

# Pharmacy Technology

The Pharmacy Technology curriculum prepares individuals to assist the pharmacist in duties that a pharmacy technician can legally perform and to function within the boundaries prescribed by the pharmacist and the employment agency.

Course work includes and builds upon the domains of health care and pharmaceutical principles. Content emphasizes the pharmacy technician as a member of the interdisciplinary team providing safe, individualized care while employing evidence-based practice, quality improvement, and informatics. Students prepare prescription medications, mix intravenous solutions and other specialized medications, update patient profiles, maintain inventories, package medications and gather data used by pharmacists to monitor drug therapy.

Graduates of this program are eligible to apply to take the certification exam with the Pharmacy Technician Certification Board (PTCB). Employment opportunities are vast within the global health care system. Employment opportunities include retail, hospitals, nursing homes, research laboratories, and pharmaceutical manufacturing facilities.

For specific information about potential positions and wages in pharmacy technology employment, visit the Central Piedmont Career Coach website.

## Pharmacy Technology (A45580)

### Degree Awarded

The Associate in Applied Science degree – Pharmacy Technology is awarded by the College upon completion of this program.

### Admissions

- Complete an admissions application to Central Piedmont.
- Submit high school transcripts, as well as any college transcripts, to Admissions, Records and Registration.
- Take the required placement tests.
- Consult with a counselor or advisor to review placement test scores, program information and select courses for registration.
- Complete any required Developmental Education courses with a grade of 'C' or better.
- Complete and submit a Pharmacy Technology AAS degree application by the deadline date.
- Many courses have prerequisites or co-requisites; check the Courses section for details.
- Progression in this program depends upon a grade of "C" or better in all general education courses and major and related courses.

Applicants to the Pharmacy Technology AAS degree program are selected on a "best prepared" basis. The point system was implemented as an objective means for evaluating Pharmacy Technology applicants. Applicants are ranked based upon points earned, and the students with the highest number of points will be selected each year. Admission points are assigned according to the applicant's documented record. Criteria for selection include scores on standardized tests, past academic performance, and experience in the field of interest.

### Notes

Students must demonstrate basic computer competencies through coursework or testing. The division director of Computer Office and Information Systems determines equivalent competency.

In addition to tuition and textbooks, costs of this program include uniforms, physical examination, criminal background check, and specific vaccinations. The student must provide proof of health and accident insurance.

The North Carolina State Board of Pharmacy may request information regarding having been charged with or convicted of violating any controlled substances laws or charged or disciplined by any licensing or permitting authority, federal or state, on the application for registration. The Board of Pharmacy may decide not to register an individual based on the results of an investigation. A candidate may be disqualified for Pharmacy Technician Certification Board (PTCB) certification upon the disclosure or discovery of:

- criminal conduct involving the candidate.
- State Board of Pharmacy registration or licensure action involving the candidate.
- Violation of a PTCB Certification policy, including but not limited to the Code of Conduct.

To participate in clinical education experiences at health care facilities, students are required to submit results of a criminal background check at their own expense. As a condition of program admission, students are required to verify that they are United States citizens or are otherwise legally authorized residents of the United States. Students also are required, at their own expense, to submit to a 13-panel drug screen.

### Contact Information

For more information, visit the Pharmacy Technology Program website. For further assistance, contact the Program Chair at 704.330.6432.

#### General Education Requirements

ENG 111	Writing and Inquiry	3.0
PSY 150	General Psychology	3.0
Select 3.0 credits from the following:		3.0
ENG 112	Writing and Research in the Disciplines	
COM 110	Introduction to Communication	
COM 231	Public Speaking	
Select 3 credits of the following:		3.0
ART 111	Art Appreciation	
ART 114	Art History Survey I	
ART 115	Art History Survey II	
HUM 120	Cultural Studies	
DRA 111	Theatre Appreciation	
HUM 130	Myth in Human Culture	
MUS 110	Music Appreciation	
MUS 112	Introduction to Jazz	
PHI 215	Philosophical Issues	
PHI 240	Introduction to Ethics	
REL 110	World Religions	
Select 3 credits of the following:		3.0
MAT 143	Quantitative Literacy	
MAT 152	Statistical Methods I	

