HOWARD UNIVERSITY COLLEGE OF PHARMACY

Advanced Pharmacy Practice Experiential Program (APPEP)

Program Director

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Course Numbers and Titles

Advanced Professional Practice Experience (APPE) I – CRN 50001 CLPS 420 61 **Credit Hours & Length of Rotation**

0 credits: 10 weeks (40 hrs/week) - 400 hours

Advanced Professional Practice Experience (APPE) II - CRN 80311 CLPS 421 01

Credit Hours & Length of Rotation

15 credits: 15 weeks (40 hrs/week) - 600 hours

Advanced professional Practice Experience (APPE) III – CRN 13239 CLPS 422 01

Credit Hours & Length of Rotation

15 credits: 15 weeks (40 hrs/week) – 600 hours

Prerequisites: Successful completion of all required courses in P1 through P3 curriculum.

Reading: As assigned by individual preceptors.

Course Description: The pharmacy practice clerkships are college-coordinated experience-based integrated problem-solving courses designed to help the student become an active participant in providing pharmacy services. The student, under the direction of different preceptors will learn to incorporate his/her knowledge of pharmacy into making drug therapy recommendations for patients. Each rotation will stress outcome-oriented decision making in clinical situations regarding drug therapy in specific disciplines. Students will learn to collaborate and interact with other health care providers and patients, attend rounds and conferences, monitor and present patients, and learn about the distributive and administrative functions of pharmacy. Courses will be offered in the Summer semester, APPE I, Fall semester, APPE II and Spring semester, APPE III.

General Course Outcomes:

Relationship to Terminal Competencies

APPE rotations should reinforce and continue the development of skills and knowledge that students have received during the previous three years in the curriculum. APPEs should also provide the opportunity for students to serve various patient populations in a variety of settings and to collaborate with other healthcare professionals. These experiences should offer exposure to patients and disease states that pharmacists are likely to encounter in practice. Students must work under the supervision of a licensed pharmacist or college-appointed preceptor at all times during APPEs.

Upon completion of the rotations, the student should be able to demonstrate the knowledge, skills and attitudes as highlighted below:

- 1. The student should be able to evaluate, review or develop, implement and monitor therapeutic outcomes associated with a pharmaceutical care plan for a patient.
 - A. Understand the administration and delivery systems.
 - B. Understand how to evaluate laboratory and patient data.
 - C. Develop basic patient (including physical) assessment.
 - D. Review patient's drug therapy for drug related problems (pharmaceutical care).
 - E. Develop a pharmaceutical care plan for patients.
 - F. Integrate problem solving in developing cost-effective therapy related plan toward achieving a desired therapeutic outcome, keeping in mind non-pharmacologic alternatives.
 - G. Develop therapeutic parameters and become competent in monitoring the patients for therapeutic endpoints on an ongoing basis.
 - H. Competently use pharmacokinetics in developing and monitoring the patient's drug therapy.
 - I. Understand the responsibility and reporting mechanism for adverse drug reactions.
- 2. The student should be able to identify and utilize drug information services in order to facilitate their role as a drug-information specialist for other health care professionals and patients to achieve positive therapeutic outcomes.
 - A. Interact appropriately with other members of the health care team.
 - B. Know and use the sources of drug information for any given rotation.

- C. Apply drug information to obtain positive outcomes for patients.
- D. Serve as drug information specialists for patients and other health care professionals.
- E. Understand the responsibility and reporting mechanism for adverse drug reactions.
- 3. The student should be able to develop oral or written presentations on a drug topic or drugrelated topics to other health care professionals and patients.
 - A. Effectively communicate in verbal and/or written form, in concise and organized fashion, a pharmaceutical evaluation of the patient.
 - B. Serve as drug information specialists for patients and other health care professionals.
 - C. Develop presentation skills for variable audiences for interdisciplinary education.
 - D. Develop communication skills for patient education.

APPE General Description

Clinical

These experiences provide care to patients of all ages related to general medicine issues or to specific medical issues and conditions. Students will learn the provision of pharmaceutical care of a preventive, primary care, or acute/chronic nature on an inpatient or ambulatory care basis. These APPEs will emphasize continuity of care and the development of pharmacist-delivered patient care competencies.

Electives

Elective APPEs may be either patient-care or non-patient care experiences. These rotations should provide students with an adequate breadth of knowledge in areas of interest and should complement the required AAPEs to develop the student pharmacist into a competent and mature professional. Elective experiences give students the opportunity to gain insight in areas such as research, drug information, and pharmacy administration, among others.

Advanced Practice Community Pharmacy

These experiences take place primarily in retail settings such as chain store pharmacies, grocery store pharmacies, or independent pharmacies. These experiences focus on the identification, resolution, and prevention of drug related problems dealing with general medicine issues and medication therapy management.

Advanced Practice Hospital/Health System Pharmacy

These experiences take place in hospitals or other systems of integrated pharmaceutical services such as long-term care, home health care or correctional facilities. These experiences focus on drug distribution and patient-specific care. Emphasis is placed on the drug-use decision-making process, monitoring of individual patient drug therapy, formulary management and the communication of information and analysis to other health professionals and patients.

Required Rotations

The College of Pharmacy (COP) requires three mandatory clinical experiences, one of which must be a general medicine rotation (e.g. internal medicine, primary care). The other required clinical rotations must be clinical specialty rotations (e.g. oncology, cardiology, infectious disease, psychiatry, anti-coagulation, pediatrics, critical care, ambulatory care, etc.). In addition the student is required to complete one administrative pharmacy rotation and one community pharmacy rotation.

Goals, Objectives and Activities

The goals and objectives for each experience are based on the competencies needed to fulfill the requirement for the Doctor of Pharmacy Degree. Students must demonstrate a minimum level of proficiency in each competency by the end of the experiential education program in order to receive credit for this portion of the curriculum. Goals, objectives and activities of the APPEs are as follow:

Pharmacy Administration Elective

The following goals, objectives, and activities are provided as a general overview only of the Pharmacy Administration APPE; they are not specific to all pharmacy administration rotations. Each rotation will vary due to particular site, preceptor, and orientation.

Purpose: The purpose of the Pharmacy Administration APPE is to develop the pharmaceutical knowledge base, competencies, and administrative skills in the business and operations management of pharmacy services.

Goals:

- 1. To develop skills necessary to make judgments, set priorities, and assume responsibilities concerning management of pharmaceutical care resources at site
- 2. To develop thorough understanding of pharmacy practice business operations
- 3. To gain experience in purchasing and inventory control in pharmacy practice
- 4. To gain understanding and experience in financial management of pharmacy practice
- 5. To allow for exploration of areas of interest that will enhance student knowledge base and/or patient care

Objectives:

- 1. Describe state and federal laws and regulations as well as applicable accreditation standards affecting pharmacy operations
- 2. Identify factors involved in managing personnel issues, including policies, procedures, and laws regarding hiring and termination of employees, workload and scheduling, worker rights, benefits, etc.
- 3. Describe differences in healthcare models: socialized medicine vs. US model of health care,

- for-profit vs. not-for-profit systems (institutional pharmacy administration)
- 4. Describe policies and guidelines for drug acquisition including quality specifications, supply, cost, delivery schedule, and mechanisms of assessment of purchasing policies
- 5. Understand systems for quality assurance and quality improvement
- 6. Describe system of inventory control which assures adequate inventory levels
- 7. Identify proper storage of various pharmaceutical dosage forms
- 8. Describe security system to prevent theft or pilferage of drugs
- 9. Understand financial/resource constraints existing in healthcare system and how these impact pharmaceutical services
- 10. Understand importance of maintaining and reconciling accounts receivable from third-party payers
- 11. Maintain and monitor operations budget
- 12. Understand process of medication pricing (independent/chain pharmacy administration)

Activities:

- 1. Assigned readings
- 2. Orientation to administrative structure at site
- 3. Working/observing pharmacy management and operations at site
- 4. Introduction to inpatient and/or outpatient program administration, supply management, resource budgeting, staff/workload scheduling
- 5. Taking inventory and generating orders
- 6. Providing weekly/monthly reports on medication errors, purchase orders, ordering trends
- 7. Write recommendations for drug usage to physicians (institutional administration)
- 8. Participate in Pharmacy and Therapeutic Committee meetings (institutional administration)

College's Terminal Competencies:

- 1. Serves as a drug information specialist.
- 2. Associates therapeutic agents with their clinical applications.
- 3. Utilizes principles of bioavailability and pharmacokinetics to absorption, distribution, metabolism and excretion upon drug therapy.

