



INSTRUCTIONAL PACKAGE

Phlebotomy Capstone
AHS 167

Effective Term
Fall 2024/Spring 2025/Summer 2025

INSTRUCTIONAL PACKAGE

Part I: Course Information

Effective Term: Fall 2024/Spring 2025/Summer 2025

COURSE PREFIX: AHS 167

COURSE TITLE: Phlebotomy Capstone

CONTACT HOURS: 1-6-3

CREDIT HOURS: 3

RATIONALE FOR THE COURSE:

AHS 167 is intended to build upon the principles and foundations encountered in AHS 141. This course allows the student to do clinical rotations at medical facilities, which prepares them for employment. This course also prepares the student for the national certification exam.

COURSE DESCRIPTION:

This course provides the opportunity for the student to function as a team member during a phlebotomy clinical experience and provides the knowledge and skills needed to pass the national certification exam.

PREREQUISITES/CO-REQUISITES:

BIO 112 or BIO 210 or BIO 211, or BIO 110, AHS 106, AHS 141

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:

Students will be required to purchase the NHA Practice Modules and Exams for \$84. This must be purchased by the beginning of the semester. Students will also need to purchase the NHA certification exam for \$129. This must be purchased before the exam can be taken. Students must pass the AHS 167 before they can take the NHA Exam.

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..

CLASSROOM ETIQUETTE:

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 for an emergency, please notify your professor prior to class and switch cell phone ringers to vibrate.

Part II: Student Learning Outcomes**COURSE LEARNING OUTCOMES and ASSESSMENTS*:****Module #1 Test #1**

Chapters 7, 15, 16, 17

Chapter 7 Cardiovascular and Lymphatic Systems

1. Define the functions of the cardiovascular and lymphatic systems.
2. Identify and describe the structures and functions of the heart.
3. List pathologic conditions and common laboratory tests associated with the cardiovascular and lymphatic systems.
4. Trace the flow of blood through the cardiovascular system.
5. Describe different types of blood vessels, the properties of arterial blood, venous blood, and capillary blood.
6. Identify and describe the cellular and noncellular components of blood.
7. Describe the differences and similarities between whole blood, serum, and plasma.
8. Locate and name the veins most commonly used for phlebotomy procedures.
9. Define hemostasis and describe the basic process of coagulation and fibrinolysis.

Chapter 15 Blood Cultures, Arterial, Intravenous, and Special Collection Procedures

1. List the steps and equipment in blood culture collections.
2. Discuss the requirements for the glucose and lactose tolerance tests.
3. Explain the special precautions and types of equipment needed to collect arterial blood gases.
4. Differentiate cannulas from fistulas.
5. List the special requirements for collecting blood through intravenous (IV) catheters.
6. Differentiate therapeutic phlebotomy from autologous transfusion.
7. Describe the special precautions needed to collect blood in therapeutic drug monitoring (TDM) procedures.
8. List the types of patient specimens that are needed for trace metal analyses.
9. Discuss the use of infrared light to locate veins.
10. Describe the use of ultrasound for arterial and venous blood vessel location, assessment, and puncture.
11. List the steps and equipment required for use of ultrasound.

Chapter 16 Urinalysis, Body Fluids, and other Specimens

1. Identify body fluid specimens, other than blood, that are analyzed in the clinical laboratory, and identify the correct containers and procedures for collecting and/or transporting these specimens to the laboratory.
2. Describe the correct methodology for labeling urine specimens.
3. Explain the procedural steps for collecting a urine specimen from an infant.
4. Identify specimens collected for microbiological, throat, sputum, and nasopharyngeal cultures and the protocol that must be followed when transporting these specimens.
5. List the types of patient specimens that are needed for gastric and sweat chloride analyses.
6. List three types of urine specimen collections and differentiate the uses of the urine specimens obtained from these collections.
7. Instruct a patient in the correct procedure for collecting a timed urine specimen and a midstream clean-catch specimen.

Chapter 17 Drug Use, Forensic Toxicology, Workplace Testing, Sports Medicine, and Related Areas

1. Define toxicology and forensic toxicology.
2. Give five examples of forensic specimens and the role of the health care worker in handling, transporting, or processing them.
3. Describe the two-part process for testing drug abuse.
4. Describe why drug testing is valuable and explain the role of the health care worker in drug-testing programs.
5. Describe the role of paternity testing in legal cases and the role that the health care worker has in specimen collection for these cases.
6. Define and describe the function of a chain of custody.
7. Describe how to detect adulteration of urine specimens.
8. List two methods of measuring blood alcohol and at least three factors that affect testing.

