

PHARMACY TECHNOLOGY

ACTIVITY/COURSE CODE 5570

COURSE DESCRIPTION:

Pharmacy Technology is a program designed to train pharmacy technicians for success in this career. At the high school level, students are exposed to pharmacy careers and benefit from pharmacology, math, and science standards included in this course. Teachers are encouraged to arrange student work-based learning opportunities in pharmacies for practical experience. The American Council for Pharmacy Education accredits the program through the Texas Pharmacy Association. The cost of the program is \$299 per student per year.

PassAssured has two versions of its pharmacy technician training program: Student Version Plus (150 hours) and Student Version XL (240 hours). Both programs have enhanced curriculums that include additional units on the top 200 drugs, Roman numerals, abbreviations, sig (instructions to patients), and medication matching. The difference in the two versions is the XL version has a testing component on the new units and the Plus does not. PassAssured programs prepare students for pharmacy technician and other health careers plus provide an opportunity for national credentials. For state certified pharmacy technician requirements in South Carolina, visit

<http://www.ilor.state.sc.us/pol/pharmacy/PFORMS/Pharmacy%20Technician%20State%20Certification%20Requirements.pdf>

PassAssured delivers either program totally online or by CD-ROM. Applications offer easy-to-follow audio, video, and graphic presentations. The program prepares students to sit for the Pharmacy Technician Certification Board (PTCB) examination or the examination offered by the National Healthcare Association (ExCPT).

The interactive multimedia training uses Internet access, online testing, scoring, and monitoring. Teachers can monitor students' progress via Internet. Students are able to work at their own pace. Teachers can determine when exams are taken. The course may be taught as embedded content in Health Science 2, as a stand-alone course, or as an independent study. More information can be found at

www.passassured.com

GENERAL REQUIREMENTS:

This course is recommended for students in grade 12 who are scheduled to graduate at the conclusion of the year in which training is begun.

RECOMMENDED PREREQUISITE (S):

Introduction to Health Science, Health Science 1, Anatomy & Physiology, Biology 2, or teacher recommendation

Credit: **1 or 2 unit(s)**

EDUCATOR'S LESSON PLAN 240 hours

Pharmacy Technician Training Program

Student Version

Revision 1.9

Orientation

Orientation introduces the student to basic terms and definitions. An introduction to the Pharmacy Technician Certification Board and the exam are given. PTCB re-certification details are provided with easy to follow steps for maintaining certification. Each sub-section is supplemented with a Windows help file accessible at any time from the audio drive.

Section Level -Student Activity

The student will complete each subsection of the Orientation section. This includes: Certification, Licensure, and Registration.*** The PTCB and the Certification Exam, & Re-Certification.[I don't know what you wanted to say...but not a complete sentence.]

Section Level – Assessment-

Student will successfully complete the three sub-section quizzes and will score 75% or above on the Orientation section exam. Student will utilize PassAssured's Student Learning Center for testing.

Section Level - Time Frame

There are 3 hours of instructional and class study time, and 30 minutes designated for the section test time. **Total classroom time: 3.5 hours**

Sub-Sections

Certification, Licensure, Registration

This introduction section introduces basic definitions the student will need to know. The definitions of these basic terms are required.

Sub-Section Level – Student Activity

Student will complete "Certification, Licensure, Registration" study presentation.

Sub-Section Level – Assessment

Student will successfully complete "Certification, Licensure, Registration" pop quiz.

Sub-Section Level – Time Frame

There are 45 minutes of class study time and 15 minutes for a pop quiz. **Total: 1 hour**

The PTCB and the Certification Exam

The PTCB and the Certification Exam consist of discussions regarding its founding members, as well as its purpose. The PTCB certification examination structure, time allowed for exam, and broad topic content are reviewed.

Sub-Section Level – Student Activity

Student will complete "The PTCB and the Certification Exam" study presentation.

Sub-Section Level – Assessment

Student will successfully complete "The PTCB and the Certification Exam" pop quiz.

Sub-Section Level – Time Frame



There are approximately 45 minutes of class study time and 15 minutes for a pop quiz. **Total: 1 hour**

Re-Certification

Re-Certification details the requirements and process needed to maintain certification. Contact information and requirements for re-certification are provided. Technicians must meet certain requirements to maintain their certification.

Sub-Section Level – Student Activity

Student will complete “Re-Certification” study presentation.

Sub-Section Level – Assessment

Student will successfully complete “Re-Certification” pop quiz.

