



Clemson University - Center for Corporate Learning
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Education & Training Plan
Pharmacy Technician Certificate Program with Clinical Externship
Clemson University (CLEM)

Student Full Name: _____

Start Date: _____ End Date: _____

Program includes National Certification & a Clinical Externship Opportunity
Mentor Supported

Pharmacy Technician Certificate Program with Clinical Externship

Course Code: CLEM-PT 01
 Program Duration: 4 Months
 Contact Hours: 375
 Student Tuition: \$3,000

The Pharmacy Technician Profession

The need for Pharmacy Technicians continues to grow with demand expected to increase substantially through 2018. Technicians work under the supervision of a registered pharmacist in hospitals, home infusion pharmacies, community pharmacies and other healthcare settings. This high demand for pharmacy technicians is the result of a multitude of factors including the constant availability of new drugs, the national shortage of registered pharmacists, the establishment of certified pharmacy technicians, and the aging population. Approximately 400,000 technicians will be employed by the year 2018 to meet our nation's growing healthcare demands.

The Pharmacy Technician Program

This comprehensive course will prepare students to enter the pharmacy field and take the Pharmacy Technician Certification Board's PTCB exam. Course content includes pharmacy medical terminology, reading and interpreting prescriptions and defining generic and brand names drugs and much, much more! Program also includes a clinical externship at a local healthcare provider! This program will prepare students to enter the pharmacy field and to pursue certification including the Pharmacy Technician Certification Board's PTCB exam. This course covers the following key areas and topics:

- Pharmacy calculations
- Medical terminology specific to the pharmacy
- Skills to read and interpret prescriptions
- Review of the top 200 drugs
- Skills to identify drugs by generic and brand names
- Dosage calculations, I.V. flow rates, drug compounding, and dose conversions
- Dispensing of prescriptions, inventory control, and billing and reimbursement

Education and National Certifications

- Pharmacy Technicians should have or be pursuing a high school diploma or GED.
- There are no state approval and/or state requirements associated with this program.
- Students who complete this course are prepared for national certification:
 - **Pharmacy Technician Certification Board (PTCB) national technician certification exam**

Pharmacy Technician Detailed Course Information:

- The history of pharmacy and healthcare
- Pharmacy technician role and responsibilities
- Pharmacy technician certification and registration process
- Types of pharmacies including the hospital pharmacy, retail practice, long-term care practice, mail order pharmacy, home care pharmacies, and others
- Drug regulation and control
- Pharmaceutical terminology and related anatomy
- Parts of the prescription and labeling; Pharmacy calculations and math review
- Pharmacy measures and abbreviations; Routes and formulations
- Parenterals and compounding
- Basic biopharmaceutics
- Aseptic technique and the handling of sterile products
- Total Parenteral Nutrition (TPN)
- Basics of IV solutions and calculating 24-hour supply of IV solutions
- Factors affecting drug activity
- Information and pharmacy resources
- Inventory management and financial issues
- Brand names and generic drugs; Drug names and drug classes

National Certification

Students who complete the Clemson University Pharmacy Technician program will be prepared to sit for the Pharmacy Technician Certification Board (PTCB) national technician certification exam. In order to work as a pharmacy technician, many states nationwide are requiring that technicians achieve national PTCB technician certification prior to working in that state. Students who complete this program are encouraged to complete the clinical externship option with their program. This comprehensive program is designed to prepare students to sit for this PTCB national certification exam. Students who complete this program can and do sit for the PTCB national certification exams and are qualified, eligible and prepared to do so.

Clinical Externship / Hands on Training / Practicum

Although not a requirement of this program, once students complete the Pharmacy Technician program they have the ability to participate in a clinical externship and/or hands on practicum so as to practice the skills necessary to perform the job requirements of a Pharmacy Technician. Students will be assisted with completing a resume and/or other requirements necessary to work in a hospital, physicians practice, clinic and/or with other healthcare organizations. All students who complete this program are eligible to participate in an externship and will be placed in a healthcare organization near their location. Clemson University works with national healthcare organizations and has the ability to place students in clinical externship opportunities nationwide.

Clemson University contact: If students have any questions regarding this program including national certification and externships, **they should call Juanita Durham of Clemson University at 864.656.3984 or via email at jdrhm@clemsun.edu.**

Note: No refunds can be issued after the start date published in your Financial Award document.



About Clemson University!

Clemson Online, a unit reporting directly to the Provost, works closely with leadership teams across the University to develop, market, and deliver top-quality courses and programs in blended and online formats. The office provides vision, leadership, coordination, and expertise in support of faculty design, delivery, and evaluation of technology-enhanced, blended, and fully online courses and instructional materials. Dynamic, transformative, and unique eLearning opportunities characterize Clemson's approach to online teaching and learning.

Our Mission: Clemson Online provides strategic leadership for online education, emphasizing innovative teaching and superior learning outcomes to maximize student success in 21st-century academic and professional contexts.

Our Vision: Clemson Online will define the public web-grant university through measurable achievements in online education, research, and service.

The office is committed to pursuing strategic opportunities, providing supportive resources, promoting superior educational quality, and ensuring faculty involvement and responsibility in shaping Clemson's online future.



Clemson University and Pearson Education

Clemson University's eLearning programs were developed in partnership with Pearson Education to produce the highest quality, best-in-class content and delivery necessary to enhance the overall student learning experience, boost understanding and ensure retention. Pearson Education is the premier content and learning company in North America offering solutions to the higher education and career training divisions of colleges and universities across the country aimed at driving quality education programs to ensure student success. Please visit us at www.pearson.com.

About Pearson Education

Welcome to Pearson. We have a simple mission: to help people make more of their lives through learning. We are the world's leading learning company, with 40,000 employees in more than 80 countries helping people of all ages to make measurable progress in their lives. We provide a range of education products and services to institutions, governments and direct to individual learners, that help people everywhere aim higher and fulfil their true potential. Our commitment to them requires a holistic approach to education. It begins by using research to understand what sort of learning works best, it continues by bringing together people and organizations to develop ideas, and it comes back round by measuring the outcomes of our products.

Lesson Checklist

Each lesson has a prescribed, detailed checklist of activities for successful completion of the lesson. This includes lesson objectives, readings, and recommended assignments. Although assignments are optional, the instructor will grade and provide feedback on submitted assignments.

Course Materials:

- The Pharmacy Technician: Foundations and Practices. Custom Edition for Condensed Curriculum International
- The Pharmacy Technician: Foundations and Practices Lab Manual and Workbook, Second Custom Edition
- Pharmacy Technician Program Student Workbook. Second Custom Edition for Condensed Curriculum International

Module/Lesson Structure

The Pharmacy Technician program is divided into four main content modules. Each module contains one or more lesson presentations to view. These lesson presentations are the “lectures” which, along with the textbook readings and resources, will help you learn the material. The lesson presentations aim to address a variety of learning styles and preferences using text, audio, video, etc. Each lesson contains at least one *Check Your Understanding* interactive self-assessment that will help you gauge your comprehension of that lesson’s content. Many lessons include supplemental resources such as games, animations, videos, and interactive activities. Using these additional materials will deepen your understanding of the content. Each module has a Module test (the last Module concludes with a Final Exam for all students).

Course Overview

Module 1 – History of Pharmacy Practice

- Lesson 1 – History of Pharmacy Practice
 - Reading Assignment: Chapter 1 (pp. 1-11)
- Lesson 2 – The Professional Pharmacy Technician
 - Reading Assignment: Chapter 2 (pp. 12-26)
- Lesson 3 – Communication and Customer Care
 - Reading Assignment: Chapter 3 (pp. 27-41)
- Lesson 4 – Pharmacy Laws and Ethics
 - Reading Assignment: Chapter 4 (pp. 42-62)
- Lesson 5 – Terminology and Abbreviations
 - Reading Assignment: Chapter 5 (pp. 63-112)

Module 2 – Retail Pharmacy

- Lesson 6 – Retail Pharmacy
 - Reading Assignment: Chapter 6 (pp. 113-132)
- Lesson 7 – Health-System Pharmacy
 - Reading Assignment: Chapter 7 (pp. 133-149)
- Lesson 8 – Technology in the Pharmacy
 - Reading Assignment: Chapter 8 (pp. 150-161)
- Lesson 9 – Inventory Management and Health Insurance Billing
 - Reading Assignment: Chapter 9 (pp. 162-173)
- Lesson 10 – Introduction to Compounding

- Reading Assignment: Chapter 10 (pp. 174-188)
- Lesson 11 – Introduction to Sterile Products
 - Reading Assignment: Chapter 11 (pp. 189-204)

Module 3 – Basic Math Skills

- Lesson 12 – Basic Math Skills
 - Reading Assignment: Chapter 12 (pp. 205-227)
- Lesson 13 – Measurement Systems
 - Reading Assignment: Chapter 13 (pp. 228-243)
- Lesson 14 – Dosage Calculations
 - Reading Assignment: Chapter 14 (pp. 244-268)
- Lesson 15 – Concentrations and Dilutions
 - Reading Assignment: Chapter 15 (pp. 269-286)
- Lesson 16 – Alligations
 - Reading Assignment: Chapter 16 (pp. 287-303)
- Lesson 17 – Parenteral Calculations
 - Reading Assignment: Chapter 17 (pp. 304-324)

Module 4 – The Body and Drugs

- Lesson 18 – Dosage Formulations and Administration
 - Reading Assignment: Chapter 18 (pp. 325-347)
- Lesson 19 – The Body and Drugs
 - Reading Assignment: Chapter 19 (pp. 348-370)
- Lesson 20 – Drug Classifications
 - Reading Assignment: Chapter 20 (pp. 371-397)
- Lesson 21 – The Skin
 - Reading Assignment: Chapter 21 (pp. 398-405)
- Lesson 22 – Eyes and Ears
 - Reading Assignment: Chapter 22 (pp. 406-415)
- Lesson 23 – The Gastrointestinal System
 - Reading Assignment: Chapter 23 (pp. 416-431)
- Lesson 24 – The Musculoskeletal System
 - Reading Assignment: Chapter 24 (pp. 432-441)
- Lesson 25 – The Respiratory System
 - Reading Assignment: Chapter 25 (pp. 442-455)
- Lesson 26 – The Cardiovascular, Circulatory, and Lymph Systems
 - Reading Assignment: Chapter 26 (pp. 456-471)
- Lesson 27 – The Immune System
 - Reading Assignment: Chapter 27 (pp. 472-485)
- Lesson 28 – The Renal System
 - Reading Assignment: Chapter 28 (pp. 486-492)
- Lesson 29 – The Endocrine System
 - Reading Assignment: Chapter 29 (pp. 493-504)

- Lesson 30 – The Reproductive System
 - Reading Assignment: Chapter 30 (pp. 505-513)
- Lesson 31 – The Nervous System
 - Reading Assignment: Chapter 31 (pp. 514-525)

Module 5 – Special Topics

- Lesson 32 – Pediatric and Neonatal Patients
 - Reading Assignment: Chapter 32 (pp. 527-536)
- Lesson 33 – Geriatric Patients
 - Reading Assignment: Chapter 33 (pp. 537-543)
- Lesson 34 – Biopharmaceuticals
 - Reading Assignment: Chapter 34 (pp. 544-548)

Note: This program can be completed in 4 months. However, students will have online access to this program for a 24-month period.

MICROSOFT OFFICE Module

- Use an integrated software package, specifically the applications included in the Microsoft Office suite
- Demonstrate marketable skills for enhanced employment opportunities
- Describe proper computer techniques for designing and producing various types of documents
- Demonstrate the common commands & techniques used in Windows desktop
- List the meaning of basic PC acronyms like MHz, MB, KB, HD and RAM
- Use WordPad and MSWord to create various types of documents
- Create headings and titles with Word Art
- Create and format spreadsheets, including the use of mathematical formulas
- Demonstrate a working knowledge of computer database functions, including putting, processing, querying and outputting data
- Define computer terminology in definition matching quizzes
- Use the Windows Paint program to alter graphics
- Use a presentation application to create a presentation with both text and graphics
- Copy data from one MS Office application to another application in the suite
- Use e-mail and the Internet to send Word and Excel file attachments
- Demonstrate how to use the Windows Taskbar and Windows Tooltips
- Explain how copyright laws pertain to data and graphics posted on the Internet

Note: Although the Microsoft Office Module is not required to successfully complete this program, students interested in pursuing free Microsoft MOS certification may want to consider completing this Microsoft Office Module at no additional cost.

System Requirements:

Windows Users:

- Windows 8, 7, XP or Vista
- 56K modem or higher
- Soundcard & Speakers
- Firefox, Chrome or Microsoft Internet Explorer

Mac OS User:

- Mac OS X or higher (in classic mode)
- 56K modem or higher
- Soundcard & Speakers
- Apple Safari

iPad Users:

- Due to Flash limitations, eLearning programs are NOT compatible with iPads

Screen Resolution:

- We recommend setting your screen resolution to 1024 x 768 pixels.

Browser Requirements:

- System will support the two latest releases of each browser. When using older versions of a browser, users risk running into problems with the course software.
 - Windows Users: Mozilla Firefox, Google Chrome, Microsoft Internet Explorer
 - Mac OS Users: Apple Safari, Google Chrome Mozilla Firefox

Suggested Plug-ins:

- Flash Player
- Real Player
- Adobe Reader
- Java