

# PHARMACY PRACTICE (PHM PRAC)

## PHM PRAC 305 – CONSUMER SELF-CARE AND OVER-THE-COUNTER DRUGS

2 credits.

Provides learners with information regarding self-care of common, minor health conditions. Emphasis on: illness prevention, health condition symptoms, guidelines for over-the-counter product use, adverse effects and alcohol/drug interactions of over-the-counter products, when to request professional care.

**Requisites:** Not open to students declared in the Nursing, Physician Assistant, or Doctor of Pharmacy programs

**Repeatable for Credit:** No

**Last Taught:** Fall 2024

**Learning Outcomes:** 1. Describe signs and symptoms of common health conditions

Audience: Undergraduate

2. Explain guidelines for self-treatment with over-the-counter products

Audience: Undergraduate

3. Describe basic drug action & common side effects of selected over-the-counter products

Audience: Undergraduate

4. Explain appropriate use of nonprescription treatments

Audience: Undergraduate

5. Identify drug and alcohol interactions with over-the-counter products

Audience: Undergraduate

6. Discuss precautions or contraindications (including pregnancy issues) and adverse effects associated with over-the-counter treatments

Audience: Undergraduate

7. Illustrate when to request professional care

Audience: Undergraduate

8. Select appropriate measures to prevent health conditions

Audience: Undergraduate

## PHM PRAC 426 – PHARMACY PRACTICE EXPERIENCE I

1 credit.

Designed to introduce student pharmacists to many aspects of pharmacy practice. Participate in a wide-variety of activities to expose them to the role of the pharmacist and the many patient care opportunities that exist in and out of the community pharmacy practice setting. Observe pharmacists in a community pharmacy. Gain a broad understanding of the pharmacist's public health role. Actively participate in assigned teams in a longitudinal experience with an assigned older adult in the community. All of these experiences will be guided by a modified continuing professional development framework (prepare, plan, do, reflect).

**Requisites:** PHARMACY 423

**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** No

**Last Taught:** Spring 2025

**Learning Outcomes:** 1. Develop and enhance oral and written communication skills with patients/clients, peers, pharmacists, and other healthcare providers.

Audience: Graduate

2. Employ interpersonal and intergroup behaviors in order to collaborate effectively in a variety of situations and reflect on teams and teamwork by: a) describing the process of team development and the roles and practices of effective teams and b) reflecting on individual and team performance for performance improvement.

Audience: Graduate

3. Discover aspects of patient-centered care by reflecting on the patient's/client's perspective on health, social, economic and psychological needs.

Audience: Graduate

4. Apply social and behavioral principles and theories, including empathy, in the design of pharmacist-delivered services.

Audience: Graduate

5. Retrieve professional and lay literature in order to acquire information about therapeutic agents and to provide health information to patients and the public.

Audience: Graduate

6. Observe and participate in public health/health promotion activities in the community in order to identify causes of health disparities and increase awareness of community-based resources.

Audience: Graduate

7. Identify and discuss the various roles pharmacists assume in the health care system, especially their role in managing pharmacy operations and providing patient-centered care using the Pharmacists' Patient Care Process (PPCP).

Audience: Graduate

8. Display professional attitudes, habits, and values in accordance with ethical and social guidelines.

Audience: Graduate

## PHM PRAC 438 – NONPRESCRIPTION MEDICATIONS AND SELF-CARE

2 credits.

Develop knowledge and skills needed to perform triage and make self-care and therapeutic recommendations for self-limiting health conditions commonly encountered in pharmacy practice.

**Requisites:** Declared in the Doctor of Pharmacy program

**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** No

**Last Taught:** Fall 2024

**Learning Outcomes:** 1. Discuss accessibility, affordability, trust, and empowerment regarding nonprescription products

Audience: Graduate

2. Employ the QuEST SCHOLAR-MAC triage process and the Pharmacists' Patient Care Process to self-care cases and consultations

Audience: Graduate

3. Recognize and respect patient experiences, cultural influences, health disparities, and social identity aspects during self-care cases and consultations

Audience: Graduate

4. Discuss laws and liability related to nonprescription products and self-care consultations

Audience: Graduate

5. Identify signs and symptoms of each health condition covered in this course

Audience: Graduate

6. Discuss exclusions for self-care related to each health condition covered in this course

Audience: Graduate

7. Differentiate self-care aspects given unique characteristics of the person being evaluated/advised (such as pediatrics, pregnancy & lactation, and older adults)

Audience: Graduate

8. Classify individual nonprescription medications into distinct medication classes based on therapeutic use

Audience: Graduate

9. Choose appropriate nonprescription medications and non-drug/general care measures for cases/situations

Audience: Graduate

10. Explain common adverse effects and drug interactions for nonprescription medications and methods for managing them

Audience: Graduate

11. Construct treatment plans, including key education points, for self-care of each health condition covered in this course

Audience: Graduate

## PHM PRAC 461 – PATHWAYS IN PHARMACY PRACTICE

1 credit.

Introduction to, and exploration of, contemporary pharmacy practice settings and interprofessional practice, including opportunities for career advancement.

**Requisites:** Declared in Doctor of Pharmacy program

**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** No

**Last Taught:** Fall 2024

**Learning Outcomes:** 1. Describe multiple pathways in contemporary pharmacy practice.

Audience: Graduate

2. Demonstrate knowledge of interprofessional teamwork and articulate its importance to pharmacy practice.

Audience: Graduate

3. Evaluate curricular options available to customize educational pathways.

Audience: Graduate

4. Evaluate co- and extra-curricular options available to advance post-graduation employment/training goals

Audience: Graduate

## PHM PRAC 462 – PROFESSIONAL DEVELOPMENT AND ENGAGEMENT I- DEVELOPING YOUR PROFESSIONAL IDENTITY

1 credit.

Develop professional identity and become more engaged with the profession of pharmacy. Explore personal values, skills, and strengths and identify their implications for patient care and professional practice. Engage in continuous professional and interprofessional development to provide patient care that is safe and equitable. Prepare for future introductory pharmacy practice experiences.

**Requisites:** PHM PRAC 461

**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** No

**Last Taught:** Spring 2025

**Learning Outcomes:** 1. Identify personal strengths and discuss the application of these strengths within contemporary pharmacy practice.  
Audience: Graduate

2. Recognize how personal identity, beliefs, attitudes, and biases may impact patient care and professional practice.  
Audience: Graduate

3. Differentiate individual role within an interprofessional team and demonstrate effective team communication and collaboration skills.  
Audience: Graduate

4. Explain the four components of continuous professional development and use these steps to create two SMART learning goals for completion during spring semester.  
Audience: Graduate

5. Identify areas of interest related to professional engagement and professional or patient advocacy; complete related co-curricular activities for reflection on personal and professional growth.  
Audience: Graduate

6. Describe emotional intelligence and demonstrate effective communication skills with peers and faculty to build professional relationships.  
Audience: Graduate

7. Describe experiential requirements and course policies in preparation for upcoming IPPE experiences.  
Audience: Graduate

8. Demonstrate reflective behaviors and goal settings for academic and professional growth.  
Audience: Graduate

## PHM PRAC 464 – PROFESSIONAL DEVELOPMENT AND ENGAGEMENT III: PROMOTING PROFESSIONAL ENGAGEMENT

1 credit.

Develop professional identity and become more engaged with the profession of pharmacy. Demonstrate behaviors that regulate personal emotions and support well-being. Engage in continuous professional and interprofessional development to provide patient care that is safe and equitable. Prepare for future introductory pharmacy practice experiences.

**Requisites:** PHM PRAC 463

**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** No

**Last Taught:** Spring 2025

**Learning Outcomes:** 1. Describe the concepts of professional engagement, advocacy, resiliency, and burnout.

Audience: Graduate

2. Demonstrate behaviors that regulate personal emotions and exhibit student professionalism.  
Audience: Graduate

3. Identify areas of interest related to professional engagement and professional or patient advocacy; complete related co-curricular activities for reflection on personal and professional growth.  
Audience: Graduate

4. Engage diverse professionals who complement one's own professional expertise, as well as associated resources, to develop strategies to meet specific health and healthcare needs of patients and populations.  
Audience: Graduate

5. Use the full scope of knowledge, skills, and abilities of professionals from health and other fields to provide care that is safe, timely, efficient, and equitable.  
Audience: Graduate

6. Engage in continuous professional and interprofessional development to enhance team performance and collaboration.  
Audience: Graduate

7. Describe experiential requirements and course policies in preparation for upcoming IPPE experiences.  
Audience: Graduate

8. Demonstrate reflective behaviors and goal settings for academic and professional growth.  
Audience: Graduate

### PHM PRAC 465 – PROFESSIONAL DEVELOPMENT AND ENGAGEMENT IV- EMBRACING CONTINUOUS PROFESSIONAL DEVELOPMENT

1 credit.

