Maryland
STATE DEPARTMENT OF EDUCATION

Program of Study Guide: Pharmacy Technician - DRAFT

Comprehensive guidelines and course standards for the Pharmacy Technician

Office of College and Career Pathways

July 2025

MARYLAND STATE DEPARTMENT OF EDUCATION

MARYLAND STATE BOARD OF EDUCATION

Table of Contents

Document Control Information

Title:	Program of Study Guide: Pharmacy Technician
Security Level:	Not for Distribution
File Name:	Pharmacy Technician. docx

DOCUMENT HISTORY

Document Version	Date	Summary of Change
1.0	October 2024	Initial Document

Purpose

The purpose of this document is to communicate the required Career and Technical Education (CTE) academic standards for the Pharmacy Technician Program of Study. The academic standards in this document are theoretical and performance based. The standards contain content from multiple state departments of education, Maryland Board of Pharmacy, Pharmacy Technician Certification Board (PTCB) Certified Pharmacy Technician (CPhT), and have been reviewed and vetted by members of the Maryland business and industry community.

In addition to academic standards, the Maryland State Department of Education (MSDE) has incorporated into this document Labor Market Information (LMI) definitions and explanations for the Program of Study; program aligned Industry Recognized Credentials; and Work-Based Learning resources and requirements by course level.

This document is intended for use by educational administrators and practitioners. A similar document is available for each state-approved CTE Program of Study.

Standards Sources

Pharmacy Technician standards are based on various research-backed sources, best practices, and national frameworks that guide effective K-12 education. The following sources provide a rigorous foundation for the Pharmacy Technician standards, ensuring they are well-rounded, research-driven, and aligned with national expectations and young learners' unique needs.

Here are the primary sources that these standards draw from:

1. **Maryland Board of Pharmacy Technician Training Program Standards**
   A. **Description:** The Maryland Board of Pharmacy sets forth regulations for pharmacy technician training programs, mandating a minimum of 160 hours of work experience to be completed within six months of enrollment.
   B. **Usage**: These standards ensure that Pharmacy Technician I and II courses comply with state requirements and provide students with the necessary training and experience for registration.
   C. **Source**: Maryland Department of Health - Board of Pharmacy

2. **Pharmacy Technician Certification Board (PTCB) Certified Pharmacy Technician (CPhT) Program**
   A. **Description:** The PTCB offers the CPhT credential, requiring candidates to complete a PTCB-recognized education/training program or have equivalent work experience, and pass the Pharmacy Technician Certification Exam (PTCE).
   B. **Usage:** Pharmacy Technician II courses align with PTCB standards to prepare students for national certification, enhancing their qualifications and employment prospects.
   C. **Source:** PTCB - Certified Pharmacy Technician (CPhT)

3. **Advance CTE Education Career Cluster Framework: Health and Human Services**
   A. **Description:** The Advance CTE Education Career Cluster Framework defines the knowledge and skills necessary for success in the Health and Human Services Cluster, promoting health, wellness, and resilience in individuals and communities.
   B. **B. Usage:** The framework provides a foundation for aligning the Pharmacy Technician program to broaden healthcare career pathways and industry expectations.
   C. **Source:** Advance CTE Career Clusters.

4. **National Healthcareer Association (NHA) Standards for Certified Pharmacy Technician (CPhT) Certification**
   A. **Description:** The NHA establishes provides the ExCPT exam, leading to the CPhT certification, with eligibility criteria including completion of a pharmacy technician training program or relevant work experience.
   B. **Usage:** Pharmacy Technician II courses may incorporate NHA standards to prepare students for the ExCPT exam, offering an alternative pathway to national certification.
   C. **Source:** NHA - Certified Pharmacy Technician (CPhT)

5. **American Standards for Pharmacy Technician Education and Training Programs**
   A. **Description:** The American Society of Health-System Pharmacists (ASHP) and the Accreditation Council for Pharmacy Education (ACPE) provide accreditation standards outlining the competencies required for pharmacy technicians.
   B. **Usage:** Pharmacy Technician III courses utilize these standards to ensure advanced training aligns with industry expectations and prepares students for diverse pharmacy roles.