Sub-Section Level – Time Frame

There are approximately 45 minutes of class time and 15 minutes for a pop quiz. **Total: 1 hour**

Orientation Section Test: 0.5 hour

Federal Law

Federal law focuses on legislation that affects the pharmacy industry. From Food and Drug Administration laws to the Poison Prevention Act, federal laws that have guided pharmacy are presented. The method used in determining a valid DEA# is studied. The section does not cover state and local laws. (State and local laws vary greatly; thus, providing this material in this product is not practical.) The PTCB exam only covers federal law.

Section Level -Student Activity

The student will complete six subsections of the Federal law section. This includes: Pharmacy Law and Time, Federal Law and Drugs', Rules for Controlled Substance Prescriptions, DEA Number Verification, Schedule II Drugs, and Investigational Drugs'

Section Level - Assessment

Student will successfully complete the six sub-section quizzes and will score 75% or above on the Federal Law section exam. Student will utilize PassAssured's Student Learning Center for testing.

Section Level - Time Frame

This consists of 9 hours of instructional and class study time, as well as 1 hour of section test time. **Total classroom time: 10 hours**

Sub-Sections

Pharmacy Law and Time

Pharmacy Law and Time discusses different laws and legislation that affect the pharmacy industry, when they were enacted and their importance.

Sub-Section Level – Student Activity

Student will complete “Pharmacy Law and Time” study presentation.



Sub-Section Level – Assessment

Student will successfully complete the “Pharmacy Law and Time” pop quiz.

Sub-Section Level – Time Frame

There should be approximately 1 hour and 15 minutes of instructional and class time, as well as 15 minutes for a pop quiz. **Total: 1.5 hours**

Federal Law and Drugs

Federal Law and Drugs discuss the importance of the Controlled Substance Act of 1970. This section shows how this act regulated the manufacturing, distribution and dispensing of controlled substances based on abuse potential.

Sub-Section Level – Student Activity

Student will complete “Federal Law and Drugs” study presentation.

Sub-Section Level – Assessment

Student will successfully complete “Federal Law and Drugs” pop quiz.

Sub-Section Level – Time Frame

There should be approximately 1 hour and 15 minutes of instructional and class time and 15 minutes for a pop quiz. **Total: 1.5 hours**

Rules for Controlled Substance Prescriptions

This section outlines filing procedures, maintaining records according to state and federal laws, and drug substitution requirements.

Sub-Section Level – Student Activity

Student will complete “Rules for Controlled Substance Prescriptions” study presentation.

Sub-Section Level – Assessment

Student will successfully complete “Rules for Controlled Substance Prescriptions” pop quiz.

Sub-Section Level – Time Frame

There should be approximately 1 hour 15 minutes of instructional and class study time, as well as 15 minutes for a pop quiz. **Total: 1.5 hours**

DEA Number Verification

The DEA Number Verification illustrates how a doctor’s DEA Number is determined and its purpose. An interactive display gives the student instructions on how to determine if a DEA Number is valid.

Sub-Section Level – Student Activity

Student will complete “DEA Number Verification” study presentation.

Sub-Section Level – Assessment

Student will successfully complete “DEA Number Verification” pop quiz.

Sub-Section Level – Time Frame



There should be approximately 1 hour 15 minutes of instructional and class study, time and the instructor should allow 15 minutes for a pop quiz. **Total: 1.5 hours**

Schedule II Drugs

This section discusses storage requirements for Schedule II Drugs.

Sub-Section Level – Student Activity

Student will complete “*Schedule II Drugs*” study presentation.

Sub-Section Level – Assessment

Student will successfully complete “*Schedule II Drugs*” pop quiz.

Sub-Section Level – Time Frame

There are approximately 1 hour 15 minutes of instructional and class study time, and 15 minutes designated for a pop quiz. **Total: 1.5 hours**

Investigational Drugs

This section defines the four phases of Investigational Drugs.

Sub-Section Level – Student Activity

Student will complete “*Investigational Drugs*” study presentation.

Sub-Section Level – Assessment

Student will successfully complete “*Investigational Drugs Prescriptions*” pop quiz.

Sub-Section Level – Time Frame

There should be approximately 1 hour 15 minutes of instructional and class study time, as well as 15 minutes for a pop quiz. **Total: 1.5 hours**

Federal Law section test: 1 hour

Medication Review

Medication Review introduces the pharmacy technician to pharmacology. The study guide focuses on maintaining the proper instructional level suited for a pharmacy technician. The varied types of drugs, prescription types, medication dosage forms, and medical devices are discussed. Drug interaction on the human body's major systems, such as the central nervous system, peripheral nervous system, cardiovascular system and other systems of the human body is introduced. The study concentrates on commonly used drug classes that would be of most concern for the pharmacy technician.

