**Part I: Basic ECG**

**Student Learning Outcomes:**

*At the completion of part I, students will be able to:*

* Identify the parts of an ECG waveform and connect them to the corresponding events in the heart
* Measure waveform intervals and discriminate normal from abnormal intervals
* Determine heartrate from an ECG tracing
* Correctly identify common arrythmias
* (note: students who work as nurses in areas where patients are routinely monitored and/or who are ACLS certified, may already be competent in these areas and may elect to skip part 1. A note of caution, however, if knowledge of the above is not solid, it will negatively affect the student’s ability to progress successfully through the remainder of the module sections. The student may self-assess and watch some or all of the videos depending on prior knowledge)

**Readings:**

Dubin, D. (2000). Rapid Interpretation of EKG’s, 6th ed. Fort Meyers, FL: COVER Publishing Company.

Chapters 1-6.

**Activities:**

1. Watch the following 4 part video series from ‘Films on Demand,’ entitled: EKG Interpretation and Response Series.

It has 4 parts that should be watched in this order:

* [Reading an EKG: EKG interpretation and response (22min 31sec)](http://regiscollege.idm.oclc.org/login?url=https://fod.infobase.com/PortalPlaylists.aspx?wID=274023&xtid=120758)
* [Sinus Dysrhythmias: EKG interpretation and response (13min 44 sec)](http://regiscollege.idm.oclc.org/login?url=https://fod.infobase.com/PortalPlaylists.aspx?wID=274023&xtid=120759)
* [Atrial and Junctional Dysrhythmias and Heart Block: EKG interpretation and response (18:31)](http://regiscollege.idm.oclc.org/login?url=http://fod.infobase.com/PortalPlaylists.aspx?wID=274023&xtid=120760)
* [Ventricular Dysrhythmias and Patient Care: EKG interpretation and response (13:34)](http://regiscollege.idm.oclc.org/login?url=http://fod.infobase.com/PortalPlaylists.aspx?wID=274023&xtid=120761)

Links not working? Search “EKG Interpretation and Response” in the Films on Demand Database in the Regis Library.

1. Practice rhythms with this online interactive activity: <https://www.practicalclinicalskills.com/ekg>

* Try the ‘EKG quiz’ and/or the ‘EKG tutor’ on this page

1. Describe your experience during the online activity.

**Part 2: 12 Lead Basics**

**Objectives:**

At the completion of part 2 the student will be able to:

* Describe the basic principles of 12 lead ECG as a diagnostic tool
* List the bipolar leads and delineate the areas of the heart for which they provide information
* List the augmented voltage leads and delineate the areas of the heart for which they provide information
* List the augmented voltage leads and delineate the areas of the heart for which they provide information

**Readings:**

Up to Date: “Basic Principles of Electrocardiographic Interpretation”

Dubin: Chapters 1 and 2

**Activities:**

1. Listen to the lecture capture of “12 lead basics”
2. Complete the related interactive exercise ’12 lead basics practice’ exercise

**Part 3: Axis**

**Objectives:**

* Describe the concept of Axis
* Differentiate among normal axis, right axis deviation, left axis deviation, and extreme axis deviation
* List causes of right and left axis deviation
* Determine quadrant of axis by reviewing the ECG

**Readings:**

Dubin Chapter 7

**Activities:**

1. Listen to the lecture entitled ‘Axis’
2. Practice with an online interactive exercise:

<https://ekg.academy/learn-ekg?courseid=322&seq=1>

1. Describe your experience during the online activity.

**Part 4: Hypertrophy**

**Objectives:**

Define cardiac hypertrophy

* List conditions that cause cardiac hypertrophy
* Apply the criteria for determining cardiac hypertrophy by reviewing an ECG

**Readings:**

Up to Date: “Electrocardiographic diagnosis of left ventricular hypertrophy

Dubin, Chapter 8

**Activities:**

1. Listen to the lecture entitled “Hypertrophy”
2. Practice with an interactive online exercise:

<https://ekg.academy/learn-ekg?courseid=321&seq=1>

1. Describe your experience during the online activity.

**Part 5: Ischemia, Injury, Infarction**

**Objectives:**

* Identify the ECG findings consistent with myocardial ischemia on an ECG
* Identify the ECG findings consistent myocardial injury on an ECG
* Identify the ECG findings consistent with myocardial infarction on ECG

**Readings:**

Up to Date: ‘ECG Tutorial: Myocardial ischemia and infarction’

Dubin, Chapter 9

**Activities:**

1. Listen to the lecture entitled: ‘Ischemia, Injury, Infarction’
2. Practice with interactive online exercise:

<https://ekg.academy/learn-ekg?courseid=323&seq=1>

1. Watch Bates OSCE video #1: Chest Pain, and then respond to the prompt below.

<https://batesvisualguide.com/MultimediaPlayer.aspx?multimediaid=6017060>

You have just watched a visit for a woman presenting with chest pain. In the space below, write a SOAP note for this patient just as you would if you had been the nurse practitioner in this encounter. This activity will help to reinforce the approach to a patient with chest pain so that you will feel more confident when you encounter such a patient in your clinical placements.