MAT 171	Precalculus Algebra	
<b>Major Requirements</b>		
ACA 122	College Transfer Success	1.0
PHM 110	Introduction to Pharmacy	3.0
PHM 111	Pharmacy Practice I	4.0
PHM 115	Pharmacy Calculations	3.0
PHM 118	Sterile Products	4.0
PHM 120	Pharmacology I	3.0
PHM 125	Pharmacology II	3.0
PHM 140	Trends in Pharmacy	2.0
PHM 150	Hospital Pharmacy	4.0
PHM 155	Community Pharmacy	3.0
PHM 160	Pharm Dosage Forms	3.0
PHM 165	Pharmacy Prof Practice	2.0
PHM 132	Pharmacy Clinical	2.0
PHM 134	Pharmacy Clinical	4.0
PHM 138	Pharmacy Clinical	3.0
or PHM 133	Pharmacy Clinical	
or PHM 135	Pharmacy Clinical	
or PHM 136	Pharmacy Clinical	
PHM 265	Professional Issues	3.0
MED 121	Medical Terminology I	3.0
Take 1 course from the following:		3.0-5.0
BIO 161	Introduction to Human Biology	
BIO 110	Principles of Biology	
BIO 111	General Biology I	
BIO 112	General Biology II	
BIO 163	Basic Anatomy & Physiology	
BIO 168	Anatomy and Physiology I	
<b>Total Credits</b>		<b>68-70</b>

### Pharmacy Technology Diploma (D45580)

The Diploma Program prepares graduates to perform essential functions in various areas of retail pharmacy practice. The program provides employers with competent technicians to assist the pharmacist within their scope of practice and perform necessary unsupervised daily tasks, including basic to extensive medication preparation, dosage calculations, compounding, patient information maintenance, inventory, and quality control. Graduates of the diploma program are eligible to take the National Certification Exam administered by the Pharmacy Technician Certification Board (PTCB) to become a Certified Pharmacy Technician.

#### General Education Requirements

BIO 161	Introduction to Human Biology	3.0-5.0
or BIO 110	Principles of Biology	
or BIO 111	General Biology I	
or BIO 112	General Biology II	
or BIO 163	Basic Anatomy & Physiology	
or BIO 168	Anatomy and Physiology I	
MAT 143	Quantitative Literacy	3.0-4.0
or MAT 152	Statistical Methods I	
or MAT 171	Precalculus Algebra	
ENG 111	Writing and Inquiry	3.0
COM 110	Introduction to Communication	3.0

or COM 231	Public Speaking	
MED 121	Medical Terminology I	3.0
<b>Major Requirements</b>		
PHM 110	Introduction to Pharmacy	3.0
PHM 111	Pharmacy Practice I	4.0
PHM 115	Pharmacy Calculations	3.0
PHM 120	Pharmacology I	3.0
PHM 140	Trends in Pharmacy	2.0
PHM 125	Pharmacology II	3.0
PHM 134	Pharmacy Clinical	4.0
PHM 155	Community Pharmacy	3.0
PHM 165	Pharmacy Prof Practice	2.0
<b>Total Credits</b>		<b>42-45</b>

### Health Sciences Certificate (C45940)

#### Health Sciences Certificate with a Specialization in Fundamentals in Pharmacy Technology (C45940-C1)

This certificate also is available to high school students through the Career and College Promise program.

#### Major Requirements

HSC 110	Orientation to Health Careers	1.0
HSC 140	Transcultural Healthcare	2.0
HEA 112	First Aid & CPR	2.0
MED 121	Medical Terminology I	3.0
PHM 110	Introduction to Pharmacy	3.0
PHM 140	Trends in Pharmacy	2.0
<b>Total Credits</b>		<b>13</b>

The following is the suggested plan for when to take each course to complete the Associate in Applied Science degree, based on the program requirements of the 2022-2023 catalog. This is only a recommendation — you may take courses in another order upon consultation with your advisor. This plan is based on you starting with college-level math and English courses, starting your program in the fall, and attending full-time. You can also follow this sequence if you attend part-time. Speak with an advisor about the plan and any questions. This program might also offer diplomas or certificates; visit the catalog or contact the program for details.

Pharmacy Technology suggested course sequence

**PHM 110. Introduction to Pharmacy. 3.0 Credits.** Class-3.0. Clinical-0.0. Lab-0.0. Work-0.0

This course introduces pharmacy practice and the technician's role in a variety of pharmacy settings. Topics include medical terminology and abbreviations, drug delivery systems, law and ethics, prescription and medication orders, and the health care system. Upon completion, students should be able to explain the role of pharmacy technicians, read and interpret drug orders, describe quality assurance, and utilize pharmacy references.

**PHM 111. Pharmacy Practice I. 4.0 Credits.** Class-3.0. Clinical-0.0. Lab-3.0. Work-0.0

This course provides instruction in the technical procedures for preparing and dispensing drugs in the hospital and retail settings under supervision of a registered pharmacist. Topics include drug packaging and labeling, out-patient dispensing, hospital dispensing procedures, controlled substance procedures, inventory control, and non-sterile compounding. Upon completion, students should be able to perform basic supervised dispensing techniques in a variety of pharmacy settings.

Corequisites: Take PHM 110 and PHM 115

**PHM 115. Pharmacy Calculations. 3.0 Credits.** Class-3.0. Clinical-0.0. Lab-0.0. Work-0.0

This course provides an introduction to the metric, *avoirdupois*, and apothecary systems of measurement and the calculations used in pharmacy practice. Topics include ratio and proportion, dosage determinations, percentage preparations, reducing and enlarging formulas, dilution and concentration, aliquots, specific gravity and density, and flow rates. Upon completion, students should be able to correctly perform calculations required to properly prepare a medication order.

**PHM 118. Sterile Products. 4.0 Credits.** Class-3.0. Clinical-0.0. Lab-3.0. Work-0.0

This course provides an introduction to intravenous admixture preparation and other sterile products, including total parenteral nutrition and chemotherapy. Topics include aseptic techniques; facilities, equipment, and supplies utilized in admixture preparation; incompatibility and stability; laminar flow hoods; immunizations and irrigation solutions; and quality assurance. Upon completion, students should be able to describe and demonstrate the steps involved in preparation of intermittent and continuous infusions, total parenteral nutrition, and chemotherapy.

Prerequisites: Take PHM 110 PHM 111, minimum grade of C

**PHM 120. Pharmacology I. 3.0 Credits.** Class-3.0. Clinical-0.0. Lab-0.0. Work-0.0

This course introduces the study of the properties, effects, and therapeutic value of the primary agents in the major drug categories. Topics include nutritional products, blood modifiers, hormones, diuretics, cardiovascular agents, respiratory drugs, and gastrointestinal agents. Upon completion, students should be able to place major drugs into correct therapeutic categories and identify indications, side effects, and trade and generic names.

**PHM 125. Pharmacology II. 3.0 Credits.** Class-3.0. Clinical-0.0. Lab-0.0. Work-0.0

This course provides a continuation of the study of the properties, effects, and therapeutic value of the primary agents in the major drug categories. Topics include autonomic and central nervous system agents, anti-inflammatory agents, and anti-infective drugs. Upon completion, students should be able to place major drugs into correct therapeutic categories and identify indications, side effects, and trade and generic names.

Prerequisites: Take PHM 120, minimum grade of C

**PHM 132. Pharmacy Clinical. 2.0 Credits.** Class-0.0. Clinical-6.0. Lab-0.0. Work-0.0

This course provides an opportunity to work in pharmacy settings under a pharmacist's supervision. Emphasis is placed on effective communication with personnel, developing proper employee attitude, and dispensing of medications. Upon completion, students should be able to demonstrate an understanding of pharmacy operations, utilize references, dispense medications, prepare patient charges, and efficiently operate computers.

Prerequisites: Take PHM 111, minimum grade of C

**PHM 133. Pharmacy Clinical. 3.0 Credits.** Class-0.0. Clinical-9.0. Lab-0.0. Work-0.0

This course provides an opportunity to work in pharmacy settings under a pharmacist's supervision. Emphasis is placed on effective communication with personnel, developing proper employee attitude, and dispensing of medications. Upon completion, students should be able to demonstrate an understanding of pharmacy operations, utilize references, dispense medications, prepare patient charges, and efficiently operate computers.

**PHM 134. Pharmacy Clinical. 4.0 Credits.** Class-0.0. Clinical-12.0. Lab-0.0. Work-0.0

This course provides an opportunity to work in pharmacy settings under a pharmacist's supervision. Emphasis is placed on effective communication with personnel, developing proper employee attitude, and dispensing of medications. Upon completion, students should be able to demonstrate an understanding of pharmacy operations, utilize references, dispense medications, prepare patient charges, and efficiently operate computers.