Section Level -Student Activity

The student will complete ten sub-sections of the Calculations section. This includes: Doses and Terminology, Central Nervous System, Peripheral Nervous System, Hormones, Cardiovascular Drugs, Renal Drugs, Anti-Infectant Drugs, Cancer Chemotherapy Drugs, Blood and Blood Formation, and vitamins.



Section Level - Assessment

Student will successfully complete the ten sub-section quizzes and will score 75% or above on the Medication Review section exam. Student will utilize PassAssured's Student Learning Center for testing.

Section Level - Time Frame

There are 53.5 hours of instructional and class time, and 1.5 hours designated for a Section Test. **Total classroom time: 55 hours.**

Sub-Sections

Doses and Terminology

This section discusses the different terms used in pharmacology. It includes an in-depth review of the different types of medication dosages, such as, tablets, caplets, liquids, creams, emulsions, etc. It also describes the different types of administration devices for certain medications and dosages.

Sub-Section Level – Student Activity

Student will complete “Doses and Terminology” study presentation.

Sub-Section Level – Assessment

Student will successfully complete “Doses and Terminology” pop quiz.

Sub-Section Level – Time Frame

There should be 4.5 hours of instructional and class study time, as well as 0.5 hours designated for a pop quiz. **Total: 5 hours**

Central Nervous System

A medication review of drugs which affect the central nervous system is presented. Drug interactions and the mechanism of action for CNS drugs are reviewed. Components of the central nervous system are briefly discussed.

Sub-Section Level – Student Activity

Student will complete “Central Nervous System” study presentation.

Sub-Section Level – Assessment

Student will successfully complete “Central Nervous System” pop quiz.

Sub-Section Level – Time Frame

There are 5 hours of instructional and class study time, as well as 0.5 hours for a pop quiz. **Total: 5.5 hours**

Peripheral Nervous System

A medication review of drugs which affect the peripheral nervous system is presented. Drug interactions, mechanism of action and manufacturer named drugs are reviewed. Components of the peripheral nervous system are briefly reviewed.

Sub-Section Level – Student Activity

Student will complete “Peripheral Nervous System” study presentation.

Sub-Section Level – Assessment



Student will successfully complete “*Peripheral Nervous System*” pop quiz.

Sub-Section Level – Time Frame

There are 5 hours of instructional and class study time and 0.5 hours for a pop quiz. **Total: 5.5 hours.**

Hormones

A medication review of drugs classified as hormones. This agent significantly influences emotions and a person’s quality of life. Drug interactions, mechanism of action and manufacturer named drugs are reviewed. Reviews of various hormonal drugs and uses of each are reviewed. Local and systemic hormone uses are studied. All of the male and female hormones are discussed.

Sub-Section Level – Student Activity

Student will complete “*Hormones*” study presentation.

Sub-Section Level – Assessment

Students will successfully complete “*Hormones*” pop quiz.

Sub-Section Level – Time Frame

This includes 5 hours of instructional and class study time, as well as 0.5 hours for a pop quiz. **Total: 5.5 hours.**

Cardiovascular Drugs

A medication review of drugs that affect the cardiovascular system are presented. Basic definitions of terms used in cardiovascular treatment are studied. Drug interactions, mechanism of action and manufacturer named drugs are reviewed. Components of the cardiovascular system are briefly studied. The student will study the differences between various drugs used to treat cardiovascular illnesses.

Sub-Section Level – Student Activity

Student will complete “*Cardiovascular Drugs*” study presentation.

Sub-Section Level – Assessment

Student will successfully complete “*Cardiovascular Drugs*” pop quiz.

Sub-Section Level – Time Frame

There are 5.5 hours instructional and class study time to be allowed, as well as 0.5 hours for a pop quiz. **Total: 6 hours**

Renal Drugs

A medication review of drugs which affect the renal system is displayed. A review of basic definitions referencing the renal system is discussed. Drug interactions, mechanism of action and manufacturer named drugs are reviewed. Components of the renal system are briefly reviewed.

Sub-Section Level – Student Activity

Student will complete “*Renal Drugs*” study presentation.

Sub-Section Level – Assessment

Student will successfully complete “*Renal Drugs Prescriptions*” pop quiz.



Sub-Section Level – Time Frame

There are 5 hours of instructional and class study time and 0.5 hours designated for a pop quiz. **Total 5.5 hours.**

Anti-Infectant Drugs

A medication review of drugs classified as anti-infectant drugs is presented to the student. Drug interactions, mechanism of action and manufacturer named drugs are reviewed. Anti-infectant drug classes and typical treatment regimes are discussed. Therapeutic classes used in the treatment of infections are reviewed.

