

Introduction to the Course

This course is specifically designed for experienced phlebotomists, who have a minimum of 1040 hours (6 months full-time) of experience. It contains 21 modules, which will each take you approximately one hour each to complete. This one-hour timeframe does not include the reading assignments in the textbook, Phlebotomy Essentials.

As a working phlebotomist, people's health and lives depend on you doing your job to the best of your ability. Our healthcare system is built on the professional certification of healthcare providers. This course will assist you in qualifying for the most stringent state standards that we have seen. When you finish this course, you will have satisfied the requirements of 20 hours of classroom time, and you will be well prepared for any of the California DHS approved national exams.

The 21 course modules in Advanced Phlebotomy include all you will need to know to pass the final course exam. Some of the modules are harder than others, but they are all important. We suggest completing the modules in order.

You won't be eligible to take the final exam for the course until you complete all 21 modules. As you pass each module exam, the menu will let you know, by checking off the corresponding button. You can always go back for more study and practice on the module exams, but you only need to pass once.

Course goals:

- Provide an overall review of the most current phlebotomy products, practices and procedures with an emphasis on the most important competencies.
- Provide a large variety of application exercises, quizzes, and exams to give plenty of practice taking tests and to ensure successful completion of a California DHS approved National Phlebotomy Exam.

Method of Study

Since you are an experienced phlebotomist, you are the best judge of your strengths and weaknesses. You know your preferred method of study and your learning style. You may do the modules in any order, but the modules have been intentionally designed with a suggested order for specific reasons:

- Beginning modules (1-7) cover the most familiar topics to give you time to familiarize yourself with online methods of review and instruction.
- Middle modules (8-13) are a little more difficult because of the more technical knowledge and memorization required.

- Ending modules (14-21) may be the most difficult depending on your type of phlebotomy experience and areas of responsibility. These modules review the reasons for different types of specimen collection containers, difficult draws, patient complications, arterial draws, unusual tests, specimen processing, non blood specimens, quality assurance, legal issues, etc.

Module components:

- Reading Assignment
- Objectives
- Overview
- Notes and Exercises
- Resources
- Module Exam

The modules are very straightforward and should be approached in the following way:

Reading Assignment. Read the chapter and pages in the textbook, Phlebotomy Essentials, associated with that module. If you don't have access to this book, you will need to purchase a book before starting the course. A convenient link to **Amazon.com** is on the opening page of the course.

The Syllabus also lists the reading assignments for each module. Depending on your level of current knowledge and experience, the time commitment needed for reading each module topic will vary. Some chapters, which contain more technical knowledge and memorization, will require more careful reading and study. Others will only need to be skimmed for an overview of the topic.

For instance, the module on Phlebotomy Equipment should be fairly easy, as you use this equipment every day. The module on the Circulatory System will be more difficult, since it requires memorization of the structures of the heart and how blood flows through it.

To increase the flexibility of this course, read the textbook at times when you will not be using the computer. The computer will not be with you during slow times at work, during your break times, during your times standing in line at the grocery store, nor during times when you are at a child's sports event. It is easy to have the textbook with you whenever you have a few extra minutes in your day.

Objectives. Read the objectives of the module to familiarize yourself with the topics to be covered in each module. A comprehensive list of objectives for all the modules also appears in the course syllabus. Please note that the modules and topics covered will not always follow the exact order of the

textbook. If the objectives for a module seem very easy and familiar to you, then you might want to do a self-evaluation.

On a separate sheet of paper list everything that you know about each of the objectives. Then, write down 1-3 specific questions that you would ask about each of the objectives. This is a very useful exercise if English is not your first language, and it will help you associate topics with their respective questions. Then evaluate your knowledge and be honest about your strengths and weaknesses! Do the reading assignment and see if your knowledge of the objectives has increased.

Overview. Read the course overview, which provides an engaging discussion about each module's topic, the practical application of each topic, and the most difficult topics in the module.

Notes and Exercises. The notes and exercises that are linked to each of the items listed in the content outline, at the beginning of each "*Notes and Exercises*" section, are the core of each module. They provide essential information; they summarize the information from your other readings; and they reinforce what you have learned via interactive exercises, illustrations, examples, case studies, quizzes and more.