4.	Selects, evaluates and recommends appropriate drug product (s) and/or dosage form(s) which are most useful for a disease state in an individual patient.
5.	Evaluates reported symptoms of illness and makes appropriate referral or other recommendations.
6.	Monitors drug therapy of patients.
7.	Performs all psychomotor functions necessary for the delivery of needed medication and supplies to patients.
8.	Advises and counsels patients on the proper use, safeguards and handling of over-the-counter medications.
9.	Advises and counsels patients on the proper use, safeguards and handling of prescription medications.
10.	Advises and counsels patients on the proper use, safeguard and handling of medical-surgical devices.
11.	Advises the public on personal and environmental health problems.
12.	Communicates effectively with patients, pharmacists and other health care professionals to ensure safe and effective delivery of health care services.
13.	Applies basic principles of management as they relate to the professional practice of pharmacy.
14.	Interprets and complies with pharmacy laws and drug regulations.
15.	Demonstrates appropriate professional and ethical judgment in the interpretation of laws,

regulations and voluntary practice standards.

16. Compounds and dispenses medications to the patient.

Relationship to Cultural Competency

RELEVANT ACPE ACCREDITATION STANDARDS & GUIDELINES ON CULTURAL COMPETENCY

ACPE ^a		RELATED COURSE OBJECTIVES	RELATED TAACT ^b DOMAIN
ACPE Guideline 9.1	Ensuring that the curriculum addresses patient safety, cultural appreciation, health literacy, health care disparities, and competencies needed to work as a member of an inter-professional team.	1.Advises and counsels patients on the proper use, safeguards and handling of over-the-counter medications. 2.Advises and counsels patients on the proper use, safeguards and handling of prescription medications. 3.Advises and counsels patients on the proper use, safeguard and handling of medical-surgical devices. 4.Advises the public on personal and environmental health problems. 5.Communicates effectively with	Non-judgmental listening to health beliefs. Identify community beliefs and health practices. Assess and enhance patient adherence. Respect patient's cultural beliefs.
		patients, pharmacists and other health care professionals to ensure safe and effective delivery of health care services.	

Relationship to Naplex Competencies

Upon completion of the program, the students will be capable of fulfilling these Naplex competency areas:

Area 1: Assure Safe and Effective Pharmacotherapy and Optimize Therapeutic Outcomes

- **1.1.0** Identify, interpret and evaluate patient information to determine the presence of a disease or medical condition, assess the need for treatment and/or referral, and identify patient-specific factors that affect health, pharmacotherapy, and/or disease management.
- 1.1.1 Identify and assess patient information including medication, laboratory, and disease state histories
- 1.1.2 Identify patient specific assessment and diagnostic methods, instruments and techniques and interpret their results
- **1.1.3** Identify and define the etiology, terminology, signs and symptoms associated with diseases and medical conditions and their causes, and determine if medical referral is necessary
- 1.1.4 Identify and evaluate patient genetic and biosocial factors, and concurrent drug therapy relevant to the maintenance of wellness and the prevention or treatment of a disease or medical condition.
- **1.2.0** Evaluate information about pharmacoeconomic factors, dosing regimen, dosage forms, delivery systems and routes of administration to identify and select optimal pharmacotherapeutic agents, for patients.
 - **1.2.1** Identify specific uses and indications for drug products and recommend drugs of choice for specific diseases or medical conditions
 - **1.2.2** Identify the chemical/pharmacologic classes of therapeutic agents and describe their known or postulated sites and mechanisms of action
 - **1.2.3** Evaluate drug therapy for the presence of pharmacotherapeutic duplications and interactions with other drugs, food and diagnostic agents
 - 1.2.4 Identify and evaluate potential contraindications and provide information about warnings
 and precautions associate with a drug product's active and inactive ingredients
 - **1.2.5** Identify physicochemical properties of drug substances that affect their solubility, pharmacodynamic and pharmacokinetic properties, pharmacologic actions, and stability.
 - **1.2.6** Evaluate and interpret pharmacodynamic and pharmacokinetic principles to calculate and determine appropriate drug dosing regimens.

- **1.2.7** Identify appropriate routes of administration, dosage forms, and pharmaceutical characteristics of drug dosage forms and delivery systems, to assure bioavailability and enhance therapeutic efficacy.
- **1.3.0** Evaluate and manage drug regimens by monitoring and assessing the patient and/or patient information, collaborating with other health care professionals, and providing patient education to enhance safe, effective, and economic patient outcomes.
- 1.3.1 Identify pharmacotherapeutic outcomes and endpoints.
- **1.3.2** Evaluate patient signs and symptoms, and the findings of monitoring tests and procedures to determine the safety and effectiveness of pharmacotherapy. Recommend needed followup evaluations or tests when appropriate.
- **1.3.3** Identify, describe, and provide information regarding the mechanism of adverse reactions, allergies, side effects, iatrogenic, and drug-induced illness, including their management and prevention.
- **1.3.4** Identify, prevent, and address methods to remedy medication non-adherence, misuse, or abuse
- 1.3.5 Evaluate current drug regimens and recommend pharmacotherapeutic alternatives or modifications.

Area 2 Assess Safe and Accurate Preparation and Dispensing of Medications (Approximately 33% of Test)

- **2.1.0** Demonstrate the ability to perform calculations required to compound, dispense, and administer medication.
- **2.1.1** Calculate the quantity of medication to be compounded or dispensed; reduce and enlarge formulation quantities and calculate the quantity or ingredients needed to compound the proper amount of the preparation.
- 2.1.2 Calculate nutritional needs and the caloric content of nutrient sources.
- **2.1.3** Calculate the rate of drug administration.
- **2.1.4** Calculate or convert drug concentrations, ratio strengths, and/or extent of ionization.
- **2.2.0** Demonstrate the ability to select and dispense medications in a manner that promotes safe and effective use.
- 2.2.1 Identify drug products by their generic, brand, and/or common names.
- **2.2.2** Identify whether a particular drug dosage strength or dosage form is commercially available and whether it is available on a nonprescription basis.
- 2.2.3 Identify commercially available drug products by their characteristic physical attributes.
- **2.2.4** Assess pharmacokinetic parameters and quality assurance data to determine equivalence among manufactured drug products, and identify products for which documented evidence of inequivalence exists.
- 2.2.5 Identify and provide information regarding appropriate packaging, storage, handling, administration, and disposal of medications.
- **2.2.6** Identify and provide information regarding the appropriate use of equipment and apparatus required to administer medications.
- **2.3.0** Demonstrate the knowledge to prepare and compound extemporaneous preparations and sterile products.
- **2.3.1** Identify techniques, procedures, and equipment related to drug preparation, compounding, and quality assurance.

- **2.3.2** Identify the important physicochemical properties of a preparation's active and inactive ingredients.
- **2.3.3** Identify the mechanism of and evidence for the incompatibility or degradation of a product or preparation and methods for achieving its stability.

Area 3 Assess, Recommend, and Provide Health care Information that Promotes Public Health (Approximately 11% of Test)

- **3.1.0** Identify, evaluate, and apply information to promote optimal health care.
- **3.1.1** Identify the typical content of specific sources of drug and health information for both health care providers and consumers, and recommend appropriate resources to address questions or needs.
- **3.1.2** Evaluate the suitability, accuracy, and reliability of clinical and pharmacoeconomic data by analyzing experimental design, statistical tests, interpreting results, and formulating conclusions.
- **3.2.0** Recommend and provide information to educate the public and healthcare professionals regarding medical conditions, wellness, dietary supplements, and medical devices.
- **3.2.1** Recommend and provide health care information regarding the prevention and treatment of diseases and medical conditions, including emergency patient care and vaccinations.
- **3.2.2** Recommend and provide health care information regarding nutrition, lifestyle, and other non-drug measures that promote health or prevent the progression of a disease or medical condition.
- **3.2.3** Recommend and provide information regarding the documented uses, adverse effects, and toxicities of dietary supplements.
- **3.2.4** Recommend and provide information regarding the selection, use, and care of medical/surgical appliances and devices, self-care products, and durable medical equipment, as well as products and techniques for self-monitoring of health status and medical conditions.

Overall Course Requirements:

Attendance

- Students assigned outside of the defined perimeter (50 mile radius of the School campus), being exempt from activities in or around the college campus, must attend rotations for the duration as defined in the syllabus
- For all APPE rotations, the rotation day will end at, or later than, 5PM. The preceptor may
 modify start and end times for all activities which fall under his/her control. During the Fall
 and Spring semesters, attendance and participation in colloquium activities are considered
 to be a part of the rotation day, and will be subject to all terms and conditions governing
 attendance to rotations. In short, all registered students are required to present, on time,
 and signed in for colloquium sessions
- Preceptors will have the option of requesting that their students defer attendance at colloquium in order to complete some rotation-related activity. This will be permitted provided the preceptor communicate this in advance to the Experiential Director (APPE)
- Students who encounter problems with attendance or timely arrival at the site, must inform
 the rotation preceptor/designee, as well as the Office of Experiential Education, as soon as
 the problem is perceived

