



Multiple Category Scope and Sequence: Scope and Sequence Report For Course Standards and Objectives, Content, Skills, Vocabulary

Wednesday, August 20, 2014, 12:11AM



	Unit	Course Standards and Objectives	Content	Skills	Vocabulary
<p>District Advanced <u>Pharmacy Technician (51.0805) (District) 2014-2015 Chapple, Mandy</u></p>	<p><u>History of Medicine and Pharmacy</u>  (Week 1, 2 Weeks) </p>	<p>UT: CTE: Health Education, UT: Grades 9-12, Pharmacy Technician PHARMACEUTICAL and MEDICAL TERMINOLOGY STANDARD 03 Students will apply the skills necessary to interpret and understand pharmacy and medical terminology OBJECTIVES</p> <ul style="list-style-type: none"> ▪ 03.01 Identify basic structure of pharmaceutical and medical words. ▪ 03.04 Define root words, prefixes, suffixes, abbreviations and symbols of medical terminology. 	<p>This chapter will introduce the student to the history of medicine and pharmacy, from Hippocrates to the present. The student will have the opportunity to learn about treatments and beliefs prevalent in each major historical era, such as the medicinal use of opium and alcohol in early America. In addition to the general history of medicine, the student will trace the evolution of pharmacies and the development of the roles of pharmacists and pharmacy technicians in the nineteenth and twentieth centuries. The student will learn about the importance of the protocols that govern medical personnel. Finally, the student will be introduced to current trends in the field, which include professional barriers for pharmacy technicians that are similar to the ones pharmacists once faced.</p>	<ul style="list-style-type: none"> ▪ Identify the resistance to technicians that parallel historical resistance to pharmacists. ▪ Discuss ancient medicine 440 bc through 1600 ad. ▪ Describe fourteenth and nineteenth century medicine and identify influences major wars had on medicine. ▪ List common ancient treatments that prevailed in Western civilization. ▪ Describe the use of opium and alcohol. ▪ Identify the role that early pharmacists played in society. ▪ Describe the first technicians in pharmacy. ▪ Describe how the first pharmacies came about in the United States. ▪ List major ways pharmacy has changed over the past 100 years. ▪ Identify the need for protocol in the pharmacy profession ▪ List major current trends in pharmacy in relation to pharmacy technicians. 	<ul style="list-style-type: none"> ▪ Apothecary ▪ Clinical pharmacist ▪ Drug Education Coordinator (DEC) ▪ Dogma ▪ Formulary ▪ Inpatient pharmacy ▪ Opium ▪ Opioid ▪ Outpatient pharmacy ▪ Pharmacist ▪ Pharmacy clerk ▪ Pharmacy technician ▪ Protocol ▪ Shaman
	<p><u>Brand and Generic Drugs</u>  (Week 1, 4</p>	<p>UT: CTE: Health Education, UT: Grades 9-12, Pharmacy Technician</p>	<p>By the end of the year, students will accurately and</p>		<p>Vocabulary is attached in the link. Students will learn the top 300 drugs commonly sold in a</p>

Weeks) 

PHARMACOLOGY
STANDARD 02 Students will identify pharmacology, drugs, drug sources, drug actions and their effects on the human body.
OBJECTIVES

effectively be able to list common drug endings and their therapeutic use.

pharmacy.

 [PT Drug List 2012.xlsx](#)

- 02.01 Differentiate between brand names, generic names, uses and therapeutic classification of drugs.
- 02.02 Explain the pharmacodynamics and pharmacokinetics (biopharmaceutics) of drugs in the human body.

PHARMACEUTICAL and MEDICAL TERMINOLOGY
STANDARD 03 Students will apply the skills necessary to interpret and understand pharmacy and medical terminology
OBJECTIVES

- 03.01 Identify basic structure of pharmaceutical and medical words.
- 03.02 Apply word building and definitions.
- 03.03 Correctly use pharmaceutical terminology, medical terminology and medical abbreviations.
- 03.04 Define root words, prefixes, suffixes, abbreviations and symbols of medical terminology.
- 03.05 Apply pharmaceutical terminology in processing prescriptions.

Law and Ethics of

Pharmacy

2 Weeks) 

 (Week 2,

UT: CTE: Health Education, UT: Grades 9-12, Pharmacy Technician

PHARMACY LAW

STANDARD 07 Students will identify and assist the pharmacist in monitoring federal, state and local laws, regulations and professional ethics.

Students will demonstrate knowledge of the pharmacy law system and regulations established by governmental bodies (FDA, DEA, and state boards of pharmacy). Students will maintain professional standards and codes of ethics established by professional pharmacy associations/organizations.

OBJECTIVES

- 07.01 Explain the common legal terms used by state and federal agencies involved With pharmacy drug regulation.
- 07.02 Explain the duties that may legally be performed by the pharmacy technician in Utah.
- 07.03 Distinguish among common law, statutory law, regulatory or administrative law, ethics and professional standards.
- 07.04 List and explain the federal and state regulations agencies (FDA, DEA, BOP).
- 07.05 Identify and explain safety considerations regulated by federal law.
- 07.06 Identify the federal regulations for the repackaging of

In this chapter, the student will have the opportunity to learn the key terms and to trace the history of federal laws affecting pharmacies. The student will explore FDA, DEA, and HIPAA regulations and procedures that affect pharmacy technicians' work. The student will be introduced to the classification of controlled substances and record keeping, ordering, and storage processes for this class of drugs. The student will learn who can prescribe medication and medical devices, and how to tell if a prescriber's DEA number is valid. In addition to learning federal regulations, students will research their state's laws and learn to determine which law prevails. Beyond the letter of the law, the student will learn to compare and contrast technicians' tasks with pharmacists' responsibilities, and they will be exposed to the interplay between morals, ethics, and liabilities in the pharmacy.