C. **Source:** ASHP/ACPE Accreditation Standards

6. **ASHP/ACPE Accreditation Standards for Pharmacy Technician Education and Training Programs**
   A. **Description:** The American Society of Health-System Pharmacists (ASHP) and the Accreditation Council for Pharmacy Education (ACPE) provide accreditation standards defining competencies for entry-level and advanced-level pharmacy technician education.
   B. **Usage:** Pharmacy Technician programs align their curricula with these standards to ensure comprehensive education and training, preparing students for various pharmacy settings.
   C. **Source:** ASHP - Accreditation Standards

7. **Code of Maryland Regulations (COMAR) 10.34.34 - Pharmacy Technicians**
   A. **Description:** COMAR 10.34.34 outlines the regulations governing pharmacy technicians in Maryland, including training program standards, examination requirements, and registration processes.
   B. **Usage:** All Pharmacy Technician courses incorporate these regulations to ensure compliance with state laws and to adequately prepare students for certification and practice.
   C. **Source:** COMAR 10.34.34 - Pharmacy Technicians

8. **Next Generation Science Standards (NGSS)**
   A. **Description:** The NGSS establishes rigorous science education benchmarks, focusing on scientific inquiry, systems thinking, and the application of science concepts in real-world contexts.
   B. **B. Usage:** These standards support the integration of anatomy, physiology, and pathophysiology content in Clinical Nursing Assistant III to align with science education requirements.
   C. **C. Source:** Next Generation Science Standards

9. **American Heart Association First Aid and CPR Certification Standards**
   A. **Description:** The American Heart Association (AHA) provides guidelines and certifications for First Aid, CPR, and Basic Life Support, which are widely recognized in healthcare and education.
   B. **Usage:** AHA standards are integrated into the CNA curriculum, requiring students to obtain First Aid certification to enhance patient safety and emergency care skills.
   C. **Source:** American Heart Association First Aid Certification

Course Descriptions

Course Level	Course Information	Description
Required Core: Course 1	Pharmacy Technician I SCED: <XX> Grades: 9-12 Prerequisite: None Credit: 1	Pharmacy Technician I course introduces students to the foundational knowledge and skills required to pursue a career in healthcare as a Pharmacy Technician. Students will gain an understanding of healthcare systems, patient care practices, medical terminology, and safety protocols. Through classroom instruction and hands-on practice, students will learn to measure vital signs, provide basic patient care, and understand the principles of infection control. Emphasis is placed on the development of professionalism, communication, and ethical decision-making. This course prepares students to progress into the Pharmacy Technician II course, where they will complete the requirements for the Maryland Board of Pharmacy Certified Pharmacy Technician (CPhT) credential. certification which includes both CNA and GNA certifications.

Course Level	Course Information	Description
Required Core: Course 2	Pharmacy Technician II SCED: <XX> Grades: 10-12 Prerequisite: Pharmacy Technician I Credit: 1	Pharmacy Technician II course builds upon the foundational skills from the Pharmacy Technician I course, preparing students for advanced roles in pharmacy practice. This course provides an in-depth focus on preparing for national certification, developing technical and professional skills, and applying knowledge in real-world pharmacy settings. Students will engage in comprehensive training that includes advanced pharmacological concepts, sterile and non-sterile compounding techniques, accurate prescription processing, and inventory management. By the end of this course, students will demonstrate the competencies required to successfully pass a Board-approved pharmacy technician certification examination, such as the Certified Pharmacy Technician (CPhT) exam, and meet the Maryland Board of Pharmacy registration requirements. Graduates of this course will be well-equipped for entry-level positions in a variety of pharmacy environments, including retail, hospital, and specialty pharmacies.
Optional Flex: Course 1	Pharmacy Technician III SCED: <XX> Grades: 11-12 Prerequisite: Pharmacy Technician I and II Credit: 1	Pharmacy Technician III course focuses on the structure and functions of the human body to provide students with the advanced knowledge needed to deliver effective patient care. Students will explore the relationships between anatomy, physiology, and disease, emphasizing homeostasis, pathophysiology, and responses to the external environment. Laboratory investigations and the use of medical technologies will prepare students to analyze diagnostic data, understand therapeutic interventions, and apply science concepts in clinical scenarios. This course is ideal for students preparing for other advanced healthcare pathways.