Develop professional identity and become more engaged with the profession of pharmacy. Engage in continuous professional and interprofessional development to provide patient care that is safe and equitable; utilize appropriate published evidence to answer clinical questions; and prepare for advanced pharmacy practice experiences.

**Requisites:** PHM PRAC 464

**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** No

**Last Taught:** Spring 2025

**Learning Outcomes:** 1. Retrieve and interpret primary, secondary, and tertiary sources to answer a clinical question.

Audience: Graduate

2. Identify areas of interest related to professional engagement and professional or patient advocacy; complete related co-curricular activities for reflection on personal and professional growth.

Audience: Graduate

3. Summarize areas of financial planning for pharmacists to anticipate future goals and management decisions related to personal and professional finances.

Audience: Graduate

4. Engage diverse professionals who complement one's own professional expertise, as well as associated resources, to develop strategies to meet specific health and healthcare needs of patients and populations. (IPEC Roles and Responsibilities Core Competency 2.3).

Audience: Graduate

5. Describe experiential requirements and course policies in preparation for the APPE year.

Audience: Graduate

6. Demonstrate reflective behaviors and goal settings for academic and professional growth.

Audience: Graduate

### PHM PRAC/MEDICINE/NURSING/SOC WORK 467 – INTERPROFESSIONAL COLLABORATIVE PRACTICE IN HIV CARE

1 credit.

Gain foundational knowledge and skills in interprofessional collaborative practice and HIV care. Explore the roles of medicine, nursing, pharmacy, and social work in the HIV care continuum. Discuss quality team-based care as a member of an interprofessional student team.

**Requisites:** Declared in Nursing BSN (Traditional, Collaborative, Accelerated), Social Work BSW, Medicine MD, Pharmacy PharmD, or Social Work MSW.

**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** No

**Last Taught:** Spring 2025

**Learning Outcomes:** 1. Describe the history and epidemiology of the HIV epidemic.

Audience: Both Grad & Undergrad

2. Define Interprofessional Collaborative Practice (ICP) and describe the characteristics of effective ICP.

Audience: Both Grad & Undergrad

3. Describe the natural history of HIV disease with and without antiretroviral therapy (ART).

Audience: Both Grad & Undergrad

4. Discuss US Dept of Health and Human Services guidelines and recommendations for prevention, screening, diagnosis, treatment, and management of HIV infection and HIV-related diseases in the United States.

Audience: Both Grad & Undergrad

5. Describe the HIV care continuum including testing, entry and retention in care, and treatment including associated stigma and discrimination as barriers.

Audience: Both Grad & Undergrad

6. Discuss dimensions of wellness (emotional, environmental, financial, intellectual, occupational, physical, social and spiritual).

Audience: Both Grad & Undergrad

7. Identify potential co-morbid conditions in the HIV infected population.

Audience: Both Grad & Undergrad

8. Discuss stigma and discrimination as barriers to prevention, care, and treatment.

Audience: Both Grad & Undergrad

9. Discuss the history of the Ryan White Care Act and other federal and state policies and their current importance in HIV prevention and HIV care.

Audience: Both Grad & Undergrad

10. Identify HIV care needs and common health issues among high risk and vulnerable populations.

Audience: Both Grad & Undergrad

11. Develop a plan of care for an HIV positive individual as part of an interprofessional team.

Audience: Both Grad & Undergrad

12. Develop skills working with mixed teams including undergraduate students

Audience: Graduate

13. Demonstrate higher level skills in identifying and resolving barriers to

**PHM PRAC 468 – INTRODUCTION TO PHARMACY INFORMATICS**

1 credit.

Introduction to Pharmacy Informatics, the scientific field that utilizes a systems approach to medication-related data and information, including its acquisition, storage, analysis, and dissemination, in the delivery of optimal medication-related patient care and health outcomes.

**Requisites:** Declared in the Doctor of Pharmacy program

**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** No

**Last Taught:** Spring 2025

**Learning Outcomes:** 1. Define the basic terminology used in health informatics

Audience: Graduate

2. Describe the benefits and current constraints in using information and communication technology in healthcare

Audience: Graduate

3. Identify the reasons for the systemic processing of data, information, and knowledge in healthcare

Audience: Graduate

**PHM PRAC 469 – HEALTH EQUITY & SOCIAL JUSTICE FOR HEALTHCARE PROVIDERS**

2 credits.

Social justice seminar focusing on diversity, equity, inclusion, and leadership in the health professions. Focus on historical and contemporary issues in the healthcare system and equip students to develop the awareness, skills, and applied behaviors to impact healthcare inequities at the micro and macro level.

**Requisites:** Nursing BSN (Traditional, Accelerated or Collaborative), senior standing and declared in Health Promotion and Health Equity BS, or graduate/professional standing

**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** No

**Last Taught:** Spring 2025

**Learning Outcomes:** 1. Demonstrate knowledge of social identities and cultural differences of self and others.

Audience: Both Grad & Undergrad

2. Gain intercultural competencies in personal and professional environments

Audience: Both Grad & Undergrad

3. Continue to develop and hone skills in critical thinking and interpersonal communication

Audience: Both Grad & Undergrad

4. Identify root causes of health disparities and develop skills and behaviors to help decrease them

Audience: Both Grad & Undergrad

5. Increase awareness of how social identities impact relationships to the healthcare system, access to health care, and patient/provider interactions

Audience: Both Grad & Undergrad

6. Integrate multiple definitions of health and health care into our professional philosophies

Audience: Both Grad & Undergrad

7. Reinforce leadership skills and develop opportunities for informal mentoring/support.

Audience: Graduate

**PHM PRAC 471 – EXPLORING PHARMACY PEER MENTOR SEMINAR**

1 credit.

A mentoring, leadership and facilitation class for pharmacy student peer mentors who are assisting instructors of the Exploring Pharmacy courses

**Requisites:** Declared in Doctor of Pharmacy program

**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** Yes, unlimited number of completions

**Last Taught:** Spring 2025

**Learning Outcomes:** 1. Demonstrate familiarity with college student development theory and how it applies to pre-pharmacy students

Audience: Graduate

2. Develop group facilitation, leadership, and mentoring skills

Audience: Graduate

3. Describe how peer mentoring supports personal and professional development

Audience: Graduate

4. Employ effective interpersonal communication skills

Audience: Graduate

5. Demonstrate the ability to provide verbal and written feedback on student work

Audience: Graduate

**PHM PRAC 490 – SELECTED TOPICS IN PHARMACY PRACTICE**

1-4 credits.

Specialized Pharmacy subject matter of current interest to undergraduate and professional students.

**Requisites:** Declared in Doctor of Pharmacy program

**Repeatable for Credit:** Yes, unlimited number of completions

**Last Taught:** Spring 2023

**PHM PRAC 526 – PHARMACY PRACTICE EXPERIENCES II**

1 credit.

The second experience of a three-year Introductory Pharmacy Practice Experiences (IPPEs) sequence. Provides opportunities to integrate learning from prior didactic courses such as The Role of the Pharmacist in the Public Health System, Managing Pharmacy Systems for Patient Care, current pharmacotherapy courses, and a previous community IPPE, into observation and discussion of the provision of patient care. Participate in a wide-variety of activities to expose them to the role of the pharmacist and patient care opportunities that exist in and out of the pharmacy practice setting. Focus on the provision of care in an institutional setting along with a variety of pharmacy practice settings which fall under an elective category. Continued exposure to the Pharmacist Patient Care Process (PPCP), which is a framework for providing patient care in a pharmacy practice setting.

**Requisites:** PHM PRAC 426

**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** No

**Last Taught:** Fall 2024

**Learning Outcomes:** 1. Develop and enhance oral and written communication skills with patients, pharmacists, and other healthcare providers.

Audience: Graduate

2. Retrieve professional and lay literature in order to acquire information about therapeutic agents and to provide health information to patients, other health professionals and the public.

Audience: Graduate

3. Explore sources of information that can lead to appropriate clinical decision making (i.e. medical records, laboratory reports, and institutional policies and procedures).

Audience: Graduate

4. Display professional attitudes, habits, and values in accordance with ethical and social guidelines.

Audience: Graduate

5. Identify examples of bias in the healthcare setting and how they contribute to the quality of care provided to a patient.

Audience: Graduate

6. Develop an understanding of the pharmacist's role on the healthcare team and the complexities involved in interdisciplinary communications.

Audience: Graduate

7. Identify and discuss the various roles pharmacists assume in the health care system, especially their role in providing patient-centered care using the Pharmacist Patient Care Process (PPCP).

Audience: Graduate

**PHM PRAC 550 – FLUID AND ELECTROLYTE THERAPY**

2 credits.

Clinical management of disorders of fluid, electrolytes, and acid-base in patients with normal and abnormal homeostatic mechanisms. Also included is parenteral nutritional support.