- List the history of federal law in chronological order.
 - Identify the major laws that technicians need to work within when performing nondiscretionary functions in a pharmacy.
 - Describe the implications of the new Health Insurance Portability and Accountability Act (HIPAA) laws that are in effect as of 2003.
 - Discuss the reasons for the new Combat Meth Act of 2005.
 - Define the functions of the Food and Drug Administration (FDA) and Drug Enforcement Agency (DEA).
 - Describe the FDA reporting process of adverse reactions
 - Explain the necessary forms and regulations used for controlled substances.
 - List the current laws pertaining to ordering stock and required record keeping.
 - Explain the difference between technicians' tasks and pharmacists' responsibilities.
 - Explain how to verify a doctor's DEA number.

 - Explain which law prevails among state, federal, and local laws.
 - Define the responsibilities of pharmacy personnel as they apply to morals, ethics, and liabilities.
- Adulteration
 - Board of Pharmacy (BOP)
 - Drug Enforcement Agency (DEA)
 - Controlled Substance
 - Drug Enforcement Administration
 - *Drug Facts and Comparisons*
 - Food and Drug Administration (FDA)
 - Health Insurance Portability and Accountability Act of 1996 (HIPAA)
 - Legend drug
 - Monograph
 - Narcotic
 - Over-the-counter medication
 - Pharmacy Technician Certification Board (PTCB)
 - *Physician's Desk Reference (PDR)*

- medications.
- 07.07 Identify and follow the Utah pharmacy technician laws and rules required to practice pharmacy.
- 07.08 Discuss the Utah Pharmacy Practice Law (Title 58-17a).
- 07.09 Explain and describe the Utah Pharmacy Practice Law and Regulations for the practice of Pharmacy.
- 07.10 Identify and follow the Utah Controlled Substances Act and Rules.
- 07.11 Identify the rules of administrative law from the Division of Occupational and Professional Licensing Act and Title in Utah.

Pharmacy Associations, Certifications,

Settings  (Week 4, 2 Weeks) 

UT: CTE: Health Education, UT: Grades 9-12, Pharmacy Technician
 PHARMACY MANAGEMENT STANDARD 12 Students will follow the guidelines of medication orders and returns, maintain security of the pharmacy, manage prescription and nonprescription drug lists in the pharmacy, keep the pharmacy clean and organized, and maintain and obtain the medication inventory.
 OBJECTIVES

- 12.02 Identify and list the professional bodies and associations/organizations which set and maintain pharmacy standards (ASHP, UPS, JCAHO, ASCP,

In this chapter, students will be introduced to the qualifications, skills, and nonjudgmental duties required of pharmacy technicians in various job settings. They will also have the opportunity to learn about pharmacy technician certification. In addition to learning about the traditional settings for technicians, students will explore industry trends, such as e-pharmacies, and ways in which technicians can combine their knowledge of pharmacy with other skills and move into other positions.

- Discuss historical data on technicians
- Describe current qualifications of technicians
- Explain the term nondiscretionary duties
- Describe various pharmacy setting requirements as they apply to technicians
- Describe how pharmacy has expanded onto the Internet
- List the new position openings for technicians that are available in the health care field
- Explain how networking is important in the search for a pharmacy position
- List the organizations available to technicians
- Determine which attributes each pharmacy organization has that are important to the technician
- List the positive attributes of joining a pharmacy association
- Describe the various aspects of the National Certification Examination
- Determine the ways to approach job searching
- Explain how the Internet can be used for research and information pertaining to
- Certified pharmacy technician
- Continuing education (CE)
- Hyperalimentation
- Inpatient pharmacy
- National Association of Boards of Pharmacy (NABP)
- Outpatient pharmacy
- Parenteral medications
- Pharmacy Technician Certification Board

OSHA).

pharmacy

PROFESSIONALISM OF THE
PHARMACY TECHNICIAN
STANDARD 15 Students will
maintain an image appropriate
for the pharmacy technician
profession and demonstrate
professional skills necessary to
benefit the patient or customer.
OBJECTIVES

- 15.01 Adopt attire that follows the pharmacy's dress code.
- 15.02 Maintain appropriate personal hygiene.
- 15.03 Demonstrate personal control and professional decorum.
- 15.04 Communicate professionally when speaking or writing.
- 15.05 Demonstrate correct grammar, punctuation, spelling, style and formatting conventions in preparing all written communications.
- 15.06 Pronounce technical terms correctly.
- 15.07 Demonstrate appropriate and effective listening skills.
- 15.08 Explain the importance of body language when communicating with others.
- 15.09 Choose a communication style appropriate for the audience and demonstrate effective strategies for communicating with patients who are non-English speaking or who display other

- communication barriers.
- 15.10 Formulate plans to solve professional problems commonly encountered on the job.
- 15.11 Use a systematic approach to problem solving.
- 15.12 Identify and list pharmacy technician professional associations and organizations (PTCB, BOP, NPTA, ASHP, AAPT, APA, PTEC).