Sub-Section Level – Student Activity

Student will complete “*Anti-Infectant Drugs*” study presentation.

Sub-Section Level – Assessment

Student will successfully complete “*Anti-Infectant Drugs*” pop quiz.

Sub-Section Level – Time Frame

There are 5 hours of instructional and class study time, as well as 0.5 hours for a pop quiz. **Total 5.5 hours.**

Cancer Chemotherapy Drugs

A medication review of drugs classified as chemotherapy drugs is presented. Drug interactions, mechanism of action and manufacturer named drugs are reviewed. Therapeutic classes used in the treatment of cancer are detailed. Personnel safety and safe handling procedures for these dangerous agents are reviewed.

Sub-Section Level – Student Activity

Student will complete “*Cancer Chemotherapy Drugs*” study presentation.

Sub-Section Level – Assessment

Student will successfully complete “*Cancer Chemotherapy Drugs*” pop quiz.

Sub-Section Level – Time Frame

There are 4.5 hours of instructional and class study time and 0.5 hours designated for a pop quiz. **Total 5 hours.**

Blood and Blood Formation

A medication review of blood and blood formation drugs is done. Drug interactions, mechanism of action and manufacturer named drugs are reviewed. Basic definition referencing to blood and blood formation abnormalities are given.

Sub-Section Level – Student Activity

Student will complete “*Blood and Blood Formation*” study presentation.

Sub-Section Level – Assessment

Student will successfully complete “*Blood and Blood Formation*” pop quiz.

Sub-Section Level – Time Frame

This consists of 4.5 hours of instructional and class study time and 0.5 hours for a pop quiz. **Total 5 hours.**

Vitamins



A medication review of vitamins is done. Drug interactions, mechanism of action and manufacturer named drugs are reviewed. Fat-soluble and water-soluble vitamins are discussed. A study acronym is illustrated to assist the student in remembering which vitamins are fat-soluble.

Sub-Section Level – Student Activity

Student will complete “Vitamins” study presentation.

Sub-Section Level – Assessment

Student will successfully complete “Vitamins” pop quiz.

Sub-Section Level – Time Frame

There are 4.5 hours of instructional and class study time, as well as 0.5 hours for a pop quiz. **Total 5 hours.**

Medical Review Section Test: 1.5 hrs

Aseptic Techniques

Aseptic Techniques gives the student a “birds’s eye” view of preparation procedures for parenteral products. Pictures taken during actual preparation of various sterile products are used to illustrate a particular topic. Laminar airflow and Horizontal airflow hoods are covered with pictures and diagrams. Devices used in the preparation of sterile products are illustrated. The study topic provides the basics of Aseptic Techniques with emphasis toward possible testing topics.

Section Level -Student Activity

The student will complete seven subsections of the Aseptic Technique section. This includes: Definitions, Syringes, Parenteral Techniques of Sterile Compounding, Solutions, Parenteral Antineoplastic agents, and Stability Considerations for Parenteral Products.

Section Level - Assessment

Student will successfully complete the seven sub-section quizzes and will score 75% or above on the Aseptic Technique section exam. Student will utilize PassAssured's Student Learning Center for testing.

Section Level - Time Frame

This requires 29 instructional hours and class study time, as well as 1 hour for the Section Test.

Total classroom time: 30 hours

Sub-Sections

Definitions

The definitions module explores basic terminology and environmental contamination concerns in performing aseptic techniques procedures. Laminar airflow hoods, air filtration systems and inspection requirements are highlighted. A review of vertical airflow hoods, or biological safety cabinets, is included and uses for each type of hood are given.

Sub-Section Level – Student Activity



Student will complete “Definitions” study presentation.

Sub-Section Level – Assessment

Student will successfully complete “Definitions” pop quiz.

Sub-Section Level – Time Frame

There are 3.5 hours of instructional and class study time, as well as 0.5 hours for a pop quiz. **Total: 4 hours.**

Syringes

The components of a syringe are illustrated and reviewed. Various types of syringes are graphically illustrated. The components of a needle assembly and how the size or gauge of a needle is determined are graphically illustrated.

Sub-Section Level – Student Activity

Student will complete “Syringes” study presentation.

Sub-Section Level – Assessment

Student will successfully complete “Syringes” pop quiz.