Many of us learn concepts by application. This is especially important for kinesthetic learners who need to do something with what is being learned. These exercises are designed to help you use the information that you have just read and to assist you in testing your competency with the material presented. Some exercises will not let you continue until you have answered all the questions. Some modules will start with an application activity to assist you in evaluating your knowledge of the topics in the module before the topics are reviewed.

Resources. One or more topics in a module may be of particular interest to you. Perhaps it is a controversial topic such as whether to draw from the feet of patients. The resources section provides Internet links to current information on phlebotomy regulations, cutting edge medical data, safety facts, and additional information on virtually every topic in every module in the phlebotomy course. These resources are optional and are not required for passing the module test. If you are on a tight schedule, skip them. If you have time and desire for exploration, then enjoy!

Module Exam. Your last assignment in each module is to take the timed module exam. Each module exam consists of 20 questions, from a pool of module questions, randomly chosen by the computer for each learner. You will have 15 minutes to complete each module exam. The timing is done to prepare you for taking a timed National Phlebotomy Exam. Your goal is to get a 75% or higher on each Module Exam. If you wish to retake an exam for a module, you may do so.

Course final exam. There is no requirement for you to pass the preceding module before attempting another module. However, you must pass the Final Exam with a 75% before you will be issued a training certificate for completion of this Online Phlebotomy Course. The final exam consists of 100 questions, from a pool of questions, randomly chosen by the computer for each learner. Set aside 90 minutes to complete the final exam. Timing the final exam is important because it prepares you for taking a timed National Phlebotomy Exam.

Test taking hints.

- Read the question carefully. Be alert for key words that change the meaning of the question, such as “always, not, most often and never.”
- Scan the answers first to determine the commonality.
- Multiple-choice questions generally follow a pattern. This pattern is two answers that don't fit, one answer that is close and one answer that is correct.
- You may be out of practice with reading technical material and need to practice reading and comprehension. Do as many practice exams as possible.
- If you find that you are having a difficult time with remembering something, make flash cards, crib sheets, spreadsheets, flowcharts or some other study material that will help you remember. Often the act of writing the material down in your own method of note taking will be the best way to memorize.
- Don't just study the material to pass the test, know it! Study as though you are going to have to teach it to someone. Discuss it with your coworkers and drill each other. Learn the material to use it and to make your phlebotomy skills better.
- For the National Exams, answer the questions you know first. Do not spend excessive time on those you do not know. If you don't know, you can make a more educated guess at the end. For the National Exams,

both those on paper and those online, will allow you to mark a question and return to review it at the end. You may also find another question later in the test that gives you the answer to the question you did not know. Don't waste all your time on one difficult question. Make certain you have answered ALL the questions.

Course completion certificate

Complete the course and the final exam with a 75% score or higher and the link to your online course completion certificate will be immediately available. The course server prints your name on the certificate based on the information in your online course server profile. So make sure it is accurate. For your security, your system control identification (email address and system control number) prints at the bottom of your certificate insuring you are the only authorized course certificate recipient. Please note, the course certificate will be your only proof of successful course completion, and it must be included in your application to the California DHS for CPT Certification.

[Course Syllabus](#)

Note: We strongly suggest you print the syllabus and the course introduction you are now reading before beginning the first module.



1) Historical Perspective & Roles of Phlebotomists

Reading Assignment:

 Chapter 1: 3 - 11




2) Health Care Settings

Reading Assignment:

 Chapter 1: 18 - 38
 Appendix C: A12 - 22

3) Clerical Duties

Reading Assignment:

 Chapter 1: 19
 Chapter 8: 256 - 271
 Chapter 14: 498 - 508

4) Customer Service

Reading Assignment:

 Chapter 1: 13 - 19

Objectives:

1. Define the term phlebotomy.
2. List the reasons for blood collection.
3. List the duties and responsibilities of a phlebotomist.
4. Describe personal characteristics that are important in a phlebotomist.
5. List the professional agencies that provide phlebotomy certification.
6. Discuss the case that lead to the California State Certification Requirements for phlebotomy.
7. Define the key terms related to the ability to obtain California State Certification.
8. Differentiate the requirements for a Limited Phlebotomy Technician, for a Certified Phlebotomy Technician I, and for a Certified Phlebotomy Technician II.
9. Discuss what continuing education is required of a phlebotomist in California.

