UTAH SYSTEM OF HIGHER EDUCATION

Utah System of Higher Education
The Gateway, Salt Lake City, UT 84101
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Pharmacy Technician - Advanced — Course Description

Catalog Year: 2024, Required Hours: 600, Credits: 17

Foundational Courses (Required Hours: 480, Credits: 13)

Aligned (Required Hours: 480, Credits: 13)

		Credits	Hours
TEPT 1010	**Introduction to Pharmacy**	**3.00**	**90.00**

This course serves as an introduction to the pharmacy technician profession, pharmacy technician roles, and the different types of pharmacies within the healthcare delivery system. Students are introduced to state and federal pharmacy practice laws, and the pharmacists' patient care process. Students learn the concepts of pharmacology, medications, and calculations needed to ensure patient safety.

Objectives:
- Compare and contrast the pharmacy technician's role, pharmacist's role, and other occupations in the healthcare environment.
- Describe and apply state and federal laws pertaining to pharmacy practice.
- Recognize and apply the pharmacists' patient care process.
- Relate the basic history of pharmacy to today's pharmacy practice.
- Demonstrate the technicians' role in the medication use process.

TEPT 1100	**Community Pharmacy Practice**	**3.00**	**90.00**

This course teaches the skills necessary for working in community pharmacy settings. Students perform hands-on skill simulations including data entry, prescription processing, billing, fulfillment, inventory management, customer service, and patient safety.

Objectives:
- Identify the most utilized drugs by brand and generic name and their indications.
- Recognize common drug interactions.
- Perform essential duties and functions of a pharmacy technician in a community pharmacy.
- Describe major trends, issues, goals, and initiatives taking place in the pharmacy profession.
- Initiate, verify, and manage billing for complex and/or specialized pharmacy services and goods.
- Apply interpersonal skills, including negotiation skills, conflict resolution, customer service, communicating patient safety, and teamwork.

TEPT 1110	**Institutional Pharmacy Practice**	**3.00**	**90.00**

This course teaches the skills necessary for working in institutional pharmacy settings. Students will utilize hands-on skill simulations of institutional pharmacy responsibilities including sterile compounding and aseptic technique, hazardous drug management, unit dosing and dispensing, patient safety, and communication with hospital staff.

Objectives:
- Practice and adhere to effective infection control procedures.
- Prepare compounded sterile preparations per applicable, current United States Pharmacopeia chapters.
- Demonstrate knowledge of anatomy, physiology and pharmacology, and terminology relevant to the pharmacy technician's role.
- Perform essential duties and functions of a pharmacy technician in an institutional setting.
- Describe the different methods of drug delivery and administration within institutional settings.
- Practice patient safety and communication with hospital staff.

TEPT 1900	**Pharmacy Technician Externship**	**4.00**	**210.00**

In this course, students will demonstrate their abilities to function as a pharmacy technician in industry settings. This experience takes place under the supervision of a pharmacist or an experienced pharmacy technician and includes a combination of skills-practice and evaluation.

Objectives:
- Assist pharmacists in collecting, organizing, and recording patient information.
- Maintain pharmacy facilities and equipment.
- Receive, process, and prepare prescriptions/medication orders.
- Demonstrate a respectful and professional attitude when interacting with diverse patient populations and medical professionals.
- Participate in pharmacy compliance with professional standards and relevant legal, regulatory, formulary, contractual, and safety requirements.

Supplemental Courses Varies by Institution (Required Hours: 120, Credits: 4)

Bridgerland (Required Hours: 120, Credits: 4)

		Credits	Hours
TEPT 1200	**Advanced Community Pharmacy Practice**	**1.00**	**30.00**

This course teaches advanced skills utilized in a community pharmacy. Students will perform hands-on skill simulations of non-sterile compounds, demonstrate proper use of non-sterile compounding equipment, administer immunizations, perform point-of-care testing, and follow proper documentation protocols.

Objectives:
- Solve mathematical calculations pertaining to non-sterile compounding.
- Prepare medications requiring simple, moderate, and high-level non-sterile compounding as defined by United States Pharmacopeia (USP).
- Process, handle, and demonstrate immunization administration techniques.
- Explain and perform point-of-care testing.
- Demonstrate ability to effectively and professionally communicate with diverse patient populations.