Conversions and Calculations

6, 5 Weeks)  

(Week

UT: CTE: Health Education, UT: Grades 9-12, Pharmacy Technician
PHARMACY CALCULATIONS STANDARD 04 Students will assist the pharmacist in calculating ingredients and doses, and determine dosage form, quantity and supply of medications dispensed in a variety of pharmacy settings.
OBJECTIVES

- 04.01 Solve basic mathematical problems involving fractions, decimals, percents, ratios and proportions.
- 04.02 Perform conversions from one metric unit of measure to another.
- 04.03 Interpret and use the four systems of measurement and perform conversions.
- 04.04 Set up ratio and proportion equations and solve for unknown terms.
- 04.05 Evaluate drugs problems involving solutions, solid dosage forms, injection

In this chapter, the student will have the opportunity to learn the key terms and will learn to perform conversions among the four most commonly used systems of measurement. The student will learn several methods for calculating dosages of medicines, as well as how to dilute and combine medicines to achieve the desired dosage. The student will learn specific requirements for pediatric dosing and for preparation of IV medications. The student will also learn how to convert Arabic numerals into Roman numerals and vice versa, and how to use international time.

Upon completing the chapter, you should be able to do the following:

- Describe the differences among the following measurement systems:
 - Apothecary system
 - Avoirdupois system
 - Metric system
 - Common household measurements
- Convert Arabic numbers into Roman numerals
- Demonstrate the ability to convert between the following measurement systems commonly used on prescriptions:
 - Metric system
 - Apothecary system
 - Household system
- Use mathematical calculations to determine dosage:
 - Ratios/proportions
 - Fractions
 - Percentages
 - Demonstrate the ability to set up equations and solve problems for the following:
 - Determining day's supply
 - Pediatric dosages
 - Drip rates
 - Alligation
 - Percent dosages

- Alligation
- Apothecary system
- Avoirdupois system
- Household system
- International time
- Metric system
- Volume

- solutions and TPN solutions.
- 04.06 Analyze problems involving pediatric and elderly dosing.
 - 04.07 Prepare and calculate the drug dosage for intravenous solutions.
 - 04.08 Prepare and calculate reconstituted non-injected solutions for oral and enteral feeding.
 - 04.09 Calculate drug dosage based on the body weight of the pediatric, adult and the elderly patient.
 - 04.10 Demonstrate proficiency in meeting pharmacy efficiency and accuracy standards.
 - 04.11 Demonstrate calculator functions.
 - 04.12 Explain percentage preparations (w/w, w/v, v/v).

Dosage Forms and Abbreviations

(Week 11, 3 Weeks)  

UT: CTE: Health Education, UT: Grades 9-12, Pharmacy Technician
PHARMACOLOGY
STANDARD 02 Students will identify pharmacology, drugs, drug sources, drug actions and their effects on the human body.
OBJECTIVES

- 02.08 Identify different forms of drug products and the routes by which they are administered.

PHARMACEUTICAL and MEDICAL TERMINOLOGY
STANDARD 03 Students will apply the skills necessary to

This chapter will familiarize students with the primary dosage forms and their characteristics. The student will also learn routes of drug administration, including the advantages and disadvantages of each. The student will be introduced to the standard abbreviations of dosage forms and routes of administration, and understand the importance of using this system. The

- List the most common routes and dosage forms of drugs.
 - Define the common abbreviations for extended-release agents.
 - List at least three reasons why certain drugs need to be given by certain routes.
 - Discuss the different components of medications and how that affects their bioavailability and
 - pharmacology.
 - Describe why additives are necessary in the production of medications.
 - Explain basic storage requirements of various dosage forms.
 - List the different dosage forms of common drugs and their storage requirements.
- Absorption
 - Bioavailability
 - Bioequivalence
 - Distribution
 - Excretion
 - Half-life
 - Instill
 - Metabolism
 - OTC
 - Parenteral
 - Pharmacokinetics

interpret and understand pharmacy and medical terminology

OBJECTIVES

- 03.01 Identify basic structure of pharmaceutical and medical words.
- 03.02 Apply word building and definitions.
- 03.03 Correctly use pharmaceutical terminology, medical terminology and medical abbreviations.
- 03.04 Define root words, prefixes, suffixes, abbreviations and symbols of medical terminology.
- 03.05 Apply pharmaceutical terminology in processing prescriptions.

student will learn the basic concepts of pharmacokinetics, such as drug absorption, metabolism, and bioavailability. The student will also learn what types of additives are most commonly used in drugs, as well as the importance of packaging and storing drugs in accordance with the manufacturer's instructions.

MEDICATION ERRORS

STANDARD 19 Students will identify causes, prevention, reporting and risk management of medication errors; practice safe medication use and prevent errors in the distribution, preparation, dispensation and administration of medications; and will encourage patients to ask questions to minimize errors.

OBJECTIVES

- 19.01 Identify causes of medication errors.
- 19.02 Explain the importance of the Food and Drug Administration (FDA) MedWatch program.
- 19.03 Discuss how to educate patients to identify, minimize and prevent medications

- errors.
- 19.04 Apply the five rights of drug administration.
- 19.05 Explain medication errors and human perspectives.
- 19.06 Choose methods to prevent medication errors and share responsibilities.
- 19.07 Explain the management procedures of medication errors.
- 19.08 Identify the Drug Utilization Evaluation (DUE) process.
- 19.09 Outline the criteria used to select medications for DUE reporting.
- 19.10 Identify medications errors in relation to specific diseases and conditions.
- 19.11 Explain the medication error reporting system.

Prescription

Processing

14, 4 Weeks)



UT: CTE: Health Education, UT: Grades 9-12, Pharmacy Technician
PHARMACY COMPUTER SYSTEMS
STANDARD 08 Students will describe and explain the basic concepts of a pharmacy computer system to assist the pharmacist in prescription processing, drug interaction, drug verification and patient education.
OBJECTIVES

- 08.01 Utilize the computer system and practice the prescription process.
- 08.02 Add or select third party records,

In this chapter, the student will begin learning the processes for accurately filling prescriptions in outpatient and inpatient facilities. The student will focus on the steps taken to fill prescriptions in each of these settings, with particular attention paid to the checks needed to minimize errors. The student will become familiar with the types of information present on prescription labels. The student will be

- Describe the responsibilities of a technician filling prescriptions.
- List the necessary information required for prescriptions and labels.
- Differentiate between inpatient and outpatient information requirements.
- Demonstrate the ability to prioritize the filling of prescriptions.
- Explain steps in reducing medication errors.
- Describe laws pertaining to the technician's responsibilities when filling prescriptions.
- List the types of automated machines used in filling prescriptions.
- List the rights of a patient.
- Differentiate filling methods between controlled substances and noncontrolled substances.

