# PHARMACY TECHNICIAN CERTIFICATION PREPARATION

## Course Syllabus

**Course Number:** THRP-0423  
**OHLAP Credit:** No  
**OCAS Code:** None  
**Course Length:** 30 Hours  
**Career Cluster:** Health Science  
**Career Pathway:** Therapeutic Services  
**Career Major(s):** Advanced Pharmacy Technician, Pharmacy Technician

### Pre-requisite(s):  
This course will prepare the student to take and pass the national Pharmacy Technician Certification exam. Students will be given the opportunity to reinforce learning of material covered in class and while on the job training.

### Textbooks:  
- *Pharmacy Calculations for Technicians 5th Edition*, text with Study Partner CD  
- *Certification Exam Review 3rd Edition*, text with Study Partner CD  
- *Pharmacy Practice for Technicians 5th Edition*, text with Study Partner CD  

### Blackboard

### Course Objectives:  
**A. Review The Procedures In Assisting The Pharmacist**

1. Understand the federal, state, and/or practice site regulations, codes of ethics, and standards pertaining to the practice of industry.  
2. Understand the pharmaceutical, medical, and legal developments that impact the practice of pharmacy.  
3. List state-specific prescription transfer regulations.  
4. List pharmaceutical and medical abbreviations and terminology.  
5. List generic and brand names of pharmaceuticals.  
6. Describe therapeutic equivalence.  
7. Understand epidemiology.  
8. Understand risk factors for certain diseases.  
9. Understand anatomy and physiology.  
10. List signs and symptoms of disease states.  
11. List standard and abnormal laboratory values.  
12. Understand drug interactions (such as drug-disease, drug-drug, drug-laboratory, drug-nutrient).  
13. Understand strengths/dose, dosage forms, physical appearance, routes of administration and duration of drug therapy.  
15. List and describe drug information sources including printed and electronic reference materials.
16. Understand pharmacology (method of action, etc.)
17. List common and severe side or adverse effects, allergies and therapeutic contraindications associated with medications.
18. Understand drug indications.
19. Knowledge of relative role of drug and non-drug therapy (for example, herbal remedies, lifestyle modification, smoking cessation).
20. Knowledge of practice site policies and procedures regarding prescriptions or medication orders.
21. Knowledge of information to be obtained from patient/patient’s representative (for example, demographic information, allergy, third-party information).
22. Knowledge of required prescription order refill information.
23. Knowledge of formula to verify the validity of a prescriber’s DEA number.
24. Knowledge of techniques for detecting forged or altered prescriptions.
25. Knowledge of techniques for detecting prescription errors (for example, abnormal doses, early refill, incorrect quantity, incorrect patient ID #, incorrect drug).
26. Knowledge of effects of patient’s disabilities (for example, visual, physical) on drug and non-drug therapy.
27. Knowledge of techniques, equipment and supplies for drug administration (for example, insulin syringes and IV tubing).
29. Knowledge of monitoring and screening equipment (for example, blood pressure cuffs, glucose monitors).
30. Knowledge of medical and surgical appliances and devices (for example, ostomies, orthopedic devices, pumps).
31. Knowledge of proper storage conditions.
32. Knowledge of automated dispensing technology.
33. Knowledge of packaging requirements.
34. Knowledge of NDC number components.
35. Knowledge of purpose for lot numbers and expiration dates.
36. Knowledge of information for prescription or medication order label(s).
37. Knowledge of requirements regarding auxiliary labels.
38. Knowledge of requirements regarding patient package inserts.
39. Knowledge of special directions and precautions for patient/patient’s representative regarding preparation and use of medications.
40. Knowledge of techniques for assessing patient’s compliance with prescription or medication order.
41. Knowledge of action to be taken in the event of a missed dose.
42. Knowledge of requirements for mailing medications.
43. Knowledge of delivery systems for distributing medications (for example, pneumatic tube, robotics).
44. Knowledge of requirements for dispensing controlled substances.
45. Knowledge of requirements for dispensing investigational drugs.
46. Knowledge of record-keeping requirements for medication dispensing.
47. Knowledge of automatic stop orders.
48. Knowledge of restricted medication orders.
49. Knowledge of quality improvement methods (for example, matching NDC number, double-counting narcotics).
50. Knowledge of pharmacy calculations (for example, algebra, ratio and proportions, metric conversions, IV drip rates, IV admixture calculations).
51. Knowledge of measurement systems (for example, metric and avoirdupois).
52. Knowledge of drug stability.
53. Knowledge of physical and chemical incompatibilities.
54. Knowledge of equipment calibration techniques.
55. Knowledge of procedures to prepare IV admixtures.  
56. Knowledge of procedures to prepare chemotherapy.  
57. Knowledge of procedures to prepare total parenteral nutrition (TPN) solutions.  
58. Knowledge of procedures to prepare reconstituted injectable and non-injectable medications.  
59. Knowledge of specialized procedures to prepare injectable medications (for example, epidurals and patient controlled analgesic [PCA] cassettes).  
60. Knowledge of procedures to prepare radiopharmaceuticals.  
61. Knowledge of procedures to prepare oral dosage forms (for example, tablets, capsules, liquids) in unit-dose or non-unit dose packaging.  
62. Knowledge of procedures to compound sterile non-injectable products (for example, eyedrops).  
63. Knowledge of procedures to compound non-sterile products (for example, ointments, mixtures, liquids, emulsions)  
64. Knowledge of procedures to prepare ready-to-dispense multidose packages (for example, ophthalmics, otics, inhalers, topicals, transdermals).  
65. Knowledge of aseptic techniques (for example, laminar flow hood, filters).  
66. Knowledge of infection control procedures.  
67. Knowledge of requirements for handling hazardous products and disposing of hazardous waste.  
68. Knowledge of documentation requirements for controlled substances, investigational drugs and hazardous wastes.  
69. Knowledge of pharmacy-related computer software for documenting the dispensing of prescriptions or medication orders.  
70. Knowledge of manual systems for documenting the dispensing of prescriptions or medication orders.  
71. Knowledge of customer service principles.  
72. Knowledge of communication techniques.  
73. Knowledge of confidentiality requirements.  
74. Knowledge of cash handling procedures.  
75. Knowledge of reimbursement policies and plans.  
76. Knowledge of legal requirements for pharmacist counseling of patient/patient’s representative.  