Objectives:







1. Demonstrate knowledge of the health care delivery system and associated medical terminology.
2. Identify the health care providers in hospitals and clinics and their major functions in which the phlebotomist may interact.
3. Describe the organizational structure and functions of the clinical & anatomical laboratory department.
4. Discuss the roles of the clinical laboratory personnel and their qualifications for these professional positions.
5. List the types of laboratory procedures performed in the various sections of the laboratory.












Objectives:









1. Define basic terms associated with computerization in Health Care.
2. List the different types of information management systems and computer functions used by the Laboratory to obtain and report patient related information.
3. List the typical reasons for telephone use by laboratory staff and the characteristics of good telephone techniques.
4. Describe the test request process, identify the types of requisitions, and list the information required on a requisition.
5. List the different types of test collection and testing priorities as it relates to patient status and organize a work load according to these priorities.
6. Describe how to verify fasting and other patient status requirements, and what to do when these requirements have not been met.
7. List the methods used to confirm the patient's identity for a variety of situations and patient age groups.
8. Explain how the phlebotomist should handle ID discrepancies and the procedure for a "missing" ID band.
9. List the items required on specimen collection containers and requisitions.









Objectives:

1. Identify the unique factors in healthcare and the laboratory environment which present customer service challenges.
2. Describe the behaviors and characteristics of professionalism as it applies to phlebotomy.
3. Apply basic concepts of communication, interpersonal relations, and stress management to phlebotomy.
4. Discuss effective verbal and nonverbal communication appropriate in the workplace.
5. List the characteristics of active listening.
6. List the types of diversity present among laboratory customers.
7. List the methods used to confirm the patient's identity for a variety of situations and patient age groups.
8. Differentiate between internal and external laboratory customers.
9. List appropriate ways to resolve conflict situations.

<p>5) Medical Terminology</p> <p>Reading Assignment:</p> <p> Chapter 4:125 - 136 (all)</p> <p> Chapter 5:137 - 144</p>	<p>6) Venipuncture Equipment</p> <p>Reading Assignment:</p> <p> Chapter 7: 217 - 247</p> <p> Monograph Tube Guide, book's last 2 pgs</p>	<p>7) Body Systems</p> <p>Reading Assignment:</p> <p> Chapter 5: 144 - 176</p>	<p>8) The Circulatory System</p> <p>Reading Assignment:</p> <p> Chapter 6: 177 - 198</p>
<p>Objectives:</p> <ol style="list-style-type: none"> 1. List the common medical word roots, prefixes, and suffixes, and state their definition. 2. List the abbreviations commonly associated with laboratory tests. 3. Relate body positions, directional terms, and planes of the body to phlebotomy. 4. List the body cavities and the organs associated with each cavity. 5. Define homeostasis and the two different types of metabolism. 6. Describe the organization of cells in the human body to form body systems 	<p>Objectives:</p> <ol style="list-style-type: none"> 1. List and describe the use of various types of equipment needed for venipuncture blood collection. 2. Describe when to wear gloves and when they should be changed. 3. Compare and contrast the various types of antiseptics and disinfectants and describe their uses. 4. Discuss the various types of wastes generated by phlebotomy and list their proper waste containers. 5. Identify and describe the various types of tourniquets, the reason for their use, proper placement and maximum time allowed. 6. Describe the various types of needles, their parts, sizing by gauge and length, common use, and safety features. 7. List the three types of systems use for venipuncture and explain the advantages and disadvantages of each system. 8. Describe the color coding used to quickly identify the presence or absence of additives 	<p>Objectives:</p> <ol style="list-style-type: none"> 1. List the eleven major body systems 2. Understand the function of the different body systems 3. Be able to identify the major organs in each system 4. Demonstrate awareness of disorders common to the body systems. 5. Know which laboratory tests are associated with the different body systems 	<p>Objectives:</p> <ol style="list-style-type: none"> 1. Identify the layers and primary structures of the heart. 2. Demonstrate a basic knowledge of the function of the circulatory system and related terms. 3. Identify the two main divisions of the vascular structures / system, the pulmonary and systemic circulations, and describe the flow of blood through these systems. 4. Differentiate the physical characteristics of veins, arteries and tendons. 5. Identify the veins of the arms, hands, legs, and feet on which phlebotomy is performed and describe the suitability of each for venipuncture. 6. List common disorders of the Circulatory System. 7. List tests commonly used to diagnose patients experiencing chest pain.