- Auxiliary label
- Hard copy
- Rx
- Script
- Sig

utilizing information on patient's insurance prescription card and add or update information.

- 08.03 Demonstrate the process of refilling prescriptions, utilizing the computer system.
- 08.04 Describe the DAW override code and preauthorization number used to fill or refill a prescription in the computer system.
- 08.05 Describe the override code for interactions and allergies and the preauthorization number used to fill or refill prescriptions in the computer system.
- 08.06 Explain the process for obtaining quotes for drugs requested by a patient and match prices at other pharmacies.
- 08.08 Describe the drug, physician and patient maintenance programs.
- 08.09 Demonstrate use of the wholesale computer system program in creating orders, receiving orders, generating printouts and managing quantity changes of drugs on hand.
- 08.10 Demonstrate use of the insurance company computer system program to charge prescriptions to a third party and determine eligibility for a patient.
- 08.11 Explain how to locate and utilize

introduced to the rights of patients and will learn when a pharmacist consultation must be offered. The student will become familiar with types of automated equipment, such as computer dispensing systems. The student will learn what extra steps are needed to fill prescriptions for controlled substances, and how hard copies of prescriptions are labeled and filed.

information about third party medication restrictions, exclusions, rejected claims, submitting claims, other coverage and limitations, rebilling and reimbursement processing.

- 08.12 Describe and demonstrate the computer process required to enter information for compounding medications.

Referencing

18, 1 Week



(Week



UT: CTE: Health Education, UT: Grades 9-12, Pharmacy Technician
PHARMACY LAW STANDARD 07 Students will identify and assist the pharmacist in monitoring federal, state and local laws, regulations and professional ethics. Students will demonstrate knowledge of the pharmacy law system and regulations established by governmental bodies (FDA, DEA, and state boards of pharmacy). Students will maintain professional standards and codes of ethics established by professional pharmacy associations/organizations.
OBJECTIVES

- 07.05 Identify and explain safety considerations regulated by federal law.
- 07.07 Identify and follow the Utah pharmacy technician laws and rules required to practice pharmacy.
- 07.08 Discuss the Utah Pharmacy Practice Law (Title 58-

In this chapter, the student will have the opportunity to master the key terms and will be able to appropriately reference drugs and other information. The student will learn about the information contained in specific pharmacy reference books and how often this information is updated. The role of journals, news magazines, and professional organizations in the continuing education of pharmacy technicians is explored. The student also will learn about the Internet as a valuable reference tool.

- Demonstrate the appropriate way to reference drugs and other information.
- Describe the information contained in the listed reference books.
 - Describe the information contained in the following reference books:
 - American Hospital Formulary Service Drug Information
 - Drug Topics Red Book
 - Orange Book
 - Drug Facts and comparisons
 - Goodman & Gilman's the PHarmacological Basis of Therapeutics
 - Handbook on Injectable Drugs
 - Ident-A-Drug Handbook
 - Physician's Desk Reference
 - Remington's Pharmaceutical Sciences: The Science and Practice of Pharmacy
- Explain the specialized reference books necessary in hospital pharmacy.
- Explain the importance of journals and news magazines as they pertain to pharmacy and continuing education.
- List other types of referencing materials in addition to books.
 - Brand/trade name
 - Chemical structure
 - Drug classification
 - Formulary
 - Generic name
 - Monograph

- 17a).
- 07.09 Explain and describe the Utah Pharmacy Practice Law and Regulations for the practice of Pharmacy.
- 07.10 Identify and follow the Utah Controlled Substances Act and Rules.
- 07.11 Identify the rules of administrative law from the Division of Occupational and Professional Licensing Act and Title in Utah.

INTERNET IN THE PHARMACY
STANDARD 11 Students will use the Internet to research and study a variety of pharmacy related topics. Students will also research opportunities for more training and job market entry options.

OBJECTIVES

- 11.01 Apply and understand Internet terminology, structure and function.
- 11.02 Explain and demonstrate professional use of the Internet.
- 11.03 Incorporate Internet information into the pharmacy technician profession.
- 11.04 Demonstrate use of the Internet browser.
- 11.05 List research capabilities and limitations of the Internet.
- 11.06 Demonstrate knowledge of legal and ethical issues.
- 11.07 Identify risks and safety concerns.

- 11.08 Describe the value of the Internet to the health care professional.
- 11.09 Analyze criteria to evaluate the validity of health information on the Internet.

PHARMACY MANAGEMENT
STANDARD 12 Students will follow the guidelines of medication orders and returns, maintain security of the pharmacy, manage prescription and nonprescription drug lists in the pharmacy, keep the pharmacy clean and organized, and maintain and obtain the medication inventory.

OBJECTIVES

- 12.02 Identify and list the professional bodies and associations/organizations which set and maintain pharmacy standards (ASHP, UPS, JCAHO, ASCP, OSHA).

PROFESSIONALISM OF THE
PHARMACY TECHNICIAN
STANDARD 15 Students will maintain an image appropriate for the pharmacy technician profession and demonstrate professional skills necessary to benefit the patient or customer.

OBJECTIVES

- 15.12 Identify and list pharmacy technician professional associations and organizations (PTCB, BOP, NPTA, ASHP, AAPT, APA, PTEC).

- Employment 
(Week 19, 1 Week) 

Grades 9-12, Pharmacy Technician
EMPLOYMENT SKILLS
STANDARD 18 Students will demonstrate the skills, knowledge and responsibilities required to gain employment and maintain status as a professional pharmacy technician.
OBJECTIVES

- 18.01 Complete a job application form.
- 18.02 Develop a current resume.
- 18.03 Create a letter of application.
- 18.04 Perform successfully in an interview.
- 18.05 Demonstrate appropriate follow-up procedures.
- 18.06 Complete pharmacy technician internship/externship.
- 18.07 Explain requirements to obtain and maintain national certification and state licensure.

compose a resume that is tailored to a pharmacy technician position

- Students will generate a cover letter tailored to a pharmacy technician position

a cover letter and resume

- Reference
- Heading
- Salutation
- Job Description
- Job Skills

Competency, Communication, and Ethics 
(Week 20, 2 Weeks) 

UT: CTE: Health Education, UT: Grades 9-12, Pharmacy Technician
PHARMACY CUSTOMER SERVICES
STANDARD 13 Students will assist the pharmacist by providing excellent customer service.
OBJECTIVES

- 13.01 Demonstrate the importance of maintaining a caring attitude with the patient or customer.
- 13.02 Adopt a caring attitude towards patients in all aspects

In this chapter, students will be introduced to the primary responsibilities of a pharmacy technician. The student will learn the basics of registration and certification, and they will become more familiar with current federal pharmacy laws. The student will also have the opportunity to learn which competencies successful pharmacy technicians use to reduce medication

- List the primary responsibilities of a pharmacy technician.
- Define professionalism and communication
- Describe the importance of good communication skills.
- Give an example of resolution techniques when dealing with irate patients.
- Differentiate between morals and ethics.
- Explain the main psychological steps through which a terminally ill patient proceeds.
- Explain the current trends toward dealing with the reduction of medication errors.
- List examples of ways pharmacy technicians can lessen errors in the workplace.

- Communication
- Competency
- Confidentiality
- Ethics
- Morals
- Nationally Certified Technician
- Professionalism

of the job responsibilities.

- 13.03 Compare and contrast the provision of direct patient care in various patient care settings.
- 13.04 Describe the importance of handling patients' or customer's problems.
- 13.05 Prepare to help the patient or customer locate OTC drugs.
- 13.06 Counsel patients on the use of OTC drugs as approved by the pharmacist.
- 13.07 Explain the importance of the professional pharmacy staff relationship with the patient or customer.

and workplace errors. In particular, the student will learn the importance of good communication skills, and will learn situational applications, such as dealing with a terminally ill patient. The student will also become familiar with the requirements for maintaining patient confidentiality.

PHARMACY PROFESSIONAL ETHICS

STANDARD 14 Students will examine their personal ethics, assist the pharmacist in improving the code of ethics in the pharmacy setting and demonstrate ethical conduct in all job related activities.

OBJECTIVES

- 14.01 Explain the "Code of Ethics for Pharmacy Technician".
- 14.02 Explain the concept of the pharmacy as a moral community.
- 14.03 Explain the patient-pharmacy technician relationship.
- 14.04 Explain the pharmacy staff-other health professional relationship.
- 14.05 Demonstrate honesty and integrity.

- 14.06 Demonstrate professional and ethical competency.
- 14.07 Demonstrate ethical drug distribution.
- 14.08 Practice the standards of professional communication.
- 14.09 Analyze and discuss other principles of professional conduct that guide the pharmacist and pharmacy technician.

PROFESSIONALISM OF THE PHARMACY TECHNICIAN
STANDARD 15 Students will maintain an image appropriate for the pharmacy technician profession and demonstrate professional skills necessary to benefit the patient or customer.
OBJECTIVES

- 15.01 Adopt attire that follows the pharmacy's dress code.
- 15.02 Maintain appropriate personal hygiene.
- 15.03 Demonstrate personal control and professional decorum.
- 15.04 Communicate professionally when speaking or writing.
- 15.05 Demonstrate correct grammar, punctuation, spelling, style and formatting conventions in preparing all written communications.
- 15.06 Pronounce technical terms correctly.
- 15.07 Demonstrate appropriate and effective listening skills.

- 15.08 Explain the importance of body language when communicating with others.
- 15.09 Choose a communication style appropriate for the audience and demonstrate effective strategies for communicating with patients who are non-English speaking or who display other communication barriers.
- 15.10 Formulate plans to solve professional problems commonly encountered on the job.
- 15.11 Use a systematic approach to problem solving.
- 15.12 Identify and list pharmacy technician professional associations and organizations (PTCB, BOP, NPTA, ASHP, AAPT, APA, PTEC).

Aseptic Technique



(Week 21, 3 Weeks)



UT: CTE: Health Education, UT: Grades 9-12, Pharmacy Technician
ADVANCE IV ADMIXTURE STANDARD C Students will demonstrate advanced knowledge in preparing intravenous admixtures.
OBJECTIVES

- C.1 Examine and explain advanced IV admixture formulations.
- C.2 Prepare complete, uniform IV labels.
- C.3 Reconstitute drug additives using appropriate aseptic technique.