Module #2 Test #2

Materials Covered

Chapters 11, 12, 13, 14

Chapter 11 Capillary Blood Specimens

1. Describe the reasons for acquiring capillary blood specimens for adults, children, and infants.
2. List common laboratory tests for which capillary specimens may be collected.
3. Explain why capillary blood from a skin puncture is different from blood taken by venipuncture and the impact on laboratory tests.
4. Identify the proper sites for performing a skin puncture procedure and explain why it is necessary to control the depth of the incision.
5. Describe the procedure for performing a skin puncture.
6. Describe the purpose and procedure for making blood smears and the characteristics of an acceptable blood smear.

Chapter 12 Specimen Handling, Transportation, and Processing

1. Describe at least three sources of preexamination error that can occur during blood specimen handling.
2. Describe at least three sources of preexamination error that can occur during blood specimen transportation.

3. Describe at least three sources of preexamination error that can occur during specimen processing or storage.
4. Name three methods commonly used to transport specimens.
5. Describe at least three basic shipping requirements for the safe transportation of infectious substances.

Chapter 13 Pediatric and Geriatric Procedures

1. Describe fears or concerns that children in different developmental stages might have toward the blood collection process.
2. List suggestions that might be appropriate for parental and health care worker behavior during a venipuncture or skin puncture.
3. Identify puncture sites for a heelstick on an infant and describe the procedure.
4. Describe the venipuncture sites for infants and young children.
5. Discuss the types of equipment and supplies that must be used during microcollection and venipuncture of infants and children.
6. Discuss the use of assistive devices in phlebotomy such as ultrasound and infrared light.
7. Explain the special precautions and types of equipment needed to collect capillary blood gases.
8. Describe the procedure for specimen collection for neonatal screening.
9. Define five physical and/or emotional changes that are associated with the aging process.
10. Describe how a health care worker should react to physical and emotional changes associated with older adults.

Chapter 14 Point-of-Care Collections

1. List two other terms that are synonymous with point-of-care testing.
2. Identify four analytes whose levels can be determined through point-of-care testing.
3. Describe the most widely used application of point-of-care testing.
4. Define quality assurance and its requirements in point-of-care testing.

Module #3 Test 3

Materials Covered

Chapters 5, 6, 8, 9, 10

Chapter 5 Safety and First Aid

1. Discuss safety awareness for health care workers.
2. Explain the measures that should be taken for fire, electrical, radiation, mechanical, and chemical safety in a health care facility.
3. Describe the essential elements of a disaster emergency plan for a health care facility.
4. Explain the safety policies and procedures that must be followed in specimen collection and transportation.
5. Describe the safe use of equipment in health care facilities.
6. List three precautions that can reduce the risk of injury to patients.

Chapter 6 Medical Terminology, Anatomy, and Physiology of Organ Systems

1. Define medical terminology using word elements such as roots, prefixes, and suffixes.
2. Define words commonly used in the clinical laboratory.
3. Describe how laboratory testing is used to assess body functions and disease,

4. Define the differences among the terms *anatomy*, *physiology*, and *pathology*.
5. Describe the directional terms, anatomic surface regions, and cavities of the body.
6. Describe the role of homeostasis in normal body functioning.
7. Describe the purpose, function, and structural components of the major body systems.
8. Identify examples of pathologic conditions associated with each organ system.
9. Describe the types of specimens that are analyzed in the clinical laboratory.
10. List common diagnostic tests associated with each organ system.

Chapter 8 Blood Collection Equipment

1. Describe the latest phlebotomy safety supplies and equipment and evaluate their effectiveness in blood collection.
2. List the various types of anticoagulants and additives used in blood collection, their mechanisms of action on collected blood, examples of tests performed on collected blood, and the vacuum collection tube color codes for these anticoagulants and additives.
3. Identify the various supplies that should be carried on a specimen collection tray when collecting blood by venipuncture or skin puncture.
4. Identify the types of safety equipment needed to collect blood by venipuncture and skin puncture.
5. List substances that can interfere in clinical testing of blood analytes.

Chapter 9 Preexamination/Preanalytical Complications Causing Medical Errors in Blood Collection

1. Describe preanalytical (preexamination) complications related to phlebotomy procedures and impacting patient safety.
2. Explain how to prevent and/or handle complications in blood collection.
3. List at least five factors about a patient's physical disposition (i.e., makeup) that can affect blood collection.
4. List examples of substances that can interfere in clinical analysis of blood constituents, and describe methods used to prevent these interferences.
5. Describe how allergies, a mastectomy, edema, and thrombosis can affect blood collection.
6. List preanalytical complications that can arise with test requests and identification.
7. Describe complications associated with tourniquet pressure and fist pumping.
8. Identify how the preanalytical factors of syncope, petechiae, neurological complications, hemoconcentration, hemolysis, and intravenous therapy affect blood collection.
9. Describe methods used to prevent these interferences.