<p>9) Blood Components</p> <p>Reading Assignment:</p> <p> Chapter 1: 27 - 32  Chapter 6: 198 - 214  Chapter 7: 242 - 252,  Chapter 11: 429 - 433  Appendix C: A12 - 22</p>	<p>10) Venipuncture</p> <p>Reading Assignment:</p> <p> Chapter 7: 237 - 241, & 248 - 252  Chapter 8: 256 - 323 (all)  Chapter 9: 324 - 334, & 352 - 356</p>	<p>11) Skin Puncture</p> <p>Reading Assignment:</p> <p> Chapter 10: 360 - 398 (all)</p>	<p>12) Infection Control</p> <p>Reading Assignment:</p> <p> Chapter 3: 70 - 101  Chapter 8: 271, & 279 - 280</p>
<p>Objectives:</p> <ol style="list-style-type: none"> 1. List the major components of blood and describe the function of the three cells in blood. 2. List the 5 types of white blood cells reported on a WBC differential. 3. Differentiate between serum and plasma. 4. Describe the categories of tube additives used in blood collection, list the various additives in each category, and describe how each additive works 5. List the most common laboratory tests and testing sections commonly associated with the different tube additives. 6. List the most common Hematology tests and the required specimen tube. 7. List the tests / parameters which are reported on a Complete Blood Count. 8. Define hemostasis and describe basic coagulation and fibrinolysis processes. 9. List the most common Coagulation tests and the required specimen tube. 10. Describe the type of additional patient information needed for Coagulation tests. 	<p>Objectives:</p> <ol style="list-style-type: none"> 1. Describe how to prepare patients for testing, how to answer inquiries concerning tests, and what to do if a patient objects to a test. 2. Describe the basal state and list the physiologic patient variables which influence test results. 3. List methods used to locate veins that are not prominent. 4. List the effects of tourniquet, pumping fist, and heating on venipuncture. 5. Describe proper needle insertion and withdrawal techniques including direction, angle, depth and aspiration for venipuncture. 6. List the correct order of steps for performing the venipuncture procedure with an evacuated tube system, the syringe system, and the butterfly system. 7. List common causes for the failure to obtain blood. 8. Describe the principle behind, and list the order of draw for the evacuated tube system and the syringe system. 9. Describe post puncture care of the patient. 	<p>Objectives:</p> <ol style="list-style-type: none"> 1. Describe the various features needed on skin puncture lancets and micro collection devices. 2. Discuss the purpose and methodology for puncture site warming. 3. List the indications / advantages for performing Skin Punctures in pediatric and adult populations 4. Identify laboratory tests that have a different reference values when collected by skin puncture. 5. Identify tests that cannot be performed by skin puncture. 6. List acceptable and unacceptable sites for Skin Puncture on adult and pediatric patients. 7. Describe the correct order of steps in the performance of a Skin Puncture. 8. Describe the proper lancet insertion depth for Skin Punctures, and list possible complications if the punctures are done deeper than recommended. 9. Describe the labeling of micro collection specimens. 10. List the order of draw for skin puncture specimens. 11. List the tests most commonly done on skin puncture specimens. 	<p>Objectives:</p> <ol style="list-style-type: none"> 1. List the components of the chain of infection and the safety precautions that break the chain. 2. Identify and discuss the modes of transmission for infectious diseases and the methods for prevention. 3. Define and discuss the term "nosocomial infection." 4. Identify and properly label Biohazardous specimens. 5. Discuss key points of the Bloodborne Pathogens Standard, including changes required by the Needlestick Safety and Prevention Act. 6. List the personal protective equipment required for phlebotomists and describe their function. 7. List the procedural order for proper infection control techniques, such as hand-washing, gowning, gloving, masking, and double-bagging. 8. List the situational uses for the OSHA Standard & Transmission Precautions. 9. List other inpatient informational signage. 10. Differentiate between sterile and aseptic techniques.