At the completion of this chapter the student will become familiar with the types and sizes of syringes, needles, and containers used in the preparation of parenteral medications. The student will understand proper aseptic technique as it applies to working with these items in both horizontal and vertical flow hoods and the care of the flow hoods. The student also will learn

- List various containers used in the laminar flow hood.
- List the sizes of syringes and needles used in the pharmacy setting.
- List the medications that must be placed in glass containers.
- Describe how to prepare and transport medications in syringes.
- Explain the use of aseptic technique within a horizontal flow hood.
- Describe how often hoods must be inspected.
- Describe how to properly care for laminar flow hoods.
- Describe aseptic technique within a vertical flow hood and barrier hood.
- Describe how to properly dispose of needles, vials, and cytotoxic supplies.
- Explain the differences between total parenteral nutrition (TPN) and peripheral
 - Aseptic technique
 - Gauge
 - Horizontal flow hood
 - Hyperalimentation
 - Laminar flow hood
 - Parenteral medication
 - Peripheral parenteral
 - Precipitate
 - Reconstitute
 - Total parenteral nutrition (TPN)
 - Universal precautions
 - Vertical Flow Hood

- C.4 Compound the admixture using appropriate aseptic techniques.
 - C.5 Examine the IV admixture for clarity and presence of particulate matter.
 - C.6 Prepare and maintain a patient profile so that admixture can be prepared and delivered to the nursing unit.
 - C.7 Deliver completed admixture to the patient care area and return unused admixtures to the pharmacy.
 - C.8 Initiates patient charges for admixture administered and credits admixture returned unused.
 - C.9 Demonstrates orderly maintenance of the admixture area.
 - C.10 Prepare chemotherapy solutions, advance TPN solutions and recognize incompatibilities.
 - C.11 Demonstrates correct use of advanced calculations involved in preparing IV admixtures.
 - C.12 Explain the flow of the admixture orders.
 - C.13 Demonstrate quality assurance and performance improvement.
 - C.14 Describe an IV piggyback.
 - C.15 Explain the difference between working in a horizontal flow hood versus a vertical flow hood.
- of the types of stock and medications used in an IV room, as well as special considerations needed for some medications. Additionally, the student will gain an understanding of total and peripheral parenteral nutrition.
- parenteral nutrition (PPN).

- C.16 Define a class 100 area.
- C.17 Identify major components of parenteral nutrition solutions.

Hospital Pharmacy



(Week 24, 3 Weeks) >

UT: CTE: Health Education, UT: Grades 9-12, Pharmacy Technician

PHARMACY CALCULATIONS STANDARD 04 Students will assist the pharmacist in calculating ingredients and doses, and determine dosage form, quantity and supply of medications dispensed in a variety of pharmacy settings.
OBJECTIVES

- 04.01 Solve basic mathematical problems involving fractions, decimals, percents, ratios and proportions.
- 04.02 Perform conversions from one metric unit of measure to another.
- 04.03 Interpret and use the four systems of measurement and perform conversions.
- 04.04 Set up ratio and proportion equations and solve for unknown terms.
- 04.05 Evaluate drugs problems involving solutions, solid dosage forms, injection solutions and TPN solutions.
- 04.06 Analyze problems involving pediatric and elderly dosing.
- 04.07 Prepare and calculate the drug dosage for intravenous solutions.
- 04.08 Prepare and

In this chapter the student will learn some of the key terms encountered in a hospital pharmacy. The student will become familiar with different hospital units, the stock they require, and the different functions they serve. The chapter defines the most common tasks performed by hospital pharmacy technicians and reveals the pertinent information required for processing patient orders.

- Define the most common tasks performed by hospital pharmacy technicians.
- Identify hospital units according to their speciality
- Explain the functions of various hospital pharmacies.
- List the patient information required for processing orders
- Describe the functions of satellite pharmacies
- Recognize the differences in floor stock depending on the area of the hospital
- List special unit services and the type of stock they require
- Explain the reasons for stock rotation, PAR levels, and ordering practices
- Describe the differences between horizontal and vertical laminar flow hoods
- List the types of medications used on crash carts and the areas that stock them
- Aseptic technique
- Code blue
- Floorstock
- Inpatient
- Inpatient or in-house pharmacy
- NKDA
- On-call
- PAR
- Post-op
- Pre-op
- Protocol
- STAT order

calculate reconstituted non-injected solutions for oral and enteral feeding.

- 04.09 Calculate drug dosage based on the body weight of the pediatric, adult and the elderly patient.
- 04.10 Demonstrate proficiency in meeting pharmacy efficiency and accuracy standards.
- 04.11 Demonstrate calculator functions.
- 04.12 Explain percentage preparations (w/w, w/v, v/v).

INTRAVENOUS (IV) PREPARATIONS

STANDARD 05 Students will assist the pharmacist in the preparation of admixtures and demonstrate correct operation and procedures of admixture equipment.

OBJECTIVES

- 05.01 Interpret the calibration of the appropriate equipment to administer the IV admixture medication to the patient.
- 05.02 Identify and explain the most common parenteral routes of administration used in the institutional pharmacy.
- 05.03 Accurately prepare an IV admixture in the laminar flow hood.
- 05.04 Describe and categorize the drugs most commonly used in an IV admixture.
- 05.05 Identify and

describe the facilities, equipment and supplies used in the preparation of IV admixture medications.

- 05.06 Explain and demonstrate the aseptic techniques and procedures followed in the preparation of an IV admixture.
- 05.07 Describe the preparation, equipment, supplies, techniques and precautions used in compounding chemotherapy drugs.
- 05.08 Measure, calculate and transfer IV drugs.
- 05.09 Identify universal precautions to avoid IV contamination.
- 05.10 Explain the proper procedure for repacking IV drugs.
- 05.11 Prepare TPN solutions for patients.
- 05.12 Describe the flow of IV admixture orders within an institutional setting.