**PHM 135. Pharmacy Clinical. 5.0 Credits.** Class-0.0. Clinical-15.0. Lab-0.0. Work-0.0

This course provides an opportunity to work in pharmacy settings under a pharmacist's supervision. Emphasis is placed on effective communication with personnel, developing proper employee attitude, and dispensing of medications. Upon completion, students should be able to demonstrate an understanding of pharmacy operations, utilize references, dispense medications, prepare patient charges, and efficiently operate computers.

**PHM 136. Pharmacy Clinical. 6.0 Credits.** Class-0.0. Clinical-18.0. Lab-0.0. Work-0.0

This course provides an opportunity to work in pharmacy settings under a pharmacist's supervision. Emphasis is placed on effective communication with personnel, developing proper employee attitude, and dispensing of medications. Upon completion, students should be able to demonstrate an understanding of pharmacy operations, utilize references, dispense medications, prepare patient charges, and efficiently operate computers.

**PHM 138. Pharmacy Clinical. 8.0 Credits.** Class-0.0. Clinical-24.0. Lab-0.0. Work-0.0

This course provides an opportunity to work in pharmacy settings under a pharmacist's supervision. Emphasis is placed on effective communication with personnel, developing proper employee attitude, and dispensing of medications. Upon completion, students should be able to demonstrate an understanding of pharmacy operations, utilize references, dispense medications, prepare patient charges, and efficiently operate computers.

**PHM 140. Trends in Pharmacy. 2.0 Credits.** Class-2.0. Clinical-0.0. Lab-0.0. Work-0.0

This course covers the major issues, trends, and concepts in contemporary pharmacy practice. Topics include professional ethics, continuing education, job placement, and the latest developments in pharmacy technician practice. Upon completion, students should be able to demonstrate a basic knowledge of the topics discussed.

Prerequisites: Take PHM 110, minimum grade of C

**PHM 150. Hospital Pharmacy. 4.0 Credits.** Class-3.0. Clinical-0.0.  
Lab-3.0. Work-0.0

This course provides an in-depth study of hospital pharmacy practice. Topics include hospital organizational structure, committee functions, utilization of reference works, purchasing and inventory control, drug delivery systems, and intravenous admixture preparation. Upon completion, students should be able to explain hospital organization/committee functions, interpret and enter patient orders, fill unit-dose cassettes, and prepare intravenous admixtures.

**PHM 155. Community Pharmacy. 3.0 Credits.** Class-2.0. Clinical-0.0.  
Lab-2.0. Work-0.0

This course covers the operational procedures relating to retail pharmacy. Emphasis is placed on a general knowledge of over-the-counter products, prescription processing, business/inventory management, and specialty patient services. Upon completion, students should be able to provide technical assistance and support to the retail pharmacist.

**PHM 160. Pharm Dosage Forms. 3.0 Credits.** Class-3.0. Clinical-0.0.  
Lab-0.0. Work-0.0

This course is a study of pharmaceutical dosage forms and considerations in their manufacture. Topics include bioavailability, routes of administration, tablets, capsules, solutions, syrups, suspensions, elixirs, aerosols, transdermals, topicals, ophthalmics, otics, and other dosage forms. Upon completion, students should be able to describe the characteristics of the major dosage forms and explain how these characteristics affect the action of the drug.

**PHM 165. Pharmacy Prof Practice. 2.0 Credits.** Class-2.0. Clinical-0.0.  
Lab-0.0. Work-0.0

This course provides a general overview of all aspects of pharmacy technician practice. Emphasis is placed on pharmacy law, calculations, compounding, pharmacology, and pharmacy operations. Upon completion, students should be able to demonstrate competence in the areas required for the Pharmacy Technician Certification Examination.

**PHM 265. Professional Issues. 3.0 Credits.** Class-3.0. Clinical-0.0.  
Lab-0.0. Work-0.0

This course provides a comprehensive discussion of topics common to the practice of the pharmacy technician. Emphasis is placed on application of professional competencies including legal/ethical issues, leadership/management concepts and employability skills. Upon completion, students should be able to demonstrate competence in pharmacy workplace skills and leadership/management roles.

Prerequisites: Take PHM 165, minimum grade of C