

**PHYSICAL HEALTHCARE SUBCLUSTER
PHARMACOLOGY FOR MEDICAL CAREERS
COURSE CODE: 5570**

COURSE DESCRIPTION: Pharmacology for Medical Careers is a program designed to inform senior level students about pharmacology in the medical field. Through project-based activities, classroom lab experiences, and work-based learning opportunities students are exposed to pharmacy careers and benefit from pharmacology, math, and science standards included in this course.

COURSE OBJECTIVES: Upon successful completion of this course students may be prepared to sit for the national pharmacy technician certification exam (PTCB, ExCPT). Once students are nationally certified and have met the state requirements through work experiences, they will be eligible to sit for the state certification exam.

GRADE: 12 ONLY.

GENERAL REQUIREMENTS AND RECOMMENDATIONS: This course is recommended for students in grade 12 who are scheduled to graduate at the conclusion of the year in which training has begun. Students are eligible to test for the PTCB up to 60 days prior to graduation. Please check with the testing agencies for details pertaining to each exam.

PRE-REQUISITES: Students must be a completer in any healthcare pathway with a minimum grade of 75% in previous courses to enroll in this course.

CREDIT: 2 units (240 hours or more)

INDUSTRY ALIGNED CREDENTIAL: Certified Pharmacy Technician (CPhT)

CONCENTRATOR: Completes the two required courses in chosen pathway (Ex: HS1 & HS2).

COMPLETERS: For a full explanation of completers visit the Student Reporting Procedures Guide (SRPG) or the SCDE program specific web page.

Three Course Completer Sample:

HS1, HS 2, HS Human Structure, Function and Disease

OR Four Course Completer Sample:

HS 1, HS 2, HS WBL, Pharmacy for Medical Careers

GENERAL INFORMATION: This course may be taught without the requirement to participate in a pharmacy technician training/certification program. Should students be enrolled in a vendor driven pharmacy technician training program, all course foundation standards should be reviewed in conjunction with the objectives required as part of the training program.

FOUNDATION STANDARDS FOR PHARMACOLOGY

Foundation 1: Academic Foundations

Review and apply human anatomy, physiology, common diseases and disorders, and medical math principles as related to pharmacology.

1. Apply pharmacological understanding as it relates to body systems including but not limited to:
 - a. Cardiovascular
 - b. Renal (Kidney)
 - c. Central and peripheral nervous systems
 - d. Endocrine (Liver)
2. Understand the classification of drugs including:
 - a. Generic medications vs. brand medications
 - b. Chemical Classifications
 - c. Drug interactions
 - d. Stability
 - e. Incompatibility
 - f. Storage
 - g. Narrow therapeutic index medications (NTI)
 - h. Indications for use of medication
3. Demonstrate medical math principles.
 - a. Roman numerals
 - b. Fractions
 - c. Decimals
 - d. Percentage
 - e. Ratio proportions
 - f. Temperature conversions
 - g. Weight
 - h. Dosage calculations
 - IV flow rates
 - Powder volumes
 - Tablets
 - Liquids
4. Recognize pharmacological terminology.
 - a. Abbreviations
 - b. Medication routes of administration



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Foundation 2: Communications

Demonstrate methods of delivering and obtaining accurate information while communicating within the medical environment.

1. Discuss third party reimbursement.
2. Practice appropriate communication with team members.
3. Demonstrate soft skills and telephone skills when engaging in customer service.
4. Interpret basic terminology commonly used in pharmacological interactions.

Foundation 3: Systems

Discuss how key systems affect services performed in the pharmacy setting.

1. Discuss insurance options vs. self-pay.
 - a. Coordination of benefits (prior authorizations, rejections, co-pays)
 - b. Coupons
 - c. Rx discount cards
2. Recognize types of practice settings.
 - a. In-patient pharmacy setting
 - b. Out-patient pharmacy setting
 - c. Retail pharmacy setting
 - d. Pharmaceutical companies
 - e. Government agencies (Ex: USPHS)
3. Identify the importance of the organizational structure of a pharmacy.

Foundation 4: Employability Skills

Utilize employability skills to enhance employment opportunities and job satisfaction.

1. Discuss and demonstrate soft skills.
2. Demonstrate respectful and empathetic interactions.
3. Display and discuss basic professional standards.
 - a. Traits
 - b. Attitudes
 - c. Personal hygiene
 - d. Language
 - e. Confidentiality
 - f. Behavior
 - g. Dress
4. Expand on components of a professional portfolio.
5. Understand the process of obtaining employment.



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Foundation Standard 5: Legal Responsibilities

Comply with federal and state laws and regulations applicable to pharmacy practice.

1. Identify handling and disposal of pharmaceutical substances and waste.
2. Recognize the requirements for controlled substance prescriptions.
 - a. DEA substance schedules
 - b. Initial prescription vs. refill or transfer prescription
3. Understand how controlled substances are:
 - a. Received
 - b. Stored
 - c. Ordered
 - d. Labeled
 - e. Dispensed
 - f. Taken back
4. Maintain HIPAA compliance.
5. Evaluate requirements for restricted drug programs (ex: pseudoephedrine).
6. Discuss the recall system for drug supplies.
7. Define prescription fraud.
8. Summarize the pharmacy technician's scope of practice.

Foundation Standard 6: Ethics

Review and apply accepted ethical practices with respect to racial, religious, cultural, social, and ethnic differences within the healthcare environment.

1. Practice fair and equal treatment to all clients and co-workers.

Foundation Standard 7: Safety Practices

Review existing and potential hazards that may affect clients, co-workers, and self.

