



PHARMACY TECHNICIAN

PROFESSOR

Greetings Students,

Welcome to the Lakewood University Pharmacy Technician Diploma Program, my name is Ollie Thomas. As a previous faculty member of the program, I am excited for the opportunity to once again play a part in your career journey as a pharmacy technician. Over the course of my career, I have served as a pharmacy technician, pharmacy technician trainer and educator, operations manager, and HR professional. As a trainer I have been responsible for the overall training and development of hundreds of pharmacy technicians. These development trainings consisted of day-to-day operations, system trainings and successful completion of the PTCB and state board certification processes.

I am graduate of The University of Toledo and The University of Texas at Tyler, obtaining a Bachelor of Science Degree in Healthcare Administration and a Master of Business Administration from each university, respectively.

Pharmacy Technicians play a critical role in the pharmacy workflow and will become even more valuable in the job marketplace as the healthcare environment continues to evolve. Upon completion of this program, you will obtain the tools you need to excel in an extremely rewarding career as a pharmacy technician and beyond.

Your first step is to click on the welcome section and take note of the syllabus. Remember, the syllabus is your guideline, but ultimately you decide the pace you complete the program. The only requirement is that you do not skip chapters. The course is designed to build on knowledge from the previous chapters, and you put yourself at a disadvantage if you try to skip around.

Having twelve years of experience in the retail pharmacy industry, I know how important this next step in your journey is. I look forward to being a part of this journey as your instructor.

Once again welcome to The Lakewood University,

Ollie Thomas, MBA, CPhT

CONTACT INFORMATION

E-mail: othomas@lakewood.edu

ONLINE SUPPORT (IT) AND MOODLE NAVIGATION:

All members of the Lakewood University community who use the University's computing, information or communication resources must act responsibly. Support is accessible by calling 1-800-517-0857 option 2 or by emailing info@lakewood.edu

BOOKS AND RESOURCES

Your Pharmacy Technician Program utilizes three textbooks:

Pharmacology for Technicians, 7th Edition, 2021

Pharmacy Practice for Technicians, 7th Edition, 2021

EVALUATION METHOD

GRADING SCALE

Graded work will receive a numeric score reflecting the quality of performance as given above in evaluation methods. The maximum number of points a student may earn is 670. To determine the final grade, the student's earned points are divided by 670.

Your overall course grade will be determined according to the following scale:

- A = (90% -100%)
- B = (80% - 89%)
- C = (70% - 79%)
- D = (60% - 69%)
- F < (Below 60%)

ACADEMIC INTEGRITY/ PLAGIARISM:

Cheating (dishonestly taking the knowledge of another person whether on a test or an assignment and presenting it as your work) and plagiarism (to take and pass off as one's own the ideas or writing of another) are a serious issue. While it is legitimate to talk to others about your assignments and incorporate suggestions, do not let others "write" your assignments in the name of peer review or "borrow" sections or whole assignments written by others. We do get ideas from life experiences and what we read but be careful that you interpret these ideas and make them your own.

I am aware that many types of assignments are available on the internet and will check these sources when there is legitimate suspicion.

Penalty is a zero on the assignment. In cases where there is a major or continuous breach of trust, further discipline, such as an "F" in the course, may be necessary.

The major consequence of any form of cheating is damage to your character and the result of trust and respect.

DISABILITY ACCOMMODATIONS

Students who have a disability and wish to request an academic accommodation should contact Jim Gepperth, the Disabilities Services Coordinator and Academic Dean. The student can request an accommodation at any time although it is encouraged to do so early in the enrollment process. The student should complete an accommodation request form which begins a conversation between the school and the student regarding the nature of their disability and an accommodation that would help the student succeed in their program. The school may request documentation regarding the disability to address the accommodation request effectively. The school will communicate to the student the type of accommodation arranged. This process typically follows a team approach, bringing together persons from the academic department (including the instructor) and personnel from other departments as necessary. Additional information on disability accommodations may be found in the Lakewood University Catalog.

Disability Services Email: disabilityservices@lakewood.edu

SUPPLEMENTAL TEXTS

You can use the following resources to assist you with proper source citation.