Course Level	Course Information	Description
Optional Flex: Course 2	Career Connected Learning I SCED: <XX> Grades: 11-12 Prerequisite: Pharmacy Technician I and II Credit: 1	This flexible, work-based learning course introduces students to real-world applications of classroom knowledge and technical skills through on-the-job experiences and reflective practice. Students engage in career exploration, skill development, and professional networking by participating in youth apprenticeships, registered apprenticeships, pre-apprenticeships, internships, capstone projects, or other approved career-connected opportunities. Variable credit (1–3) accommodates the required on-the-job training hours and related instruction. By integrating industry standards, employability skills, and personalized learning goals, Career Connected Learning I equips students to make informed career decisions, develop a professional portfolio, and build a strong foundation for success in postsecondary education, training, or the workforce.
Optional Flex: Course 3	Career Connected Learning II SCED: <XX> Grades: 11-12 Prerequisite: Career Connected Learning I Credit: 1	Building on the foundational experiences of Career Connected Learning I, this advanced work-based learning course provides students with deeper on-the-job practice, leadership opportunities, and refined career exploration. Students continue to enhance their technical and professional skills, expanding their industry networks and aligning personal goals with evolving career interests. Variable credit (1–3) remains aligned with the required training hours and related instruction. Through elevated responsibilities and skill application, Career Connected Learning II prepares students to confidently transition into higher-level postsecondary programs, apprenticeships, or the workforce.

Dual Enrollment and Career Connected Learning Experiences Must be Aligned to the CTE Core.

Industry-Recognized Credentials and Work-Based Learning

Industry-Recognized Credentials
By the end of Pharmacy Technician II: Certified Pharmacy Technician **Optional Credentials (via the Flex Course options**): Dual Credit Options, Apprenticeships, Internships

Work-Based Learning Examples and Resources		
Pharmacy Technician I and II**:** **Career Awareness**	Pharmacy Technician III: **Career Preparation**	**Flex Courses:** **Career Preparation**
• Industry Visits • Guest Speakers • Participation in Career and Technical Student Organizations • Postsecondary Visits – Program Specific Site Tours • Mock Interviews	• All of Career Awareness plus the following: • Job Shadow • Paid and Unpaid Internships	• Paid and Unpaid Internships • Apprenticeships

Labor Market Information: Definitions and Data

Labor market information (LMI) plays a crucial role in shaping Career and Technical Education (CTE) programs by providing insights into industry demands, employment trends, and skills gaps. This data helps education leaders assess the viability of existing programs and identify opportunities for new offerings. By aligning CTE programs with real-time labor market needs, schools can better prepare students for in-demand careers and ensure that resources are effectively utilized to support pathways that lead to high-quality, sustainable employment.

Standard Occupational Code (SOC) and Aligned Industry:

Indicator	Definition	Pathway Labor Market Data
High Wage[1]	Those occupations that have a 25th percentile wage equal to or greater than the most recent MIT Living Wage Index for one adult in the state of Maryland, and/or leads to a position that pays at least the median hourly or annual wage for the DC-VA-MD-WV Metropolitan Statistical Area (MSA). *Note: A 25th percentile hourly wage of $24.74 or greater is required to meet this definition.*	**Standard Occupational Code:** 29-2052: Pharmacy Technicians in Maryland **Hourly Wage/Annual Salary:** 25th Percentile: $17.60 / $36,608.00 50th Percentile: $18.75 / $39,000.00 75th Percentile: $22.50 / $46,800.00
High Skill	Those occupations located within the DC-VA-MD-WV Metropolitan Statistical Area (MSA) with the following education or training requirements: completion of an apprenticeship program; completion of an industry-recognized certification or credential; associate's degree, bachelor's degree, or higher.	**Typical Entry-Level Education:** High school diploma or equivalent
In-Demand	Annual growth plus replacement, across all Maryland occupations, is 405 openings between 2024-2029.	**Annual Openings** Pharmacy Technician: 784

[1] Living Wage Calculator: https://livingwage.mit.edu/states/24

Labor Market Information Data Source

Lightcast Q4 2024 Data Set. Lightcast occupation employment data are based on final Lightcast industry data and final Lightcast staffing patterns. Wage estimates are based on Occupational Employment Statistics (QCEW and Non-QCEW Employees classes of worker) and the American Community Survey (Self-Employed and Extended Proprietors). Occupational wage estimates are also affected by county-level Lightcast earnings by industry. Foundational data for the state of Maryland is collected and reported by the Maryland Department of Labor.

Methodology for High Wage Calculations

To combine labor market data across multiple Standard Occupational Classifications (SOCs), a weighted average approach was used to ensure accurate representation of the marketplace. Median wages for each SOC were weighted based on their respective employment levels, reflecting the relative demand for each occupation. This method ensures that occupations with higher employment contribute proportionately to the overall wage calculation. Additionally, job openings from all relevant SOCs were summed to determine the total projected demand. For example, if Mechanical Engineers account for 67% of total employment and Electrical Engineers for 33%, their respective wages are weighted accordingly, and job openings are aggregated to provide a comprehensive view of labor market opportunities. This approach delivers a balanced and accurate representation of both wages and employment demand for the program.

