



## **Course Syllabus**

### **DSAE 1003 EKG Technician**

**Catalog Description:** This program covers topics and processes critical to conducting and interpreting electrocardiograms. The students will review the anatomy and physiology of the heart. The students will explore the technology used such as the EKG machine. The participants will learn how to interpret a rhythm strip and discover the details of a myocardial infarction. Successful completion of this program will prepare the students to perform the role of EKG technician.

**Prerequisites:** High School Diploma or equivalent

**Continuing Education Credit Hours:** 5

**Lecture / Lab Hours per Week:** 7

**Extended hours:** Online--Additional study is required outside posted class times.

**Contact Hours per course:** 50

**State Approval Code:** 5109100000

**Class section meeting time:** Monday and Thursday evenings from 6:00-9:30 p.m. The 'in person' class meetings are mandatory. If online assignments are made, students are expected to spend at least **3-10 hours per week** reading, reviewing, and participating in assigned activities for successful completion of this course.

**Alternate Operations During Campus Closure:** In the event of an emergency or announced campus closure due to a natural disaster or pandemic, it may be necessary for Panola College to move to altered operations. During this time, Panola College may opt to continue delivery of instruction through methods that include, but are not limited to: online learning management system (CANVAS), online conferencing, email messaging, and/or an alternate schedule. It is the responsibility of the student to monitor Panola College's website ([www.panola.edu](http://www.panola.edu)) for instructions about continuing courses remotely, CANVAS for each class for course-specific communication, and Panola College email for important general information.

**Instructional Goals and Purposes:** The purpose of this course is to prepare the student to work in an office, hospital, clinic, or other healthcare related facility. EKG technicians are essential in the diagnosis and treatment of heart conditions. The field is experiencing a high demand and is expected to continue to rise.

#### **Learning Outcomes:**

1. Apply basic electrophysiologic principles of cardiac conduction to the anatomy and physiology of the human body.
2. Identify proper placement of leads to ensure an accurate and consistent EKG reading, and evaluate various EKG rhythm strips, identifying rate, rhythm, and intervals.
3. Apply an understanding of the technical aspects of the EKG machine to the correct use of the machine and interpretation of artifacts.
4. Describe diagnostic electrocardiography in terms of goals, types, procedures, indications, and contraindications.

**Specific Course Objectives (includes SCANS):**

After studying all materials and resources presented in the course, the student will be able to:

1. Evaluate various EKG rhythm strips following established normal criteria for each of the wave forms and intervals.
2. Analyze a variety of EKG rhythm strips for common dysrhythmias.
3. Describe the functions, associated terminology, types, and rhythm strips of pacemakers.
4. Explain how to interpret a 12-lead EKG strip.
5. Explain myocardial infarction in terms of physiology, symptoms, and EKG interpretation.
6. Describe common cardiac medications.
7. Interpret rhythms originating in the Sinus Node, Atria, AV Junction, and Ventricles.
8. Interpret AV blocks.

**Course Content:**

A general description of lecture/discussion topics included in this course are listed in the Learning Outcomes / Specific Course Objectives sections of this syllabus.

**Students in all sections of this course will be required to do the following:**

1. Attend class regularly
2. Participate in all classroom activities, discussions and online activities if applicable
3. Maintain an average of 75% or better
4. Demonstrate the ability to learn information presented orally or via written materials in the class or online

**Methods of Instruction/Course Format/Delivery:** This course is offered in the classroom setting two evenings per week. Additional course work may be assigned by the instructor. Materials may be presented using audio-visual aides, case studies, class participation, demonstrations, and written materials.

**Major Assignments / Assessments:**

The following items will be assigned and assessed during the semester and used to calculate the student's final grade.

**Assignments**

1. Quizzes
2. Discussions
3. Assigned homework

**Assessment(s):**

1. Quizzes
2. Exams
3. Practicums

**Course Grade:**

The grading scale for this course is as follows:

Attendance/Class Participation – 50%

Quizzes/Practicums– 25%

Final Exam – 25%

**Texts, Materials, and Supplies:**

- *EKG Plain and Simple*
- EKG Plain and Simple Student Workbook

**Other:**

- Courses conducted via video conferencing may be recorded and shared for instructional purposes by the instructor.
- For current texts and materials, use the following link to access bookstore listings: <https://www.panolacollegestore.com>
- For testing services, use the following link: <https://www.panola.edu/elearning/testing.html>
- If any student in this class has special classroom or testing needs because of a physical learning or emotional condition, please contact the ADA Student Coordinator in Support Services located in the Charles C. Matthews Student Center or go to <https://www.panola.edu/student-success/disability-support-services/> for more information.
- Withdrawing from a course is the student's responsibility. Students who do not attend class and who do not withdraw will receive the grade earned for the course.
- Student Handbook, *The Pathfinder*: <https://www.panola.edu/student-success/documents/pathfinder.pdf>

**If required by Clinical Facility:**

Our clinical facilities have notified us that, in accordance with the federal COVID-19 vaccine mandate for Medicare/Medicaid facilities, faculty and staff participating in clinical practice or who have clinical rotations at healthcare facilities (long-term care and hospitals) will need to be fully vaccinated for COVID-19.

All students participating in a clinical/facility setting will need to be fully vaccinated, either two doses of Pfizer or Moderna or one dose of Johnson & Johnson by clinical start date, to abide by the mandate and to be in compliance with the clinical facility.