**Requisites:** Declared in Doctor of Pharmacy program with third year standing

**Repeatable for Credit:** No

**Last Taught:** Fall 2024

**Learning Outcomes:** 1. Describe the physiological processes that normally maintain fluid and electrolyte homeostasis

Audience: Undergraduate

2. Explain how disease processes result in a failure of homeostasis, leading to fluid and electrolyte imbalances, and the clinical manifestations of the imbalances

Audience: Undergraduate

3. Connect how basic concepts from chemistry, biochemistry, physical chemistry, physiology, and pathophysiology can be applied directly to the management of fluid and electrolyte disorders

Audience: Undergraduate

4. Utilize information from a patient's history, symptoms, physical and laboratory findings to evaluate the type of imbalance, the magnitude of the imbalance, and the urgency of the problem

Audience: Undergraduate

5. Propose treatment strategies that will stabilize urgent problems, utilize homeostatic mechanisms, correct imbalances, and avoid complications

Audience: Undergraduate

6. Review primary literature and authoritative review articles to obtain the most current ideas regarding optimal treatment of the disorders

Audience: Undergraduate

**PHM PRAC 553 – INTEGRATED PHARMACOTHERAPY SKILLS I**

1 credit.

Learn pharmacotherapeutic skills necessary to develop competence as a pharmacist to assume the responsibility to improve therapeutic patient outcomes related to medication use. Skills will include patient communication, identification and resolution of drug related problems, and documentation.

**Requisites:** Declared in Doctor of Pharmacy program with second year standing

**Repeatable for Credit:** No

**Last Taught:** Fall 2024

**Learning Outcomes:** 1. Use therapeutic decision-making skills and drug information to apply clinical knowledge to address drug-related problems and promote health improvement, wellness, and disease prevention in cooperation with individual patients

Audience: Undergraduate

2. Perform steps of the pharmacists' patient care process (PPCP): collect, assess, plan, implement, and follow-up through documentation, communication, and collaboration in a patient-centered and efficient manner as consistent with the University of Wisconsin – Madison School of Pharmacy's technical standards

Audience: Undergraduate

3. Acquire the necessary skills and experience to provide patient care as a member of an interprofessional team

Audience: Undergraduate

4. Begin to develop skills and commitment for life-long learning in order to maintain professional competence

Audience: Undergraduate

5. Demonstrate professionalism by exhibiting behaviors and values that are consistent with the trust given to the profession by patients, other health care providers, and society

Audience: Undergraduate

**PHM PRAC 554 – INTEGRATED PHARMACOTHERAPY SKILLS II**

1 credit.

Learn pharmacotherapeutic skills necessary to develop competence as a pharmacist to assume the responsibility to improve therapeutic patient outcomes related to medication use. Skills will include patient and provider communication, identification and resolution of drug related problems, and documentation.

**Requisites:** PHM PRAC 553 and 555

**Repeatable for Credit:** No

**Last Taught:** Spring 2025

**Learning Outcomes:** 1. Use therapeutic decision-making skills and drug information to apply clinical knowledge to address drug-related problems and promote health improvement, wellness, and disease prevention in cooperation with individual patients

Audience: Undergraduate

2. Perform steps of the pharmacist patient care process (PPCP): collect, assess, plan, implement, and follow-up through collaboration, communication, and documentation in a patient-centered and efficient manner as consistent with the University of Wisconsin – Madison School of Pharmacy's technical standards

Audience: Undergraduate

3. Acquire the necessary skills and experience to provide patient-centered care as a member of an interprofessional team

Audience: Undergraduate

4. Begin to develop skills and commitment for life-long learning in order to maintain professional competence

Audience: Undergraduate

5. Demonstrate professionalism by exhibiting behaviors and values that are consistent with the trust given to the profession by patients, other health care providers, and society

Audience: Undergraduate

**PHM PRAC 555 – PHARMACOTHERAPY I**

3 credits.

Clinical application of medications in the management of various neurologic and psychiatric disease states. Assessment and therapeutic monitoring of drug therapy with emphasis on the concepts of drug selection, monitoring of drug effect and titration of regimen. Also incorporates issues regarding pharmacokinetics/dynamics, drug interactions, pharmacy practice, and patient education.

**Requisites:** Declared in the Doctor of Pharmacy program with second year standing

**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** No

**Last Taught:** Fall 2024

**Learning Outcomes:** 1. Recognize the target symptoms of mental health and neurologic conditions commonly encountered in pharmacy practice including epilepsy, headache, multiple sclerosis, Parkinson's disease, depression, anxiety, bipolar disorder, schizophrenia, sleep disorders, and dementia.

Audience: Graduate

2. Classify individual psychotropic and neurologic medications into distinct medication classes based on mechanism of action and therapeutic use (i.e. antiepileptic drugs, selective serotonin reuptake inhibitors, tricyclic antidepressants, second-generation antipsychotics, benzodiazepine, dopaminergic agents, etc).

Audience: Graduate

3. Devise key education points that should be communicated to a patient prescribed a psychotropic or neurologic medication (including indication, administration/dosing, monitoring for safety and efficacy, interactions).

Audience: Graduate

4. Describe common/serious adverse effects of psychotropic and neurologic medications and methods for preventing and/or minimizing occurrence.

Audience: Graduate

5. Identify clinically relevant interactions between psychotropic and neurologic medications and other medications, substances, foods, and disease states.

Audience: Graduate

6. Create a treatment plan to minimize an individual patient's risk of experiencing poor outcomes related to psychotropic and neurologic medication interactions.

Audience: Graduate

7. Select a first-line medication regimen (including specific agent, formulation, dose and frequency) for an individual patient, targeted at treating a specific mental health or neurologic condition.

Audience: Graduate

8. Develop a monitoring plan (including timeframe and monitoring parameters) for an individual patient newly starting or restarting a psychotropic or neurologic medication.

Audience: Graduate

9. Formulate key questions or strategies to assess psychotropic or neurologic medication response in an individual patient.

Audience: Graduate

10. Provide a recommendation to adjust a psychotropic or neurologic medication regimen based on individual patient response.

Audience: Graduate



**PHM PRAC 556 – PHARMACOTHERAPY II**

3 credits.

Clinical application of medications in the management of various disease states. Assessment and therapeutic monitoring of disease states and drug therapy using the concepts of pharmacokinetics/dynamics, drug interactions, pharmacy practice and patient counseling. Topics include cardiovascular and pulmonary therapeutics.

**Requisites:** PHM PRAC 553 and 555

**Repeatable for Credit:** No

**Last Taught:** Spring 2025

**Learning Outcomes:** 1. Define the goals of treatment - both overall and related to individual patient cases

Audience: Undergraduate

2. Design a therapeutic regimen consisting of both non-drug and drug elements appropriate for individual patients. In selecting drug therapy, consider the patient's age, disease, clinical condition/severity of illness, concomitant diseases and medications

Audience: Undergraduate

3. Select the initial dosing regimen and plan a dose titration scheme not exceeding maximal recommended doses (unless such excess is warranted)

Audience: Undergraduate

4. Provide the patient and health care personnel with information on the nature, likelihood and management of relevant (likely or severe) adverse effects

Audience: Undergraduate

5. Design a treatment monitoring plan incorporating symptoms, physical assessment, diagnostic test and laboratory findings as needed to document patient response and possible drug-related problems. Identify monitoring parameters, including endpoints/goals, timing and follow-up

Audience: Undergraduate

6. Explain the disease process, purpose of drug therapy, and other information pertinent to patient education in lay terms

Audience: Undergraduate

**PHM PRAC 559 – INTRODUCTION TO ANTIMICROBIAL PHARMACOTHERAPY**

1 credit.

Preparation for antimicrobial exposure and monitoring during internships to ensure safe and effective patient use of antimicrobials. Exposure to antibiotic-related drug information questions in the community and institution settings and review of primary literature to respond to these questions.

**Requisites:** Declared in Doctor of Pharmacy program with second year standing

**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** No

**Last Taught:** Spring 2020

**Learning Outcomes:** 1. Assess an antibiotic prescription in outpatient and inpatient settings for safety and efficacy based on patient-specific criteria.

Audience: Graduate

2. Identify components of a safe and effective antibiotic patient consultation.

Audience: Graduate

3. Recognize when a patient with an infection should be referred to a provider for evaluation.

Audience: Graduate

4. Monitor a patient's response to an antimicrobial.

Audience: Graduate

5. Demonstrate understanding of common infections.

Audience: Graduate

6. Identify first-line antimicrobials for common infections.

Audience: Graduate

7. Demonstrate competence in utilization of antimicrobial resources available through responding to drug information questions in the inpatient out outpatient settings.

Audience: Graduate

**PHM PRAC 560 – SEMINARS IN ANTIMICROBIAL STEWARDSHIP**

2 credits.