Chapter 10 Venipuncture Procedures

1. Describe the steps a health care worker should take in preparing him- or herself for a venipuncture procedure.
2. List supplies and equipment used in a typical venipuncture procedure.
3. Describe detailed steps in the patient identification process and what to do if information is missing.
4. Describe methods for hand hygiene.
5. Identify the most appropriate sites for venipuncture and situations when these sites might not be acceptable.

6. Identify alternative sites for the venipuncture procedure.
7. Describe the process and time limits for applying a tourniquet to a patient's arm.
8. Describe the decontamination process and the agents used to decontaminate skin for routine blood tests and blood cultures.
9. Describe the steps of a venipuncture procedure using the evacuated tube method, syringe method, and butterfly method according to the CLSI Approved Standard.
10. Describe the "order of draw" for collection tubes.
11. Describe how to react when the patient has fainted or experiences nausea, vomiting, or convulsions.
12. Define and explain the clinical reason for the terms *fasting*, *STAT*, and *timed specimens*.

Module #4 Test #4

Materials Covered

Chapters 1, 2, 3, 4

Chapter 1 Phlebotomy Practice and Quality Assessment

1. Define phlebotomy and identify health professionals who perform phlebotomy procedures.
2. Identify the importance of phlebotomy procedures to the overall care of the patient.
3. List professional competencies for phlebotomists, the role in delivering, collecting and/or transporting specimens the laboratory, and key elements of a performance assessment.
4. List members of a health care team who interact with phlebotomists.
5. Describe the roles and qualifications of clinical laboratory personnel and common laboratory departments/sections.
6. Describe the health care delivery system and settings in which phlebotomy services are routinely performed.
7. Describe the clinical laboratory workflow pathway, or testing cycle, from beginning laboratory requests to reporting laboratory test results.
8. Explain components of professionalism and desired character traits for phlebotomists.
9. Describe coping skills that are used to reduce stress in the workplace.
10. List the basic tools used in quality improvement activities and give examples of how a phlebotomist can participate in quality improvement activities.
11. Define the difference between quality improvement and quality control procedures.

Chapter 2 Communication, Computer Essentials, and Documentation

1. Outline the basic communication loop.
2. Describe methods for effective verbal and nonverbal communication, active listening, and written communication.
3. List examples of positive and negative body language.
4. Describe methods to achieve cultural competence and sensitivity in the workplace.
5. Describe the basic components of the medical record and provide examples of how to maintain confidentiality and privacy related to patient information.
6. Describe essential elements of laboratory test requisitions, specimen labels, and test results.
7. Identify potential clerical or technical errors that may occur during labeling or documentation of phlebotomy procedures.

8. Identify essential components and functions of computers in health care and list ways that health care workers use them to accomplish job functions.

Chapter 3 Professional Ethical, Legal, and Regulatory Issues

1. Define basic ethical and legal terms and explain how they differ.
2. Differentiate ethics and bioethics.
3. Describe types of consent used in health care settings, including informed consent and implied consent
4. Describe how to avoid litigation as it relates to blood collection.
5. Define standard of care from a legal and a health care provider's perspective.-
6. Identify key elements of the Health Insurance Portability and Accountability Act (HIPAA).
7. List key factors common to health professional liability insurance policies.
8. List common issues in lawsuits against health care providers and prevention tips to avoid lawsuits in phlebotomy.
9. Explain the term liability and what it means for health care providers.

Chapter 4 Infection Control

1. Explain the infection control policies and procedures that must be followed in specimen collection and transportation
2. Define the terms *health care-associated*, *health care-acquired*, and *nosocomial infections*.
3. Identify the basic programs for infection control and isolation procedures.
4. Explain the proper techniques for handwashing, gowning, gloving, masking, double bagging, and entering and exiting the various isolation areas.
5. Identify steps to avoid transmission of blood-borne pathogens.
6. Identify ways to reduce risks for infections and accidental needlesticks.
7. Describe measures that can break each link in the chain of infection.
9. Describe the components for the chain of infection.
10. State the central purpose of hand hygiene.
- 11 .Describe the CDC procedure for collection and transport of specimens for Ebola virus testing.
12. Describe the major organisms responsible for healthcare-associated infections.

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

GENERAL EDUCATION OUTCOMES:

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GELO- Grading Rubric Phlebotomy

COMMUNICATION- GELO

Indicator

Students will be able to communicate effectively by:

1. Inferring correct or reasonable conclusions through critical reading.

2. Using effective listening skills to be able to respond appropriately

Artifact: Student Clinical Evaluation Form

Scoring System:

Above Average - Overall score of 90% or greater.

Average- Overall score of 80-89%.

Below Average- Overall score of 79% or less.

CRITICAL THINKING - GELO

Indicator

Students will be able to demonstrate higher order of thinking when problem solving by:

1. Utilizing inductive and/or deductive reasoning skills.

Artifact: National Healthcareer Association Exam Results

Scoring System:

Above Average - Overall score of 90% or greater.