TEPT 1210	**Advanced Institutional Pharmacy**	**3.00**	**90.00**

This course teaches advanced skills necessary in institutional pharmacy settings. Students will demonstrate aseptic techniques, advanced sterile compounding, and hazardous sterile compounding.

Objectives:
- Analyze medication orders and process prescription labels for sterile compounded medications.
- Utilize mathematical calculations required for sterile compounding.
- Practice and master aseptic technique.
- Prepare sterile and hazardous sterile compounds.
- Demonstrate safety procedures in accordance with the United States Pharmacopeia (USP) chapters 797 and 800.

Davis (Required Hours: 120, Credits: 4)		Credits	Hours
TEPT 1500	**Pharmacy Technician Math**	**1.00**	**30.00**

Pharmacy Technician Math examines basic mathematic skills and math concepts related to the pharmacy industry. During this course, you will study systems of measurement, formulas, intravenous flow rates, and other calculations used in the pharmacy industry. Upon completing this course, students will have a strong foundation in required mathematics and an introduction to the terminology and abbreviations used in pharmaceutical occupations.

Objectives:
- Learn and apply basic math skills, including proportions, formulas, and conversions.
- Calculate oral doses using ratio-proportion, formulas, and dimensional analysis.
- Compute and/or use percentage of error.
- Identify the elements of a prescription order and a typical drug label.
- Use allegation and other formulas to change a product's concentration by adding diluents or mixing stock solutions.
- Calculate intravenous flow rates.
- Compute discounts and markups.

WKSK 1400	**Workplace Success**	**2.00**	**60.00**

Workplace Success is designed to help students develop essential work habits and attitudes as well as human-relation skills needed to maintain gainful and satisfying employment. Topics include common challenges faced in the workplace, such as presenting yourself professionally, developing a professional work ethic, developing interpersonal skills, navigating office politics successfully, and planning and managing your career.

Objectives:
- Demonstrate a positive attitude and set and accomplish personal and career goals.
- Manage time, stress, organization and finances.
- Explain conflict resolution, negotiation and communication in the workplace.
- Display a strong work ethic and illustrate accountability.
- Perform work within a group effectively and discuss the value of negotiation and compromise.
- Describe the basics of public speaking and presenting a professional demeanor.
- Implement career goals and take active control of professional life.

WKSK 1500	**Job Seeking Skills**	**1.00**	**30.00**

Job Seeking Skills explores how to prepare and successfully apply to potential career opportunities. During this course, you will be presented with essential job-seeking skills needed to find gainful employment.

Objectives:
- Create a professional resume, cover letter and reference sheet.
- Utilize online tools successfully to create an e-portfolio.
- Expand and develop networking skills.
- Utilize online resources effectively to find job openings.
- Demonstrate the ability to fill out job applications in a professional manner.
- Perform successfully in a job interview.
- Demonstrate appropriate follow-up procedures.

Dixie (Required Hours: 120, Credits: 4)		Credits	Hours
TEPT 1510	**Pharmacy Calculations**	**1.00**	**30.00**

This course teaches students the mathematical calculations necessary for working in a variety of pharmacy settings. Students will learn entry level and advanced level concepts, conversions, and calculations. Using practical applications and a hands-on approach, students will be prepared to enter externships, pass the national exam, and enter the workforce with confidence to provide safe and effective care.

Objectives:
- Recognize number sense, including rounding and comparing numbers.
- Add, subtract, multiply, and divide whole numbers and decimals.
- Calculate percentages.
- Use formulas to find perimeter and area.
- Convert measurements.

TEPT 1521	**Medications**	**2.00**	**60.00**

This course will provide a deeper understanding of the top 200+ medications. Students will gain the ability to recite the brand name, generic name, classification, and indication of the most prescribed medications currently dispensed in pharmacies.

Objectives:
• Recognize medications by either brand or generic name.
• Describe the DEA schedules and medications that fall into each schedule and why.
• Identify different illnesses, diseases, and the class of drugs required to treat them.
• Explore complementary and alternative drug therapies.
• Identify medications that require special handling, documentation, and patient instruction.

