

PHARMACY TECHNICIAN TRAINING PROGRAM

COURSE DESCRIPTION

The University of Tennessee Health Science Center College of Pharmacy is partnering with the Therapeutic Research Center to launch a comprehensive online pharmacy technician training program. This program is to prepare current and aspiring pharmacy technicians with standardized training to succeed in the fast-paced pharmacy practice setting. This program also serves as thorough examination preparation for the Pharmacy Technician Certification Exam.

Course Title	Pharmacy Technician Training Program
Availability	Online
Hours	160
Schedule	Self-paced, to be completed in 12 weeks

PROGRAM DIRECTORS

James S. Wheeler, Pharm.D., BCPC

Assistant Professor
Director, Continuing Professional Development
College of Pharmacy
The University of Tennessee Health Science Center
1924 Alcoa Hwy, Box 117
Knoxville, TN 37920
T: 865.974.2386
E-mail: jwheele4@uthsc.edu

Rachel E. Barenie, Pharm.D., J.D., M.P.H

Assistant Professor
Assistant Director, Continuing Professional Development
College of Pharmacy
The University of Tennessee Health Science Center
881 Madison Ave., Room 573
Memphis, TN 38163
T: 901.448.3513
E-mail: rbarenie@uthsc.edu

COURSE ADMINISTRATIVE ASSISTANT

Bethany Ogle
Senior Conference Specialist
1924 Alcoa Hwy, Box 117
Knoxville, TN 37920
Office Phone: 865-974-6605
Email: bogle9@utk.edu

Rena Ishak
Senior Conference Specialist
1924 Alcoa Hwy, Box 117
Knoxville, TN 37920
Office Phone: 865-974-6605
Email: rishak@uthsc.edu

COURSE MATERIALS

Upon enrollment in the program, the course directors will provide you access to the comprehensive online pharmacy technician training program. You will receive your own user name and login to be able to access program materials.

Please navigate to this link upon receipt of credentials to access program materials:

<https://ptu.therapeuticresearch.com/login/index.php?tenantid=204>

COMMUNICATIONS

Please e-mail the course directors directly for questions. Expect a response within 48 business hours, but do not expect a reply during weekends or University closing dates.

PROGRAM OBJECTIVES

Upon completion of this program, each learner should be able to:

- Differentiate between duties allows and not allowed of a pharmacy technician
- Practice within the scope of practice of a pharmacy technician
- Translate medical terminology and sig codes
- Calculate drug dosages, concentrations, quantities, and days' supply
- Prepare prescriptions and medication orders
- Practice billing procedures for medications and supplies
- Follow inventory policies and procedures
- Classify different pharmacologic classes of medications
- Assist the pharmacist in medication therapy management
- Demonstrate medication reconciliation
- Prepare unit-dose orders and products for medication carts
- Demonstrate sterile and non-sterile compounding
- Demonstrate compounding procedures for chemotherapy agents

COURSE EXPECTATIONS

The following guidelines are intended to create a comfortable and productive learning environment through the program.

The learner can expect the course directors to:

- To provide prompt access to program materials
- To be accessible throughout the learner's enrollment in the program
- To answer questions and provide guidance, when possible

The course directors can expect the learner to:

- To complete courses in the program in a timely fashion
- To spend an adequate amount of time on the program each week, making an effort to learn and complete quizzes
- To see help when appropriate

ASSESSMENT

Three attempts are given for each module quiz and final exam. The minimum pass scores are as follows:

- Module quiz – 80%
- Final exam – 75%

COURSE ATTENDANCE POLICY

The course is completely online, and it is recommended that learners dedicate about 15 hours per week to the program to finish in 12 weeks.

PHARMACY TECHNICIAN CERTIFICATION EXAM REIMBURSEMENT

Learners may be eligible for reimbursement of their Pharmacy Technician Certification Exam. The only exam eligible for reimbursement is the Pharmacy Technician Certification Exam administered by the Pharmacy Technician Certification Board (see: <https://www.ptcb.org>). To be eligible for reimbursement, learners must meet the following requirements: passage of all course assessments in the Pharmacy Technician Training Program, completion of the program in 3 consecutive months from the learners start-date (or in a reasonable timeframe agreed upon by the learner and course directors), and passage of the Pharmacy Technician Certification Exam. Failure to meet these requirements may render the learner ineligible for reimbursement. If you require a modification to the suggested course schedule below, please email the course directors prior to your course start date.