Sub-Section Level – Time Frame

There are 3.5 hours of instructional and class study time and 0.5 hours arranged for a pop quiz. **Total: 4 hours.**

Parenteral

A high level review of various injection types is reviewed. The uses of parenteral routes and the four most widely used parenteral routes are discussed. Intravenous injection types and widely used parenteral fluids are illustrated. The module prepares the student for review of sterile compounding.

Sub-Section Level – Student Activity

Student will complete “Parenteral” study presentation.

Sub-Section Level – Assessment

Student will successfully complete “Parenteral” pop quiz.

Sub-Section Level – Time Frame

There are 3.5 hours of instructional and class study time and 0.5 hours allowed for a pop quiz. **Total: 4 hours.**

Techniques of Sterile Compounding

A review of sterile compounding procedures provides a broad “overview” of skills needed to perform sterile compounding. Tips in avoiding contamination while using a Laminar airflow hood and various procedures that assure successful sterile product mixing are provided. Examples of filling a syringe, breaking an ampule, reconstituting a sterile powder, injecting liquids into a plastic IV bag, introducing liquids into a glass intravenous bottle, and many more needed aseptic techniques are reviewed.

Sub-Section Level – Student Activity

Student will complete “Techniques of Sterile Compounding” study presentation.



Sub-Section Level – Assessment

Student will successfully complete “Techniques of Sterile Compounding” pop quiz.

Sub-Section Level – Time Frame

There are 4 hours of instructional and class study time and 0.5 hours designated for a pop quiz. **Total: 4.5 hours.**

Solutions

The Solution section reviews the uses of various solutions used in pharmacy. Irrigation solutions, parenteral solutions, and TPNs are highlighted.

Sub-Section Level – Student Activity

Student will complete “Solutions” study presentation.

Sub-Section Level – Assessment

Student will successfully complete “Solutions” pop quiz.

Sub-Section Level – Time Frame

There are 3.5 hours of instructional and class study time, as well as 0.5 hours designated for a pop quiz. **Total: 4 hours.**

Parenteral Antineoplastic Agents

A general overview of preparation, and the safe handling of Antineoplastic agents used in the treatment of cancer is provided. Emphasis on personnel safety and safety procedures for handling these dangerous agents are discussed.

Sub-Section Level – Student Activity

Student will complete “Parenteral Antineoplastic Agents” study presentation.

Sub-Section Level – Assessment

Student will successfully complete “Parenteral Antineoplastic Agents ‘Prescriptions’” pop quiz.

Sub-Section Level – Time Frame

There are 4 hours of instructional and class study time, as well as 0.5 hours for a pop quiz. **Total: 4.5 hours.**

Stability Considerations for Parenteral Products

Parenteral Products have special stability concerns. Stability considerations, as well as information on various types of reference material are given. The steps of a Parenteral Admixture Order are illustrated. Details from receiving the order to delivering to the patient are discussed.

Sub-Section Level – Student Activity

Student will complete “Stability Considerations for Parenteral Products” study presentation.

Sub-Section Level – Assessment

Student will successfully complete “Stability Considerations for Parenteral Products” pop quiz.



Sub-Section Level – Time Frame

These are 3.5 hours of instructional and class study time and 0.5 hours for a pop quiz. **Total: 4 hours.**

Aseptic Techniques Section Test: 1 hour

Calculations

Pharmacy calculations are an essential function of the pharmacy technician. The PTP's calculation section provides a refresher path through the aspects of pharmacy mathematics. Many of our example calculations are done using different methods; thus, providing the student a choice for calculating pharmacy math problems that best suits the individual's needs. Our calculation section provides an excellent tool for learning pharmacy math. Our calculations are performed "in motion", with a timed audio presentation.

Section Level -Student Activity

The student will complete eleven subsections of the Calculations section. This includes: Metric Measurements, Abbreviations, Roman Numerals, "Fractions, Decimals & Percent", Temperature Conversions, Ratio Proportions, "Quantities, Dilutions,&Concentrations", Dosage Regimen, IV Flow Rates, Powder Volumes, and Pricing.

Section Level - Assessment

Student will successfully complete the eleven sub-section quizzes and will score 75% or above on the Calculations section exam. Student will utilize PassAssured's Student Learning Center for testing.

Section Level - Time Frame

There are 49.5 hours instructional and class study time, and 2 hours are designated for the Section Test.

Total classroom Time: 51.5 hours

Sub-Sections

Metric Measurements

Audio, charts, graphic illustrations and text help files are used to provide the student with knowledge and reference tables for use in performing various conversions. The units of measurement for the Metric, Avirdupois, and Apothecary systems are discussed.

Sub-Section Level – Student Activity

Student will complete "Metric Measurements" study presentation.