Gain foundational knowledge of the societal implications of antimicrobial resistance and the basic tenets of antimicrobial stewardship in multiple practice settings. Apply these tenets by developing antimicrobial stewardship intervention(s) and design measurement of associated outcomes.

**Requisites:** Declared in the Doctor of Pharmacy program

**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** No

**Last Taught:** Fall 2024

**Learning Outcomes:** 1. Describe the benefits of antimicrobial stewardship

Audience: Graduate

2. Describe how antimicrobial use in humans, agriculture, and animals contribute to the development of antimicrobial resistance.

Audience: Graduate

3. Discuss strategies to improve antimicrobial prescribing in outpatient, inpatient, and long-term care settings

Audience: Graduate

4. Describe components of an Antimicrobial Stewardship Program.

Audience: Graduate

5. Discuss how technology such as rapid diagnostics and electronic decision support tools can support stewardship initiatives and improve patient care.

Audience: Graduate

6. Apply Centers for Disease Control and Prevention Core Elements for a Stewardship Program to propose the development of a program in an inpatient, outpatient, or long-term care setting.

Audience: Graduate

7. Identify state-, national-, and international initiatives to improve patient outcomes related to inappropriate antimicrobial use.

Audience: Graduate

8. Design an educational antimicrobial stewardship intervention and outcomes measurements as a part of a team.

Audience: Graduate

9. Present a proposed policy or procedure to a mock Pharmacy and Therapeutics Committee as a part of a team.

Audience: Graduate

**PHM PRAC 570 – DRUG LITERATURE EVALUATION**

3 credits.

Fundamentals of drug literature and statistical evaluation to enable students to make decisions regarding the clinical use of drugs in their practice.

**Requisites:** Declared in Doctor of Pharmacy program with second year standing

**Repeatable for Credit:** No

**Last Taught:** Spring 2025

**Learning Outcomes:** 1. Determine the strengths and weaknesses of clinical trials and observational research

Audience: Undergraduate

2. Analyze a guideline recommendation given a cited clinical trial

Audience: Undergraduate

3. Interpret the statistics presented in published literature

Audience: Undergraduate

4. Report the results of clinical trials in a coherent and articulate fashion using written communication

Audience: Undergraduate

**PHM PRAC/NURSING 605 – PHARMACOTHERAPEUTICS FOR ADVANCED PRACTICE NURSES**

3 credits.

Pharmacotherapeutics content and application for advanced practice nursing. Emphasis on selection of appropriate therapeutics, development of clinical decision-making skills, and examination of legal, ethical, and safety issues in prescribing medications.

**Requisites:** Declared in a School of Nursing graduate program

**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** No

**Last Taught:** Spring 2025

**Learning Outcomes:** 1. Select appropriate therapeutics for specific acute and chronic health conditions using an evidenced based approach.

Audience: Graduate

2. Develop the clinical decision making skills necessary to individualize prescribing to meet patient's needs and resources.

Audience: Graduate

3. Examine the appropriate rules for issuing safe prescriptions and minimize errors.

Audience: Graduate

4. Describe the legal and ethical ramifications of prescribing medications.

Audience: Graduate

**PHM PRAC 610 – LEADERSHIP IN HEALTH-SYSTEM PHARMACY**

2 credits.

Designed to expose students to personal leadership qualities essential to operate efficiently within an integrated health care delivery system and advance the profession and practice of pharmacy. Students will gain a foundation to become future pharmacy leaders through an understanding of pharmacy's continual evolution in the changing health care environment.

**Requisites:** Declared in Doctor of Pharmacy program with third year standing

**Repeatable for Credit:** No

**Last Taught:** Fall 2021

**Learning Outcomes:** 1. Develop personal and practice-related leadership skills

Audience: Undergraduate

2. Apply health system management techniques

Audience: Undergraduate

3. Utilize skills needed to create, promote, and market the pharmacist's role within integrated health systems

Audience: Undergraduate

4. Provide a foundation for students/practitioners to become future pharmacy leaders through an understanding of our profession's role in the evolving health care environment

Audience: Undergraduate

5. Expose personal leadership qualities essential to operate effectively within an integrated health care delivery system and advance the profession and practice of pharmacy

Audience: Undergraduate

6. Develop skills in the following areas: project management, decision making, productivity management, quality methodologies, organizational design and behavior, and strategic planning

Audience: Undergraduate

7. Develop administrative acumen within the principles of human resource management, financial management, and pharmacy/health care reimbursement

Audience: Undergraduate

**PHM PRAC 611 – MEDICAL IMAGING FOR PHARMACISTS**

2 credits.

An overview of the imaging modalities offered in a Hospital Radiology Department. Completion of this course will help students understand the concepts of radiation, how it is used, and some of the tests and medications a patient may encounter when in the Radiology Department of a hospital.

**Requisites:** Declared in Doctor of Pharmacy program

**Repeatable for Credit:** No

**Last Taught:** Fall 2024

**Learning Outcomes:** 1. Describe the components of a nuclear pharmacy practice site

Audience: Undergraduate

2. Identify the most common types of radiation used in radiology and describe their physical characteristics

Audience: Undergraduate

3. Explain how radiation affects the human body and how regulatory agencies have set standards for protection

Audience: Undergraduate

4. Identify common imaging modalities in radiology

Audience: Undergraduate

5. Empathize with patients undergoing radiology procedures

Audience: Undergraduate

**PHM PRAC 612 – RADIOPHARMACEUTICALS**

2 credits.

A survey of the clinical diagnostic and therapeutic use of radioactive pharmaceuticals. Included is a review of nuclear physics, radiation biology, radiation chemistry, regulatory issues, and radiation safety, as these areas relate to the synthesis, formulation, dispensing, and administration of radiopharmaceuticals.

**Requisites:** PHM PRAC 611

**Repeatable for Credit:** No

**Last Taught:** Spring 2025

**Learning Outcomes:** 1. Apply the knowledge learned in Medical Imaging 611 to explain the biological effects of radiation used clinically with FDA approved radiopharmaceuticals

Audience: Undergraduate

2. Identify common production methods for common radionuclides

Audience: Undergraduate

3. Explain the common indications of FDA approved radiopharmaceuticals in clinical Radiology

Audience: Undergraduate

4. Describe the pharmacokinetics and biodistribution of common radiopharmaceuticals

Audience: Undergraduate

**PHM PRAC 617 – HEALTH SYSTEM PHARMACY DATA ANALYSIS AND INFORMATICS**

2 credits.

Weekly lectures will familiarize the student with pharmacy information systems and the use of data and data processing systems for decision support. Students will complete a data analysis and report project to drive a decision in the hospital.

**Requisites:** Graduate standing or declared in the Doctor of Pharmacy program with third year standing

**Repeatable for Credit:** No

**Last Taught:** Spring 2025

**Learning Outcomes:** 1. Articulate how EHR systems store data, and how they impact patient care

Audience: Undergraduate

2. Elaborate on medication use systems and core components of pharmacy informatics

Audience: Undergraduate

3. Design and present solutions using analytical tools to effectively analyze and visualize data

Audience: Undergraduate

4. Communicate effectively with informatics teams and healthcare providers

Audience: Undergraduate

**PHM PRAC 625 – PHARMACY PRACTICE EXPERIENCES III**

2 credits.

Integrates didactic learning with active participation in a wide-variety of patient-care activities under the supervision of a pharmacist preceptor including medication reconciliation, patient consultation, complex medication reviews, documentation, therapeutic drug monitoring and calculations. Continued exposure to the Pharmacist Patient Care Process (PPCP), which is a framework for providing patient care in a pharmacy practice setting.

**Requisites:** PHM PRAC 526

**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** No

**Last Taught:** Fall 2024

**Learning Outcomes:** 1. Develop and enhance oral and written communication skills with patients, pharmacists, and other healthcare providers

Audience: Graduate

2. Retrieve and interpret primary, secondary, and tertiary sources to answer clinical questions encountered by patients and other healthcare providers

Audience: Graduate

3. Identify, assess, and provide recommendations to patients and other healthcare providers to resolve medication- and health-related problems using the Pharmacist Patient Care Process

Audience: Graduate

4. Design or modify dosage regimens using pharmacokinetic data, plasma concentration, and factors that alter them

Audience: Graduate

5. Educate patients and caregivers on the safe and effective use of medications while considering the patient's perspective on health, social, economic, and psychological needs

Audience: Graduate

6. Observe and participate in pharmacy operations including accurate dispensing and preparation of a medication

Audience: Graduate

7. Apply legal principles to perform professional activities as a pharmacy intern

Audience: Graduate

8. Display professional attitudes, habits, and values in accordance with ethical and social guidelines

Audience: Graduate

9. Develop individualized goals and reflect on experiences through structured learning activities and assignments

Audience: Graduate

**PHM PRAC 626 – PHARMACY PRACTICE EXPERIENCES IV**

2 credits.