Methodology for In-Demand Calculations

The baseline for annual job openings, taking into account new positions and replacement positions, was determined by taking the average of all annual job openings between 2024 and 2029 across all 797 career sectors at the 5-digit SOC code level. For the 2024-2029 period, average job openings (growth + replacement) is 405.

Course Standards: Pharmacy Technician I

1. **GENERAL REQUIREMENTS.** This course is recommended for students in Grades 9-12, and there are no prerequisites.

2. **INTRODUCTION**
   A. Career and Technical Education (CTE) instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.
   B. The Health and Human Services Career Cluster promotes whole health in individuals and communities through diverse services. This sector includes technical, mental, and therapeutic services and personal care supported by medical and social sciences. By addressing social determinants of health and leveraging health data and science, this Cluster aims to enhance the overall health and resilience of individuals, families, and communities.
   C. The Pharmacy Technician Program of Study equips high school students with the knowledge and skills needed for careers in pharmacy and healthcare. Through a sequence of courses, students learn healthcare systems, pharmacology, prescription processing, and patient care practices, with hands-on training in compounding, inventory management, and pharmacy technology. The program includes a minimum of 160 hours of work-based learning, internships, or apprenticeships in licensed pharmacy settings, meeting Maryland Board of Pharmacy requirements. Students are prepared to achieve national certification as Certified Pharmacy Technicians (CPhT) and transition into entry-level roles or advanced healthcare pathways.
   D. Pharmacy Technician I introduces students to the foundational knowledge and skills required for a pharmacy technician career. Topics include healthcare systems, medical terminology, patient care, safety protocols, and infection control. Emphasis is placed on professionalism, communication, and ethical decision-making, preparing students for progression into Pharmacy Technician II.
   E. Students will participate in at least two Career-Connected Education and Work-Based Learning experiences in this course, which might include informational interviews or job shadowing relevant to the program of study.
   F. Students are encouraged to participate in extended learning experiences through aligned Career and Technical Student Organizations (CTSOs). CTSOs are a cocurricular requirement in the Carl D. Perkins Act, and alignment to CTSO activities is an expectation for CTE programs in the state of Maryland.

3. **KNOWLEDGE AND SKILLS**

   A. The student demonstrates the necessary skills for career development, maintenance of employability, and successful completion of course outcomes. The student is expected to:
      1. Identify and demonstrate positive work behaviors that enhance employability and job advancement, such as regular attendance, promptness, proper attire, maintenance of a clean and safe work environment, and pride in work.
      2. Demonstrate positive personal qualities such as flexibility, open-mindedness, initiative, active listening, and a willingness to learn.
      3. Employ effective reading, writing, and technical documentation skills.
      4. Solve problems using critical thinking techniques and structured troubleshooting methodologies.
      5. Demonstrate leadership skills and collaborate effectively as a team member.

6. Implement safety procedures, including proper use of software and following privacy guidelines.
7. Exhibit an understanding of legal and ethical responsibilities in the healthcare field, following copyright laws and regulations.
8. Demonstrate time-management skills and the ability to prioritize tasks in a technical setting.

B. The student identifies various career pathways in the healthcare field. The student is expected to:

1. Develop a career plan that includes the necessary education, certifications, job skills, and experience for specific roles in healthcare.
2. Create a professional resume and portfolio that reflect skills, projects, certifications, and recommendations.
3. Demonstrate effective interview skills for roles in healthcare fields.

C. The student develops technology and digital literacy skills. The student is expected to:

1. Use technology as a tool for research, organization, communication, and problem-solving.
2. Use digital tools, including computers, mobile devices, collaboration platforms, and cloud services, to access, manage, and create information.
3. Demonstrate proficiency in using emerging and industry-standard technologies.
4. Understand ethical and legal considerations for technology use, including the principles of data protection, copyright, and responsible technology use.

D. The student integrates core academic skills into healthcare practices. The student is expected to:

1. Demonstrate the use of clear communication techniques, both written and verbal, that are consistent with industry standards.
2. Apply English concepts such as writing informative texts when documenting procedures and articulating goals.
3. Use mathematical concepts for measurement and conversion (Fahrenheit vs. Celsius), ratios and proportions as well as fraction and decimal conversions.

E. The student demonstrates foundational knowledge of healthcare systems and careers in the Health and Biosciences Cluster. The student is expected to:

1. Identify the therapeutic, diagnostic, environmental, and informational systems of the healthcare industry.
2. Evaluate career pathways in the Health and Biosciences Cluster, including entry-level and advanced roles in healthcare.
3. Examine the history, economics, and current trends in the healthcare industry, including their impact on healthcare delivery.
4. Investigate professional and personal qualities essential for success in healthcare careers.