- When time logs are electronically completed and filed, all "local" students are required to omit those hours pertaining to colloquium. Their colloquium attendance hours will be assigned by the Experiential Program office
- Students (in order to successfully complete the course) will not exceed three (3) excused absences in any of the APPE courses. (Excused absences will be as defined in the Student handbook and Rotation rules.)
- Students will continue to be allowed to pursue opportunities for furthering their
 education such as residency interviews and professional meetings. These situations will
 require that advance notice (as extensive as possible), be given to preceptors as well as
 the APPE Director. In all situations, some form of documentation validating the absence
 must be provided, such as, travel itinerary, interview itinerary, etc. Students will be
 expected to make arrangements to complete rotation requirements with their preceptors
 whenever these interruptions in their schedule are permitted.
- Absences that are cleared by virtue of rescheduling, or the completion of additional assignments by the preceptor, must be clearly indicated on the documentation completed through the e-Value computer program
- Students are assigned the responsibility of ensuring that all documentation and notification of make-up activity is communicated and made available to the office of the APPE program through the Experiential Administrative Assistant, Ms. Washington at 202-806-7960 or lwashington@howard.edu.
- Failure to accommodate for rotation absences exceeding three (3) days will result in an "incomplete/F" or "F" grade for the course. In this event, the entire course must be repeated, or the incompletion made up, at the next available period.

Tardiness

Students are expected to arrive at their rotation sites on time, and be prepared to learn. In addition, students are required to be at all assigned destinations, e.g. Colloquium, Post Graduate Forum, Career Fair, etc. on time and ready to engage in the activity. Sing-in sheets will be provided at all activities and will be monitored for punctuality and attendance. Every two (2) occasions of tardiness will be counted as one (1) absence. There will be no opportunity to make up these occurrences.

Requirements for Passage of APPE I – III

The following requirements will need to be met in order to matriculate:

- Students must successfully complete APPE I III to qualify for passage of the program.
- Portfolio submissions must be complete and certified by assigned reviewers.
- Students must attain passage with 50% of the pre-Naplex examination offered just prior
 to the completion of the terminal AAPE course. Failure to meet the 50% threshold will
 result in remediation. Students will be given one (1) opportunity to remediate this
 failure. A pre-Naplex style examination will be given to students who fail on the first
 attempt
- In the event that the student is unsuccessful after remediation, he/she will be required to enroll for the next APPE course (this may be Spring or Summer dependent on when the student entered the APPE cycle). The student will be required to pass that course.

The student's incomplete/F grade will then change to a Passing grade. A pre-Naplex style examination will be administered at that time. Upon passing that exam the student will be voted on for graduation.

• Students unsuccessful on the third occasion will be dismissed from the program.

Remediation

Remediation of APPE rotations will depend on the areas of deficiency. When a student has failed a course (or a rotation) the APPE Coordinator and the Department Chair will confer with the preceptor to determine the nature of the deficiencies and the area(s) in which they fall. A decision will then be made as to whether or not the failure is remediable.

Americans with Disabilities Act:

Howard University is committed to providing an educational environment which is accessible to all students. In accordance with this policy, students in need of accommodations due to disability should contact the Office of the Dean for Special Student Services for verification and determination of reasonable accommodations as soon as possible after admission to the University, or at the beginning of each semester. The Dean of Special Student Services, Dr. Barbara Williams, may be reached at 202-238-2420.

Dress Code

Students are required to be professionally dressed at all times on rotations and during the conduct of APPE affairs. The rotation preceptor who is in charge at the site, can authorize deviations from established school policy, as required by the site. When attending colloquium and other campus meetings, students are required to adhere to the stated dress code (College of Pharmacy Student Handbook/Manual).

Class Participation

Students are expected to be fully engaged and participate in all activities involved in these courses. All aspects of the APPE program, ranging from rotations through Exam Master and colloquium activities to Professional Spanish, must be given full attention.

Non-registered Students

Non-registered students are not permitted to participate in APPE program activities. Students on rotation who are made aware that they have been purged from the class, are required to inform the preceptor of the need to leave and address these matters. Students should provide proof of reinstatement to the APPE Director prior to returning to their sites or class activities.

WRITING MATTERS

Writing is an essential tool for thinking and communicating in virtually every profession. Therefore, in this course I expect you to produce writing that is not only thoughtful and accurate, but also organized, clear and consistent with the rules of Standard English. If your writing does not meet these standards, I may will ask you to revise. For assistance with your writing go to the student section of the Writing across the Curriculum (WAC) website

http://www.cetla.howard.edu/wac/students.aspx