References for the mandate:

<https://www.federalregister.gov/documents/2021/11/05/2021-23831/medicare-and-medicaid-programs-omnibus-covid-19-health-care-staff-vaccination>

<https://www.cms.gov/files/document/cms-omnibus-staff-vax-requirements-2021.pdf>

<https://www.cms.gov/newsroom/press-releases/biden-harris-administration-issues-emergency-regulation-requiring-covid-19-vaccination-health-care>

## SCANS CRITERIA

### 1) **Foundation skills are defined in three areas: basic skills, thinking skills, and personal qualities.**

- a) **Basic Skills:** A worker must read, write, perform arithmetic and mathematical operations, listen, and speak effectively. These skills include:
  - i) Reading: locate, understand, and interpret written information in prose and in documents such as manuals, graphs, and schedules.
  - ii) Writing: communicate thoughts, ideas, information, and messages in writing, and create documents such as letters, directions, manuals, reports, graphs, and flow charts.
  - iii) Arithmetic and Mathematical Operations: perform basic computations and approach practical problems by choosing appropriately from a variety of mathematical techniques.
  - iv) Listening: receive, attend to, interpret, and respond to verbal messages and other cues.
  - v) Speaking: Organize ideas and communicate orally.
- b) **Thinking Skills:** A worker must think creatively, make decisions, solve problems, visualize, know how to learn, and reason effectively. These skills include:
  - i) Creative Thinking: generate new ideas.
  - ii) Decision Making: specify goals and constraints, generate alternatives, consider risks, and evaluate and choose the best alternative.
  - iii) Problem Solving: recognize problems and devise and implement plan of action.
  - iv) Visualize ("Seeing Things in the Mind's Eye"): organize and process symbols, pictures, graphs, objects, and other information.
  - v) Knowing How to Learn: use efficient learning techniques to acquire and apply new knowledge and skills.
  - vi) Reasoning: discover a rule or principle underlying the relationship between two or more objects and apply it when solving a problem.
- c) **Personal Qualities:** A worker must display responsibility, self-esteem, sociability, self-management, integrity, and honesty.
  - i) Responsibility: exert a high level of effort and persevere toward goal attainment.
  - ii) Self-Esteem: believe in one's own self-worth and maintain a positive view of oneself.
  - iii) Sociability: demonstrate understanding, friendliness, adaptability, empathy, and politeness in group settings.
  - iv) Self-Management: assess oneself accurately, set personal goals, monitor progress, and exhibit self-control.
  - v) Integrity and Honesty: choose ethical courses of action.

### 2) **Workplace competencies are defined in five areas: resources, interpersonal skills, information, systems, and technology.**

- a) **Resources:** A worker must identify, organize, plan, and allocate resources effectively.
  - i) Time: select goal-relevant activities, rank them, allocate time, and prepare and follow schedules.
  - ii) Money: Use or prepare budgets, make forecasts, keep records, and make adjustments to meet objectives.
  - iii) Material and Facilities: Acquire, store, allocate, and use materials or space efficiently. Examples: construct a decision time line chart; use computer software to plan a project; prepare a budget; conduct a cost/benefits analysis; design an RFP process; write a job description; develop a staffing plan.
- b) **Interpersonal Skills:** A worker must work with others effectively.
  - i) Participate as a Member of a Team: contribute to group effort.
  - ii) Teach Others New Skills.
  - iii) Serve Clients/Customers: work to satisfy customer's expectations.

- iv) **Exercise Leadership:** communicate ideas to justify position, persuade and convince others, responsibly challenge existing procedures and policies.
  - v) **Negotiate:** work toward agreements involving exchange of resources, resolve divergent interests.
  - vi) **Work with Diversity:** work well with men and women from diverse backgrounds.  
Examples: collaborate with a group member to solve a problem; work through a group conflict situation, train a colleague; deal with a dissatisfied customer in person; select and use appropriate leadership styles; use effective delegation techniques; conduct an individual or team negotiation; demonstrate an understanding of how people from different cultural backgrounds might behave in various situations.
- c) **Information:** A worker must be able to acquire and use information.
- i) **Acquire and Evaluate Information.**
  - ii) **Organize and Maintain Information.**
  - iii) **Interpret and Communicate Information.**
  - iv) **Use Computers to Process Information.**
- Examples: research and collect data from various sources; develop a form to collect data; develop an inventory record-keeping system; produce a report using graphics; make an oral presentation using various media; use on-line computer data bases to research a report; use a computer spreadsheet to develop a budget.
- d) **Systems:** A worker must understand complex interrelationships.
- i) **Understand Systems:** know how social, organizational, and technological systems work and operate effectively with them.
  - ii) **Monitor and Correct Performance:** distinguish trends, predict impacts on system operations, diagnose deviations in systems' performance and correct malfunctions.
  - iii) **Improve or Design Systems:** suggest modifications to existing systems and develop new or alternative systems to improve performance.
- Examples: draw and interpret an organizational chart; develop a monitoring process; choose a situation needing improvement, break it down, examine it, propose an improvement, and implement it.
- e) **Technology:** A worker must be able to work with a variety of technologies.
- i) **Select Technology:** choose procedures, tools or equipment including computers and related technologies.
  - ii) **Apply Technologies to Task:** understand overall intent and proper procedures for setup and operation of equipment.
  - iii) **Maintain and Troubleshoot Equipment:** Prevent, identify, or solve problems with equipment, including computers and other technologies.
- Examples: read equipment descriptions and technical specifications to select equipment to meet needs; set up and assemble appropriate equipment from instructions; read and follow directions for troubleshooting and repairing equipment.