

Certified EKG Technician (CET) scope document

Course Name	Certified EKG Technician (CET)	Course = 0.50 Carnegie Unit Credit	
Course Description	The Certified EKG Technician (CET) course provides preparation for the National Healthcareer Association (NHA) CET certification exam. The course also instills the knowledge and standards needed for excellence in EKG technician practice. The NHA CET certification is an approved certification found on the Career Development Incentive Program (CDIP) approved programs list.		
Note:	• This is a suggested scope and sequence for the course content. The content will work with any textbook or instructional resource. If locally adapted, make sure all competencies are covered. Please contact your local community college partner for credit options available. • This course can only be run by instructors that can provide occupational experience in the field of EKG technician or similar careers. If instructors provide proof that they have taken and passed the NHA CET certification exam then they will be approved to run this course as part of their program. • Students can sit for the exam up to 12 months before they graduate from high school. • Provisional Certifications are offered for students that pass the CET exam in the 12 months window before graduation.		
Schedule:	Schedule calculation based on 60 contact hours. 60% of instruction time should be geared in meeting the course competencies in the scope and sequence. The remaining 40% of the instructional time allows for guest speakers, student presentations, field trips, remediation, or other content topics.		
All courses taught in an approved CTE program must include Essential Skills embedded into the course content. The Essential Skills Framework for this course can be found at https://www.cde.state.co.us/standardsandinstruction/essentialskills			
Instructional Unit Topic	Suggested Length of Instruction	CTE or Academic Standard Alignment	Competency / Outcomes
Safety, Compliance, and Coordinated Patient Care			1. Adhere to HIPAA regulations
			2. Adhere to infection control practices. (e.g., OSHA, universal precautions.)
			3. Adhere to the scope of practice and comply with ethical standards. a. Scope of practice and ethical standards related to the practice of EKG technicians
			4. Communicate appropriately with patients and members of the multidisciplinary health care team.

			a. Communication methods and techniques b. Factors that affect communication with patients i. Culture ii. Language iii. Religion iv. Developmental level v. Gender vi. Disability c. Roles and responsibilities of members of the interdisciplinary health care team.
			5. Obtain and interpret patient vital signs. a. Emergencies related to cardiac testing (e.g., syncope, chest pain, abnormal vitals) b. Methods for obtaining vital signs and normal vitals signs across the lifespan.
			6. Instruct patients about preparation for and expectations during stress testing. a. Patient preparation for stress testing b. Types of stress tests
			7. Instruct patients on the use of ambulatory monitoring (e.g., Holter, event), and verify their understanding.
			8. Utilize electronic medical records /electronic health records to input patient information a. Patient history b. Medications c. Vitals d. Completed EKG
			9. Recognize signs and symptoms of cardiopulmonary compromise. a. Emergencies related to cardiac testing i. Syncope ii. Chest pain iii. Abnormal vitals b. Cardiopulmonary resuscitation and basic life support c. Normal vitals across the lifespan d. Signs, and symptoms of cardiopulmonary compromise
EKG Acquisition			1. Maintain EKG equipment a. e.g.,

			i. Load paper ii. Replace clips iii. Disinfect machines and leads iv. Supplies needed to perform or assist in cardiac tests v. Equipment needed to perform or assist in cardiac tests
			2. Verify EKG machine settings a. e.g. i. Speed ii. Gain
			3.1. Methods to prepare the skin for the application of EKG electrodes 3.2. Prepare skin for electrodes
			4. Position patient for cardiac testing a. Positioning considerations for special patient populations i. Amputees ii. Respiratory issues iii. Late-term pregnancy b. Positioning protocols for specific cardiac tests
			5.1. Basic anatomy and physiology of the heart 5.2. Location of electrode application for various cardiac tests 5.3. Lead placement and troubleshooting 5.4. Apply electrodes and attach leads for... a. Standard 12-Lead EKG b. Ambulatory (e.g., Holter, event) monitoring c. Stress testing d. Telemetry e. Patients who have special considerations (e.g., right-sided heart, posterior chest, amputations, pediatric.)
			6. Verify that all leads were recorded.
			7. Identify and resolve artifacts from the tracing a. Causes and types of artifacts e.g... i. Wandering baseline ii. Somatic tremor iii. AC interference b. Methods to resolve artifacts

			8. Mount a completed EKG tracing strip for the patient's chart.
			9.1. Assist in monitoring patient condition during stress testing. 9.2. Identify signs of an adverse reaction during stress testing e.g... a. Shortness of breath b. Chest pain c. Abnormal vitals
			10. Provide support in responding to complications during stress testing. a. Cardiopulmonary resuscitation b. Basic life support
EKG Analysis and Interpretation			1. Calculate patient's heart rate from the EKG tracing. a. Formulas to determine maximum and target heart rate b. Methods to calculate heart rate e.g... i. 6-second method ii. R-R interval iii. Sequencing iv. Units of measurement of graph paper
			2. Determine the regularity of the patient's heart rhythm from the EKG tracing
			3. Measure EKG intervals and waveforms e.g... a. PR interval [PRI] b. QRS duration c. QT interval
			4.1. Normal and abnormal waveform duration and intervals 4.2. Normal and abnormal waveform characteristic 4.3. Electrolyte abnormalities 4.4. Inspect the waveform characteristics for symmetry, direction, and amplitude. a. P waves b. QRS complexes c. ST segments d. T waves
			5. Identify arrhythmias from the EKG tracing a. Sinus b. Atrial c. Ventricula d. Junctional e. Heart blocks

			6. Recognize pacemaker spikes on an EKG tracing.
			7. Identify ischemia, injury, and infarction on the EKG tracing.
			8. Take appropriate action when life-threatening arrhythmias are identified e.g... a. Ventricular fibrillation b. Ventricular tachycardia

Academic Standards Alignment

Colorado CTE courses are required to integrate academic and essential skills into course content. The following academic standards have been identified as aligned to this course and should be integrated throughout instruction.

[CO CTE Academic Standards Resources](#) (Rubrics, integration strategies, etc)

[CDE Colorado Academic Standards Online](#) (Online standards lookup tool)

Reading, Writing, & Communicating

Standard 1: Oral Expression and Listening

- **Prepared Graduate 1:** Collaborate effectively as group members or leaders who listen actively and respectfully; pose thoughtful questions, acknowledge the ideas of others; and contribute ideas to further the group's attainment of an objective.

Standard 3: Writing and Composition .

- **Prepared Graduate 9:** Demonstrate mastery of their own writing process with clear, coherent, and error-free polished products.

Note: Mathematics and Science standards will be added in the future. Visit the [Colorado Academic Standards](#) page for the most current version.