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
Repeatability: No

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
Repeatability: No

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 2023
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 2023
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 2024

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

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

3. 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

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

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

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PHM PRAC 463 – PROFESSIONAL DEVELOPMENT AND ENGAGEMENT II- CULTIVATING SELF- AWARENESS
1 credit.

Develop professional identity and demonstrate behaviors that regulate personal emotions and support well-being. Identify personal strengths and communicate these strengths to others. Engage in continuous professional and interprofessional development to provide patient care that is safe and equitable.

**Requisites:** PHM PRAC 462

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

**Repeatable for Credit:** No

**Last Taught:** Fall 2023

**Learning Outcomes:**
1. Identify personal strengths and discuss how to communicate these strengths to potential employers and preceptors
   Audience: Graduate

2. Create professional curriculum vitae, cover letter, professional online profile, and elevator speech; utilize these professional tools during yearly Career Fair with employers and preceptors
   Audience: Graduate

3. Work with individuals from other health professional students to maintain a climate of mutual respect and shared values
   Audience: Graduate

4. Embrace cultural diversity and individual difference that characterizes patients, populations, and the health care team
   Audience: Graduate

5. Describe emotional intelligence and demonstrate effective communication skills with peers, faculty, preceptors, and employers to build professional relationships
   Audience: Graduate

6. 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

7. 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 2024
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 2024
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 2024

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

   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 interprofessional collaborative care for patients with HIV in a primary care clinic
    Audience: Graduate

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 2024

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 2024
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 2024
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 2023
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 healthcare 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 2023
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 2023

**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 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 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 2023

**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 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 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 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 or 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 2023
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 2024

**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 2024

**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

5. Utilize skills needed to create, promote, and market the pharmacist’s role within integrated health systems
   Audience: Undergraduate

6. 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

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. 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

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

5. 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 2023
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 2024
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 2024
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 2023
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 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 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 2023

**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 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 638 – NONPRESCRIPTION PRODUCTS & SELF-CARE**

2 credits.

Provides students with 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:** PHM PRAC 554, 556 and PHMCOL-M/PHM SCI 522  
**Repeatable for Credit:** No  
**Last Taught:** Fall 2023  
**Learning Outcomes:**  
1. Describe the laws that govern the use of nonprescription medications, homeopathic medicines and vitamins/dietary supplements  
   Audience: Undergraduate  
2. Describe and differentiate the proper use of aspirin and other nonprescription NSAIDs used in the treatment of children and adults for fever and pain  
   Audience: Undergraduate  
3. Describe and differentiate among the nonprescription corticosteroids, topical analgesic and counter-irritants for the self-care of children and adults with pain and/or itch  
   Audience: Undergraduate  
4. Describe and differentiate among the nonprescription medications used for children and adults to self-treat cough, cold and allergy symptoms  
   Audience: Undergraduate  
5. Describe and differentiate among the nonprescription medications used for self-care of motion sickness, improving sleep, maintaining wakefulness and preventing emesis  
   Audience: Undergraduate  
6. Create plans for self-care of wounds using nonprescription medications and products  
   Audience: Undergraduate  
7. Construct self-care plans for common ophthalmic conditions  
   Audience: Undergraduate  
8. Appraise commonly used nonprescription vitamins and herbal self-care remedies  
   Audience: Undergraduate  
9. Design self-care plans regarding upper and lower GI conditions  
   Audience: Undergraduate  
10. Choose appropriate nonprescription medications for pediatric and geriatric patients given common conditions amenable to self-care  
    Audience: Undergraduate  
11. Appraise nonprescription medications used for miscellaneous therapeutic applications including otic, antiseptic, hair loss and insect repulsion  
    Audience: Undergraduate  
12. Communicate effectively with patients or agents-of-patients regarding triage for and appropriate self-care plans involving nonprescription medications and over-the-counter products  
    Audience: Undergraduate  
13. Create treatment plans for symptoms caused by common vulvovaginal disorders (e.g. vulvovaginal candidiasis and atrophic vaginitis) after an assessment for other possible causes  
    Audience: Undergraduate

**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 2023  
**Learning Outcomes:**  
1. Apply the principles of immunization  
   Audience: Undergraduate  
2. Recommend vaccinations for patients based on their ages, concurrent illnesses or conditions, and lifestyle  
   Audience: Undergraduate  
3. Describe how to implement and maintain a pharmacy-based immunization service  
   Audience: Undergraduate  
4. Develop vaccine administration skills  
   Audience: Undergraduate
**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 2023

**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

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**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 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 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 2023

**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 2024

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

2. Examine patients’ antimicrobial regiments 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 2024

**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

   **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 2024

**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

   **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 2024
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: Spring 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 2024
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 2023

**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 2024

**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 2024
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: Spring 2024

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: Spring 2024
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: Spring 2024
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
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: Spring 2024
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:** Spring 2024

**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

   Audience: Graduate

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**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 2024

**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: Spring 2024
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: No
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 2024

**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 CLERKSHIP

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:** Spring 2024

**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:** Spring 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 2024

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 2024