TEPT 1601	**National Exam and Licensure Prep**	**1.00**	**30.00**

In this course, students will complete practice exams, quizzes and take another look at pharmacy law. Students will receive feedback from instructors on areas to improve as well as areas in which they excel to gain confidence to sit for either the PTCB or the ExCPT. Students will be instructed on how to apply for and maintain their national certification and licensure.

Objectives:
• Apply the knowledge gained throughout the Pharmacy Technician Program.
• Compare the licensure requirements between states.
• Define certification and licensure.
• Identify the requirements regarding continued education hours.

Ogden-Weber (Required Hours: 120, Credits: 4)		Credits	Hours
TEPT 1522	**Pharmacy Calculations**	**2.00**	**60.00**

This course builds upon basic mathematic skills to include the application of mathematics in the pharmacy setting. This course will cover calculations for medication dosing and day supplies in both community and institutional pharmacies. Common business and inventory calculations used in the pharmacy will also be included in this course.

Objectives:
• Apply mathematics to calculations most often used in the pharmacy setting.
• Describe common household and metric conversions.
• Calculate correct dosages and days supply for medications.
• Explain key concepts such as time, temperature, volume, and weight.
• Perform advanced calculations for compounded drug products and sterile preparations.

TEPT 1300	**Clinical Pharmacology**	**2.00**	**60.00**

This course covers pharmacy terminology, SIG code, dosage forms, and abbreviations for successful transcription of prescriptions in the pharmacy setting. This course will link drug therapeutic classes with the affected body systems and medical conditions and include common drug interactions, contraindications and side effects. Drug reference materials and the drug approval process will also be covered.

Objectives:
• Memorize the most common drugs by brand name, generic, and therapeutic class.
• Describe how medications are developed and approved.
• Identify the different drug dosage forms and routes of administration.
• Interpret pharmacy SIG code and common pharmacy abbreviations.

Salt Lake (Required Hours: 120, Credits: 4)		Credits	Hours
TEPT 1310	**Advanced Pharmacy Technician Skills**	**4.00**	**120.00**

This course explores technician roles in sterile compounding, diversion, supply chain management, medication history, therapy management and leadership. Course teaches technical skills needed to support career progression. Students will demonstrate skill mastery through case studies, critical thinking exercises and routine skill assessment.

Objectives:
• Describe the expanding roles training, and skill open to the pharmacy technician.
• Demonstrate interdisciplinary leadership and team management skills in the pharmacy setting.
• Monitor patient medication compliance, education, and tracking to assist the pharmacist.
• Demonstrate principles of sterile and hazardous material compounding with vials, ampules, small and large volume parenterals and automated compounding equipment.
• Outline points of a controlled substance diversion and tracking system.
• Demonstrate techniques for receipt, storage, handling, delivery, and disposal of hazardous drugs, materials, and ingredients.

Southwest (Required Hours: 120, Credits: 4)		Credits	Hours

TEPT 1522	**Pharmacy Calculations**	**2.00**	**60.00**

This course builds upon basic mathematic skills to include the application of mathematics in the pharmacy setting. This course will cover calculations for medication dosing and day supplies in both community and institutional pharmacies. Common business and inventory calculations used in the pharmacy will also be included in this course.

Objectives:
• Apply mathematics to calculations most often used in the pharmacy setting.
• Describe common household and metric conversions.
• Calculate correct dosages and days supply for medications.
• Explain key concepts such as time, temperature, volume, and weight.
• Perform advanced calculations for compounded drug products and sterile preparations.

TEPT 1610	**Pharmacy Review**	**1.00**	**30.00**

Pharmacy Review will have students review material from Intro to Pharmacy, Community Pharmacy Practice, Pharmacy Calculations, and Institutional Pharmacy Practice. It will prepare students to take their national exams and be ready for their future employment.

Objectives:
• Demonstrate a foundational understanding of retail, hospital, and compounding pharmacies.
• Perform basic interactions between technicians, healthcare professionals, and patients.
• Perform calculations and procedures related to dosages, dilutions, days supply, and the prescription filling process.