F. The student demonstrates knowledge of human anatomy, physiology, and pathophysiology as it relates to patient care. The student is expected to:

1. Explain the basic structure and functions of major human body systems in health and illness.
2. Identify the signs, symptoms, and care considerations for common diseases and disorders.
3. Apply concepts of anatomy and physiology to real-world scenarios, including patient assessments and care planning.

4. Use medical terminology accurately to describe human anatomy, conditions, and procedures.

G. The student demonstrates the ability to provide safe and effective care in a healthcare environment. The student is expected to:

1. Maintain a safe environment for patients, healthcare providers, and visitors by following safety and emergency protocols.
2. Perform techniques related to infection control, including proper hand hygiene, use of personal protective equipment (PPE), and waste disposal.
3. Identify various pathogenic microorganisms, modes of transmission, and strategies for preventing healthcare-associated infections (HAIs).
4. Demonstrate basic first aid skills and obtain first aid certification from a recognized organization, such as the American Heart Association.

H. The student demonstrates proficiency in technical procedures used in healthcare settings. The student is expected to:

1. Accurately measure and record vital signs, including temperature, pulse, respiration, and blood pressure.
2. Perform basic patient care tasks while maintaining patient dignity.
3. Assist with mobility and positioning techniques, including transferring patients and using assistive devices.
4. Apply mathematical operations and calculations related to healthcare, such as medication dosages and fluid intake/output measurements.

I. The student demonstrates knowledge of ethical and legal responsibilities in healthcare. The student is expected to:

1. Analyze ethical considerations in healthcare, including patient confidentiality, autonomy, and informed consent.
2. Demonstrate knowledge of legal responsibilities, including adherence to scope of practice, reporting requirements, and healthcare laws such as HIPAA.
3. Evaluate case studies to make informed decisions regarding ethical and legal challenges in healthcare.

J. The student demonstrates understanding and application of healthcare technologies and resources. The student is expected to:

1. Use medical technologies and electronic health records (EHR) to document patient care and access healthcare information.
2. Evaluate research reports, media, and scientific studies related to healthcare issues and advancements.
3. Explore the role of health data and evidence-based practices in improving patient outcomes and healthcare delivery.

K. The student demonstrates readiness to apply healthcare concepts to real-world patient care scenarios. The student is expected to:

1. Apply science concepts in the assessment and delivery of medical and healthcare services.
2. Simulate basic nursing assistant procedures in a controlled environment, preparing for clinical practice.
3. Engage in clinical decision-making by analyzing patient conditions and identifying appropriate interventions.
4. Integrate academic and technical skills to address scenarios involving therapeutic, diagnostic, and preventive healthcare services.

Course Standards: Pharmacy Technician II

1. **GENERAL REQUIREMENTS.** This course is recommended for students in Grades 10-12, and Pharmacy Technician I is the prerequisite.

2. **INTRODUCTION**
   A. Career and Technical Education (CTE) instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.
   B. The Health and Human Services Career Cluster promotes whole health in individuals and communities through diverse services. This sector includes technical, mental, and therapeutic services and personal care supported by medical and social sciences. By addressing social determinants of health and leveraging health data and science, this Cluster aims to enhance the overall health and resilience of individuals, families, and communities.
   F. The Pharmacy Technician Program of Study equips high school students with the knowledge and skills needed for careers in pharmacy and healthcare. Through a sequence of courses, students learn healthcare systems, pharmacology, prescription processing, and patient care practices, with hands-on training in compounding, inventory management, and pharmacy technology. The program includes a minimum of 160 hours of work-based learning, internships, or apprenticeships in licensed pharmacy settings, meeting Maryland Board of Pharmacy requirements. Students are prepared to achieve national certification as Certified Pharmacy Technicians (CPhT) and transition into entry-level roles or advanced healthcare pathways.
   C. Pharmacy Technician II builds build on foundational skills with advanced training in pharmacy law, prescription processing, sterile and non-sterile compounding, and inventory management. A required 160-hour work-based learning experience and preparation for the Certified Pharmacy Technician (CPhT) exam ensure students are ready to meet Maryland Board of Pharmacy certification standards.
   D. Students will participate in at least two Career-Connected Education and Work-Based Learning experiences in this course, which might include informational interviews or job shadowing relevant to the program of study.
   E. Students are encouraged to participate in extended learning experiences through aligned Career and Technical Student Organizations (CTSOs). CTSOs are a co-curricular requirement in the Carl D. Perkins Act, and alignment to CTSO activities is an expectation for CTE programs in the state of Maryland.