American Psychological Association Style Guide- https://www.mylakewoodu.com/pluginfile.php/118179/mod_resource/content/1/APA%20Style%20Guide%207th%20edition.pdf

The Purdue OWL website is also a helpful resource for students. Here is a link to the OWL website: https://owl.purdue.edu/owl/research_and_citation/apa_style/apa_formatting_and_style_guide/general_format.html

LIBRARY

Mary O'Dell is the Librarian on staff at Lakewood University

She is available by appointment. You can make an appointment with her by emailing her at modell@lakewood.edu or call at 1-800-517-0857 X 730

You may also schedule a meeting at this link: <https://my.setmore.com/calendar#monthly/r3a761583354923270/01032020>

She can assist you with navigating LIRN, research, citations etc.

SUPPORT

Each student at Lakewood University is assigned a Success Coach. Your Success Coach exists to assist you with academic and supportive services as you navigate your program. They will reach out to you, often, to check-in. Please use the resources they offer.

Student Services is available to assist with technical questions regarding Lakewood University and all services available to you.

1-800-517-0857 option 2
info@lakewood.edu
studentservices@lakewood.edu

CAREER SERVICES

Students are offered Career Services at any point as they journey their academics at Lakewood University.

1-800-517-0857 option 2
careerservices@lakewood.edu

LESSONS

TITLE	COURSE TOPIC	READINGS/ASSIGNMENTS	OBJECTIVES
Week One	You will learn the definition of pharmacology. In this section, you will also learn about why the pharmacy technician needs to understand and learn about pharmacology. In the drug actions section, you will develop an		Objective 2 Objective 3 Objective 4 Objective 8

understanding of the role that receptors play in the body. You will get an overview of the similarities and differences between agonists and antagonists in terms of pharmacology. You will learn the concepts associated with pharmacodynamics: messengers, receptors, and mechanisms of drug action. You will also learn about the four processes of pharmacokinetics: absorption, distribution, metabolism, and excretion.

Meet - Your Experiential Site Coordinator

Select - Your Pharmacy Externship Site

PTCB Registration

Read - Pharmacology Chapter 1 Introduction to Pharmacology and Medications in the Body

Read - Pharmacology Chapter 2 Pharmaceutical Development

Read - Pharmacy Practice Introductions

Watch & Learn Lessons

Lab - Proper Handwashing Demonstration Assignment

Lab - Practicing Professionalism in the Pharmacy Setting Assignment

Chapter One Exam

TITLE
Week Two

COURSE TOPIC

You will learn about study strategies, such as spacing, interleaving, testing, and the contiguity principle. You will discover how to eliminate distractions and adopt a growth mindset to improve your studying. In the pharmacy-specific study aids section, you will develop an awareness of how learning medications by drug class can assist with efficient pharmacology learning. You will learn common generic drug name endings and their associated drug classes. You will also learn about mnemonic devices useful for pharmacy.

READINGS/ASSIGNMENTS

- Read - Pharmacology Chapter 2 Pharmaceutical Development
- Read - Pharmacology Chapter 3 Pharmacology Study for the Pharmacy Technician
- Read - Pharmacy Practice Chapter 2 Pharmacy Law, Regulations, and Standards
- Assignment - History & DEA
- Assignment - State Law
- Watch & Learn Lessons
- Lab - Customer Service Point of Sale Assignment
- Lab - Using a Pseudoephedrine Logbook
- Chapter 2 - Practice Test
- Chapter 2 - Exam
- Chapter 3 - Exam

OBJECTIVES

- Objective 2
- Objective 3
- Objective 4
- Objective 8

TITLE
Week Three

COURSE TOPIC

READINGS/ASSIGNMENTS

OBJECTIVES
Objective 4

You will learn about the components of a prescription and commonly used prescription abbreviations. You will also learn about the “rights” of correct drug administration. You will discover common dosage forms as well as the routes of administration and dosage forms in the corresponding section of this chapter.

Read - Pharmacology Chapter 4 Prescription Orders and Medication Safety

Read - Pharmacology Chapter 5 The Integumentary System and Drug Therapy

Read - Pharmacy Practice Chapter 3 Drug and Supplement Development

Watch & Learn Lessons

Discussion - Interview

Lab - [ISMP Tall Man Lettering HAMSALAD Assignment](#)

Lab - [Reviewing Signa Codes & Patient Instructions Assignment](#)

Chapter Four Exam

Objective 9

TITLE	COURSE TOPIC	READINGS/ASSIGNMENTS	OBJECTIVES
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Week Four

You will learn about the anatomy and physiology of the musculoskeletal system in the first two sections of this chapter. In the osteoarthritis and drug treatments section, you will learn about drug classes used to treat osteoarthritis and their usage, side effects, contraindications, and cautions or considerations. You will also discover what the antidote is for acetaminophen overdose. As you progress through that section, you will develop an awareness of the similarities and differences between traditional NSAIDs and COX-2 inhibitors. As you move through rheumatoid arthritis and drug treatments section, you will get an overview of agents commonly used to treat rheumatoid arthritis and their usage, side effects, contraindications, and cautions or considerations.

Read- Pharmacology Chapter 5 The Integumentary System and Drug Therapy

Read- Pharmacology Chapter 6 The Musculoskeletal System and Drug Therapy

Read- Pharmacy Practice Chapter 4 Introducing Pharmacology

Assignment - Commonly Prescribed Medications

Assignment - Zantac

Watch & Learn Lessons

Lab - Entering Patient Data Assignment

Lab - Reviewing a Patient Profile Assignment

Chapter Five Exam

Chapter Six Exam

Objective 1
Objective 3
Objective 5
Objective 6

TITLE	COURSE TOPIC	READINGS/ASSIGNMENTS	OBJECTIVES
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Week Five

You will learn about the divisions of the nervous system and its functions. You will get an overview of the classes of drug therapy that are used to treat conditions affecting the nervous system. In the section called seizure disorders and drug therapy, you will learn about the physiologic processes that occur in epilepsy. In addition, you will develop an understanding of how seizures are classified and the goals of antiseizure therapy. You will also learn about the specific drugs used in the treatment of different classes of seizures.

Read - Pharmacology Chapter 7 The Nervous System and Drug Therapy

Read - Pharmacy Practice Chapter 5 Routes of Drug Administration and Dosage Formulations

Watch & Learn Lessons

Lab - Medication Therapy Management Assignment

Lab - Medication Reconciliation Form Assignment

Chapter Seven Exam

Objective 1
Objective 3
Objective 5
Objective 6

TITLE	COURSE TOPIC	READINGS/ASSIGNMENTS	OBJECTIVES
Week Six	<p>You will develop an understanding of the differences between antidepressants, antipsychotics, and anti-anxiety agents. In the depression, mood disorders, and drug treatment section, you will learn about the antidepressant classes, their uses, and their side effects. In the bipolar disorder and drug treatments section, you will discover the mechanism of lithium and other drugs used in treating bipolar disorders.</p> <p>Throughout this chapter, you will learn about the anatomy and physiology of the eyes and ears. You will learn about the classes of ophthalmic drugs, and the conditions they treat throughout the chapter. In the sections on glaucoma, chronic dry eye, and conjunctivitis, you will get an overview of the classes of ophthalmic drugs used to treat these conditions. In the sections on chronic dry eye and conjunctivitis, you will develop an understanding of how to properly use eye drops and ointments. In the otitis media and external and drug treatments section, you will discover the classes of optic agents used to treat these conditions. In addition, you will learn how to properly use eardrops.</p>	<p>Read - Pharmacology Chapter 8 The Nervous System, Mental Health, and Drug Therapy</p> <p>Read - Pharmacology Chapter 9 The Sensory System and Drug Therapy</p> <p>Read - Pharmacy Practice Chapter 6 Pharmacy Measurements and Calculations</p> <p>Watch & Learn Lessons</p> <p>Assignment - RX Verification</p> <p>Lab - Reviewing an RX Form Assignment</p> <p>Lab - Reviewing Medication Orders Assignment</p> <p>Chapter Six Practice Test</p> <p>Chapter Eight Exam</p>	<p>Objective 2</p> <p>Objective 3</p> <p>Objective 4</p>

TITLE	COURSE TOPIC	READINGS/ASSIGNMENTS	OBJECTIVES
Week Seven	<p>You will learn about the anatomy and physiology of the cardiovascular system. In hypertension and drug treatments section, you will learn about drug classes used to treat hypertension. In addition, you will discover the multiple therapeutic indications for these drugs. In the cardiac arrhythmias and drug treatments section, you will get an overview of agents commonly used to treat cardiac arrhythmia. In angina, myocardial infarction, and the corresponding drug treatments section of this chapter, you will compare and contrast the drug classes used to treat angina and myocardial infarction. You will then get an overview of these agents and their descriptions.</p>	<p>Read - Pharmacology Chapter 9 The Sensory System and Drug Therapy</p> <p>Read - Pharmacology Chapter 10 The Cardiovascular System and Drug Therapy</p> <p>Read - Pharmacy Practice Chapter 7 Community Pharmacy Dispensing</p> <p>Watch & Learn Lessons</p> <p>Assignment - Drug Interactions</p> <p>Lab - Processing a Refill Assignment</p> <p>Lab - Processing Third-Party Claims Assignment</p> <p>Chapter - Nine Exam</p> <p>Chapter - Ten Exam</p>	<p>Objective 1</p> <p>Objective 2</p> <p>Objective 3</p> <p>Objective 4</p>

TITLE	COURSE TOPIC	READINGS/ASSIGNMENTS	OBJECTIVES
Week Eight	<p>You will learn about the anatomy of the respiratory</p>		<p>Objective 5</p>

system. Throughout this chapter, you will learn about the differences between the main pulmonary diseases. In asthma and drug treatments section, you will develop an understanding of the pathophysiology and treatment of asthma. You will also get an overview of the pathophysiology and treatment of chronic obstructive pulmonary disease.

In section 12.1, you will learn about the anatomy and physiology of the gastrointestinal system. Throughout this chapter, you will develop an understanding of drug treatments for GI diseases. You will learn about gastroesophageal reflux disease and its complications. In diarrhea and drug treatment section, you will get an overview of antidiarrheal agents and their mechanisms of action. In constipation and flatulence and drug treatments section, you will learn about the role of fiber in the digestive process. You will also learn about laxatives and their mechanisms of action in that section.

Read - Pharmacology Chapter 11 The Respiratory System and Drug Therapy

Read - Pharmacology Chapter 12 The Gastrointestinal System and Drug Therapy

Read - Pharmacy Practice Chapter 8 Prescription Drug Insurance in Health Care

Watch & Learn Lessons

Lab - Obtaining a Refill Authorization

Lab - Processing "Filling" a Prescription

Chapter Eleven Exam

TITLE	COURSE TOPIC	READINGS/ASSIGNMENTS	OBJECTIVES
Week Nine	You will learn about the physiologic processes of the endocrine system. You will also learn about hormones and how they regulate the body. In the thyroid disorders and drug treatments section, you will develop an awareness of the treatments for disorders of the thyroid. As you progress through the adrenal glands and drug treatments section, you will discover commonly used corticosteroids. In diabetes and drugs treatments section of this chapter, you will learn about diabetes along with the proper treatment and care of patients with diabetes. You will also learn about the classes of drugs used to treat diabetes. In addition, you will develop an understanding of how the medications used to treat diabetes work.	<p>Read - Pharmacology Chapter 12 The Gastrointestinal System and Drug Therapy</p> <p>Read - Pharmacology Chapter 13 The Endocrine System and Drug Therapy</p> <p>Read - Pharmacy Practice Chapter 9 The Business of Community Pharmacy</p> <p>Watch & Learn Lessons</p> <p>Lab - Processing "Filling" a Prescription</p> <p>Chapter Twelve Exam</p>	<p>Objective 1</p> <p>Objective 2</p> <p>Objective 3</p> <p>Objective 4</p>

TITLE	COURSE TOPIC	READINGS/ASSIGNMENTS	OBJECTIVES
Week Ten	You will develop an understanding of the concept of hormones and how they regulate the body. You will also learn about sex hormones and their	<p>Read - Pharmacology Chapter 13 The Endocrine System and Drug Therapy</p> <p>Read - Pharmacology Chapter 14 The Reproductive System and Drug Therapy</p>	<p>Objective 5</p> <p>Objective 6</p> <p>Objective 8</p>

physiologic functions. In the hormone replacement therapy section, you will develop an awareness of the concept and applications of hormone replacement therapy. In the section called sexual dysfunction and drug treatments, you will get an overview of sexual dysfunction and the options for management

Read - Pharmacy Practice Chapter 10 Extemporaneous, Nonsterile Compounding

Watch & Learn Lessons

Lab - Processing "Filling" a Prescription

Lab - Reviewing a Filled RX

Chapter 13 Exam

Chapter 14 Exam

TITLE

Week Eleven

COURSE TOPIC

You will learn about the anatomy and physiology of the renal system. In the renal function and pharmacokinetics section, you will develop an awareness of renal system dysfunction and ways of assessing renal function. In the section titled urinary tract infection and drug treatments, you will learn about which antibiotics are used to treat urinary tract infections. You will also learn the indication, dosage and administration, side effects, contraindications, and cautions and considerations of phenazopyridine. In the urinary incontinence and drug treatments section, you will develop an understanding of the agents used to treat urinary incontinence, their dosage and administration, side effects, contraindications, and cautions and considerations.

In the first section of this chapter, you learned about the major organs and cells involved in the immune response. You will develop an awareness of the differences between the innate and adaptive immune systems. You will also learn the definitions of antigen and antibody. In sections 16.2 and 16.7, you will get an overview of the major types of antibiotics by drug class. Throughout this chapter, you will discover which auxiliary labels to use when dispensing major types of antibiotics and antifungals.

READINGS/ASSIGNMENTS

Read - Pharmacology Chapter 15 The Renal System and Drug Therapy

Read - Pharmacology Chapter 16 The Immune System, Bacterial Infections, Fungal Infections, and Drug Therapy

Read - Pharmacy Practice Chapter 11 Hospital Pharmacy Dispensing

Watch & Learn Lessons

Discussion - Electronic Systems

Lab - Point-of-Care Testing

Chapter 15 Exam

OBJECTIVES

Objective 1
Objective 3
Objective 5
Objective 6

TITLE

Week Twelve

COURSE TOPIC

You will learn about the differences between bacteria, fungi, and viruses and why the drugs used to treat them must have different mechanisms of action in the section called viruses and viral infections and in the section called antiviral agents. In the antiviral agents section and the HIV/AIDS and

READINGS/ASSIGNMENTS

Read - Pharmacology Chapter 16 The Immune System, Bacterial Infections, Fungal Infections, and Drug Therapy

Read - Pharmacology Chapter 17 The Immune System, Viral Infections, and Drug Therapy

Read - Pharmacy Practice Chapter 12 Infection Control, Aseptic Technique, and Cleanroom Facilities

OBJECTIVES

Objective 1
Objective 3
Objective 5
Objective 6

antiretroviral agents section, you will develop an understanding of the differences between antiviral and antiretroviral drugs in terms of their indications, therapeutic effects, side effects, dosages, and administration. You will also develop an awareness of how to use antiviral and antiretroviral terminology correctly in written and oral communication.

Watch & Learn Lessons

Discussion - Medication Therapy Management

Lab - Managing Pharmacy Inventory

Lab - Drug Recall / Shortage

Chapter 16 Exam

TITLE	COURSE TOPIC	READINGS/ASSIGNMENTS	OBJECTIVES
Week Thirteen	You will learn about sources of pain and the difference between acute and chronic pain. In the opioids and pain management section, you will develop an understanding of the role of opioid analgesics in pain management and the primary hazards of their use. You will also develop an awareness of the role of nonopioid analgesics in pain management. In the section on opioid use disorder and treatments, you will learn the signs of opioid use disorder and the drugs used to treat the disorder.	<p>Read - Pharmacology Chapter 17 The Immune System, Viral Infections, and Drug Therapy</p> <p>Read - Pharmacology Chapter 18 Pain, Anesthesia, and Drug Therapy</p> <p>Read - Pharmacy Practice Chapter 13 Sterile and Hazardous Compounding</p> <p>Watch & Learn Lessons</p> <p>Lab - Processing "Filling" a Prescription</p> <p>Lab - Filling and Recording a Controlled Substance Floor Stock Log</p> <p>Chapter 17 Exam</p> <p>Chapter 18 Exam</p>	<p>Objective 1</p> <p>Objective 3</p> <p>Objective 5</p> <p>Objective 6</p>

TITLE	COURSE TOPIC	READINGS/ASSIGNMENTS	OBJECTIVES
Week Fourteen	<p>You will learn about how the body uses vitamins and the common signs and symptoms of vitamin deficiency. In the fluids, electrolytes, and acid-base balance section, you will discover how fluids and electrolytes are used in the body. You will also learn how electrolyte replacement products are used.</p> <p>In the obesity and drug therapy section, you will develop an understanding of the definition of obesity. In addition, you will learn about the prescription treatments for obesity. In the malnutrition and drug therapy section, you develop an awareness of the similarities and differences between enteral and parenteral nutrition, including their purposes, ingredients, stability, and complications.</p>	<p>Read - Pharmacology Chapter 19 Nutrition, Fluids, Electrolytes, and Drug Therapy</p> <p>Read - Pharmacy Practice Chapter 14 Medication Safety</p> <p>Watch & Learn Lessons</p> <p>Assignment - Vitamins & Minerals</p> <p>Lab - Documentation and Preparing Immunizations</p> <p>Chapter 19 Exam</p>	<p>Objective 1</p> <p>Objective 3</p> <p>Objective 5</p> <p>Objective 6</p>

TITLE	COURSE TOPIC	READINGS/ASSIGNMENTS	OBJECTIVES
Week Fifteen	You will learn about the basic physiology of cancer and the growth of tumor cells. Throughout this chapter, you will about traditional	Read - Pharmacology Chapter 20 Cancer and Drug Therapy	<p>Objective 1</p> <p>Objective 3</p> <p>Objective 5</p> <p>Objective 6</p> <p>Objective 7</p>

chemotherapy drugs, hormonal anticancer therapies, and targeted anticancer drug therapies. As you progress through this chapter, you'll get an overview of the generic names, brand names, indications, dosage ranges, side effects, and considerations associated with drugs commonly used to treat cancer.

In the immunotherapy section of this chapter, you will discover when immunotherapy is justified as a viable treatment option. In the handling hazardous agents section, you will develop an understanding of strategies that help prevent chemotherapy-related errors.

Read - Pharmacy Practice Chapter 15 Professional Performance, Communication, and Ethics

Read - Pharmacy Practice Chapter 16 Your Future in Pharmacy Practice

Watch & Learn Lessons

Lab - Reconstituting Powered Drugs

Chapter 20 Exam

TITLE

Week Sixteen

COURSE TOPIC

This week you will prepare for and take your final exam for the didactic and simulation phase of the program. The next step is to now apply what you've learned by working in the real world during your externship.

READINGS/ASSIGNMENTS

Review - Pharmacology and Pharmacy Practice Review

Watch & Learn Lesson

Assignment - Aseptic Techniques

Lab - Preparing Creams, Ointments, Gels & Pastes (Non-Sterile)

DESCRIPTION

Lakewood University's Pharmacy Technician program prepares students to aid licensed pharmacists prepare medications, provide customer service, and perform administrative duties within a pharmacy setting. The program outlines the proper communication skills necessary for pharmacy technicians which include telecommunication skills and interpersonal communication skills. The course will focus on the accuracy necessary to ensure that information on prescriptions is complete and accurate. Students in this program will gain the knowledge and skills to qualify them for entry-level positions in pharmacies as well as to be prepared for the National Certification Exam.

Program Objectives

1. Interpret physician orders and prescriptions for accuracy
2. Explain the role a pharmacy technician plays in the compounding of medications
3. Define medical and pharmaceutical terms and common abbreviations
4. Describe the role that the pharmacy technician plays in the pharmacy
5. Perform basic pharmaceutical calculations
6. Explain the differences between brand and generic medications
7. Recognize the role that the pharmacy plays in preventative services such as immunizations
8. Identify the individual state requirements for a pharmacy technician
9. Demonstrate the basic skills needed to effectively prepare for an interview

OBJECTIVES

1. Interpret physician orders and prescriptions for accuracy
2. Explain the role a pharmacy technician plays in the compounding of medications
3. Define medical and pharmaceutical terms and common abbreviations

4. Describe the role that the pharmacy technician plays in the pharmacy
5. Perform basic pharmaceutical calculations
6. Explain the differences between brand and generic medications
7. Recognize the role that the pharmacy plays in preventative services such as immunizations
8. Identify the individual state requirements for a pharmacy technician
9. Demonstrate the basic skills needed to effectively prepare for an interview