**Repackaging -
Compounding** 

(Week 27, 3 Weeks) 

UT: CTE: Health Education, UT: Grades 9-12, Pharmacy Technician
ADVANCED COMPOUNDING STANDARD D Students will explain mythologies needed to make effective dosage forms to meet individual patient needs.
OBJECTIVES

- D.1 Define advanced compounding formulations.
- D.2 Prepare advance dosage forms.
- D.3 Maintain compounding forms

At the completion of this chapter the student will be able to define key terms and procedures used in repackaging and compounding. The student will understand how to assign new expiration dates, how to use several kinds of balances, and how to properly document the compounding and repackaging process. The student will explore the reasons

- Define terms used in compounding procedures.
- List the common reasons behind using unit dose medications.
- List the steps in repackaging medications.
- Describe the proper handling of medications when repackaging.
- List the requirements for assigning expiration dates for unit dose medication.
- Explain the calculations used to determine expiration dates when repackaging.
- Describe the equipment used in compounding drugs
- Explain the correct methods in preparing and clean-up of compounding areas.
- Describe the way in which ointments or creams should be packed into jars.

- Blister packs
- Bulk compounding
- Calibration
- Compounding
- Cream
- Elixir
- FDA
- Hydrophilic
- Hydrophobic
- Mortar and pestle
- Ointment
- Reconstitution
- Repackaging
- Solute
- Solution
- Solvent

- and records.
- D.4 Illustrate initial requirements necessary to compound a formulation.
- D.5 Prepare prescription and medication orders using common compounding equipment and facilities.
- D.6 Demonstrate the proper use of equipment, knowledge of required procedures and maintaining a compounding log.
- D.7 Explain detailed pharmaceutical considerations and common compounding procedures for various formulations.
- D.8 Prepare sterile compounding formulations and explain how to administer them.

why pharmacies practice repackaging and compounding and will be introduced to the various risks, responsibilities, and benefits—both to pharmacies and pharmacists—of repackaging and compounding.

- Differentiate between types of scales used to weigh compounds.

- Suspension
- Syrup
- Tincture
- Unit dose

Over-the-Counter and Skin Disorders

(Week 30, 3 Weeks)

UT: CTE: Health Education, UT: Grades 9-12, Pharmacy Technician
OTC AND HERBAL PRODUCTS STANDARD 10
 Students will prepare to assist patients in selecting OTC and herbal supplements to alleviate symptoms and to assist the pharmacist in determining which patients using OTC or herbal supplements need counseling.
OBJECTIVE

- 10.01 Describe the role of self-medication with OTC products in the health care delivery system.
- 10.02 Explain when

In this chapter, the student will have the opportunity to learn key terms and information on over-the-counter (OTC) medications as well as skin care products. The student will learn how the FDA determines whether a drug is suitable for OTC use. The student will learn the most common OTC medicines, their uses, and important patient information such as side effects and drug interactions. The student will learn basics of skin

- Describe why over-the counter (OTC) medications are popular.
- List considerations that should be made concerning the use of OTC drugs.
- List the three categories used by the Food and Drug Administration (FDA) for OTC drugs.
- Describe FDA regulations concerning the manufacturing of OTC drugs.
- Explain how legend drugs become OTC drugs.
- Describe the various types of conditions that OTC medicines treat.
- List major components of skin anatomy.
- List the types of agents used to treat skin conditions.
- Determine the right strength of sunscreen necessary to protect skin from ultraviolet rays.
- Define the various forms of acne.
- Describe infectious inflammatory conditions and the types of medications used to treat

- Analgesic
- Antiinflammatory
- Antiseptic
- Antitussive
- ASA
- Bulk forming
- Desquamation
- Expectorant
- Keratolytic
- OTC
- Prophylaxis
- Protectant
- Pruritus
- ROA
- Sunscreen

- OTC or herbal medication is appropriate.
- 10.03 Explain federal regulations for OTC and herbal preparations.
 - 10.04 Evaluate the advertising of OTC and herbal products.
 - 10.05 Explain the labeling requirements for OTC and herbal products and their place in medical therapy according to the Dietary Supplement Health and Education Act.
 - 10.06 Compare OTC, herbal, homeopathic and dietary supplements.
 - 10.07 Identify and practice methods to obtain patient history of non-prescription medications.
 - 10.08 Explain potential hazards of non-prescription products including contamination, adulteration, interaction with prescription medications and adverse reactions.
 - 10.09 Apply techniques to determine which patients using non-prescription products need counseling by a pharmacist.

anatomy and become familiar with the most common skin conditions (especially acne and psoriasis) and their treatments. The student also will learn the SPF system for rating sunscreen and how this information can be used by the consumer to select an appropriate product.

- them.
- Describe these serious skin conditions and the types of medications used to treat this skin condition.

PHARMACY MANAGEMENT STANDARD 12 Students will follow the guidelines of medication orders and returns, maintain security of the pharmacy, manage prescription and nonprescription drug lists in the pharmacy, keep the

pharmacy clean and organized, and maintain and obtain the medication inventory.

OBJECTIVES

- 12.15 Describe and identify OTC medications stocked by the pharmacy technician or pharmacist, assist customers to locate medication and instruct on usage.

Pharmacy Stock

(Week 33, 3 Weeks) 

UT: CTE: Health Education, UT: Grades 9-12, Pharmacy Technician

PHARMACY MANAGEMENT STANDARD 12 Students will follow the guidelines of medication orders and returns, maintain security of the pharmacy, manage prescription and nonprescription drug lists in the pharmacy, keep the pharmacy clean and organized, and maintain and obtain the medication inventory.