3. **KNOWLEDGE AND SKILLS**
   A. The student demonstrates the necessary skills for career development, maintenance of employability, and successful completion of course outcomes. The student is expected to:
      1. Identify and demonstrate positive work behaviors that enhance employability and job advancement, such as regular attendance, promptness, proper attire, maintenance of a clean and safe work environment, and pride in work.
      2. Demonstrate positive personal qualities such as flexibility, open-mindedness, initiative, active listening, and a willingness to learn.
      3. Employ effective reading, writing, and technical documentation skills.
      4. Solve problems using critical thinking techniques and structured troubleshooting methodologies.
      5. Demonstrate leadership skills and collaborate effectively as a team member.

6. Implement safety procedures, including proper use of software and following privacy guidelines.
7. Exhibit an understanding of legal and ethical responsibilities in the healthcare field, following copyright laws and regulations.
8. Demonstrate time-management skills and the ability to prioritize tasks in a technical setting.

B. The student identifies various career pathways in the healthcare field. The student is expected to:

1. Develop a career plan that includes the necessary education, certifications, job skills, and experience for specific roles in healthcare.
2. Create a professional resume and portfolio that reflect skills, projects, certifications, and recommendations.
3. Demonstrate effective interview skills for roles in healthcare fields.

C. The student develops technology and digital literacy skills. The student is expected to:

1. Use technology as a tool for research, organization, communication, and problem-solving.
2. Use digital tools, including computers, mobile devices, collaboration platforms, and cloud services, to access, manage, and create information.
3. Demonstrate proficiency in using emerging and industry-standard technologies.
4. Understand ethical and legal considerations for technology use, including the principles of data protection, copyright, and responsible technology use.

D. The student integrates core academic skills into healthcare practices. The student is expected to:

1. Demonstrate the use of clear communication techniques, both written and verbal, that are consistent with industry standards.
2. Apply English concepts such as writing informative texts when documenting the procedures and articulating goals.
3. Use mathematical concepts for measurement and conversion (Fahrenheit vs. Celsius), ratios and proportions as well as fraction and decimal conversions.

E. The student demonstrates the necessary skills to support the role of a certified pharmacy technician in a professional healthcare environment. The student is expected to:

1. Apply knowledge of pharmacy laws and ethical guidelines, including the scope of practice for pharmacy technicians, HIPAA regulations, and controlled substance management.
2. Demonstrate accurate pharmaceutical calculations, including conversions, dosages, and compounding measurements.
3. Analyze and interpret prescriptions for accuracy, completeness, and legality, identifying errors or discrepancies.
4. Operate pharmacy technology systems to process prescriptions, manage inventory, and maintain accurate patient records.

F. The student demonstrates proficiency in preparing and handling medications under professional supervision. The student is expected to:

1. Provide sterile and non-sterile compounds following USP <795>, <797>, and <800> standards.
2. Perform proper aseptic techniques in a simulated or real pharmacy environment.

3. Label and package prescriptions accurately, adhering to federal and state labeling requirements.
4. Safely handle, store, and dispose of hazardous substances, including controlled substances and cytotoxic drugs.

G. The student applies communication and customer service skills in a pharmacy setting. The student is expected to:

1. Communicate effectively with patients, healthcare professionals, and pharmacy staff, demonstrating empathy and professionalism.
2. Explain the correct use of prescription and over-the-counter medications to patients under pharmacist supervision.
3. Resolve conflicts or concerns using appropriate problem-solving strategies and customer service best practices.
4. Utilize bilingual or culturally sensitive communication skills when serving diverse populations.

H. The student demonstrates an understanding of pharmacology and the role of medications in healthcare. The student is expected to:

1. Classify medications by therapeutic use, mechanism of action, and side effects.
2. Understand the pharmacokinetics and pharmacodynamics of common medications.
3. Identify common drug interactions and contraindications.
4. Use medical and pharmaceutical references to ensure proper drug usage and safety.

I. The student demonstrates proficiency in managing pharmacy operations. The student is expected to:

1. Maintain accurate inventory records and order medications as needed using pharmacy management systems.
2. Conduct quality assurance checks to ensure accuracy and compliance with regulations.
3. Understand billing, insurance claims processing, and resolving third-party payer issues.
4. Adhere to workplace safety protocols, including infection control and equipment maintenance.