<p>13) Lab Safety</p> <p>Reading Assignment:</p> <p> Chapter 3: 101 - 122</p>	<p>14) Complications</p> <p>Reading Assignment:</p> <p> Chapter 9: 324 - 359 (all)</p> <p> Chapter 8: 308 - 319</p> <p> Chapter 3: 111, & 114 - 115</p> <p> Appendix D: A29 - 30</p>	<p>15) Tests & Requirements</p> <p>Reading Assignment:</p> <p> Chapter 11: 401 - 452 (all)</p> <p> Chapter 6: 204 - 206</p>	<p>16) Arterial Specimens</p> <p>Reading Assignment:</p> <p> Chapter 12: 453 - 477 (all)</p>
<p>Objectives:</p> <ol style="list-style-type: none"> 1. Discuss the biohazard, sharps, chemical, fire, electrical and radiation hazards that a phlebotomist might encounter, and identify the safety procedures associated with each hazard. 2. Identify the symbols for: Radiation Hazard, Sharps Hazard, Chemical Hazard, Biohazard, Fire Hazard, Electrical Hazard, Radiation Hazard, and Physical Hazard. 3. Discuss the purpose of a Chemical Hygiene Plan. 4. Discuss the purpose and use of Material Safety Data Sheets. 5. Correlate the classifications of fires to the types of fire extinguishers. 6. List the common work related injuries in the laboratory setting, including latex allergies, and their prevention techniques. 7. List the causes of stress in the work environment and discuss the coping skills and techniques used to deal with stress in the work environment. 	<p>Objectives:</p> <ol style="list-style-type: none"> 1. Describe how to answer inquiries concerning tests, and the protocol for handling a patient's refusal to have a blood sample collected. 2. Identify and describe the procedural errors that lead to the inability to obtain a blood specimen, and explain how to handle them. 3. Describe measures used to ensure patient safety in various patient settings, i.e., inpatient, outpatient, pediatrics, emergency situations, etc. 4. List the site selection areas to avoid. 5. Identify vascular access devices managed by nurses. 6. Describe signs and symptoms of physical problems (syncope, nausea, vomiting, convulsions, allergic reaction, hematoma, cardiac arrest, etc.) in the patient that may occur during phlebotomy and the appropriate phlebotomist response. 7. Describe the basal state and list the physiologic variables of the patient that influence this state. 8. Describe unique requirements associated with drawing special populations including geriatric, pediatric, and long-term care patients. 9. List the symptoms of shock, cardiac arrest, and external hemorrhage and their appropriate first aid procedures. 	<p>Objectives:</p> <ol style="list-style-type: none"> 1. Identify the most common tests performed in the chemistry section of the laboratory and the most common reasons for performing these tests. 2. State the requirements for fasting specimens and name three tests that require fasting specimens. 3. Explain the procedure for a 2 hour postprandial glucose test and glucose tolerance tests. 4. List the different reasons for performing Toxicology tests and differentiate between trough and peak drug levels. 5. Describe "chain of custody" requirements for legal specimens and list the tests frequently requested for forensic studies. 6. Describe the additional identification procedures required for Transfusion testing specimens and identify medical consequences if patients receive the wrong unit of blood. 7. Discuss the aseptic techniques and timing sequence for the collection of blood cultures, and the reasons for multiple collections. 8. List the most common point-of-care tests (POCT) and the reasons for performing these tests. 	<p>Objectives:</p> <ol style="list-style-type: none"> 1. State the primary reason for performing an arterial puncture procedure. 2. Identify the sites that can be used for arterial puncture, the criteria used for the selection of the site, and the advantages and disadvantages of each site. 3. List the additional equipment and supplies needed for arterial puncture. 4. Describe patient assessment and preparation procedures. 5. Explain the performance of the Allen test, its purpose, define what constitutes a positive or negative result, and give the procedure to follow for either result. 6. List the correct order of steps in performing arterial blood gas collection on both an artery and a capillary site. 7. List complications associated with arterial puncture, identify factors that may affect the integrity of the blood gas sample, and describe the criteria for sample rejection. 8. Identify how heparin prevents blood from clotting. 9. Evaluate the advantages and disadvantages of using liquid and lyophilized heparin for blood gas testing.

