This course focuses on providing the learner with a basic knowledge of the interpretation of cardiac dysrhythmia and 12 lead electrocardiograms. The material focuses on the essential information needed to interpret basic dysrhythmia, define causes and analyze appropriate treatments. Rhythm strips and electrocardiograms are presented for practice in gaining the necessary skills to interpret dysrhythmia, myocardial infarctions, and other abnormalities.

COURSE LEVEL STUDENT LEARNING OUTCOME(S) Supported by this course:

1. analyze cause and treatment for various arrhythmias and 12 lead electrocardiogram problems.
2. conduct a 12 lead electrocardiogram and analyze 12 lead electrocardiograms to determine normal rhythm and arrhythmia.
3. describe the conduction pathway of electrical impulses through the heart.
4. describe the anatomy of the heart and lungs and physiological effect on the heart by the sympathetic and parasympathetic nervous system.
COURSE OBJECTIVES:
1. understand the anatomy of the heart and lungs and physiological effect on the heart by the sympathetic and parasympathetic nervous system.
2. understand the conduction pathway of electrical impulses through the heart.
3. conduct a 12 lead electrocardiogram and analyze 12 lead electrocardiograms to determine normal rhythm and arrhythmia.
4. analyze cause and treatment for various arrhythmias and 12 lead electrocardiogram problems.

COURSE CONTENT:

LECTURE CONTENT:

A. Anatomy of the heart
   1. Location, size layers and chambers of the heart
   2. Other heart structures
   3. Normal blood flow
   4. Coronary arteries
   5. Coronary sinus
   6. Cardiac cycle

B. Electrophysiology of the Heart
   1. Intrinsic properties of cardiac muscle
   2. Cardiac action potential
   3. Phases of the cardiac action potential
   4. Components of the cardiac cycle
   5. Refractory periods

C. Conduction System
   1. Function
   2. Sinoatrial node
   3. Internodal atrial conduction tracts
   4. Interastral conduction tract
   5. Atrioventricular node
   6. Bundle of His
   7. Right and Left bundle branch
   8. Purkinje fibers

D. Electrocardiogram Paper
   1. Measurement
   2. Standard paper speed

E. Basic Principles of Electrocardiography
   1. Application of electrodes
   2. Einthoven’s triangle
   3. Augmented unipolar leads
   4. Precordia unipolar leads

F. Normal Electrocardiogram Configuration
   1. P wave
   2. QRS complex
   3. PR interval
   4. QRS duration

G. Rate calculation
   1. 6 second method
   2. Small box method
   3. Large box method

H. Artifacts
   1. Wandering baseline
   2. 60 cycle interference
   3. Muscle tremors
I. Sinus Rhythms
J. Atrial Rhythms
   1. Causes
   2. Treatments
K. Junctional rhythms
   1. Causes
   2. Treatments
L. Ventricular rhythms
   1. Significance
   2. Causes
   3. Treatments
M. Bundle branch blocks
N. Pacemakers
O. Electrolyte imbalance
P. Drug toxicity
Q. Myocardial disturbances
   1. Ischemia
   2. Injury
   3. Infarction

METHODS OF INSTRUCTION:
A. Lecture:
B. Online:
C. Independent Study:

INSTRUCTIONAL TECHNIQUES:

COURSE ASSIGNMENTS:
Reading Assignments
Textbooks
Journal Articles
Library collection
Module study guides

Out-of-class Assignments
Give accurate and comprehensive evaluation of one's participation
Evaluate the course

Writing Assignments
Analyze dysrhythmias on test with a minimum score of 75%.
Analyze electrocardiograms for ischemia, injury, infarction, blocks and hypertrophy.
Analyze electrocardiograms for effect of medications on the heart.
 Demonstrate proficiency in all previously learned material dealing with the heart.

METHODS OF STUDENT EVALUATION:
Midterm Exam
Final Exam
Short Quizzes
Written Assignments
Objective Examinations
Report
Problem Solving Exercises
Oral Presentations
Demonstration of Critical Thinking:
1. Utilize all prior knowledge from previous semesters in science and nursing.
2. Apply theory to solving electrocardiogram problems.
3. Analyze rhythm strips for abnormalities.
4. Anticipate client problems from understanding abnormal rhythm strips.
5. Assess client's rhythm strips and electrocardiograms for appropriate treatment.
6. Prioritize realistic goals for client's receiving treatments for problems with electrocardiograms.
7. Evaluate the effectiveness of care given.
8. Participate in the applied activities that augment theory.

Required Writing, Problem Solving, Skills Demonstration:

- Analyze dysrhythmias on test with a minimum score of 75%.
- Analyze electrocardiograms for ischemia, injury, infarction, blocks and hypertrophy.
- Analyze electocardiograms for effect of medications on the heart.
- Demonstrate proficiency in all previously learned material dealing with the heart.

TEXTS, READINGS, AND RESOURCES:

TextBooks:

LIBRARY:

- Adequate library resources include:
- Comments:

Attachments:
- Attached Files