J. The student completes the requirements of a Board-approved pharmacy technician training program The student is expected to:

1. Complete a minimum of 160 hours of supervised work experience in an approved pharmacy setting, demonstrating proficiency in real-world tasks and responsibilities.
2. Participate in training activities and evaluations aligned with Board-approved pharmacy technician standards.
3. Successfully pass a Board-approved pharmacy technician examination to demonstrate competency in knowledge and skills required for certification.
4. Maintain detailed documentation of completed hours, training tasks, and competency assessments as part of the program requirements.

K. **The student demonstrates preparation for the Certified Pharmacy Technician (CPhT) credential. The student is expected to:**

1. Review and apply knowledge from coursework to complete a CPhT exam practice test.
2. Identify and address areas of improvement based on mock assessments and instructor feedback.

3. Demonstrate the ability to meet Maryland Board of Pharmacy registration requirements.
4. Create a professional portfolio including resume, certifications, and training documentation to support job placement or internships.

Course Standards: Pharmacy Technician III

1. **GENERAL REQUIREMENTS.** This course is recommended for students in Grades 11-12, and Pharmacy Technician I and II are the prerequisites.

2. **INTRODUCTION**

   A. Career and Technical Education (CTE) instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.
   B. The Health and Human Services Career Cluster promotes whole health in individuals and communities through diverse services. This sector includes technical, mental, and therapeutic services and personal care supported by medical and social sciences. By addressing social determinants of health and leveraging health data and science, this Cluster aims to enhance the overall health and resilience of individuals, families, and communities.
   C. The Pharmacy Technician Program of Study equips high school students with the knowledge and skills needed for careers in pharmacy and healthcare. Through a sequence of courses, students learn healthcare systems, pharmacology, prescription processing, and patient care practices, with hands-on training in compounding, inventory management, and pharmacy technology. The program includes a minimum of 160 hours of work-based learning, internships, or apprenticeships in licensed pharmacy settings, meeting Maryland Board of Pharmacy requirements. Students are prepared to achieve national certification as Certified Pharmacy Technicians (CPhT) and transition into entry-level roles or advanced healthcare pathways.
   D. Pharmacy Technician III course explores advanced healthcare topics, focusing on the human body's structure, functions, and pathophysiology. Students apply their knowledge in laboratory investigations, analyze diagnostic data, and learn therapeutic interventions, preparing for roles in advanced pharmacy and healthcare pathways.
   E. Students will participate in at least two Career-Connected Education and Work-Based Learning experiences in this course, which might include informational interviews or job shadowing relevant to the program of study.
   F. Students are encouraged to participate in extended learning experiences through aligned Career and Technical Student Organizations (CTSOs). CTSOs are a co-curricular requirement in the Carl D. Perkins Act, and alignment to CTSO activities is an expectation for CTE programs in the state of Maryland.

3. **KNOWLEDGE AND SKILLS**

   A. The student demonstrates the necessary skills for career development, maintenance of employability, and successful completion of course outcomes. The student is expected to:
      1. Identify and demonstrate positive work behaviors that enhance employability and job advancement, such as regular attendance, promptness, proper attire, maintenance of a clean and safe work environment, and pride in work.
      2. Demonstrate positive personal qualities such as flexibility, open-mindedness, initiative, active listening, and a willingness to learn.
      3. Employ effective reading, writing, and technical documentation skills.
      4. Solve problems using critical thinking techniques and structured troubleshooting methodologies.
      5. Demonstrate leadership skills and collaborate effectively as a team member.

6. Implement safety procedures, including proper use of software and following privacy guidelines.
7. Exhibit an understanding of legal and ethical responsibilities in the healthcare field, following copyright laws and regulations.
8. Demonstrate time-management skills and the ability to prioritize tasks in a technical setting.

B. The student identifies various career pathways in the healthcare field. The student is expected to:

1. Develop a career plan that includes the necessary education, certifications, job skills, and experience for specific roles in healthcare.
2. Create a professional resume and portfolio that reflect skills, projects, certifications, and recommendations.
3. Demonstrate effective interview skills for roles in healthcare fields.

C. The student develops technology and digital literacy skills. The student is expected to:

a. Use technology as a tool for research, organization, communication, and problem-solving.
b. Use digital tools, including computers, mobile devices, collaboration platforms, and cloud services, to access, manage, and create information.
c. Demonstrate proficiency in using emerging and industry-standard technologies.
d. Understand ethical and legal considerations for technology use, including the principles of data protection, copyright, and responsible technology use.

