

Essentials of ECG and Dysrhythmia Monitoring

Course Syllabus

Course Content

- **4 Modules Encompassing 13 Lessons**
- **3 Exams: Dysrhythmias, Pacemakers, and Ischemia and Infarction**
- **Optional pretest to “test out” of lessons in modules 1 and 2**, so learners can focus their learning time where it’s needed most.
- **Printable resources associated with each module** — Module and lesson objectives, expanded optional content, optional practice strips with answer keys

The American Association of Critical-Care Nurses (AACN) is accredited as a provider of continuing nursing education by the American Nurses Credentialing Center’s (ANCC’s) Commission on Accreditation, ANCC Provider Number 0012. AACN has been approved as a provider of continuing education in nursing by the California State Board of Registered Nursing, California Provider Number CEP1036. This activity is approved for 4.88 to 14.25 contact hours.

Module: Introduction

Lesson 1

Video Introduction

Lesson 2

Introduction

Topics

- How do I navigate the course?
 - What can I expect to learn in each lesson?
 - How long will it take to complete each lesson?
 - How do I use the digital calipers?
 - What tools are available with 12-lead rhythm strips?
 - How do I obtain CE for this course?
 - How much CE will I receive for this course?
 - Who can I contact if I experience technical problems?
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Module 1: Monitoring Systems and Measurements

Lesson 1

The Anatomy Behind the ECG

Topics

- Pretest (optional)
 - Anatomy and Conductive Tissue
 - Cellular Depolarization and Repolarization, and Refractory Periods
 - Contraction of Cardiac Muscle
 - Posttest
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Lesson 2

ECG Monitoring Systems

Topics

- Pretest (optional)
 - Monitoring System Components
 - Preparing Your Patient's Skin
 - 3-Lead and 5-Lead Systems
 - Leads: Frontal Plane and Horizontal Plane
 - 10-Lead Wire System
 - Posttest
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Lesson 3

Analyzing the ECG Rhythm Strip

Topics

- Pretest (optional)
 - Measuring With the Rhythm Strip
 - ECG Complex Components and Intervals
 - Ensuring Optimal ECG Tracings, Artifact
 - Using Calipers (in this course, physical calipers)
 - 8-step Analysis
 - Posttest
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Module 2: Identifying Dysrhythmias

Lesson 1

Sinus Rhythms

Topics

- Pretest (optional)
- Sinus Rhythm
- Sinus Bradycardia
- Sinus Tachycardia
- Sinus Arrhythmia
- Sinus Pause
- Patient Management Case Scenarios
- Posttest

Lesson 2

Atrial Rhythms

Topics

- Pretest (optional)
- Premature Atrial Contraction (PAC) and Nonconducted PAC
- Supraventricular Tachycardia
- Atrial Flutter
- Atrial Fibrillation
- Case Scenarios
- Posttest

Lesson 3

Junctional Rhythms

Topics

- Pretest (optional)
- Impulse Conduction Through the Atria: P Waves With Antegrade and Retrograde Conduction
- Junctional Rhythms (including Accelerated Junctional Rhythm and Junctional Tachycardia)
- Premature Junctional Contraction (PJC)
- Case Scenarios
- Posttest

Lesson 4

Ventricular Rhythms

Topics

- Pretest (optional)
- Common Attributes of Ventricular Beats
- Idioventricular Rhythms
- Premature Ventricular Contraction (PVC)
- Ventricular Tachycardias (Monomorphic and Polymorphic)
- Ventricular Fibrillation
- Asystole
- Pulseless Electrical Activity (PEA)
- Case Scenarios
- Posttest

Lesson 5

Atrioventricular Blocks

Topics

- Pretest (optional)
- First-degree AV Block
- Second-degree AV Blocks (Type I, Type II, 2:1)
- Third-degree AV Block
- Bundle Branch Block
- Case Scenarios
- Posttest

Cumulative Dysrhythmia Exam

Module 3: Introduction to Pacemaker Rhythms

Lesson 1

Artificial Pacemakers

Topics

- Indications for Pacing
- Temporary and Permanent Pacemakers (includes Transcutaneous, Transvenous, Epicardial)
- Pacing Options (Single or Dual Chamber, Biventricular)
- Pacemaker Functions
- Pacemaker Codes
- Posttest

Lesson 2

Analyzing Pacemaker Rhythms

Topics

- 5-Step Analysis of Pacemaker Rhythms
- Posttest

Lesson 3

Identifying Pacemaker Malfunction

Topics

- Assessing the Patient
- Troubleshooting (Failure to Pace, Failure to Capture, Failure to Sense, Oversensing)
- Case Scenarios
- Posttest

Pacemaker Module Exam

Module 4: Introduction to Ischemia and Infarction

Lesson 1

Recognizing ECG Signs of Ischemia and Infarction

Topics

- Acute Coronary Syndromes
- Ischemic Changes: ST and T waves
- Injury and Infarction Changes: ST, T, and QRS
- Identify the Leads for Each Wall of the Heart
- Coronary Arteries
- (Lesson) Posttest

Lesson 2

Identifying Areas of Ischemia and Infarction

Topics

- A Consistent Approach to 12-Lead ECG Changes
- Common Areas of MI (Inferior, Septal, Anterior, Lateral)
- Less-Often-Seen MIs (Posterior, Right Ventricular)
- MIs Affecting Multiple Areas (Anteroseptal, Inferolateral)
- Case Scenarios
- (Lesson) Posttest

Ischemia and Infarction Module Exam