

Pharmacy Tech

Rationale Statement:

This course is designed to empower high school students to take charge of and set a course for their future. It will also prepare them to graduate with marketable skills and a real-world work connection. Careers in the healthcare industry are robust and growing nationwide; however, it is actually experiencing a shortage of workers. The Department of Labor predicts that 8 of the 20 fastest growing occupations are in healthcare services. The need for healthcare professionals in the United States is expected to increase by 27 percent by the year 2014. This class allows students to recognize their unique abilities relating to health care careers and assists them to find a pathway to success.

Course Description:

An instructional course that prepares students to assist pharmacists. This includes learning about over-the-counter medications and natural products, counter dispensing operations, and prescription preparation. Students will also learn how to perform a wide range of duties in the following settings: retail, hospital, and home care. The importance of maintaining accurate patient and related health record information will also be stressed.

Suggested grade level: 11-12

Topics covered:

- **Pharmacologic Terminology**
- **Various Drugs and Over-the-Counter Medications**
- **Drug Dosage Calculations and Preparation Procedures**
- **Laws and Ethics**
- **Medication Errors**
- **Fundamental Pharmacy and Management Techniques**

Indicator # 1: Understand pharmacologic and pertinent medical terminology, as well as various drugs, including over-the-counter medications, and their effects on the human body.	
Bloom's Taxonomy Level	Standard and Examples.
Understanding	<p>PT1.1 Interpret and understand pharmacologic and medical terminology.</p> <p>Examples:</p> <ul style="list-style-type: none"> • Identify basic structure of pharmaceutical and medical words • Define root words, prefixes, suffixes, abbreviations, and symbols of medical terminology • Correctly use pharmaceutical and medical terminology as well as medical abbreviations
Understanding	<p>PT1.2 Identify various drugs and drug sources and their effects on the human body.</p> <p>Examples:</p> <ul style="list-style-type: none"> • Differentiate between brand names, generic names, and therapeutic classification of drugs • Explain the pharmacodynamics and pharmacokinetics of drugs in the human body • Explain the Absorption, Distribution, Metabolism, and Elimination (ADME) process of drugs • Discuss factors that can alter drug response in the patient
Understanding	<p>PT1.3 Understand over-the-counter (OTC) and herbal medications</p> <p>Examples:</p> <ul style="list-style-type: none"> • Describe the role of self-medication with OTC products in the health care delivery system • Explain when OTC or herbal medication is appropriate, and the federal regulations involved • Explain the labeling requirements for OTC and herbal products and their place in medical therapy according to the Dietary Supplement Health and Education Act • Explain potential hazards of non-prescription products including contamination, adulteration, and interaction with prescription medications and adverse reactions

Indicator # 2: Understand drug dosage calculations and preparation and administration procedures.	
Bloom's Taxonomy Level	Standard and Examples.
Applying	<p>PT2.1 Calculate doses, and determine dosage form and quantity dispensed in a variety of pharmacy settings.</p> <p>Examples:</p> <ul style="list-style-type: none"> • Interpret different systems of measurement and perform conversions • Calculate and prepare the drug dosage for intravenous solutions, as well as reconstituted, non-injected solutions for oral and external feedings • Solve basic mathematical problems involving decimals, ratios, and proportions, and explain percentage preparations (w/w, w/v, v/v)
Understanding	<p>PT2.2 Understand mixture preparation, equipment, and administration procedures</p> <p>Examples:</p> <ul style="list-style-type: none"> • Describe and categorize the drugs most commonly used in an IV mixture • Identify and explain the most common parenteral routes of administration • Identify universal precautions to avoid IV contamination and explain the proper procedure for repacking IV drugs • Accurately prepare a mixture and interpret the calibration of the appropriate equipment necessary for administration

Indicator # 3: Identify various laws and ethics pertinent to the pharmaceutical field, along with principles relating to medication errors.	
Bloom's Taxonomy Level	Standards and Examples.
Understanding	<p>PT3.1 Identify federal, state, and local laws, as well as professional ethics, that are applicable to the pharmaceutical field.</p> <p>Examples:</p> <ul style="list-style-type: none"> • Explain the common legal terms used by state and federal agencies involved with pharmacy drug regulation, including HIPAA • Explain the duties that may legally be performed by the pharmacy technician in South Dakota • Identify and explain safety considerations regulated by federal law, including repackaging of medications • Explain the “Code of Ethics for Pharmacy Technicians” • Analyze and discuss other principles of professional conduct and ethics that guide the pharmacist and pharmacy technician
Understanding	<p>PT3.2 Identify causes, prevention, reporting, and risk management of medication errors.</p> <p>Examples:</p> <ul style="list-style-type: none"> • Discuss how to educate patients to identify, minimize, and prevent medication errors. • Explain the importance of the Food and Drug Administration MedWatch program • Apply the five rights of medication administration • Explain necessary procedures to utilize when handling medication errors, including the medication error reporting system

Indicator # 4: Understand fundamental pharmacy laboratory and management techniques.	
Bloom's Taxonomy Level	Standards and Examples.
Understanding	<p>PT4.1 Summarize fundamental pharmacy techniques and skills.</p> <p>Examples:</p> <ul style="list-style-type: none"> • Identify the general safety rules and precautions in the pharmacy environment • Operate the cash register for prescription sales • Locate different sections of the pharmacy, including where brand and generic drugs are found • Identify the five schedules of controlled substances, and the most common hospital and community drugs used
Understanding	<p>PT4.2 Describe and explain the basic concepts of a pharmacy computer system</p> <p>Examples:</p> <ul style="list-style-type: none"> • Add or select third party records, utilizing information on the patient prescription card, and add or update information • Operate a computer system to process prescriptions, as well as to print patient information, drug interactions and information, doctor labels, and prescription labels • Describe the dispense-as-written (DAW) override code and preauthorization number used to fill or refill a prescription in the computer system • Explain the process for obtaining quotes for drugs requested by a patient and match prices at other pharmacies • Explain how to locate and utilize information about third party medication restrictions, exclusions, rejected claims, submitted claims, and other coverage and limitations, rebilling and reimbursement issues
Understanding	<p>PT4.3 Understand principles of pharmacy management</p> <p>Examples:</p> <ul style="list-style-type: none"> • Identify pharmacy standards, and the professional bodies and associations that are responsible for establishing those standards • Analyze pharmacy department for efficient management, maximum function and workflow • Explain inventory management, and the medication purchasing process • Describe the routine duties needed to maintain adequate pharmacy operation