OBJECTIVES

- 12.01 Analyze the pharmacy department for efficient management, maximum function and workflow.
- 12.02 Identify and list the professional bodies and associations/organizations which set and maintain pharmacy standards (ASHP, UPS, JCAHO, ASCP, OSHA).
- 12.03 Explain the concept of pharmacy formulary.
- 12.04 Identify the work areas in the pharmacy.
- 12.05 Identify sources

In this chapter, the student will learn the purpose of a formulary and how formulary drugs, both generic and trade, affect costs to patients, pharmacies, and insurance companies. The student will be introduced to the primary types of insurance company and how each manages drug coverage. To familiarize the student with the Medicare prescription drug benefit (new in 2006), several class activities and a homework assignment feature articles and government updates about the policy that affects 40 million Americans. The student also will learn methods of ordering to keep stock levels constant and the types of automated dispensing systems in use.

- Explain the function of a drug formulary.
- Describe the differences between generic and trade drugs and how they affect cost to the patient and pharmacy.
- List the primary types of insurance companies and how they manage drug coverages.
- Differentiate between Medicaid and Medicare programs and who is eligible.
- Explain the purpose of worker's compensation.
- List the types of automated dispensing systems.
- Describe three main ordering systems available in a pharmacy to keep stock levels constant.

- Adjudication
- PAR
- POS
- Recall
- Trade name
- Government
- HMO
- PPO
- Workmen's compensation

- of medications.
- 12.06 Explain the medication purchasing process.
- 12.07 Apply concepts of inventory management.
- 12.08 Identify and describe the procedures for receiving orders.
- 12.09 Identify and describe the procedures for stocking medications.
- 12.10 Identify medication storage requirements for pharmaceutical companies.
- 12.11 Describe the procedures and methods used for returning unwanted medications and supplies.
- 12.12 Identify the function of a medication package.
- 12.13 Describe the procedures for sales transactions using the cash register.
- 12.14 Describe the routine duties to maintain the pharmacy.
- 12.15 Describe and identify OTC medications stocked by the pharmacy technician or pharmacist, assist customers to locate medication and instruct on usage.
- 12.16 Differentiate between pharmacy compounding and manufacturing.
- 12.17 Explain important aspects of weighing pharmaceuticals and

- measuring liquid pharmaceuticals.
- 12.18 Describe the concept of reconstitution.
- 12.19 Identify common elements of the unit dose distribution system.
- 12.20 Discuss why pharmacy workers need to know how to safely handle the many potentially hazardous materials in the pharmacy environment.
- 12.21 Identify the general safety rules and precautions in the pharmacy environment.
- 12.22 Discuss the importance of cleanliness in the pharmacy work environment.
- 12.23 Explain the necessity and importance of cleaning and maintenance of specialized pharmacy equipment.
- 12.24 Review the pharmaceutical technology advancements that are common in the pharmacy system.
- 12.25 Identify the fire safety rules for the pharmacy workplace.
- 12.26 Restate general rules regarding what to do in the event of a pharmacy robbery.

Psychopharmacology

 (Week 36, 2 Weeks) 

UT: CTE: Health Education, UT: Grades 9-12, Pharmacy Technician
HUMAN ANATOMY and

In this chapter, the student will be introduced to the most common forms of

- List the major medications used for each of the conditions described in the chapter
- Differentiate between older and newer treatments for the mentally disabled

- Anxiety
- Bipolar disorder
- Depression
- Dystonia

PHYSIOLOGY

STANDARD 01 Students will describe the basic concepts of human anatomy and physiology, common diseases and disorders of all body systems related to pharmacodynamic and pharmacokinetic properties of drugs.

OBJECTIVES

- 01.01 Identify and describe basic human anatomy.
- 01.02 Identify and describe basic human physiology.
- 01.03 Analyze the relationship of human physiology and drugs.
- 01.04 Examine diseases and disorders of the human body.

PHARMACOLOGY

STANDARD 02 Students will identify pharmacology, drugs, drug sources, drug actions and their effects on the human body.

OBJECTIVES

- 02.02 Explain the pharmacodynamics and pharmacokinetics (biopharmaceutics) of drugs in the human body.
- 02.06 Discuss basic posology and toxicology.
- 02.09 Explain the basic terminology of chronic drug administration and drug dependence.
- 02.10 Discuss factors that can alter drug response in the patient.
- 02.11 Compare beneficial and harmful

mental illness and their treatments. The student will become familiar with the methods used to treat mental illness in the past, as well as with a number of nondrug therapies currently in use. The student will learn the types of mental health professionals and what conditions they normally treat. The student will become familiar with the major classes of drugs to treat mania and depression, as well as the side effects and cautions for each of those drug classes. The student will learn how insomnia is treated and what types of drugs are used for sedative and hypnotic purposes. In addition, in this first chapter of Section III (Classifications of Drugs), the student should begin creating sets of flashcards for each drug class introduced. The flashcards will be used in class activities to help memorization and promote understanding.

- Distinguish the capabilities of a psychologist versus a psychiatrist
- Describe the main emotional conditions affecting the brain
- Describe the types of nondrug therapy available to patients suffering from various mental disorders
- Describe the differences between the uses of phenothiazines and thioxanthenes
- Differentiate between a normal depression and a severe depression
- List the differences between the uses of monoamine oxidase inhibitors (MAOIs), tricyclic antidepressants (TCAs), and selective serotonin reuptake inhibitors (SSRIs).
- Explain the reasons for the use of SSRIs over MAOI and TCA agents
- List the type of insomnia that can occur and why
- List the major medications used for each of the conditions described in psychopharmacology
- List the most common side effects of the major psychopharmacology medications
- Extrapyramidal
- Insomnia
- Mania
- Neurosis
- Psychosis
- Schizophrenia
- Tardive dyskinesia
- Tourette's syndrome

effects of drugs.

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