D. The student integrates core academic skills into healthcare practices. The student is expected to:

a. Demonstrate the use of clear communication techniques, both written and verbal, that are consistent with industry standards.
b. Apply English concepts such as writing informative texts when documenting procedures and articulating goals.
c. Use mathematical concepts for measurement and conversion (Fahrenheit vs. Celsius), ratios and proportions as well as fraction and decimal conversions.

E. The student demonstrates advanced understanding of the structure and functions of the human body in the context of pharmacy and healthcare. The student is expected to:

1. Analyze the relationships between the anatomical structures and physiological functions of human body systems and their connection to health and disease.
2. Evaluate the effects of disease, trauma, and congenital defects on cells, tissues, organs, and systems.
3. Use directional terms, anatomical planes, and body cavities to describe the organization of the human body and its systems.
4. Examine the interdependence of body systems in maintaining homeostasis and responding to internal and external stimuli.

F. The student demonstrates proficiency in applying medical and scientific knowledge to healthcare services. The student is expected to:

1. Investigate the chemical and physical processes that occur within the human body, including metabolism, energy transfer, and electrical interactions.
2. Conduct laboratory investigations and apply scientific methods to solve healthcare-related problems and make informed decisions.

3. Analyze the impact of environmental factors, such as toxins and pathogens, on the human body's systems and health.
4. Explain the role of transport systems in the body, including circulatory, lymphatic, and respiratory functions.

G. The student demonstrates the use of medical terminology related to body systems in healthcare contexts. The student is expected to:

1. Accurately define and effectively use medical vocabulary related to anatomical structures, physiological functions, and diseases.
2. Transcribe medical terms in clinical scenarios and patient documentation accurately and efficiently.
3. Interpret diagnostic reports and medical records using relevant medical terminology.
4. Communicate anatomical and physiological information using precise medical language.

H. The student demonstrates the ability to integrate scientific and healthcare knowledge in clinical practice. The student is expected to:

1. Implement investigative procedures, including posing questions, formulating hypotheses, and using appropriate diagnostic methods and technologies.
2. Apply principles of cellular biology and histology to assess and understand disease processes.
3. Use diagnostic and therapeutic technologies accurately, including imaging systems, laboratory tests, and monitoring devices.
4. Organize, analyze, and interpret data from patient assessments to predict trends and make clinical decisions.

I. The student analyzes the historical, cultural, and global context of healthcare delivery. The student is expected to:

1. Compare and contrast the historical significance of medicine with current practices and future advancements.
2. Examine cultural and lifespan considerations in healthcare delivery, including their impact on patient care and outcomes.
3. Analyze global healthcare issues, including regulatory frameworks and challenges in delivering equitable care.
4. Predict future trends in healthcare, including advancements in technology and their implications for patient care.

J. The student demonstrates the ability to evaluate and address healthcare challenges using systems thinking. The student is expected to:

1. Construct general systems models using inputs, throughputs, and feedback loops to represent physiological processes.
2. Analyze the interconnectedness of body systems and their roles in maintaining overall health.
3. Evaluate healthcare delivery systems, regulatory agencies, and their role in improving patient outcomes in a global economy.
4. Propose solutions to healthcare challenges using evidence-based strategies and interdisciplinary approaches.

K. The student demonstrates readiness for advanced pharmacy programs and future healthcare careers. The student is expected to:

1. Apply knowledge of anatomy, physiology, and pathophysiology in clinical simulations and real-world scenarios.

2. Synthesize concepts from biology, chemistry, and physics to enhance understanding of human body functions.
3. Explore career pathways in healthcare, including the progression from Certified Pharmacy Technician to other advanced roles.
4. Develop a professional portfolio that highlights laboratory investigations, clinical skills, and knowledge of human body systems.

Course Standards: Career Connected Learning I and II

Career connected learning is an educational approach that integrates classroom instruction with real-world experiences, enabling high school students to explore potential careers and develop relevant skills before graduation. By participating in work-based learning opportunities—such as apprenticeships, internships, capstone projects, and school-based enterprises—students apply academic concepts in authentic settings, gain practical industry knowledge, and build professional networks. This hands-on engagement helps students connect their studies to future career paths, strengthens their problem-solving and communication skills, and supports a smoother transition into college, vocational programs, or the workforce.

All Career and Technical Education Programs of Study include aspects of work-based learning, and almost all of the programs include two Career Connected Learning (CCL) courses. Below are the course descriptions for CCL I and CCL II. The CCL standards can be found via this link: