



Horry-Georgetown
Technical College

COURSE INSTRUCTIONAL PACKAGE

AHS 145

Effective Term

Fall 2026/Spring 2027/Summer 2027

Part I: Course Information

Effective Term: Fall 2026/Spring 2027/Summer 2027

COURSE PREFIX: AHS 145

COURSE TITLE: Electrocardiography

CONTACT HOURS: 2-0-2

CREDIT HOURS: 2

RATIONALE FOR THE COURSE:

Emphasis will be on the proper operation of equipment for accurate ECG interpretation.

COURSE DESCRIPTION:

This course provides the basic skills necessary to perform ECGs in a hospital, physician's office or other health care setting. The student will be able to perform and interpret basic ECGs.

PREREQUISITES/CO-REQUISITES:

None

REQUIRED MATERIALS:

Please visit the [BOOKSTORE](#) online site for most current textbook information. Enter the semester, course prefix, number and section when prompted and you will be linked to the correct textbook.

ADDITIONAL REQUIREMENTS:

None

TECHNICAL REQUIREMENTS:

- Access to Desire2Learn (D2L), HGTC's learning management system (LMS) used for course materials.
- Access to myHGTC portal for student self-services.
- College email access – this is the college's primary official form of communication.

ATTENDANCE VERIFICATION:

The Add/Drop Period is the first 7 days of the semester for **full term** classes. Add/Drop periods are shorter for accelerated format classes. Please refer to the [academic calendar](#) for deadlines for add/drop. You must attend at least one meeting of all your classes during that period. If you do not, you will be dropped from the course(s) and your Financial Aid will be reduced accordingly

IDENTIFICATION VERIFICATION:

Students enrolled in online courses will be required to complete identity verification. Please refer to your Instructor's Course Information Sheet for information regarding this requirement.

STUDENT COURSE EVALUATIONS:

Each semester, students are provided with an opportunity to participate in course evaluation surveys. These evaluations offer crucial feedback to instructors and the College, leading to enhancement of educational quality. By completing these surveys, you play a key role in the ongoing improvement of teaching methods and course content, ensuring future students enjoy a better learning experience. Students are encouraged to complete these surveys as your active participation in this process reflects your dedication to your education and drives positive change.

CLASSROOM ETIQUETTE AND STUDENT RIGHTS AND RESPONSIBILITIES:

As a matter of courtesy to other students and your professor, please turn off cell phones and other communication/entertainment devices before class begins. If you are monitoring an emergency, please notify your professor prior to class and switch cell phone ringers to vibrate.

To ensure a positive College experience, guidelines exist in numerous areas of campus life. The Student Code for The South Carolina Technical College System "The Student Code" (3-2-106.1) applies to all HGTC students. The Student Code sets forth rights and responsibilities of the individual student, identifies behaviors that are not consistent with the values of college communities, and describes the procedures that will be followed to adjudicate cases of alleged misconduct. Students are expected to conduct themselves in a civil manner, that is respectful

of the rights of others, and that is compatible with the college's educational mission. Students are expected to comply with all of the college's duly established rules and regulations regarding student behavior while on campus; while participating in off-campus college sponsored activities; and while participating in off-campus clinical, field, internship, or in-service experiences. Students are expected to comply with all course requirements as specified by instructors in course syllabi and to meet the standards of acceptable classroom behavior set by instructors. For more information, login to your myHGTC account under "Student Rights and Responsibilities" card then select "Student Code of Conduct" or the "Student Catalog and Handbook."

Part II: Student Learning Outcomes

COURSE LEARNING OUTCOMES and ASSESSMENTS*:

1. Describe the Role of the EKG Technician.
2. Demonstrate basic patient care skills.
3. Understand the basic anatomy and physiology of the heart.
4. Summarize common cardiovascular diseases and disorders.
5. Explain basic EKG technology and application.
6. Perform basic EKG procedures.
7. Identify artifacts and be able to make adaptations in the EKG testing.
8. Describe the cardiac conduction system.
9. Understand EKG tracings.
10. Interpret cardiac rhythms.
11. Explain what EKG rhythms mean for the patient.
12. Recognize the emergencies.

Module #1 – Chapters 1, 2, 3 & 4

Material Covered:

Hartman's EKG Technician

Assessments:

Chapter Quiz

Module #1 Test

Learning Outcomes:

1. Describe the role of the EKG technician and identify healthcare settings in which EKG technicians work.
2. Identify soft skills and personal traits needed for success as an EKG technician.
3. Describe the certification process for the EKG technician.
4. Describe the importance of continuing education and recertification.
5. Demonstrate proper communication with other members of the healthcare team.
6. Discuss the chain of command and understand the importance of following a facility's policies and procedures.
7. Discuss outside organizations critical to the function of healthcare facilities.
8. Explain the importance of monitoring vital signs.
9. Discuss the role of the EKG technician in infection prevention and control.
10. List guidelines for measuring body temperature and observing skin conditions.
11. Define pulse and list guidelines for measuring pulse.
12. Define respirations and list guidelines for measuring respirations.
13. Define blood pressure and list guidelines for measuring blood pressure.
14. Describe normal vital sign ranges for pediatric patients.
15. Perform the procedure for obtaining pulse oximetry readings and identify normal ranges for pulse oximetry readings.
16. Describe the importance of assessing and reporting pain and level of consciousness.
17. Describe patient body positions commonly used during EKG testing.
18. Discuss critical concepts of anatomy and physiology and define anatomical terms.
19. Identify and describe the parts of the cardiovascular system and their functions.
20. Identify and describe the parts of the respiratory system and their functions.
21. Describe the relationship between the nervous system and the cardiovascular system.
22. Identify the three layers of the heart.
23. Identify and describe the significant vessels that enter and leave the heart,

including the coronary arteries.

24. Identify and describe the chambers and valves of the heart and blood movement through the heart.
25. Trace and describe two circulatory paths: pulmonary and systemic.
26. Summarize the relationship between the cardiovascular system and the respiratory system.
27. Describe coronary artery disease.
28. Describe ischemia and myocardial infarction.
29. Describe cardiomyopathy.
30. Describe congestive heart failure.
31. Describe heart valve disease.
32. Describe blood clots and possible complications.
33. Describe hypertension.

Module #2 – Chapters 5 & 6

Material Covered:

Hartman's EKG Technician

Assessments:

Chapter Quiz

Module #2 Test

Learning Outcomes:

1. Describe the essential electrical activity of the heart and how EKG machines record it.
2. Discuss the portable EKG machine.
3. Describe the types of EKG-based tests and discuss the indications for each.
4. Identify the different EKG leads and lead groups.
5. Describe electrode placement and the use of different leads.
6. Demonstrate proper setup of the EKG machine.
7. Describe general guidelines for patient identification, preparation, and response to emergencies during EKG testing.
8. Demonstrate the performance of the 12-lead EKG test.
9. Explain patient preparation and monitoring for telemetry.

10. Demonstrate the performance of a stress test.
11. Discuss Holter and other ambulatory monitoring.
12. Discuss the importance of accurate record-keeping and patient confidentiality.

Module #3 – Chapters 7 & 8

Material Covered:

Hartman's EKG Technician

Assessments:

Chapter Quiz

Module #3 Test

Learning Outcomes:

1. Define artifacts and identify situations where adjustments or adaptations may be required during EKG testing.
2. Demonstrate solutions to different types of EKG artifacts and discuss primary EKG machine Troubleshooting.
3. Demonstrate adaptations to electrode placement and patient positioning in particular situations and for pediatric patients.
4. Identify sources of information for EKG machine troubleshooting and maintenance.
5. Explain the difference between the mechanical and electrical activity of the heart.
6. Explain the electrical conduction system of the heart.
7. Understand the features of an EKG tracing.
8. Identify significant intervals and segments on the EKG tracing and list average measurements.
9. Demonstrate the measurement of time on the EKG tracing using small and large blocks
10. List the six steps used to analyze an EKG tracing.

11. Discuss the first step in analyzing heart rhythms: three methods to determine heart rate
from the EKG tracing.
12. Discuss the second step in analyzing heart rhythms: how to examine an EKG tracing
for regularity.
13. Discuss the third step in analyzing heart rhythms: examining the P wave on an EKG tracing.
14. Discuss the fourth step in analyzing heart rhythms: measuring the PR interval on an
EKG tracing.
15. Discuss the fifth step in analyzing heart rhythms: measuring the QRS complex on an
EKG tracing.
16. Discuss the importance of following each step when analyzing an EKG tracing.

Module #4 – Chapters 9 & 10

Material Covered:

Hartman's EKG Technician

Assessments:

Chapter Quiz

Module #4 Test

1. Explain how EKG rhythms are named and discuss the importance of recognizing
cardiac rhythms.
2. Identify sinus rhythms.
3. Discuss what sinus rhythms mean for the patient.
4. Identify atrial rhythms.
5. Discuss what atrial rhythms mean for the patient.
6. Identify junctional rhythms.
7. Discuss what junctional rhythms mean for the patient.
8. Identify ventricular rhythms.
9. Discuss what ventricular rhythms mean for the patient.

10. Identify heart block rhythms.
11. Discuss what heart block rhythms mean for the patient.
12. Recognize artificially paced rhythms on EKG tracings.
13. Discuss possible complications with artificial pacemakers.
14. Discuss ST segment changes and other indications of injury on the EKG tracing.
15. Recognize emergencies during cardiac testing.
16. Discuss proper notification of supervisor and 911 in a medical emergency.
17. Explain the care of a conscious patient experiencing a cardiac emergency.
18. Demonstrate the care of an unconscious patient experiencing a cardiac emergency.
19. Describe cardiopulmonary resuscitation (CPR) and defibrillation using an automated external defibrillator (AED).
20. Describe the care of a patient experiencing a stroke.
21. Discuss drugs that may be used in a cardiac emergency.
22. Describe response to nonmedical emergencies.

****Students – please refer to the Instructor’s Course Information sheet for specific information on assessments and due dates.***

Part III: Grading and Assessment

EVALUATION OF REQUIRED COURSE MEASURES/ARTIFACTS*:

Students’ performance will be assessed, and the weight associated with the various measures/artifacts are listed below.

EVALUATION*

Module Tests	65%
Online Quizzes	20%
Final Exam	<u>15%</u>
	100%

****Students, for the specific number and type of evaluations, please refer to the Instructor’s Course Information Sheet.***

GRADING SYSTEM:

Please note the College adheres to a 10-point grading scale A = 100 – 90, B = 89–

80, C = 79 – 70, D = 69 – 60, F = 59 and below.

Grades earned in courses impact academic progression and financial aid status. Before withdrawing from a course, be sure to talk with your instructor and financial aid counselor about the implications of that course of action. Ds, Fs, Ws, and Is also negatively impact academic progression and financial aid status.

Part IV: Attendance

Horry-Georgetown Technical College maintains a general attendance policy requiring students to be present for a minimum of 80 percent (80%) of their classes to receive credit for any course. Due to the varied nature of courses taught at the college, some faculty may require up to 90 percent (90%) attendance. Pursuant to 34 Code of Federal Regulations 228.22 – Return to Title IV Funds, once a student has missed over 20% of the course or has missed two (2) consecutive weeks, the faculty is obligated to withdraw the student, and a student may not be permitted to reenroll. **Instructors define absentee limits for their class at the beginning of each term; please refer to the Instructor Course Information Sheet.**

For online and hybrid courses, refer to your Instructor's Course Information Sheet for any required on-site meeting times. In online courses, attendance is fulfilled through the submission of academic work. Please be aware that instructors may require exams to be proctored either online or at an approved testing site. If you choose to use a testing center other than those provided by HGTC, that center may charge a fee for its services.

Part V: Student Resources

THE STUDENT SUCCESS AND TUTORING CENTER (SSTC):

The SSTC offers all students the following **free** resources:

1. Academic tutors for most subject areas, Writing Center support, and Academic Coaching for college success skills.
2. Online tutoring and academic support resources.
3. Professional and interpersonal communication coaching.



Visit the [Student Success & Tutoring Center](#) website for more information. To schedule tutoring or coaching, contact the SSTC at sstc@hgtc.edu or self-schedule in the Penji iOS/Android app or at www.penjiapp.com. Email sstc@hgtc.edu or call SSTC Conway, 349-7872; SSTC Grand Strand, 477-2113; and SSTC Georgetown, 520-1455, or go to the SSTC [Online Resource Center](#) to access on-demand resources.

STUDENT INFORMATION CENTER – TECH Central:



TECH Central offers all students the following free resources:

1. Getting around HGTC: General information and guidance for enrollment, financial aid, registration, and payment plan support!
2. In-person and remote assistance are available for Desire2Learn, Student Portal, Degree Works, and Office 365.
3. Chat with our staff on TECH Talk, our live chat service. TECH Talk can be accessed on the student portal and on TECH Central's website, or by texting questions to (843) 375-8552. Visit the [Tech Central website](#) for more information. Live Chat and Center locations are posted on the website. You may also call (843) 349-5199.

HGTC LIBRARY:



Each campus location has a library where HGTC students, faculty, and staff may check out materials with their HGTC ID. All three HGTC campus libraries have librarians and staff who can aid with research, computers to support academic research and related school-work, and individual/group study rooms. Printing is available as well at each location. Visit the [Library](#) website for more information or call (843) 349-5268.

STUDENT TESTING:

Testing in HGTC courses may occur during regularly scheduled class time or online, with or without proctoring. Tests may be delivered in the following formats:

- Digitally through D2L
- In writing on paper
- Through a publisher platform (note: some publisher platforms carry an associated fee)

Tests may include time limits and may require proctoring depending on the course.

When proctoring is required and is not provided by the course instructor in the classroom, students may complete their test face-to-face at an [HGTC Testing Center](#) or another approved testing site, or online using HGTC's online proctoring provider. For more information about available proctoring options, visit the [Online Testing](#) section of the HGTC Testing Center webpage.

Students testing at an HGTC Testing Center should note the following:

- **Appointments must be scheduled at least 24 hours in advance.**
- **A physical, government-issued photo ID is required to test.**

The **Instructor Information Sheet** will have more details on test requirements for your course.

DISABILITY SERVICES:

HGTC is committed to providing an accessible environment for students with disabilities. Students seeking accommodations are encouraged to visit HGTC's [Accessibility and Disability Service webpage](#) for detailed information.

It is the student's responsibility to self-identify as needing accommodations and to provide appropriate documentation. Once documentation is submitted, the student will participate in an interactive process with Accessibility and Disability Services staff to determine reasonable accommodations. Students may begin the accommodations process at any time; however, accommodations are **not retroactive** and will only be applied from the point at which they are approved. Students must contact the office **each semester** to renew their accommodations.

For assistance, please contact the Accessibility and Disability Services team at disabilityservices@hgtc.edu or 843-796-8818 (call or text).

COUNSELING SERVICES:

HGTC Counseling Services strives to optimize student success through managing personal and academic concerns that may interfere with achieving educational

goals. Staff are available to every student for assistance and guidance on personal matters, academic concerns and other areas of concern. HGTC offers free in-person and telehealth counseling services to students. For more information about counseling services, please reach out to counseling@hgtc.edu or visit the website the [Counseling Services webpage](#).

STATEMENT OF EQUAL OPPORTUNITY/NON-DISCRIMINATION STATEMENT:

Our sincere commitment to both effective business management and equitable treatment of our employees requires that we present this Policy Statement as an embodiment of that commitment to the fullest.

Discrimination is conduct that includes unjust or prejudicial treatment based upon an individual's age, race, color, sex, religion, national origin, disability, and genetic information or any other protected classes deemed unlawful under State or Federal law that excludes an individual from participation in, denies the individual the benefits of, treats the individual differently, or otherwise adversely affects a term or condition of a person's working or learning environment. This includes failing to provide reasonable accommodation, consistent with state and federal law, to persons with disabilities.

All inquiries regarding the federal laws as they relate to discrimination on the basis of sex may be directed to Jen Riddei, Title IX Coordinator, Horry-Georgetown Technical College, Building 1100C, Room 107B, 2050 HWY 501 E, PO Box 261966, 843-349-5218, Jenifer.Riddei@hgtc.edu.

Student and prospective student inquiries concerning the federal laws and their application to the College or any student decision may be directed to Dr. Melissa Batten, Vice President, Student Affairs, and Section 504 & Title II Coordinator, Horry-Georgetown Technical College, Building 1100C, Room 107A, 2050 HWY 501 E, PO Box 261966-6066, 843-349-5228, Melissa.Batten@hgtc.edu.

Employee and applicant inquiries concerning the federal laws and their application to the College may be directed to Jacquelyne Synder, Vice President, Human Resources and Employee Relations and the College's Affirmative Action/Equal Opportunity Officer, Horry-Georgetown Technical College, Building 200C, Room 205B, 2050 HWY 501 E, PO Box 261966, Conway, SC 29528-6066, 843-

349-5212, Jacquelyne.Snyder@hgtc.edu.

TITLE IX REQUIREMENTS:

Title IX of the Education Amendments of 1972 protects students, employees, applicants for admission and employment, and other persons from all forms of sex discrimination.

HGTC prohibits the offenses of sexual harassment, domestic violence, dating violence, sexual assault, and stalking and will provide students, faculty, and staff with necessary information regarding prevention, policies, procedures, and resources.

Any student, or other member of the college community, who believes that they have been a victim of sexual harassment, domestic violence, dating violence, sexual assault, or stalking may file a report with the college's Title IX Coordinator or campus law enforcement*.

*Faculty and Staff are required to report these incidents to the Title IX Coordinator when involving students. The only HGTC employees exempt from mandatory reporting are licensed mental health professionals (only as part of their job description such as counseling services).

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PREGNANCY ACCOMMODATIONS

Under Title IX, colleges must not exclude a pregnant student from participating in any part of an educational program. Horry-Georgetown Technical College is committed to ensuring that pregnant students receive reasonable accommodations to ensure access to our educational programs.

Students should advise the Title IX Coordinator of a potential need for accommodations as soon as they know they are pregnant. It is extremely important that communication between student, instructors, and the Title IX Coordinator begin as soon as possible. Each situation is unique and will be

addressed individually.

Title IX accommodations DO NOT apply to Financial Aid. Financial Aid regulations do not give the College any discretion in terms of Financial Aid eligibility.

Certain educational programs may have strict certification requirements or requirements mandated by outside regulatory agencies. Therefore, in some programs, the application of Title IX accommodations may be limited.

To request pregnancy accommodations, please complete the *Pregnancy Intake Form* that can be found [here](#).