Average- Overall score of 80-89%.

Below Average- Overall score of 79% or less.

SELF-DEVELOPMENT - GELO

Indicator

Students will be able to effectively engage in the professional world or transition to higher level of learning by:

1. Responding appropriately to challenging situations.
2. Collaborating well in a team environment.

Artifact: Student Clinical Evaluation Form

Scoring System:

Above Average - Overall score of 90% or greater.

Average- Overall score of 80-89%.

Below Average- Overall score of 79% or less

This course fulfills the following General Education Outcomes. Upon completion of this course, students will be able to:

- Communicate effectively;
- Think critically;
- Self and professional development.

EFFECTIVE PROFESSIONAL AND INTERPERSONAL COMMUNICATION (EPIC):

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*

Tests	55%
Homework - Modules	5%
Clinical	5%
Final Exam	35%
	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. You must have your Dean's approval if changes in the scale are made.

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, WFs and Is also negatively impact academic progression and financial aid status.

The Add/Drop Period is the first 5 days of the semester for **full term** classes. Add/Drop periods are shorter for accelerated format courses. Please refer to the [academic calendar](#) for deadlines for add/drop. You must attend at least one meeting of all of 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.

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 in order 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, check your Instructor's Course Information Sheet for any required on-site meeting times. Please note, instructors may require tests to be taken at approved testing sites, and if you use a testing center other than those provided by HGTC, the center may charge a fee for its services.

Part V: Student Resources



THE STUDENT SUCCESS AND TUTORING CENTER (SSTC):

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

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

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



STUDENT INFORMATION CENTER: TECH Central

TECH Central offers to all students the following **free** resources:

1. **Getting around HGTC**: General information and guidance for enrollment, financial aid, registration, and payment plan support!
2. Use the [Online Resource Center \(ORC\)](#) including Office 365 support, password resets, and username information.
3. **In-person workshops, online tutorials and more services** are available in Desire2Learn, Student Portal, Degree Works, and Office 365.
4. **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.



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 are equipped with computers to support academic research and related school work; printing is available as well. Visit the [Library](#) website for more information or call (843) 349-5268.

STUDENT TESTING:

Testing in an **online/hybrid** course and in **make-up exam** situations may be accomplished in a variety of ways:

- Test administered within D2L.
- Test administered in writing on paper.
- Test administered through Publisher Platforms (which may have a fee associated with the usage)

Furthermore, tests may have time limits and/or require a proctor.

Proctoring can be accomplished either face-to-face at an approved site or online through our online proctoring service. To find out more about proctoring services, please visit the [Online Testing](#) section of the HGTC's Testing Center webpage.

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. Inquiries may be directed to HGTC's [Accessibility and Disability Service webpage](#). The Accessibility and Disability Services staff will review documentation of the student's disability and, in a confidential setting with the student, engage in an interactive process to develop an educational accommodation plan.

Note: It is the student's responsibility to self-identify as needing accommodations and to provide acceptable documentation. After a student has self-identified and submitted documentation of a disability, accommodations may be determined, accepted, and provided. Students will need to reach out to the Accessibility and Disability Services staff each semester to renew their accommodations.

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:

Horry-Georgetown Technical College shall not discriminate in employment or personnel decisions or in student admissions or in student decisions, or in all other segments of the College community on the basis of race, color, sex, national or ethnic origin, age, religion, disability, marital or family status, veteran status, political ideas, sexual orientation, gender identity, or pregnancy, childbirth, or related medical conditions, including, but not limited to, lactation, in the educational programs and activities which it operates, and the college is prohibited from discrimination in such manner by applicable laws. Practices and requirements for nondiscrimination extend to the enrollment of students in programs and activities of the College and employment by the College.

All inquiries regarding the federal laws as they relate to discrimination on the basis of sex may be directed to Tamatha Sells, Title IX Coordinator, Horry-Georgetown Technical College, Building 1100C, Room 107B, 2050 Hwy 501 E, PO Box 261966, Conway, SC 29528-6066, 843-349-5218, tamatha.sells@hgtc.edu or to the US Department of Education Office of Civil Rights. (Telephone: 800-421-3481/Email: OCR@ed.gov).

Other employee and applicant inquiries concerning the federal laws and their application to the College may be directed to Jacquelyne Snyder, Vice President, Human Resources and Employee Relations & 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.

Other 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, Section 504 & Title II Coordinator Horry-Georgetown Technical College, Building 1100C, Room 107A, 2050 Hwy 501 E, PO Box 261966, Conway, SC 29528-6066, 843-349-5228, melissa.batten@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 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).

For more information, contact Tamatha Sells, Title IX Coordinator, Conway Campus, Building 1100C, Room 107B, 843-349-5218, tamatha.sells@hgtc.edu.

PREGNANY 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**](#).