Sub-Section Level – Assessment

Student will successfully complete "Metric Measurements" pop quiz.

Sub-Section Level – Time Frame

There are 3.5 hours of instructional and class study time, as well as 0.5 hours for a pop quiz. **Total: 4 hours.**

Abbreviations



The pharmacy industry exists in a world of abbreviations. Abbreviation uses in prescriptions are covered in detail. Emphases on abbreviations that have historically been misinterpreted are discussed. Reference listing of pharmacy abbreviations is included. Sub-Section Level – Student Activity

Student will complete “Abbreviations” study presentation.

Sub-Section Level – Assessment

Student will successfully complete “Abbreviations” pop quiz.

Sub-Section Level – Time Frame

There are 3.5 hours of instructional and class study time and 0.5 hours for a pop quiz. **Total: 4 hours.**

Roman Numerals

The eight primary Roman numerals are illustrated, with emphasis on “rules” for adding and subtracting. Roman Numerals are widely used in pharmacy.

Sub-Section Level – Student Activity

Student will complete “Roman Numerals” study presentation.

Sub-Section Level – Assessment

Student will successfully complete “Roman Numerals” pop quiz.

Sub-Section Level – Time Frame

There are 3.5 hours of instructional and class study time and 0.5 hours for a pop quiz. **Total: 4 hours.**

Fractions, Decimals, & Percent

This review provides the basics of fractions, decimals and percent. The intensive use of “motion graphics” supports the audio driven lesson. A good understanding of this section will provide the student a basis for the remaining calculations topics.

Sub-Section Level – Student Activity

Student will complete “Fractions, Decimals, & Percent” study presentation.

Sub-Section Level – Assessment

Student will successfully complete “Fractions, Decimals, & Percent” pop quiz.

Sub-Section Level – Time Frame

There are 4 hours of instructional and class study time and 0.5 hours for a pop quiz. **Total: 4.5 hours.**

Temperature Conversions

Two widely used methods for Fahrenheit – Centigrade temperature conversions are illustrated. The audio driven lesson uses “graphics in motion” to provide clearly explained examples of typical pharmacy temperature conversions.

Sub-Section Level – Student Activity

Student will complete “Temperature Conversions” study presentation.

Sub-Section Level – Assessment

Student will successfully complete “Temperature Conversions” pop quiz.

Sub-Section Level – Time Frame



There are 4 hours of instructional and class study time and 0.5 hours available for a pop quiz. **Total: 4.5 hours.**

Ratio Proportions

Ratio proportion relationships are used to provide a means for reducing or enlarging chemical mixtures used in pharmacy. Determining the proper amount of solution to mix with drug active ingredients is covered.

Sub-Section Level – Student Activity

Student will complete “*Ratio Proportions*” study presentation.

Sub-Section Level – Assessment

Student will successfully complete “*Ratio Proportions Prescriptions*” pop quiz.

Sub-Section Level – Time Frame

There are 4 hours of instructional and class study time and 0.5 hours available for a pop quiz. **Total: 4.5 hours.**

Quantities, Dilutions, & Concentrations

Quantities, dilutions, & concentrations provide a review of unit of measurement for drug and expressions of quantity and concentration for drugs in drug products. Illustrations are discussed for the different methods for determining quantities of ingredients and concentration of drugs when preparing or dispensing drug products.

Sub-Section Level – Student Activity

Student will complete “*Quantities, Dilutions, & Concentrations*” study presentation.

Sub-Section Level – Assessment

Student will successfully complete “*Quantities, Dilutions, & Concentrations*” pop quiz.

Sub-Section Level – Time Frame

There are 4 hours of instructional and class study time and 0.5 hours for a pop quiz. **Total: 4.5 hours.**

Dosage Regimen

A review of methods of expressing doses and dosage regimens is given. The student will learn to calculate the amount of drug product to dispense, or the number of days’ supply from a dosage regimen. In addition, emphasis on learning methods to calculate doses for pediatric patients is provided.

Sub-Section Level – Student Activity

Student will complete “*Dosage Regimen*” study presentation.

Sub-Section Level – Assessment

Student will successfully complete “*Dosage Regimen*” pop quiz.

Sub-Section Level – Time Frame

There are 4 hours of instructional and class study time and 0.5 hours for a pop quiz. **Total: 4.5 hours.**

IV Flow Rates



The student will learn to determine the flow rate of an IV solution when given the total volume, total time of administration, and the drops delivered per ml by the administration set.

Sub-Section Level – Student Activity

Student will complete “IV Flow Rates” study presentation.