1. Employ safe work practices and follow health and safety policies and procedures to prevent injury and illness.
 - a. Ergonomics
 - b. Infection control
 - Aseptic technique
 - Handwashing
 - Personal protective equipment (PPE)
 - Cleaning surfaces
 - Sharp disposal
2. Comply with OSHA regulations.
3. Understand hazard symbols (Ex: hazmat) .
4. Demonstrate error prevention strategies.
 - a. Right medication
 - b. Right dosage
 - c. Right person
 - d. Right route



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5. Identify the process of reporting errors.
 - a. Types of errors
 - b. Drug recalls

Foundation Standard 8: Teamwork

Review the roles and responsibilities of individual members as part of the healthcare team.

1. Discuss the experience of working as a team member during the assigned clinical experience.
2. Identify the members and responsibilities of the pharmacy team.
3. Differentiate between tasks performed by a pharmacy technician and those that must be performed by a pharmacist (scope of practice).

Foundation Standard 9: Health Maintenance Practices

Discuss the effects of pharmacological therapeutic benefits and how they can be altered.

1. Promote disease prevention and model healthy behaviors (Ex: health screenings).
2. Identify how stress and anxiety can play a role in wellness and disease.
3. Examine the role of nutrition and body weight and its significance in the dosing and absorption of drugs.
4. Describe the importance and significance of:
 - a. patient compliance.
 - b. Complementary and alternative medicine (CAM)/over the counter (OTC)/prescription drug interactions
 - c. Food to drug interactions and drug to drug interactions
 - d. Therapeutic equivalent

Foundation Standard 10: Technical Skills

Apply pharmacological skills that may be necessary for successful completion of this course.

1. Demonstrate skills and knowledge as appropriate.
 - a. Medical math procedures
 - b. IV flow rates
 - c. Compounding mixtures
 - d. Oral suspensions
 - e. Injection types
 - f. Count, measure, and pour the medication into appropriate container.
 - g. Making medication labels
 - h. Vital signs review
 - i. Equipment needed for drug administration
 - j. TPN preparation and therapeutic fluid indications
2. Identify lot numbers, expiration dates, dispense as written (DAW) codes, and National Drug Code (NDC) numbers.



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Foundation Standard 11: Information Technology Applications

Demonstrate use of basic technology applications in the pharmacy setting.

1. Enter and maintain electronic patient profiles.
2. Demonstrate the use of basic computer procedures.
3. Understand basic electronic cash register procedures.
4. Identify electronic insurance forms.
5. Access and use electronic references and resources as needed to perform job duties.

RESOURCES:

South Carolina Department of Education (SCDE)

[Home - South Carolina Department of Education](#)

SCDE – Health Science web page

[Health Science Education - South Carolina Department of Education](#)

HOSA Future Health Professionals – National Organization

[HOSA – Future Health Professionals](#)

SC HOSA Future Health Professionals – State Organization

[SC HOSA Future Health Professionals](#)

National Consortium of Health Science Education (NCHSE)

[Home | National Consortium for Health Science Education \(healthscienceconsortium.org\)](#)

Aztec

[PharmTech Student Course Resources | Aztec Software](#)

Kaduceus Hands on Career Training – Pharmacy Technician Training Program

[Kaduceus Inc. |](#)

- Teacher training through Kaduceus is required
- Students must have a computer or tablet that supports access to the online training materials
- Equipment and supplies will be included in classroom sets or may be purchased separately
- Teacher and student reference materials come with the program
- Initial start-up costs – contact Kaduceus directly for a quote
- Annual package renewal rates – contact Kaduceus directly for a quote



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eDynamicLearning- pharmacology -digital curriculum

[CTE Career Ready Program | \(edynamiclearning.com\)](https://edynamiclearning.com)

[Pharmacology 1a: Introduction | eDynamic Learning](#)

[Pharmacology 1b: Analysis and Effects | eDynamic Learning](#)

Lisa Rahn, Director, Strategy & Design

contact: 778.699.2071 ext 403 |

Email: lisa@edynamiclearning.com

National Healthcareer Association – Pharmacy Technician Certification (ExCPT)

[Pharmacy Technician Certification | CPhT \(nhanow.com\)](https://nhanow.com)

[The ExCPT exam — what to expect and how to prepare \(nhanow.com\)](#)

Tammy Stine, Certification Specialist

Contact: Tammy Stine Phone: o 913-225-5869 m 540-532-0583

Email: Tammy.stine@nhanow.com

Pharmacy Technician Certification Board (PTCB)

[Pharmacy Technician Certification Board \(ptcb.org\)](https://ptcb.org)

Pharmacy Tech Scholar

[PTCB Recognized Training Program | Pharmacy Tech Scholar](#)

RX Tech

[2025 PTCB Exam: Guaranteed Pharmacy Technician Certification](#)

RX LIST – Online Drug Index

[RxList - The Internet Drug Index for prescription drug information, interactions, and side effects](#)

National Library of Medicine

[National Library of Medicine - National Institutes of Health \(nih.gov\)](https://nih.gov)

Medicine Plus

[Drugs, Herbs and Supplements: MedlinePlus](#)

Physicians Desk Reference (PDR) or Prescribers Digital Reference

[PDR.Net](#)

Drugs.com -Consumer Drug Information

[Physician's Desk Reference for Consumers \(drugs.com\)](https://drugs.com)

Centers for Disease Control (CDC)

[Centers for Disease Control and Prevention \(cdc.gov\)](https://cdc.gov)



National Institutes of Health (NIH)

[National Institutes of Health \(NIH\) | Turning Discovery Into Health](#)

United States Department of Health and Human Services (USDHHS)

[HHS.gov](#)

USDHHS Careers

[HHS Careers](#)

Medical Reserve Corps (MRC)

[MRC \(hhs.gov\)](#)

SC Medical Reserve Corps

[South Carolina Public Health Reserve Corps \(scdhec.gov\)](#)