<p>17) Specimen Processing</p> <p>Reading Assignment:</p> <p> Chapter 14: 508 - 525  Appendix D: A23 - 29</p>	<p>18) Non-Blood Requirements</p> <p>Reading Assignment:</p> <p> Chapter 13: 478 - 497</p>	<p>19) Federal Regulations</p> <p>Reading Assignment:</p> <p> Chapter 1: 10 - 13  Chapter 2: 42 - 45</p>	<p>20) Quality Assurance</p> <p>Reading Assignment:</p> <p> Chapter 2: 46 - 58  Chapter 9: 347 - 352  Chapter 14: 514 - 518</p>
<p>Objectives:</p> <ol style="list-style-type: none"> 1. Describe the phlebotomist's role in collecting and/or transporting specimens to the laboratory. 2. List the general criteria for suitability of a specimen for analysis, and the reasons for specimen rejection or recollection. 3. List common tests that must be chilled immediately after collection. 4. List common tests that are affected by exposure to light. 5. Describe the potential clerical and technical errors that may occur during specimen processing. 6. Discuss safety rules for specimen processing and the safe operation of a centrifuge. 7. Discuss DOT regulations for the transport of blood and blood containing body fluids. 8. Identify basic metric units and prefixes used in the laboratory. 9. Read both Fahrenheit and Celsius temperature charts. 10. Define military time and convert from traditional 12-hour clock to 24-hour clock. 	<p>Objectives:</p> <ol style="list-style-type: none"> 1. Match the different types of non blood body fluids with their description. 2. List the appropriate instructions for patients in the proper collection and preservation for various samples, including, urine, sputum, and stools. 3. Select correct patient collection containers for the various non blood samples. 4. Contrast the different types of urine specimen collections. 5. List the most common tests performed on urine, stool, semen, CSF, and other body fluids. 6. Differentiate between tests done on the Physical Exam, Chemical Exam, Microscopic Exam, and Microbiology Examination of Urine. 7. List common reasons for performing a Urine Drug Test. 8. List the common problems associated with Urine Pregnancy testing. 9. Contrast the different types of semen collections. 	<p>Objectives:</p> <ol style="list-style-type: none"> 1. Describe the CLIA '88 Regulations and describe their impact on laboratories. 2. Discuss the role of JCAHO, CAP, NCCLS, AABB, DHS, and NAACLS in the regulation and accreditation of laboratories. 3. Identify the different types of Lab testing complexity as defined by CLIA. 4. Describe the sanctions or penalties imposed for non-compliance with CLIA regulations. 5. Describe the personnel standards for laboratory testing personnel as defined by CLIA. 6. Identify the different categories of laboratory documentation. 7. Identify common deficiencies found in the phlebotomy area during laboratory inspections. 	<p>Objectives:</p> <ol style="list-style-type: none"> 1. Define the terms and abbreviations associated with quality assurance in phlebotomy. 2. List the types of records that can be used to monitor the quality of specimen ordering, collection, testing and turn-around-time. 3. List the general criteria for suitability of a specimen for analysis, and reasons for specimen rejection or recollection. 4. Recognize and describe corrective actions to take, with problems in test requisitions, specimen transport and processing. 5. Identify potential pre-analytical errors that may occur during specimen collection, labeling, transporting, and processing. 6. State possible errors that may occur through the use of outdated or defective vacuum tubes. 7. List the tests affected by prolonged tourniquet application. 8. List tests that can be affected by improper site cleansing.

21) Legal & Ethical Issues

Reading Assignment:

 Chapter 1: 11 - 13

 Chapter 2: 59 - 69

Objectives:

1. Define the different terms used in the medicolegal aspect for phlebotomy.
 2. Describe the various types of patient consent.
 3. List policies and protocol designed to avoid medicolegal problems.
 4. Discuss the major points of the American Hospital Association's Patient's Bill of Rights and Health Insurance Portability Act (HIPPA) and the phlebotomist's responsibility for maintaining confidentiality of privileged information on individuals.
 5. Describe when and how to complete Incident reports.
 6. Give examples of how phlebotomists could be involved in medical malpractice law suits.
 7. List ways to avoid lawsuits.
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