

University of Pittsburgh School of Pharmacy

PHARM 5402 Syllabus

2267: Summer 2026

Mission of the PharmD Program

The Pitt Pharmacy Doctor of Pharmacy Program inspires students to personalize their education and become medication experts, inter-professional collaborators, and leaders who advocate, champion, and act to improve health, wellbeing, and quality of life for individuals and communities.

Course Title, Course Number, Credit Allowance

Adv. Pharmacy Exp. 2 - Hospital/Health System, Pharm 5402 , 5 credits

Professional Year and Terms Offered

Year: Professional 4, Fall, Spring, Summer Terms

Days, Times, Location

Full-time, five weeks in length, minimum of 200 experiential hours

Prerequisites/Co-Requisites

1. Students must successfully complete all required Doctor of Pharmacy course work in the first 3 professional program years.
2. Students must have a cumulative GPA > 2.0.
3. Students must meet all prerequisite conditions as set forth in affiliation agreements specific to the site.

Participating Faculty and Support

Coordinator, Susan Skledar, RPh, MPH, FASHP, sis15@pitt.edu, 412-648-1504

Faculty, Deanne Hall, PharmD, CDCES, BCACP, dlh75@pitt.edu, 412-578-9260

Course Description

During this rotation students will develop competence in hospital pharmacy operations. Experiences may include but are not limited to:

- Understanding medication distribution, clinical, workflow, and electronic record documentation systems
- Preparation of intravenous medications including antibiotics, total parenteral nutrition, and chemotherapy
- Pharmacy provision of clinical services, such as pharmacokinetics, medication education, antibiotic stewardship
- Medication formulary management
- Maintaining and controlling medication inventory
- Pharmacy department management
- Quality improvement
- Medication formulary management
- Answering drug information questions as they relate to the hospital/health-system setting

- Understanding the roles of pharmacists and pharmacy technicians in hospital operations, clinical services, and specialty areas such as informatics, investigational drugs, medication safety, and management

PittPharmacy Outcomes Addressed by the Course

Learner
 Problem Solver
 Communicator and Educator
 Ally, Promoter & Champion
 Provider
 Medication Use Steward
 Interprofessional Collaborator
 Leader
 Self-Aware
 Professional & Advocate

Key Words Identifying Core Content

Pathophysiology, Pharmaceutical Calculations, Pharmacogenomics/genetics, Pharmacology, Ethics, Healthcare Systems, Personal Management, Practice Management, Professional Communication, Professional Development and Identity, Clinical Pharmacokinetics, Health Informatics, Health Information Retrieval and Evaluation, Patient Assessment, Patient Safety, Pharmacotherapy, Public Health, Self-Care Pharmacotherapy

Learning Objectives

- 1) • Demonstrate foundational scientific and practice knowledge to achieve patient-centered care and population health
 - Disease states including pathophysiology, anatomy/physiology
 - Medication therapy including pharmacology, pharmacokinetics, dosing
 - Workflow and process for safe and efficient practice

PittPharmacy Outcome: Learner

- 2) • Use the Pharmacists' Patient Care Process to develop individualized, patient-centered care plans in collaboration with the patient, other healthcare professionals, and/or caregivers
 - Review manual or electronic patient record/profile to accurately identify factors affecting therapy, health or disease management
 - Create and/or update patient record/profiles accurately and in a timely manner
 - Accurately create a drug-related problem list with prioritization of problems
 - Assess appropriateness of patient medication therapy (e.g. medication, dose, route of administration, monitoring)
 - Make appropriate and complete recommendations for care: non-pharmacologic and pharmacologic
 - Establish therapeutic outcomes/goals via a prioritized drug-related problem list
- Identifies and evaluates feasible therapeutic alternatives

- Designs and manages drug therapy regimens to enhance outcomes
 - Accurately identify, manage, and prevent drug-related problems and make appropriate decisions
 - Assess regimen for efficacy and toxicity
- Redesigns regimen as necessary