B. Review Medication Distribution And Inventory Control Systems  
1. Knowledge of drug product laws and regulations and professional standards related to obtaining medication supplies, durable medical equipment and products (for example, Food, Drug and Cosmetic Act; Controlled Substances Act; Prescription Drug Marketing Act; USP-NF; NRC standards).  
2. Knowledge of pharmaceutical industry procedures for obtaining pharmaceuticals.  
3. Knowledge of purchasing policies, procedures and practices.  
4. Knowledge of dosage forms.  
5. Knowledge of formulary or approved stock list.  
6. Knowledge of par and reorder levels and drug usage.  
7. Knowledge of inventory receiving process.  
8. Knowledge of bioavailability standards (for example, generic substitutes).  
10. Knowledge of regulatory requirements regarding record-keeping for repackaged products, recalled products, and refunded products.  
11. Knowledge of policies, procedures, and practices for inventory systems.  
12. Knowledge of products used in packaging and repackaging (for example, child-resistant caps and light-protective unit-dose packaging).  
13. Knowledge of risk management opportunities (for example, dress code, personal protective equipment [PPE], needle recapping).
15. Knowledge of systems to identify and return expired and unsalable products. 
17. Knowledge of legal and regulatory requirements and professional standards governing operations of pharmacies (for example, prepackaging, difference between compounding and manufacturing). 
18. Knowledge of legal and regulatory requirements and professional standards (for example, FDA, DEA, state board of pharmacy, JCAHO) for preparing, labeling, dispensing, distributing, and administering medications. 
19. Knowledge of medication distribution and control systems requirements for the use of medications in various practice settings (for example, automated dispensing systems, bar coding, nursing stations, crash carts). 
20. Knowledge of preparation, storage requirements, and documentation for medications compounded in anticipation of prescriptions or medication orders. 
21. Knowledge of repackaging, storage requirements, and documentation for finished dosage forms prepared in anticipation of prescriptions or medication orders. 
22. Knowledge of policies, procedures, and practices regarding storage and handling of hazardous materials and wastes (for example, Materials Safety Data Sheet [MSDS]). 
23. Knowledge of medication distribution and control systems requirements for controlled substances, investigational drugs, and hazardous materials and wastes. 
24. Knowledge of the written, oral, and electronic communication channels necessary to ensure appropriate follow-up and problem resolution (for example, product recalls, supplier shorts). 
25. Knowledge of quality assurance policies, procedures, and practices for medication and inventory control systems. 