TEPT 1220	**Sterile Compounding**	**1.00**	**30.00**

Sterile Compounding will teach students how to operate in a sterile environment and keep solutions, dilutions, and medications contaminant free. Students will be shown how to use and clean various compounding equipment.

Objectives:
• Explain the functions and limitations of compounding equipment.
• Summarize common contaminations and how to prevent them.
• Employ the basics of a cleanroom.

Tooele (Required Hours: 120, Credits: 4)	Credits	Hours

TEPT 1230	**Extemporaneous, Nonsterile Compounding**	**2.00**	**60.00**

This course teaches the skills necessary for working in nonsterile compounding to prepare medications strengths, combinations, or dosage formulations that are not commercially available. Students will utilize hands-on skill simulations of Nonsterile compounding, responsibilities including following each step in the compounding process as outlined in the Master Formulation Record; and USP Standard. The students will utilize instruments for weighing and measuring. Extemporaneous compounds commonly include a digital scale or a analytical two-pan balance, pharmaceutical weights, forceps, spatulas, weighing papers, ointment slab, parchment paper, mortar and pestle, graduated cylinders; and pipettes among others.

Objectives:
• Define the terms compounding, extemporaneous, nonsterile, sterile, and anticipatory compounding.
• Discuss the distinction between a manufactured drug and a compounded nonsterile medication, and preparation and purpose of USP Chapter 795.
• Explain the differing techniques by which solutions, suspensions, ointment, creams, powders, suppositories, rapid dissolving tablets, troches and capsules are prepared.
• Perform essential duties and functions of a pharmacy technician in preparing solutions, suspensions, ointment, creams, powders, suppositories, rapid dissolving tablets, troches and capsules are prepared.
• Explain the final compounding steps including calculating beyond-use-dating, labeling, offering patient education; doing clean-up, and equipment maintenance.
• Practice patient safety and communication with staff.
• Performing compounding steps including calculating beyond-use-dating, labeling, offering patient education; doing clean-up, and equipment maintenance.

TEPT 1240	**Sterile and Hazardous Compounding**	**2.00**	**60.00**

This course teaches the skills necessary for working in sterile and hazardous compounding to prepare medications for intravenous (IV) use. Students will utilize hands-on skill simulations of sterile and hazardous compounding responsibilities including following each step in the compounding process as outlined in USP Compounding 797 Sterile Compounding, and USP Chapter 800 Hazardous Compounding. The students will explain general principles in sterile and hazardous compounding with vials ampules and automated sterile compounding equipment. Paraphrase the handling of premade parental products, including vial-and-bag systems and frozen intravenous sterile solutions. Extemporaneous compounds commonly include a digital scale or a analytical two-pan balance, pharmaceutical weights, forceps, spatulas, weighing papers, ointment slab, parchment paper, mortar and pestle, graduated cylinders, and pipettes among others.

Objectives:
• Define the terms compounding, extemporaneous, nonsterile, sterile, hazardous, nuclear, and anticipatory compounding.
• Define the sterile compounding process, which follows USP Chapter 797.
• Define hazardous drugs and the categories of risk of exposure and the different levels of primary engineering controls for compounding them, according to USP Chapter 800.
• Explain the differing for receiving, storing, handling, delivering, and disposing of hazardous drugs and ingredients, and the function and contents of a spill kit.
• Perform essential duties and functions of a pharmacy technician in preparing sterile and Hazardous medications.
• Explain the final compounding steps including calculating beyond-use-dating, labeling, and doing clean-up and equipment maintenance.
• Practice patient safety and communication with staff.
• Discuss the role of USP's evolving standards in Nuclear Pharmaceutical compounding.

Uintah Basin (Required Hours: 120, Credits: 4)	Credits	Hours

TEPT 1230	**Extemporaneous, Nonsterile Compounding**	**2.00**	**60.00**

This course teaches the skills necessary for working in nonsterile compounding to prepare medications strengths, combinations, or dosage formulations that are not commercially available. Students will utilize hands-on skill simulations of Nonsterile compounding, responsibilities including following each step in the compounding process as outlined in the Master Formulation Record; and USP Standard. The students will utilize instruments for weighing and measuring. Extemporaneous compounds commonly include a digital scale or a analytical two-pan balance, pharmaceutical weights, forceps, spatulas, weighing papers, ointment slab, parchment paper, mortar and pestle, graduated cylinders; and pipettes among others.