PROFESSIONAL CONDUCT

Learners are expected to act in a professional manner in all interactions with the course directors, staff, and other learners. Failure to adhere to this policy may result in disciplinary action, as determined by the course director, and/or appearance before the Professionalism Committee of the College.

PROGRAM DISHONESTY

Receiving help from another learner or any other person to complete module assessments or any other program work is prohibited. Learners found in violation of this policy may not be eligible for the pharmacy technician certification exam reimbursement.

PROGRAM EVALUATIONS

Evaluations measure achievement of the program objectives and faculty performance. The data collected are used to ensure the integrity of the program and improve educational experiences in the program. Learners will receive an on-line evaluation of course directors, program materials, and experience in the program overall upon completion of program.

PROGRAM FEES

There are no refunds for the Pharmacy Technician Training Program. Please check with the Board of Pharmacy in the state you plan to practice (or are practicing) to determine your eligibility and the requirements to become a pharmacy technician. If you are interested in a payment plan, please email the course directors. The payment plan will consist of 3 installments of \$600 to be due on the first day of each consecutive month the learner is enrolled in the program. If timely payment is not received, the course directors reserve the right to suspend access to the Pharmacy Technician Training Program.

COURSE SCHEDULE

Program location: Online. Below is the recommended schedule to stay on track for timely course completion.

Weeks	Time hrs)	Topic	Summary
Week 1	12.5		
	3	Role of Pharmacy Technician	A look into the roles and responsibilities of pharmacy technicians and other pharmacy staff. Learn about the duties of the technician in various pharmacy settings, along with the requirements necessary to become a technician and to maintain technician status. Also, learn about the many organizations available for pharmacy technicians to join and their mission to advance pharmacy practice.
	3	Drug Information Resources	See how package inserts are organized and what information can be found in each section. Learn about various professional resources available to pharmacy technicians that are used to retrieve medical information.
	2	Laws Affecting Prescription Dispensing	A comprehensive look into the federal laws and regulations that govern medication dispensing. Understand the importance of the laws and regulations governing medication dispensing and how they relate to the pharmacy technician's role. Also, understand the responsibilities of federal regulatory agencies that impact the dispensing of medications.
	4.5	Laws Affecting Prescription Dispensing – Supporting Materials	A detailed look at the importance of pharmacist counseling and keeping children safe from medications. As well as a deep dive into HIPAA (Health Information Portability and Accountability Act).
Week 2	12		

Weeks	Time hrs)	Topic	Summary
	2.5	Drug Regulation and Control	Learn how medications are regulated when going to market and when they are recalled or withdrawn. Walk through the phases of a drug's approval process and the pharmacy tech's role with investigational drugs. Also, understand the elements of brand-name patents and generic meds. Learn what's involved with generic substitution using the Orange Book, along with understanding the differences among pharmaceutical and therapeutic alternatives.
	1.5	Drug Regulation and Control—Supporting Materials	A detailed look into an expert's experience with investigational drugs. Also, understand and learn practice tips when it comes to dealing with unapproved drugs, drug recalls, market withdrawals, and generic substitution.
	3	Controlled Substances	A comprehensive learning experience about DEA (Drug Enforcement Administration), as well as the laws and regulations that pertain to the classification, prescribing, and dispensing of controlled substances. Understand the requirements for managing controlled substance inventory and recordkeeping, along with exploring the requirements for transfers, proper disposal, and handling diversion.
	0.5	Controlled Substances – Supporting Materials	Learn useful and practical techniques when it comes to handling controlled substance prescriptions, dispensing controlled substances, and knowing what type of drugs are unexpectedly misused and abused.
	1.5	Restricted Drug Programs	Understand which medications have special requirements when being prescribed and/or dispensed. Learn about the regulations behind these requirements, the details of the requirements, and the role of the pharmacy technician.
	1.5	Restricted Drug Programs— Supporting Materials	Gain valuable practice techniques as it pertains to medications with special prescribing and/or dispensing requirements. Take a detailed look into Combating Methamphetamine Abuse and how it pertains to pseudoephedrine sales.
	1.5	State Laws and Regulations	Learn the state-specific laws and regulations for the role of the pharmacy technician, duties that can and cannot be performed by a technician, and requirements to become a technician. Understand the

Weeks	Time hrs)	Topic	Summary
			difference between federal and state laws as it pertains to prescribing and dispensing meds, as well as controlled substance and recordkeeping requirements.
Week 3	13.5		
	2.5	Pharmaceutical Terminology	Learn common medical terminology used in the pharmacy. Use word parts to determine the meaning of medical terms, body parts, drug names and classes, and diseases and conditions. Translate abbreviations and symbols that are used to write prescriptions. Also, find out which abbreviations and symbols are error prone and should be avoided.
	0.5	Pharmaceutical Terminology— Supporting Materials	A detailed look into drug name abbreviations to help understand what they really mean, along with practice techniques to avoid errors. Also, hear about what’s happening in the pharmacy when it comes to dangerous abbreviations and how to prevent mix-ups.
	1.5	Medication Safety	Learn what a medication error is, how they occur, and how they can be prevented. Understand how to handle and report medication errors appropriately to help keep patients safe and help prevent the same error from happening again. Also, learn about safety data sheets, which meds require them, and how they help maintain safety in the pharmacy.
	1	Medication Safety— Supporting Materials	A detailed look into medication safety by understanding points of care that can lead to medication errors. Review techniques in practice that can prevent medication errors, including proper use of pillboxes and over-the-counter medications.
	2	Communication	See how proper communication is essential to working with patients, pharmacy colleagues, and other healthcare staff. Learn techniques that can be used to effectively communicate verbally and nonverbally with patients who have vision or hearing impairment, language barriers, or other challenges.
	0.5	Communication— Supporting Materials	A detailed look into communication challenges and how to overcome them, specifically with other healthcare professionals and transgender patients.
	2.5	Introductory Calculations	See how foundational math concepts prepare technicians for performing pharmacy calculations. Learn the rules for working with roman numerals and

Weeks	Time hrs)	Topic	Summary
			their current use in the pharmacy. Also, practice adding, subtracting, multiplying, and dividing with fractions and decimals.
	2.5	Basic Pharmaceutical Calculations	Understand ratios and proportions and how they're used in the medication-use process. Use ratios and proportions to calculate dispense quantities and days' supply.
	0.5	Pharmaceutical Calculations— Supporting Material	A detailed look on how to calculate day's supply for various dosage forms. Includes a cheat sheet for calculating day's supply for meds with fixed quantities.
Week 4	15.5		
	3.5	Measurement Calculations	Use conversion factors from multiple measuring systems to convert between units. Practice calculating with prescriptions that need converting in order to accurately prepare the products.
	3.5	Dosage Calculations	Learn how to calculate dosages for pediatric and adult patients. Practice calculating dosages for parenteral meds, and meds dosed in milliequivalents and units.
	1.5	Business Calculations	Understand and learn how to calculate business concepts such as turnover, markup, and profit.
	5.5	Basic Pharmaceuticals	Learn about various dosage forms used to deliver medication. Understand the characteristics of and auxiliary labels used for each dosage form. Also, learn how to calculate quantity to dispense and days' supply for dosage forms requiring unique calculations.
	1.5	Basic Pharmaceuticals— Supporting Materials	A detailed look into transdermal patches, topicals, eye and ear medications, inhaled products, and oral dosage forms. Plus, learn which tablets and capsules can be crushed, opened, or split.
Week 5	15		
	2.5	Prescription Drop-Off and Entry	Understand how prescriptions arrive at the pharmacy. Learn the ins and outs of the drop-off window, including what questions to ask patients in order to create or update a patient profile and how to verify a prescription is written properly. Work within the rules of HIPAA when communicating prescription information.

Weeks	Time hrs)	Topic	Summary
	1.5	Prescription Drop-Off and Entry— Supporting Materials	A detailed look into managing patient profiles and how to handle drug allergy and drug interaction information. Hear an expert’s perspective on electronic prescriptions. Plus, understand the confusion that can occur with the letter “L.”
	4.5	Prescription Preparation	Learn how to verify accurate prescription labels, fill prescriptions, and select appropriate auxiliary labels. Use automation and other medication safety techniques, including how to identify high-alert meds and look- alike/sound-alike meds. Ask patients specific identifiers before releasing a prescription at the pick-up window and provide necessary documentation with the prescription.
	2.5	Prescription Preparation— Supporting Materials	Get an overview of hazardous drugs and learn how to handle them in the pharmacy. Find out which meds need to be dispensed in an original container and get dispensing tips for pediatric patients. Learn about specialty drugs, what they are, and how they’re managed. Plus, get information on automated dispensing cabinets, proper med administration, prescription transfers, and optimizing pharmacy workflow.
	2.5	Billing and Third-Party Processing	Understand various payers, such as Medicaid, Medicare, TRICARE, HMOs, PPOs, and other aids for payment. Learn third-party billing terminology and processes used to bill patients’ insurance for prescription medications. Learn to troubleshoot rejections from payers, as well as, how to effectively communicate billing issues with patients.
	1.5	Billing and Third-Party Processing— Supporting Materials	A detailed look into billing for prescription drugs, the aspects of Medicare, and the new Medicare card. Plus, specifics about durable medical equipment, such as U-500 insulin syringe, spacers, blood pressure monitors, and blood glucose meters.
Week 6	13		
	1.5	Inventory Control and Management	Gain an understanding of suppliers used by pharmacies to stock medications. Also, learn how to organize stock, order and reorder meds, as well as check in orders. Develop techniques to keep the

Weeks	Time hrs)	Topic	Summary
			pharmacy organized and medications in date and learn the benefits of returning medications to suppliers.
	1	Inventory Control and Management— Supporting Material	A detailed look into pharmacy inventory, expiration dates, medication storage, and proper med disposal. Also, learn how to prevent common mishaps by managing inventory properly.
	0.5	Pharmacology	See how foundational pharmacology concepts prepare students for more in-depth PTU pharmacology modules, and equip technicians in the pharmacy to help spot med errors. Learn about common disease states by body system, how medications work in the body, and how they're eliminated. Also, practice spotting mix-ups with prescription directions and diagnoses. Also, a resource about common labs tests and their clinical use.
	5	Immune System	Learn basic pharmacology of the immune system with emphasis on drug therapy. Course content includes terminology, therapeutic classes of drugs, indications, side effects, contraindications, and generic and brand names.
	2	Immune System— HIV Training	Gain an understanding of HIV and AIDS by learning the etiology and epidemiology, types of testing and need for counseling, infection control guidelines, clinical manifestations, legal and ethical issues, confidentiality, and drug treatment.
	1	Immune System Emerging Therapies	Detailed presentations of the new shingles vaccine, secnidazole for bacterial vaginosis, ozenoxacin for impetigo, baloxavir for influenza, new meds for hepatitis C, and an update on influenza for 2018-2019.
	0.5	Immune System— Supporting Materials	A comprehensive review of the basics of immunizations and vaccines. Plus, presentations on treating partners for sexually transmitted diseases, warnings on hepatitis C meds, and travel health.
	1.5	Respiratory System	Learn basic pharmacology of the respiratory system with emphasis on drug therapy. Course content includes terminology, therapeutic classes of drugs, indications, side effects, contraindications, and generic and brand names.

Weeks	Time hrs)	Topic	Summary
Week 7	15		
	2.5	Respiratory System—Smoking Cessation	Understand the details about options to quit smoking. Learn the pharmacological and behavioral aspects to help patients who want to quit smoking.
	0.5	Respiratory System Emerging Therapies	A detailed look at over-the-counter nasal sprays for allergy relief and a new glycopyrrolate nebulizer for COPD.
	0.5	Respiratory System—Supporting Materials	Presentations on COPD treatment, proper use of inhalers, phenylephrine for congestion, and how to prevent errors with inhalers.
	1.5	Topical Agents	Learn basic pharmacology of topical agents with emphasis on drug therapy. Course content includes terminology, therapeutic classes of drugs, indications, side effects, contraindications, and generic and brand names.
	1	Topical Agents Emerging Therapies	A detailed look at new meds for open-angle glaucoma, over-the-counter acne meds, and brimonidine for red eyes. Plus, presentations on hyperhidrosis treatment and the management of eczema and rosacea.
	1	Topical Agents—Supporting Materials	A review of therapies used for dry eyes; head lice; insect repelling; glaucoma; and poison ivy, oak, and sumac. Plus, how to care for tattoos.
	2	Gastrointestinal System	Learn basic pharmacology of the gastrointestinal system with emphasis on drug therapy. Course content includes terminology, therapeutic classes of drugs, indications, side effects, contraindications, and generic and brand names.
	0.5	Gastrointestinal System—Emerging Therapies	A detailed look at new meds for opioid-induced constipation.
	0.5	Gastrointestinal System—Supporting Materials	A review of the treatment of <i>H. pylori</i> and appropriate use of proton pump inhibitors (PPIs).
	3.5	Cardiovascular System	Learn basic pharmacology of the cardiovascular system with emphasis on drug therapy. Course content includes terminology, therapeutic classes of drugs, indications, side effects, contraindications, and generic and brand names.

Weeks	Time hrs)	Topic	Summary
	1.5	Cardiovascular System—Supporting Materials	A review of beta-blockers and reducing confusion with metoprolol products. Also, a detailed look on dispensing cholesterol-lowering medications, and how to help patients who take statins. Plus, a comprehensive review of new drugs for systolic heart failure, injectable anticoagulants, and dispensing oral blood thinners.
Week 8	14.5		
	1	Musculoskeletal System	Learn basic pharmacology of the musculoskeletal system with emphasis on drug therapy. Course content includes terminology, therapeutic classes of drugs, indications, side effects, contraindications, and generic and brand names.
	0.5	Musculoskeletal System Emerging Therapies	A detailed review of the new lidocaine patch and the new long-acting buprenorphine product for opioid use disorder.
	1.5	Musculoskeletal System—Supporting Materials	A comprehensive review of tramadol drug interactions and safe use of acetaminophen, opioids, fentanyl patches, and lidocaine patches. Plus, an overview of therapies used for restless leg syndrome, osteoarthritis, and osteoporosis.
	0.5	Opioid Epidemic—Naloxone	Learn about opioid use disorder and how naloxone and buprenorphine/naloxone combos play a part. Also, read answers to common questions and myths about naloxone use for opioid overdose.
	2.5	Central Nervous System	Learn basic pharmacology of the nervous system with emphasis on drug therapy. Course content includes terminology, therapeutic classes of drugs, indications, side effects, contraindications, and generic and brand names.
	0.5	Central Nervous System—Emerging Therapies	A detailed look at new injectable antipsychotics, erenumab for migraine prevention, and stimulant products for ADHD.
	1	Central Nervous System—Supporting Materials	A comprehensive review of therapies for ADHD and Parkinson’s disease, including possible drug interactions and tips for dispensing. Also, presentations on treatments for post-traumatic stress disorder (PTSD) in adults, managing dementia, and inappropriate use of antipsychotics.
	2	Endocrine System	Learn basic pharmacology of the endocrine system

Weeks	Time hrs)	Topic	Summary
			with emphasis on drug therapy. Course content includes terminology, therapeutic classes of drugs, indications, side effects, contraindications, and generic and brand names.
	0.5	Endocrine System Emerging Therapies	A detailed review of new products including insulin lispro, desmopressin nasal spray, pen device for concentrated insulin glargine, inhaled insulin, and insulin aspart.
	1	Endocrine System— Supporting Materials	A review of diabetes, including, how to improve care for diabetic patients, prevention of errors between regular and concentrated insulin, needle and syringe size selection, and prevention and treatment of hypoglycemia. Plus, get answers to common questions about levothyroxine and managing hypothyroidism.
	1	Reproductive System	Learn basic pharmacology of the reproductive system with emphasis on drug therapy. Course content includes terminology, therapeutic classes of drugs, indications, side effects, contraindications, and generic and brand names.
	0.5	Reproductive System—Emerging Therapies	A detailed review of flibanserin for female sexual dysfunction and prasterone for pain during intercourse for postmenopausal women.
	2	Reproductive System—Supporting Materials	A comprehensive review of testosterone replacement therapy and hormonal contraception, including drug selection, and error prevention. Plus, information on emergency contraception, drugs used during pregnancy and lactation, and erectile dysfunction treatments.
Week 9	13.5		
	1	Nutrition	Learn basic pharmacology of dietary supplements with emphasis on drug therapy. Course content includes terminology, therapeutic classes of drugs, indications, side effects, contraindications, and generic and brand names.
	0.5	Nutrition— Supporting Materials	A review of weight loss drugs, safe use of dietary supplements, and a comparison of oral iron supplements.
	0.5	Cancer Medications	Learn basic pharmacology of cancer agents with emphasis on drug therapy. Course content includes terminology, therapeutic classes of drugs, indications, side effects, contraindications, and generic and

Weeks	Time hrs)	Topic	Summary
			brand names.
	1	Community Non-dispensing Duties	Understand the importance of medication therapy management, the roles of the pharmacist and technician, and how it's implemented in the pharmacy.
	2	Community Non-dispensing Duties— Supporting Materials	A review of medication therapy management (MTM), including what is involved with a comprehensive medication review (CMR), how to master medication lists and histories, and the importance of medication adherence.
	1	Institutional Non-dispensing duties	Learn about medication reconciliation. Including communication tips and an interactive medication reconciliation exercise with a virtual patient.
	5.5	Compounding Calculations	Practice pharmaceutical calculations which include infusion rates, percentages, drug concentrations, compounding, dilutions, and alligations.
	1	Non-sterile Compounding	Gain an understanding of simple non-sterile compounding, including equipment, processes, and laws.
	1	Non-sterile Compounding— Supporting Materials	A summary of complex non-sterile compounding.
Week 10	14.5		
	4.5	Institutional Pharmacy Dispensing Process	Learn about patient charts and medication orders, preparation of patient-specific and non-patient specific meds, med delivery, and the use of automation.
	1	Institutional Pharmacy Dispensing Process—Supporting Materials	A comprehensive review of medication delivery and disposal, dispensing meds for surgeries, and patient satisfaction surveys (HCAHPS).
	0.5	Institutional Pharmacy— Supporting Materials	A comprehensive review of inpatient emergencies.
	5.5	Sterile Compounding	Understand the ins and outs of aseptic technique and sterile compounding preparation. Plus, learn about incompatibility and stability of products, irrigation solutions, laminar flow hoods, aseptic handwashing, supplies and equipment used in sterile compounding, and personal protective equipment (PPE).

Weeks	Time hrs)	Topic	Summary
	2	Sterile Compounding— Supporting Materials	A comprehensive review of the sterile compounding process, compliance with sterile compounding, and a review of hand hygiene. In addition, get a thorough teaching about United States Pharmacopeia (USP) Chapter <800>.
	1	Bloodborne Pathogens	A thorough teaching about eliminating or minimizing occupational exposure to bloodborne pathogens.
Week 11	14		
	1.5	Chemotherapy Compounding	Learn the details about aseptic technique and sterile compounding preparation of hazardous and chemotherapy medication. Plus, gain understanding of the importance of biological safety cabinets, and the steps to follow when cleaning chemotherapy spills.
	1	Emergency preparedness	Learn about potential emergencies that can affect the pharmacy. Plus, gain knowledge to personally prepare oneself for an emergency, in addition to the pharmacy.
	0.5	Emergency preparedness— Supporting Materials	A detailed look at how to handle natural disasters and tips to prevent or handle pharmacy robberies.
	11	Review Games	An opportunity to review content pertaining to roles and duties of the pharmacy technician, pharmacy law and regulations, terminology, calculations, dosage forms, billing, pharmacology, medication safety, compounding, inventory, prescription preparation, and institutional pharmacy practice.
Week 12	7		
	1.5	Review Quizzes Part 1	An opportunity to review content pertaining to roles and duties of the pharmacy technician, pharmacy law and regulations, terminology, and calculations.
	1	Review Quizzes Part 2	An opportunity to review content pertaining to dosage forms, billing, medication safety, and communication.
	1	Review Quizzes Part 3	An opportunity to review content pertaining to pharmacology.
	1	Review Quizzes Part 4	An opportunity to review content pertaining to business and pharmaceutical calculations, inventory, prescription preparation, compounding, compounding calculations, and institutional pharmacy practice.



Continuing Professional Development

College of Pharmacy
1924 Alcoa Highway, Box 117
Knoxville, TN 37920
t 865.974.6605
f 865.974.2987

Memphis
Knoxville
Chattanooga
Nashville

Weeks	Time hrs)	Topic	Summary
	2.5	Final Exam	A comprehensive exam.