Integrates didactic learning with active participation in a wide-variety of patient-care activities under the supervision of a pharmacist preceptor including medication reconciliation, patient consultation, complex medication reviews, documentation, therapeutic drug monitoring and calculations. Continued exposure to the Pharmacist Patient Care Process (PPCP), which is a framework for providing patient care in a pharmacy practice setting.

**Requisites:** PHM PRAC 625

**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** No

**Last Taught:** Spring 2025

**Learning Outcomes:** 1. Develop and enhance oral and written communication skills with patients, pharmacists, and other healthcare providers

Audience: Graduate

2. Retrieve and interpret primary, secondary, and tertiary sources to answer clinical questions encountered by patients and other healthcare providers

Audience: Graduate

3. Identify, assess, and provide recommendations to patients and other healthcare providers to resolve medication- and health-related problems using the Pharmacist Patient Care Process

Audience: Graduate

4. Design or modify dosage regimens using pharmacokinetic data, plasma concentration, and factors that alter them

Audience: Graduate

5. Educate patients and caregivers on the safe and effective use of medications while considering the patient's perspective on health, social, economic, and psychological needs

Audience: Graduate

6. Observe and participate in public health activities in the community to address and promote health and wellness and increase awareness of community-based resources

Audience: Graduate

7. Select a marginalized population within the community and complete structured learning activity to identify factors that may impact the health of that population

Audience: Graduate

8. Observe and participate in pharmacy operations including accurate dispensing and preparation of a medication

Audience: Graduate

9. Apply legal principles to perform professional activities as a pharmacy intern

Audience: Graduate

10. Display professional attitudes, habits, and values in accordance with ethical and social guidelines

Audience: Graduate

11. Develop individualized goals and reflect on experiences through structured learning activities and assignments

Audience: Graduate

**PHM PRAC 628 – PRACTICE INNOVATION I**

1 credit.

Application of foundational knowledge of project management to hands-on experiences planning positive change within the health care system. Students will learn to think strategically, to critically assess a problem, identify solutions, and implement change. Students will integrate concepts in their practice area of interest with the project management skills learned in this course.

**Requisites:** Declared in Doctor of Pharmacy program with third year standing

**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** No

**Last Taught:** Fall 2024

**Learning Outcomes:** 1. Serve as strategic decision makers able to effectively organize and prioritize needs within a health care organization to produce meaningful results

Audience: Graduate

2. Engage as agents for pharmacy practice advancement through successful project development, management, and assessment

Audience: Graduate

3. Articulate project management essentials inspired by the Project Management Institute, with application to unique areas of pharmacy practice

Audience: Graduate

4. Collaborate with project stakeholders to identify a problem in pharmacy practice, define end goals, and strategize solutions

Audience: Graduate

5. Utilize project management principles to develop a project plan, manage stakeholders, and lead meetings to develop, measure, and implement meaningful change

Audience: Graduate

### PHM PRAC 629 – PRACTICE INNOVATION II

1 credit.

Expand upon the knowledge gained in Practice Innovation I to produce positive change within the health care system. Students will integrate concepts in their practice area of interest with the project management skills learned placing special emphasis on project implementation, measurement, and articulation of results.

**Requisites:** PHM PRAC 628

**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** No

**Last Taught:** Spring 2025

**Learning Outcomes:** 1. Serve as strategic decision makers able to effectively organize and prioritize needs within a health care organization to produce meaningful results

Audience: Graduate

2. Engage as agents for pharmacy practice advancement through successful project development, management, and assessment

Audience: Graduate

3. Articulate project management essentials inspired by the Project Management Institute, with application to unique areas of pharmacy practice

Audience: Graduate

4. Collaborate with project stakeholders to identify a problem in pharmacy practice, define end goals, and strategize solutions

Audience: Graduate

5. Utilize project management principles to develop a project plan, manage stakeholders, and lead meetings to develop, measure, and implement meaningful change

Audience: Graduate

### PHM PRAC 650 – COMPREHENSIVE IMMUNIZATION DELIVERY

1 credit.

Addresses vaccine-preventable diseases and the implementation of pharmacy-based immunization delivery programs.

**Requisites:** Declared in the Doctor of Pharmacy program

**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** No

**Last Taught:** Fall 2024

**Learning Outcomes:** 1. Apply the principles of immunization

Audience: Graduate

2. Recommend vaccinations for patients based on their ages, concurrent illnesses or conditions, and lifestyle

Audience: Graduate

3. Describe how to implement and maintain a pharmacy-based immunization service

Audience: Graduate

4. Develop vaccine administration skills

Audience: Graduate

**PHM PRAC 653 – INTEGRATED PHARMACOTHERAPY SKILLS III**

1 credit.

Learn and build upon pharmacotherapeutic skills necessary to develop competence as a pharmacist to assume the responsibility to improve therapeutic patient outcomes related to medication use. Skills will include patient and healthcare provider communication, identification and resolution of drug related problems, documentation, and complex problem solving skills.

**Requisites:** Declared in Doctor of Pharmacy program with third year standing

**Repeatable for Credit:** No

**Last Taught:** Fall 2024

**Learning Outcomes:** 1. Use therapeutic decision-making skills and drug information to apply clinical knowledge to address drug-related problems and promote health improvement, wellness, and disease prevention in cooperation with individual patients

Audience: Undergraduate

2. Perform steps of the pharmacists' patient care process (PPCP): collect, assess, plan, implement, and follow-up through documentation, communication, and collaboration in a patient-centered and efficient manner as consistent with the University of Wisconsin – Madison School of Pharmacy's technical standards

Audience: Undergraduate

3. Acquire the necessary skills and experience to provide patient care as a member of an interprofessional team

Audience: Undergraduate

4. Begin to develop skills and commitment for life-long learning in order to maintain professional competence

Audience: Undergraduate

5. Demonstrate professionalism by exhibiting behaviors and values that are consistent with the trust given to the profession by patients, other health care providers, and society

Audience: Undergraduate

**PHM PRAC 654 – INTEGRATED PHARMACOTHERAPY SKILLS IV**

1 credit.

Learn and build upon pharmacotherapeutic skills necessary to develop competence as a pharmacist to assume the responsibility to improve therapeutic patient outcomes related to medication use. The course will focus on building complex problem solving skills including the integration of patient and provider communication, documentation, and evaluation of integrated patient cases with a secondary focus on patient profile reviews and comprehensive medication review and assessment.

**Requisites:** PHM PRAC 653 and 655

**Repeatable for Credit:** No

**Last Taught:** Spring 2025

**Learning Outcomes:** 1. Use therapeutic decision-making skills and drug information to apply clinical knowledge to address drug-related problems and promote health improvement, wellness, and disease prevention in cooperation with individual patients

Audience: Undergraduate

2. Perform steps of the pharmacists' patient care process (PPCP): collect, assess, plan, implement, and follow-up through documentation, communication, and collaboration in a patient-centered and efficient manner as consistent with the University of Wisconsin – Madison School of Pharmacy's technical standards

Audience: Undergraduate

3. Acquire the necessary skills and experience to provide patient care as a member of an interprofessional team

Audience: Undergraduate

4. Begin to develop skills and commitment for life-long learning in order to maintain professional competence

Audience: Undergraduate

5. Demonstrate professionalism by exhibiting behaviors and values that are consistent with the trust given to the profession by patients, other health care providers, and society

Audience: Undergraduate

**PHM PRAC 655 – PHARMACOTHERAPY III**

3 credits.

Clinical application of medications in the management of various disease states. Assessment and therapeutic monitoring of disease states and drug therapy using the concepts of pharmacokinetics/dynamics, drug interactions, pharmacy practice and patient counseling. Topics include various renal, endocrine, gastrointestinal, rheumatologic and immunologic disease therapeutics.

**Requisites:** PHM PRAC 554 and 556

**Repeatable for Credit:** No

**Last Taught:** Fall 2024

**Learning Outcomes:** 1. Define the goals of treatment - both overall and related to individual patient cases

Audience: Undergraduate

2. Design a therapeutic regimen consisting of both non-drug and drug elements appropriate for individual patients. In selecting drug therapy, consider the patient's age, disease, clinical condition/severity of illness, concomitant diseases and medications

Audience: Undergraduate

3. Select the initial dosing regimen and plan a dose titration scheme not exceeding maximal recommended doses (unless such excess is warranted)

Audience: Undergraduate

4. Provide the patient and health care personnel with information on the nature, likelihood and management of relevant (likely or severe) adverse effects

Audience: Undergraduate

5. Design a treatment monitoring plan incorporating symptoms, physical assessment, diagnostic test and laboratory findings as needed to document patient response and possible drug-related problems. Identify monitoring parameters, including endpoints/goals, timing and follow-up

Audience: Undergraduate

6. Explain the disease process, purpose of drug therapy, and other information pertinent to patient education in lay terms

Audience: Undergraduate

**PHM PRAC 656 – PHARMACOTHERAPY IV**

3-4 credits.