Sub-Section Level – Assessment

Student will successfully complete “IV Flow Rates” pop quiz.

Sub-Section Level – Time Frame

There are 4 hours of instructional and class study time and 0.5 hours for a pop quiz. **Total: 4.5 hours.**

Powder Volumes

Discussions of powder volume concept are given. Learn how to calculate powder volume and how to use this information in reconstituting dry powders for suspension or solution.

Sub-Section Level – Student Activity

Student will complete “Powder Volumes” study presentation.

Sub-Section Level – Assessment

Student will successfully complete “Powder Volumes” pop quiz.

Sub-Section Level – Time Frame

There are 4 hours of instructional and class study time, as well as 0.5 hours for a pop quiz. **Total: 4.5 hours.**

Pricing

Pricing methods support the needs of the pharmacy as a business enterprise. Our study guide will provide a review of various pricing methods used in retail pharmacy.

Sub-Section Level – Student Activity

Student will complete “Pricing” study presentation.

Sub-Section Level – Assessment

Students will successfully complete “Pricing” pop quiz.

Sub-Section Level – Time Frame

There are 3.5 hours of instructional and class study and 0.5 hours designated for a pop quiz. **Total: 4 hours.**

Calculations Section Test: 2 hrs

Pharmacy Operations

Pharmacy Operations is the core of the pharmacy technician’s responsibilities. Day to day operations, interfacing with customers, maintaining patient records, and assuring the pharmacy meets all state, federal and local requirements are covered. Managing proper inventory controls is vital in assuring



continuing success of the pharmacy business. An overview of insurance claims and “Third Party” reimbursement is provided.

Section Level - Student Activity

The student will complete five subsections of the Pharmacy Operations section. This includes: Basic Facts in Pharmacy, Assisting the Pharmacist, General Prescription Duties, Medication Distribution and Inventory Control, and Third Party Reimbursement.

Section Level - Assessment

Student will successfully complete the five sub-section quizzes and will score 75% or above on the Pharmacy Operations section exam. Student will utilize PassAssured's Student Learning Center for testing.

Section Level - Time Frame

There are 21 hours of instructional and class study time and 2 hours designated for the Section Test.

Total classroom time: 23 hours

Basic Facts in Pharmacy

The pharmacy technician will need to be familiar with drug nomenclature. The three names given to each drug is reviewed. NDC codes, mnemonic codes, and the importance of understanding different expiration date formats are discussed and illustrated. The various drug containers are illustrated. The different types of container closures and uses for each are reviewed.

Sub-Section Level – Student Activity

Student will complete “Basic Facts in Pharmacy” study presentation.

Sub-Section Level – Assessment

Student will successfully complete “Basic Facts in Pharmacy” pop quiz.

Sub-Section Level – Time Frame

There are 3 hours of instructional and class study time and 0.5 hours for a pop quiz. **Total: 3.5 hours.**

Assisting the Pharmacist

Acceptable medication prescribers are reviewed. How prescriptions can be transmitted to a pharmacy and requirements for certain classes of drugs are discussed. The required information on a prescription and the process for patient refills are given.

Sub-Section Level – Student Activity

Student will complete “Assisting the Pharmacist” study presentation.

Sub-Section Level – Assessment

Student will successfully complete “Assisting the Pharmacist” pop quiz.

Sub-Section Level – Time Frame

There are 3 hours of instructional and class study time and 0.5 hours for a pop quiz. **Total: 3 hours.**

General Prescription Duties

Maintaining an accurate patient profile is crucial in providing medication to a patient. A well-maintained patient profile can prevent improper dispensing of medication and adverse effects for medication.



Details of what should be collected for a proper patient profile are illustrated. Formularies, measuring and counting techniques, compounding and the different classes of balances are discussed.

Sub-Section Level – Student Activity

Student will complete “General Prescription Duties” study presentation.

Sub-Section Level – Assessment

Student will successfully complete “General Prescription Duties” pop quiz.

Sub-Section Level – Time Frame

There should be 2.5 hours of instructional and class study time and 0.5 hours for a pop quiz. **Total: 3 hours.**

Medication Distribution and Inventory Control

Definitions of key terms used in inventory management are provided. Ordering techniques and the proper receiving process of ordered items are reviewed. Expired or discontinued stock processes and drug recall issues are illustrated.

Sub-Section Level – Student Activity

Student will complete “Medication Distribution and Inventory Control” study presentation.

Sub-Section Level – Assessment

Student will successfully complete “Medication Distribution and Inventory Control” pop quiz.

Sub-Section Level – Time Frame

There are 4 hours of instructional and class study time and 0.5 hours for a pop quiz. **Total: 4.5 hours.**

Third Party Reimbursement

Knowledge of “Third Party” reimbursement is an “ever changing” environment. A general overview of processes used for reimbursement and different payment plans currently offered are illustrated. Formularies and generics are reviewed.

Sub-Section Level – Student Activity

Student will complete “Third Party Reimbursement” study presentation.

Sub-Section Level – Assessment

Student will successfully complete “Third Party Reimbursement Prescriptions” pop quiz.

Sub-Section Level – Time Frame

There are 4 hours of instructional and class study time, as well as 0.5 hours for a pop quiz. **Total: 4.5 hours.**

Pharmacy Operations Section Test: 2 hrs

Tutored Exam

All Tutored Exams are available using the Student Learning Center’s web interface. When the educator has granted the student access to a particular Tutored Exam, the student will gain web access



to the testing system. The Tutored Exam is a timed indicated test with feedback to enhance the student's learning exercise. The test timers are halted when a feedback screen is displayed. When the three-hour time limit has expired, a warning will appear, indicating to the student that the three-hour time limit has been reached. However, the Tutored Exams will allow the student to complete the test, even if the three-hour time limit has expired. Each question provides full feedback, a visual "STOP Light", and full text feedback. If an answer to a question is correctly selected, feedback is given supporting the correct answer. If an incorrect answer is selected, feedback is given offering the student additional information to formulate the correct answer.

Actions:

The student is allowed to practice the Tutored Exam for 2 hours, 1-2 times.

The educator should proctor 2 hours of classroom time for a Tutored Exam.

Total class time: 4 hours.

Final Exam

All Final Exams are available using the Student Learning Center's web interface. When the educator has granted the student access to a particular Final Exam, the student will gain web access to the testing system. The Final Exam is designed to mimic the PTCB exam. Aspects of an actual exam setting are applied. The Final Exam offers the student no feedback. When a possible answer is selected, the next question is displayed. The "Real Time" scoring thermometer is not indicated. The student may quit and resume a practice exam. The educator controls conditions concerning access to Final Exams. The timer will resume during any subsequent test sittings. The score will be based on the number of questions answered correctly, verses the total number of questions (125), within the three-hour time limit.

Actions:

The educator should proctor 3 hours of classroom time for a Final Exam.

Study Aids

PassAssured's Study Aids are designed to provide a fun and graphic rich study environment. Audio pronunciations are provided while studying the Top 200 drugs. The Study Aids section is divided into four web based sections. Students enrolled in the "Extended Length" version will gain access to this facility through their profile in the Student Learning Center.

Student will have the opportunity to select the process in which flash card data is provided. For example, the student can select to study by our program supplying the "generic" or "brand name" for study words.

The accumulated "Flash Card" student scores are not recorded in the Educator's Control Panel. These scores are used to provide the student with a trend for the student to monitor his/her progress and to



encourage competition among students. Passassured used our “Blue Ribbon” badge to indicate the student has made a score of 75 or above.

TOP 200 Drugs

The group of drugs referred to as the “Top 200 Drugs” are a listing of the top 200 drugs sold in the United States, by volume. For example, data is collected from drug companies reporting sales by volume. This data is used in developing Passassured’s TOP 200 Drug database. It should be noted, that this list will change from year to year depending on sales trends and new drugs coming to market. Passassured will update their web based database to indicate the most recent data.

Pronunciations are provided for the student to learn how this drug names are pronounced. Audio pronunciations are provided for the generic and brand names of each drug.

There are approximately 30 hours of classroom study time and 2 hours designated for the test.

Total classroom time: 32 hours.

Abbreviations

A pharmacy technician’s work environment thrives in a world of abbreviations. Passassured has developed a list of the most commonly used abbreviations used in the pharmacy industry. The pharmacy technician should become familiar with these terms.

There are approximately 10 hours of classroom study time and 1 hour available for the test.

Total classroom time: 11 hours.

Roman Numerals

A command in Roman numerals is essential to function as a pharmacy technician. Prescriptions are written using Roman numerals to indicate various directions.

There are approximately 10 hours of classroom study time and 1 hour designated for the test.

Total classroom time: 11 hours.

Sigs

Sigs is the acronym used to describe the “cryptic” direction doctors” use with prescribing medication and dosage on prescriptions. Thorough knowledge of “Sigs” will assure accurate filling of prescriptions.



There are approximately 9 hours of classroom study time and 1 hour for the test.

Total classroom time: 10 hours.

TimeLine Graphic