C. Review The Administration And Management Of Pharmacy Practice
1. Knowledge of the practice setting’s mission, goals and objectives, organizational structure, and policies and procedures. 
2. Knowledge of lines of communication throughout the organization. 
3. Knowledge of principles of resource allocation (for example, scheduling, cross training, work flow). 
5. Knowledge of written, oral, and electronic communication systems. 
6. Knowledge of required operational licenses and certificates. 
7. Knowledge of roles and responsibilities of pharmacists, pharmacy technicians, and other pharmacy employees. 
8. Knowledge of legal and regulatory requirements for personnel, facilities, equipment, and supplies (for example, space requirements, prescription file storage, cleanliness, reference materials, storage of radiopharmaceuticals). 
9. Knowledge of professional standards (for example, JCAHO) for personnel, facilities, equipment, and supplies. 
10. Knowledge of quality improvement standards and guidelines. 
11. Knowledge of state board of pharmacy regulations. 
12. Knowledge of storage requirements and expiration dates for equipment and supplies (for example, first-aid items, fire extinguishers). 
13. Knowledge of storage and handling requirements for hazardous substances (for example, chemotherapeutics, radiopharmaceuticals). 
14. Knowledge of hazardous waste disposal requirements. 
15. Knowledge of procedures for the treatment of exposure to hazardous substances (for example, eyewash). 
16. Knowledge of security systems for the protection of employees, customers,
17. Knowledge of laminar flow hood maintenance requirements.

18. Knowledge of infection control policies and procedures.

19. Knowledge of sanitation requirements (for example, handwashing, cleaning counting trays, countertop, and equipment).

20. Knowledge of equipment calibration and maintenance procedures.


22. Knowledge of technology used in the preparation, delivery, and administration of medications (for example, robotics, Baker cells, automated TPN equipment, Pyxis, infusion pumps).

23. Knowledge of purpose and function of pharmacy equipment.

24. Knowledge of documentation requirements for routine sanitation, maintenance, and equipment calibration.

25. Knowledge of the Americans with Disabilities Act requirements (for example, physical accessibility).

26. Knowledge of manual and computer-based systems for storing, retrieving, and using pharmacy-related pharmacy information (for example, drug interactions, patient profiles, generating labels).

27. Knowledge of security procedures related to data integrity, security, and confidentiality.

28. Knowledge of downtime emergency policies and procedures.

29. Knowledge of backup and archiving procedures for stored data and documentation.

30. Knowledge of legal requirements regarding archiving.

31. Knowledge of third-party reimbursement systems.

32. Knowledge of healthcare reimbursement systems (for example, home health, respiratory medications, eligibility and reimbursement).

33. Knowledge of billing and accounting policies and procedures.

34. Knowledge of information sources used to obtain data in a quality improvement system (for example, the patient’s chart, patient profile, computerized information systems, medication administration record).

35. Knowledge of procedures to document occurrences such as medication errors, adverse effects, and product integrity (for example, FDA Med Watch Program).

36. Knowledge of staff training techniques.

37. Knowledge of employee performance evaluation techniques.

38. Knowledge of employee performance feedback techniques.

1 ODCTE Objective
All unmarked objectives are TTC instructor developed.

Teaching Methods: The class will primarily be taught by the lecture and demonstration method and supported by various media materials to address various learning styles. There will be question and answer sessions over material covered in lecture and media presentations. Supervised lab time is provided for students to complete required projects.
**Grading Procedures:**

1. Students are graded on theory and lab practice and performance.
2. Each course must be passed with seventy (70%) percent or better.
3. Grading scale: A=90-100%, B=80-89%, C=70-79%, D=60-69%, F=50-59%.
4. Career Major grades established during coursework are a major criteria in successfully obtaining certification.

**Description of Classroom, Laboratories, and Equipment:**

Tulsa Technology Center campuses are owned and operated by Tulsa Technology Center School District No. 18. All programs provide students the opportunity to work with professionally certified instructors in modern, well-equipped facilities.

**Available Certifications/College Credit:**

The student may be eligible to take state, national or industry exam after completion of the program. College credit may be issued from Oklahoma State University-Okmulgee or Tulsa Community College. See program counselor for additional information.

**College Credit Eligibility:**

The student must maintain a grade point average of 2.0 or better.