Objectives:
• Define the terms compounding, extemporaneous, nonsterile, sterile, and anticipatory compounding.
• Discuss the distinction between a manufactured drug and a compounded nonsterile medication, and preparation and purpose of USP Chapter 795.
• Explain the differing techniques by which solutions, suspensions, ointment, creams, powders, suppositories, rapid dissolving tablets, troches and capsules are prepared.
• Perform essential duties and functions of a pharmacy technician in preparing solutions, suspensions, ointment, creams, powders, suppositories, rapid dissolving tablets, troches and capsules are prepared.
• Explain the final compounding steps including calculating beyond-use-dating, labeling, offering patient education; doing clean-up, and equipment maintenance.
• Practice patient safety and communication with staff.
• Performing compounding steps including calculating beyond-use-dating, labeling, offering patient education; doing clean-up, and equipment maintenance.

TEPT 1240	**Sterile and Hazardous Compounding**	**2.00**	**60.00**

This course teaches the skills necessary for working in sterile and hazardous compounding to prepare medications for intravenous (IV) use. Students will utilize hands-on skill simulations of sterile and hazardous compounding responsibilities including following each step in the compounding process as outlined in USP Compounding 797 Sterile Compounding, and USP Chapter 800 Hazardous Compounding. The students will explain general principles in sterile and hazardous compounding with vials ampules and automated sterile compounding equipment. Paraphrase the handling of premade parental products, including vial-and-bag systems and frozen intravenous sterile solutions. Extemporaneous compounds commonly include a digital scale or a analytical two-pan balance, pharmaceutical weights, forceps, spatulas, weighing papers, ointment slab, parchment paper, mortar and pestle, graduated cylinders, and pipettes among others.

Objectives:
• Define the terms compounding, extemporaneous, nonsterile, sterile, hazardous, nuclear, and anticipatory compounding.
• Define the sterile compounding process, which follows USP Chapter 797.
• Define hazardous drugs and the categories of risk of exposure and the different levels of primary engineering controls for compounding them, according to USP Chapter 800.
• Explain the differing for receiving, storing, handling, delivering, and disposing of hazardous drugs and ingredients, and the function and contents of a spill kit.
• Perform essential duties and functions of a pharmacy technician in preparing sterile and Hazardous medications.
• Explain the final compounding steps including calculating beyond-use-dating, labeling, and doing clean-up and equipment maintenance.
• Practice patient safety and communication with staff.
• Discuss the role of USP's evolving standards in Nuclear Pharmaceutical compounding.

USU-E (Required Hours: 120, Credits: 4)		Credits	Hours
TEPT 1320	**Pharmacology**	**3.00**	**90.00**

This course teaches students to integrate pharmacology knowledge into clinical practice, manage medication safety issues in patient care, and find needed additional drug information or legal requirements of medication prescribing and use. Information is conveyed through lectures and multimedia presentations.

Objectives:
• Describe principles of general chemistry, cell biology, and human physiology and pathology.
• Demonstrate the ability to utilize online medication resources.
• Demonstrate knowledge of the brand and generic names and therapeutic category for the top 200 most commonly prescribed medications in the U.S.
• Practice using drug references to obtain information on medications to be administered, prescribed, or otherwise used in practice settings.
• Demonstrate understanding of the core principles of pharmacology, and the characteristics, use, precautions of key representative medications from all major therapeutic categories.

TEPT 1620	**National Exam and State Licensure Readiness**	**1.00**	**30.00**

This course prepares students for the National Exam and Utah State Licensure exam through a series of practice exams and quizzes based on examination content blueprints. The exams will allow the student and instructor to analyze areas of likely success and areas that may need further review.

Objectives:
• Gain familiarity with common test taking mistakes and develop strategies to overcome them.
• Utilize knowledge learned in the Pharmacy Technician program to successfully identify the correct information on the National Exam and State Licensure exam.
• Demonstrate knowledge of program accreditation outcome requirements including sitting for and passing licensure exam.
• Describe legal requirements of medication prescribing and use.
• Describe the requirements for obtaining and maintaining licensure and certification.