HEARTLAND TECHNICAL EDUCATION CENTER
1763 State Route 60, Ashland, Ohio 44805-9377 (419) 289-3313 (800) 686-3313 Fax (419) 289-3729

Adult Education
Medical Assisting
Certified ECG Technology (CET)
Syllabus
2026-2027
27.5 Hours

Instructor
Jamie Krabill BSN, RN krabillj@heartlandtech.org 419-289-3313 (ext. 2239)
- 19+ years nursing experience
- 13+ years nursing / medical education experience

Supplies
Notebook, pens, pencils, highlighters, etc. provided by student

Course Description:
This course provides students with the knowledge and practical skills necessary to perform electrocardiographic procedures in ambulatory and clinical healthcare settings. Students will study the anatomy and physiology of the cardiovascular system, the electrical conduction system of the heart, and the principles of electrocardiography. Emphasis is placed on proper patient preparation, lead placement, acquisition of quality EKG tracings, identification of common cardiac rhythms, equipment operation, patient safety, and professional standards. Through hands-on skills lab practice, students will develop competency in performing and documenting EKG procedures as part of the medical assistant's clinical role.

Course Objectives:
Upon successful completion of this course, students will be able to explain the anatomy and physiology of the cardiovascular system and cardiac conduction pathway; describe the principles and purpose of electrocardiography; prepare patients for EKG testing using appropriate communication and safety measures; correctly perform 12-lead electrocardiograms and other common cardiac monitoring procedures; identify normal sinus rhythm and recognize common cardiac dysrhythmias; troubleshoot technical and artifact-related issues that affect EKG quality; accurately document and

report EKG findings according to established protocols; and demonstrate professionalism, infection control practices, and patient-centered care throughout the electrocardiographic procedure.

Required Textbook
Szwydek, Nancy (2021) National Healthcareer Association Certified EKG Technician (CET) Certification Study Guide (Edition 2.0). St. Louis, MO: Elsevier.
Today's Medical Assistant, 5th Edition by Kathy Bonewit-West and Sue A. Hunt – Chapter 27
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Program Policies
Chapter reading and written assignments are to be completed *before* class. Class time will be devoted to discussing content, presenting enrichment materials, answering student questions, taking practice exams and additional learning activities.

Student Assessment/Grading
The grading for this course will be pass / fail

Competencies
Each student will perform 10 successful EKGs on 10 Living Individuals before they can sit for their CET (Certified EKG Technician) exam through NHA (National Healthcareer Association).

Each student will complete the National Healthcareer Association online practice quizzes when assigned by the instructor

National Healthcareer Association Certified EKG Technician Certification Study Guide 2.0 Case studies

Course Schedule/Outline/Calendar of Events (subject to change)

Date and Material Covered	Content Objectives	Related Learning Experiences & Assessments
November 12, 2026 Week of November 16, 2026 November 23, 2026 Ch 27: (Today's Medical Assistant Book) Cardiopulmonary Procedures {cardiac information only} Ch 1: (NHA Certification Study Guide 2.0) Safety, Compliance, and Coordinated Patient Care	• State the purpose of electrocardiography • Identify each of the following components of the ECG cycle: P wave, QRS complex, T wave, P-R segment, ST segment, P-R interval, Q-T interval, baseline following the T wave • State the purpose of the standardization mark • State the functions of the electrodes, amplifier, and output device • List the 12 leads that are included in an ECG • Describe the function served by each of the following: three-channel recording capability, interpretive electrocardiography, electronic medical record connectivity, teletransmission • Identify each of the following types of artifacts, and state its causes: muscle, wandering baseline, 60-cycle interference, interrupted baseline • List the reasons for applying a holter monitor	Read Today's Medical Assistant (Bonewit) • Ch 27 (cardiac portion only) Read National Healthcareer Association Certified EKG Technician Study Guide 2.0 • Ch 1 • Ch 2 • Ch 3 • Ch 4

Ch 2: (NHA Certification Study Guide 2.0) EKG Acquisition Ch 3: (NHA Certification Study Guide 2.0) EKG Analysis and Interpretation	● Identify the different types of cardiac dysrhythmias ● Explain HIPAA regulations pertaining to EKG procedures ● Adhere to infection control practices (OSHA, standard precautions) ● Describe scope of practice and ethical standards ● Communicate appropriately with patients and members of the interprofessional health care team ● Measure and interpret patient vital signs ● Instruct patients about preparation for and expectations during procedures (EKG stress testing, ambulatory monitoring) ● Use electronic medical records/electronic health records (EMR/HER) to input patient information (patient history, medications, vitals, completed EKG) ● Recognize signs and symptoms of cardiopulmonary compromise ● Describe basic anatomy and physiology of the heart ● Explain the necessary components of EKG acquisition ● Maintain EKG equipment (load paper, replace clips, disinfect machines and leads) ● Verify EKG machine settings (speed, gain) ● Prepare skin for electrode placement ● Position patient for cardiac testing (three-, five-, 12-lead, stress test, telemetry) ● Apply electrodes and attach leads for the following: standard 12-lead EKG, ambulatory (holter, event), monitoring, stress testing, telemetry, patients who have specific considerations (right-sided heart, posterior chest, amputation, pediatric patients) ● Verify that all leads were recorded ● Identify and resolve artifacts from the tracing (wandering baseline, somatic, electrical) ● Mount a completed EKG tracing strip for a patient's chart ● Assist in monitoring patient condition during stress testing ● Provide support in responding to complications during stress testing ● Calculate a patient's heart rate from an EKG tracing ● Determine the regularity of a patient's heart rhythm from an EKG tracing ● Measure EKG intervals and waveforms (PR interval, QRS duration, QT interval) ● Inspect waveform characteristics (P waves, QRS complexes, ST segments, T waves) for symmetry, direction, and amplitude ● Identify arrhythmias (sinus, atrial, ventricular, junctional, heart blocks) from an EKG tracing ● Recognize pacemaker spikes on an EKG tracing ● Identify ischemia, injury, and infarction on an EKG tracing ● Take appropriate action when life-threatening arrhythmias are identified	Study Guide Assignment ● Ch 27 (cardiac portion only) ● National Healthcareer Association Certification Study Guide 2.0 Case Studies Assessment ● National Healthcareer Association practice exams ● NHA Certified EKG Technician (CET) Exam

All dates are subject to change

Revised 8/2026