouraged to take the Board Test to be certified. Results of the Board Test are gauged as students' learning results and achievement.

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OFFICE HOURS: Contact Dr. Chris T. Nguyen or Mr. Frank Porter for appointment

(*) INSTRUCTOR AFFILIATIONS

- Member of AIUM (American Institute of Ultrasound in Medicine)
- ASE (American Society of Echocardiography)
- HMS-PGA (Harvard Medical School Postgraduate Association)
- ISEECG (International Society of Electrophysiology)
- Member of CFA (California Faculty Association)
- A Reviewer for “Journal Ultrasound in Medicine” since 2010
- A Reviewer for “Journal Ultrasound in Medicine and Biology” since 2006

(Updated: August 01, 2017)

APPENDIX. Program and Institutional Learning Outcomes.

Institutional Learning Outcomes (ILOs)	
<i>Graduates of the BS program of Lincoln University should be able to:</i>	
1a	Develop the habits and skills necessary for processing information based on intellectual commitment, and using these skills to guide behavior.
2a	Raise important questions and problems, and formulate them clearly and precisely in oral or written communication
3a	Act with dignity and follow the principles concerning the quality of life of all people, recognizing an obligation to protect fundamental human rights and to respect the diversity of all cultures.
4a	Focus on individual and organizational benefits; communicate to co-workers and company's leadership in facilitation of collaborative environment; to be honest and transparent with regard to their work, and to be respectful of the work of others.
5a	Display sincerity and integrity in all their actions, which should be based on reason and moral principles; to inspire others by showing mental and spiritual endurance
6a	Show creativity by thinking of new and better goals, ideas, and solutions to problems; to be resourceful problem solvers.
7a	Define and explain the boundaries, divisions, styles and practices of the field, and define and properly use the principal terms in the field

Program Level Outcomes (PLOs)	
<i>Students graduating our BS in Diagnostic Imaging program will be able to:</i>	
1	Develop and demonstrate knowledge in principles of UT, medical terminology, physiology, sonography, and echocardiography.
2	Demonstrate ability of accurate patient positioning techniques, and use of imaging technology
3	Adapt imaging procedures based on patient's needs and clinical limitations.
4	Practice effective oral and written communication skills in the clinical setting