Clinical application of medications in the management of various disease states. Assessment and therapeutic monitoring of disease states and drug therapy using the concepts of pharmacokinetics/dynamics, drug interactions, pharmacy practice and patient counseling. Topics include various oncology and infectious disease therapeutics. A one credit elective option will be offered to students and involves academic leadership skill development. Student leaders will lead discussion activities which involve clinical cases, scientific literature review, oncology literature discussions.

**Requisites:** PHM PRAC 653, 655 and PHM SCI 623

**Repeatable for Credit:** No

**Last Taught:** Spring 2025

**Learning Outcomes:** 1. Use patient and laboratory evidence to design initial regimens and tailor regimens based on patient monitoring and guidelines for specific infections

Audience: Undergraduate

2. Examine patients' antimicrobial regimens to minimize potential adverse events and drug-drug interactions

Audience: Undergraduate

3. Demonstrate the basic biology, microbiology and epidemiology of microorganism and antimicrobial spectra to apply to patients with infectious diseases

Audience: Undergraduate

4. Implement appropriate antimicrobial stewardship principles for safe and effective antimicrobial use in patients and populations

Audience: Undergraduate

5. Design a therapeutic regimen consisting of both non-drug and drug elements appropriate for individual cancer patients receiving a specified antineoplastic drug therapy regimen. In selecting drug therapy, consider the patient's age, disease, clinical condition/severity of illness, concomitant diseases and medications

Audience: Undergraduate

6. Describe current recommendations for decreasing the risk of developing cancer

Audience: Undergraduate

7. Describe current recommendations for cancer screening, including physical examinations, serology, and genetic screening

Audience: Undergraduate

8. Describe factors that affect the pharmacokinetics of antineoplastic chemotherapy, and the extent to which monitoring renal, hepatic, or drug concentrations can be used to titrate or empirically adjust the drug regimen

Audience: Undergraduate

9. Describe how cytotoxic medications should be prepared and how they should be safely disposed in the inpatient and outpatient environment

Audience: Undergraduate

10. Describe how reimbursement issues affect the selection of drug and administration of the drug in the outpatient and inpatient environment, and how pharmacy services can facilitate access to the intended therapy

Audience: Undergraduate



**PHM PRAC 657 – SEMINARS IN PEDIATRIC PHARMACOTHERAPY**

2 credits.

Addresses the selection, dosing, and monitoring of drugs in children from birth to adolescence. Drugs in pregnancy and lactation are also addressed. The course combines lecture, small group work, and discussion.

**Requisites:** PHM PRAC 656 or concurrent enrollment

**Repeatable for Credit:** No

**Last Taught:** Spring 2025

**Learning Outcomes:** 1. Recognize the differences in development of drug distribution and elimination in children from birth to adulthood.

Audience: Undergraduate

2. Use the available literature to recommend a dose of drug for a child based upon age, weight, and organ function.

Audience: Undergraduate

3. Describe peri-partum diagnostic and therapeutic interventions to prevent or treat infections or to delay or stimulate delivery.

Audience: Undergraduate

4. Describe how the prevention and treatment of diabetes may differ between children and adults.

Audience: Undergraduate

5. Describe drugs and doses used for sedation and analgesia in children

Audience: Undergraduate

6. Describe risk factors and common treatment approaches for fluid and electrolyte repletion in children.

Audience: Undergraduate

7. Describe the nature of treatments for pediatric-predominant cancers, including ways in which chemotherapy or other treatment-related toxicities can be minimized.

Audience: Undergraduate

8. Interact with the faculty as an opportunity to learn more about pediatric pharmacy, and various pediatric residency opportunities (several of the presenters are pediatric specialty residents).

Audience: Undergraduate

**PHM PRAC 659 – INFECTIOUS DISEASES PHARMACOTHERAPY IN THE ACUTE CARE SETTING**

1 credit.

Antimicrobial Stewardship has emerged as an important component of patient care in both inpatient and outpatient settings. Pharmacists can play an essential role in Antimicrobial Stewardship through application of knowledge in pharmacology, therapeutics, pharmacokinetics, microbiology, and biotechnology, most often expressed in the acute care setting, where patient health status and therapeutic decision making are ongoing. Addresses the ever-changing skill set required for pharmacists to understand therapeutic options and make effective interventions in the care of infected patients. Emphasis is placed on new treatment modalities as well as challenging the status quo of conventional management principles.

**Requisites:** PHM PRAC 655

**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** No

**Last Taught:** Spring 2025

**Learning Outcomes:** 1. Apply knowledge of concepts presented in the required Infectious Diseases Pharmacotherapy course to foster skills required in conducting an antimicrobial stewardship program.

Audience: Graduate

2. Apply principles of antimicrobial pharmacology and clinical management of diseases in patients treated in a hospital setting that are not covered in required coursework, at a point in the curriculum when students are near the start of clinical rotations.

Audience: Graduate

3. Recognize topics subject to dynamic changes and that may not be reflected in currently published guidelines.

Audience: Graduate

4. Enhance ability to evaluate published literature in infectious diseases.

Audience: Graduate

5. Apply algorithmic strategies to drug selection, dosing, and monitoring.

Audience: Graduate

6. Generate solutions for patient-specific care via case-based discussion.

Audience: Graduate

**PHM PRAC 668 – SEMINARS IN CRITICAL CARE**

2 credits.

Addresses the pharmacotherapeutic management of various critical care conditions. Guest lectures, primary literature review, patient case discussions, student-led presentations, and small group work will be utilized.

**Requisites:** PHM PRAC 550, 555, 556, and 655

**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** No

**Last Taught:** Spring 2025

**Learning Outcomes:** 1. Critically evaluate published clinical research and apply evidence-based medicine to individual patients

Audience: Graduate

2. Design a therapeutic regimen consisting of both non-drug and drug therapy that is appropriate for an individual patient based on clinical condition (severity of illness), concomitant diseases and medications

Audience: Graduate

3. Analyze medication orders and determine appropriateness for an individual patient

Audience: Graduate

**PHM PRAC 670 – VETERINARY THERAPEUTICS**

1-2 credits.

Presentation and discussion of topics that involve the therapeutic management of disease states of companion, food, and exotic animals. Emphasis is placed upon the principles of drug regulations, drug therapy, toxicology, and available commercial products.

**Requisites:** Declared in Doctor of Pharmacy program with third year standing

**Repeatable for Credit:** No

**Last Taught:** Fall 2024

**PHM PRAC 671 – INTRODUCTION TO ACADEMIC PHARMACY I**

2 credits.

Introduces students to pharmacy faculty responsibilities. Students will participate in a variety of activities to expose them to the role of the pharmacy educator and will actively participate in the education of DPH-1 or DPH-2 students.

**Requisites:** Declared in Doctor of Pharmacy program with third year standing

**Repeatable for Credit:** No

**Last Taught:** Fall 2021

**Learning Outcomes:** 1. Discuss a variety of remote and face-to-face instructional methodologies and assessment strategies

Audience: Undergraduate

2. Evaluate the merits and pitfalls of manuscripts in the area of teaching and learning

Audience: Undergraduate

3. Create and co-lead a group journal club discussion on an educational journal

Audience: Undergraduate

4. Develop and deliver an education-based topic discussion within the context of pharmacy education

Audience: Undergraduate

5. Design, evaluate, and/or analyze a pharmacy-related educational activity in conjunction with your mentor

Audience: Undergraduate

6. Report and critique a student-teaching interaction

Audience: Undergraduate

7. Demonstrate collaborative interpersonal and intergroup behaviors effective in various teaching situations

Audience: Undergraduate

**PHM PRAC 673 – SEMINARS IN GLOBAL HEALTH PHARMACY**

1 credit.

Explores the contribution of pharmacy and pharmacists to global health initiatives. Topics will be selected and presented by course faculty and students.

**Requisites:** Declared in Doctor of Pharmacy program

**Repeatable for Credit:** No

**Last Taught:** Spring 2023

**Learning Outcomes:** 1. Explain and interpret the Sustainable Development Goals from a healthcare professional/pharmacist perspective

Audience: Undergraduate

2. Explain the Global Pharmacy Practice Standards and compare these standards to actual practice around the world

Audience: Undergraduate

3. Identify ways that international organizations are working to improve pharmacy practice and education globally

Audience: Undergraduate

4. Compare and contrast issues raised in the classroom from an international and domestic perspective

Audience: Undergraduate

5. Identify and important topic related to this course, retrieve appropriate literature, post relevant readings in advance for class, and present a seminar (lecture and discussion) on the topic

Audience: Undergraduate

**PHM PRAC/NURSING 674 – SEMINARS IN INTERPROFESSIONAL MENTAL HEALTH CARE**

2 credits.

Addresses the team-based and patient-centered care of persons with mental health conditions. A special focus will be put on the management of psychotropic medication regimens. A combination of lecture, discussion, and small group work will be utilized.

**Requisites:** PHM PRAC 555

**Repeatable for Credit:** No

**Last Taught:** Spring 2025

**Learning Outcomes:** 1. Assess an individual person and his/her psychotropic medication regimen to identify potential and actual drug related problems

Audience: Undergraduate

2. Develop and recommend an appropriate therapeutic regimen consisting of both non-drug and drug therapy recommendations to facilitate optimal care and outcomes for an individual person

Audience: Undergraduate

3. Design an appropriate monitoring plan in collaboration with the person you are serving in order to appropriately evaluate the individual person's treatment plan

Audience: Undergraduate

4. Apply evidence-based care to practice by critically reviewing current published clinical research and guidelines

Audience: Undergraduate

5. Support persons in successfully navigating the wider mental health care system

Audience: Undergraduate

6. Apply ethical and legal concepts and processes in the analysis of clinical situations

Audience: Undergraduate

**PHM PRAC 677 – SEMINARS IN CARDIOLOGY**

2 credits.

Seminars, primary literature review, and patient case discussions on selected cardiovascular conditions, including: ACS, HF, valvular disease, cardiac devices, hemodynamic monitoring, heart transplantation, arrhythmias, ACLS, pulmonary arterial hypertension, stroke, and metabolic syndrome.

**Requisites:** Declared in Doctor of Pharmacy program with third year standing

**Repeatable for Credit:** No

**Last Taught:** Fall 2024

**Learning Outcomes:** 1. Critically review published clinical research so as to apply evidence based medicine principles to future practice

Audience: Undergraduate

2. Describe clinical applications of patient care from the perspectives of other disciplines

Audience: Undergraduate

3. Design a therapeutic regimen consisting of both non-drug and drug therapy that is appropriate for an individual patient based on clinical condition (severity of illness), concomitant diseases and medications

Audience: Undergraduate

**PHM PRAC 678 – SEMINARS IN ONCOLOGY**

1 credit.

Addresses practical issues surrounding the optimization of medication use in the treatment of patients with cancer. Practical solutions to the everyday challenges of providing exceptional clinical oncology care in a safe, fiscally responsible manner to optimize clinical outcomes of patients with cancer. Included subjects range across clinical, operational, and practice management issues that affect oncology pharmacy practice. These subjects include: pharmacogenomics, cell therapies, oncology research, survivorship, oral chemotherapy management, hazardous drug handling, value of cancer care, specialty pharmacy and Risk Evaluation and Mitigation Strategy (REMS) processes, and transitions of care. Although focused on oncology patients, offers practical exposure to issues confronting the care of patients with other types of diseases.

**Requisites:** Declared in the Doctor of Pharmacy Program with third year standing

**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** No

**Last Taught:** Spring 2025

**Learning Outcomes:** 1. Describe the steps needed to safely provide parenteral cytotoxic agents to an inpatient or outpatient (clinic) setting.

Audience: Graduate

2. Describe how to address patient access to oncology medications, including management of drug shortages.

Audience: Graduate

3. Describe how to seek financial or product support for patients prescribed expensive medications.

Audience: Graduate

4. Demonstrate how to converse and support patients and/or caregivers struggling with a diagnosis of incurable or terminal disease.

Audience: Graduate

5. Describe how to develop a de novo clinical pharmacy service in an oncology clinic.

Audience: Graduate

**PHM PRAC 679 – ADVANCED DIABETES MANAGEMENT**

2 credits.

Enhanced education on diabetes topics; current approaches to the medical management of patients with diabetes including the pharmacist's role in diabetes education and coaching/case management.

**Requisites:** PHM PRAC 655 or (NURSING 312 and NURSING 422)

**Repeatable for Credit:** No

**Last Taught:** Spring 2025

**Learning Outcomes:** 1. Describe interprofessional roles and responsibilities of various health care providers in delivering care to people with diabetes

Audience: Undergraduate

2. Discuss economic, ethnic, racial and age diversity aspects related to health care for people living with diabetes

Audience: Undergraduate

3. Construct assessments and plans for diabetes case studies including lifestyle considerations, medications, medication delivery devices, and diabetes complications

Audience: Undergraduate

4. Discuss issues and experiences faced by people living with diabetes

Audience: Undergraduate

5. Critique media reports related to diabetes

Audience: Undergraduate

6. Communicate diabetes-related topics through oral presentation and discussion facilitation

Audience: Undergraduate

**PHM PRAC 691 – SENIOR THESIS**

2 credits.

Individual study for seniors completing theses as arranged with a faculty member.

**Requisites:** Consent of instructor

**Repeatable for Credit:** No

**PHM PRAC 692 – SENIOR THESIS**

2 credits.

Individual study for seniors completing theses as arranged with a faculty member.

**Requisites:** Consent of instructor

**Repeatable for Credit:** No

**PHM PRAC 699 – ADVANCED INDEPENDENT STUDY**

0-3 credits.

Directed study projects as arranged with a faculty member.

**Requisites:** Consent of instructor

**Course Designation:** Level - Advanced

L&S Credit - Counts as Liberal Arts and Science credit in L&S

**Repeatable for Credit:** Yes, unlimited number of completions

**Last Taught:** Summer 2025

**PHM PRAC 740 – ACUTE PHARMACEUTICAL CARE CLERKSHIP**

1-6 credits.

Integrates prior didactic course work in pharmacotherapy, pathophysiology, and drug literature evaluation into the provision of pharmaceutical care to hospitalized patients. Participate in the provision of direct pharmaceutical care, by monitoring drug therapy, providing patient counseling, and providing drug information and pharmacokinetic dosing recommendations for patients. Gain experience and insight into health education by interacting with other health professionals and health-professions students.

**Requisites:** Declared in Doctor of Pharmacy program with fourth year standing

**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** No

**Last Taught:** Summer 2025

**Learning Outcomes:** 1. Effectively, reliably, and accurately acquire and document a best possible medication history from hospitalized patients.

Audience: Graduate

2. Effectively, reliably, and accurately provide medication consultation to hospitalized patients.

Audience: Graduate

3. Effectively and systematically apply the 5 phases of the Pharmacists Patient Care Process (PPCP) to the care of the hospitalized patient.

Audience: Graduate

4. Demonstrate the ability to prioritize the patient's drug and medical-related problems.

Audience: Graduate

5. Document the care of the hospitalized patient using the PPCP model.

Audience: Graduate

6. Provide a timely, thorough, and accurate response to drug information inquiries that demonstrates critical thinking, problem solving skills, and communication skills.

Audience: Graduate

7. Formally present a patient case by following a systematic presentation framework (rubric) in order to demonstrate the ability to identify relevant patient information, organize the information, critically appraise the treatment of the patient, and cogently present the information to an audience

Audience: Graduate

8. Participate as a contributing member of an interprofessional healthcare team in evidence-based therapeutic decision-making.

Audience: Graduate

9. Recommend appropriate medication dosing utilizing practical pharmacokinetic principles.

Audience: Graduate

10. Explain and document the pharmacy's role in medical emergencies and the indications, doses and administration guidelines for medications found in the institution's emergency box (cart).

Audience: Graduate

11. Provide care to a diverse patient population.

Audience: Graduate

12. Report medication errors

Audience: Graduate

**PHM PRAC 741 – AMBULATORY PHARMACEUTICAL CARE CLERKSHIP**

1-6 credits.

Integrates prior course work in pharmacotherapy, pathophysiology, and drug literature evaluation into the provision of pharmaceutical care to ambulatory patients. Activities include conducting patient interviews and assessments, providing drug information to patients and health professionals, and monitoring drug therapy in ambulatory settings.

**Requisites:** Declared in Doctor of Pharmacy program with fourth year standing

**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** No

**Last Taught:** Summer 2025

**Learning Outcomes:** 1. Patient-centered care –provide patient-centered care as the medication expert (collect and interpret evidence, prioritize, formulate assessments and recommendations, implement, monitor and adjust plans, and document activities).

Audience: Graduate

2. Medication use systems management –manage patient healthcare needs using human, financial, technological, and physical resources to optimize the safety and efficacy of medication use systems.

Audience: Graduate

3. Health and wellness –design prevention, intervention, and educational strategies for individuals and communities to manage chronic disease and improve health and wellness.

Audience: Graduate

4. Population-based care –describe how population-based care influences patient-centered care and the development of practice guidelines and evidence-based best practices.

Audience: Graduate

**PHM PRAC 742 – HEALTH-SYSTEM PHARMACY PRACTICE CLERKSHIP**

1-6 credits.

Integrates prior didactic course work into the provision of care and the development and delivery of services for hospitalized patients. Exposure to the five pillars of the medication use system (prescribing, transcribing, dispensing, administering, monitoring), plus procurement/storage along with the hospital services and processes that support them. Includes exposure to hospital-based services/programs/committees such as investigational drugs, Pharmacy and Therapeutics, quality/performance improvement (MUE), technologies, and personnel management. Exposure to best-practices, regulatory, legal, and accreditation standards/requirements that influence the quality and delivery of care to hospitalized patients.

**Requisites:** Declared in Doctor of Pharmacy program with fourth year standing

**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** No

**Last Taught:** Summer 2025

**Learning Outcomes:** 1. Participate in and critically assess the medication use system including drug procurement, safe storage, management of drug shortages, disposal of hazardous waste, product preparation, prescribing, transcribing, dispensing, administering and monitoring of medication use with an emphasis on safety, quality improvement, and best practices.

Audience: Graduate

2. Safely and effectively participate in the medication dispensing and drug distribution systems.

Audience: Graduate

3. Observe and where appropriate actively apply principles of sterile technique and participate in the preparation of sterile products.

Audience: Graduate

4. Observe and assess the use of technologies used to distribute and administer medications to patients.

Audience: Graduate

5. Participate in medication use evaluation, therapeutic protocol development, and development of clinical drug use guidelines as aspects of drug formulary management.

Audience: Graduate

6. Observe and critically assess the activities of specialty services (committees) such as P and T, IRB, Infection control, etc and report on their observations.

Audience: Graduate

7. Participate in pharmacy management meetings and self-reflect on personal strengths and challenges of being a pharmacy manager.

Audience: Graduate

8. Apply the principles of continuing professional development through reflection, completion of a personal learning plan and the activity tracker.

Audience: Graduate

### PHM PRAC 743 – COMMUNITY PHARMACY PRACTICE CLERKSHIP

1-6 credits.

Develops the skills and judgment necessary to apply the knowledge gained in the basic and clinical sciences to specific patient care situations. In addition, demonstrates the philosophy that clinical (APPE) and distributive pharmaceutical services should be patient oriented and integrated in contemporary ambulatory practice.

**Requisites:** Declared in Doctor of Pharmacy program with fourth year standing

**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** No

**Last Taught:** Summer 2025

**Learning Outcomes:** 1. Patient-centered care –provide patient-centered care as the medication expert using the pharmacist’s patient care process (collect, assess, plan, implement, monitor, evaluate, and document).

Audience: Graduate

2. Medication use systems management –manage patient healthcare needs using human, financial, technological, and physical resources to optimize the safety and efficacy of medication use systems

Audience: Graduate

3. Health and wellness –design prevention, intervention, and educational strategies for individuals and communities to manage chronic disease and improve health and wellness.

Audience: Graduate

4. Population-based care –describe how population-based care influences patient-centered care and the development of practice guidelines and evidence-based best practices.

Audience: Graduate

### PHM PRAC/NURSING/SOC WORK 746 – INTERDISCIPLINARY CARE OF CHILDREN WITH SPECIAL HEALTH CARE NEEDS

3 credits.

Interdisciplinary team care of children with special health care needs across the trajectory of illness presented within the context of family, culture, social determinants of health, community, and healthcare policy. Students introduced to interdisciplinary, collaborative, family-centered team care.

**Requisites:** Graduate/professional standing

**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** No

**Last Taught:** Spring 2025

**Learning Outcomes:** 1. Describe the interdisciplinary team approach to the care of the child with a chronic illness from the perspective of a child with a chronic illness and their family, community care providers, and each of the disciplines involved, including the student’s own.

Audience: Graduate

2. Demonstrate an understanding of issues relating to larger social and cultural context for the care of children with chronic illness.

Audience: Graduate

3. Identify and assess healthcare delivery systems and financing for children with chronic illness.

Audience: Graduate

4. Describe ways to advocate for pediatric patients with chronic disease and their families at an individual level and a policy level.

Audience: Graduate

**PHM PRAC 760 – ELECTIVE PHARMACY PRACTICE CLERKSHIP**

1-6 credits.

Experiential course that integrates prior course work in pharmacotherapy, pathophysiology, and drug literature evaluation into the provision of pharmaceutical care to ambulatory patients. Students will conduct patient interviews and assessments, provide drug information to patients and health professionals, and monitor drug therapy in ambulatory settings.

**Requisites:** Declared in Doctor of Pharmacy program with fourth year standing

**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** Yes, unlimited number of completions

**Last Taught:** Summer 2025

**Learning Outcomes:** 1. Provide patient care in cooperation with patients and members of an interprofessional health care team based on sound therapeutic principles and evidence-based data, considering legal, ethical, social, cultural, economic and professional issues, emerging technologies and evolving biomedical, pharmaceutical, social/behavioral/administrative and clinical sciences that may impact therapeutic outcomes

Audience: Graduate

2. Manage and use resources of the health care system, in cooperation with patients, prescribers, other health care providers, and administrative and supportive personnel, to promote health; to provide, assess, and coordinate safe, accurate, and time-sensitive medication distribution; and to improve therapeutic outcomes of medication use

Audience: Graduate

3. Promote health improvement, wellness, and disease prevention in cooperation with patients, communities, at-risk populations, and other members of an interprofessional team of health care providers

Audience: Graduate

**PHM PRAC 761 – INTERNATIONAL PHARMACY CLERKSHIP**

1-6 credits.

Gain immersive pharmacy practice experience in a different country.

Learn about global health, medication use, health systems, and pharmacy practice with a health equity lens.

**Requisites:** Declared in Doctor of Pharmacy program with fourth year standing

**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** Yes, for 3 number of completions

**Last Taught:** Summer 2025

**Learning Outcomes:** 1. Describe social, political, environmental, and economic factors that may contribute to health and the burden of disease in the country the student is visiting (host country).

Audience: Graduate

2. Describe the prevalence of communicable and noncommunicable diseases in the host country and health disparities within the host country.

Audience: Graduate

3. Explain the medication use system in the host country.

Audience: Graduate

4. Identify similarities and differences in pharmacy patient care services, interprofessional collaboration, and drug information resources in the host country compared to student's home country.

Audience: Graduate

5. Compare and contrast public (government) and private health systems and funding sources in the host country.

Audience: Graduate

6. Assess the strengths and opportunities for pharmacy patient care services in the host country.

Audience: Graduate



**PHM PRAC 764 – VETERINARY PHARMACY CLERKSHIP**

1-6 credits.

Practical experience in a veterinary medicine environment with emphasis on the drug treatment of diseases in animals.

**Requisites:** Declared in Doctor of Pharmacy program with fourth year standing

**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** No

**Last Taught:** Spring 2025

**Learning Outcomes:** 1. Provide patient care collaborating with clients/ animal owners, veterinarians, veterinary technicians and other members of the veterinary healthcare team.

Audience: Graduate

2. Manage and use resources of the healthcare system to ensure appropriate medication therapy for veterinary patients.

Audience: Graduate

3. Develop proficiency with medication order fulfillment.

Audience: Graduate

**PHM PRAC 769 – CLINICAL RESEARCH AND PHARMACY INVESTIGATION CLERSKSHIP**

1-6 credits.

Gain experience with clinical and translational research in a mentored situation. Learn study design, laboratory techniques, statistical analysis, manuscript preparation, and ethical principles of research.

**Requisites:** Declared in Doctor of Pharmacy program with fourth year standing

**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** No

**Last Taught:** Summer 2025

**Learning Outcomes:** 1. Describe different study designs and methods

Audience: Graduate

2. Review and apply statistical tests

Audience: Graduate

3. Apply laboratory techniques

Audience: Graduate

4. Prepare and write a manuscript

Audience: Graduate

**PHM PRAC 961 – GRADUATE SEMINAR IN HEALTH-SYSTEM PHARMACY**

1 credit.

Specialized subject matter of current interest to graduate students in the MS Pharmacy Administration program.

**Requisites:** Graduate/professional standing

**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** Yes, unlimited number of completions

**Last Taught:** Fall 2024

**PHM PRAC 962 – GRADUATE SEMINAR IN HEALTH-SYSTEM PHARMACY**

1 credit.

Specialized subject matter of current interest to graduate students in the MS Pharmacy Administration program.

**Requisites:** Graduate/professional standing

**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** Yes, unlimited number of completions

**Last Taught:** Spring 2025

**PHM PRAC 999 – ADVANCED INDEPENDENT STUDY**

1-12 credits.

Directed study projects for graduate students as arranged with a faculty member.

**Requisites:** Consent of instructor

**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** Yes, unlimited number of completions

**Last Taught:** Spring 2025