PittPharmacy Outcome: Provider

- 3) • Interpret, evaluate and clarify written prescriptions of medications to ensure appropriate, safe, and cost-effective patient care, including selection of product, dosage form, route, and methods of administration.
- Comply with local policy, state and federal laws, recommendations of regulatory agencies, and best practices
 - Evaluate and interpret prescriptions or drug orders correctly (medication selection, quantity, labeling) according to state and federal regulations
 - Ensure preparation, compounding, and dispensing of medications is consistent with patient-specific needs
 - Perform calculations and demonstrate techniques to prepare, compound, package, label, and dispense medications to ensure accuracy, product quality, and patient safety (including parenteral admixtures)
 - Manage the medication use system (i.e., procurement, storage, prescribing, transcription, dispensing, administration, monitoring, and documentation) while ensuring safety, efficacy, and efficiency
 - Detect and report actual and potential medication errors and adverse drug events to identify underlying causes and minimize/prevent patient harm
 - Understand and apply guidelines of the hospital formulary and evidence-based recommendations and protocols
 - Understand the role of the pharmacist in medication management, including order processing, dispensing, patient safety, resource management, and regulatory compliance.

PittPharmacy Outcome: Medication Use Steward

- 4) • Accurately assess patient health literacy and adherence
- Accurately assess patient health status and care needs, and adapt care plans based on diverse individuals and populations, to diminish disparities and inequities in care
 - Interpret data and information to assess health needs of an individual, community, and/or population, across the continuum of care
 - Take responsibility for health outcomes while making culturally responsive, ethical, and equitable decisions that represent the best interest of the individual and community

PittPharmacy Outcome: Ally, Promoter, and Champion

- 5) • Effectively and respectfully collaborate with technical support staff, pharmacy team, and other healthcare providers to optimize care and services
- Demonstrate appropriate human relations skills: displaying interest in others; sensitivity, empathy, acting in best interest of others
 - Demonstrate formal and informal leadership by taking responsibility for creating trust and

open communication

- Develop skills of management including use of resources to accomplish goals, demonstrating the ability to manage self, others, and roles in medication use systems
- Participate in discussions regarding compliance regulations (e.g., accreditation, legal, regulatory, safety, human resources, financial)
- Participate in drug approval/formulary process (i.e., P&T Committee and subcommittees)
- Participate in the design, development, and marketing of patient services
- Participate in the pharmacy's quality improvement program

PittPharmacy Outcome: Leader

- 6) • Identify challenges that may affect the practice setting
- Suggest and/or develop creative approaches to improve quality or overcome barriers
 - Use critical thinking skills to include interpretation, analysis, evaluation, inference, and explanation
 - Retrieve, evaluate and use scientific literature to provide information and/or make therapeutic decisions

PittPharmacy Outcome: Problem Solver

- 7) • Effectively communicate and engage with patients, caregivers, healthcare professionals, and the community to provide medication and health information
- Communicate effectively and professionally via written and verbal methods, to articulate knowledge and recommendations with empathy, sympathy, confidence, and respect
 - Use appropriate persuasion techniques to positively impact medication use
 - Educate/interact with patients, healthcare professionals, and the general public regarding health promotion, disease prevention, disease management, transitions of care, and wellness

PittPharmacy Outcome: Communicator and Educator

- 8) • Demonstrate desire to maintain professional competency through principles of life-long learning
- Participate in discussions concerning health care policy and advocacy for the profession
 - Advocate for change to improve health and well-being for all
 - Demonstrate characteristics of a pharmacy professional

PittPharmacy Outcome: Professional & Advocate

- 9) • Collaborate with the interprofessional team, including patients, caregivers, other health care disciplines, non-healthcare collaborators, and community members
- Consult and intervene with patients and healthcare regarding self-care and prescription medications
 - Participate and engage as a healthcare team member with respect and understanding of shared values, and knowledge of one's role, and roles of others on the team

PittPharmacy Outcome: Interprofessional Collaborator

- 10) • Set personal and professional goals to achieve objectives, including obtaining new skills and knowledge
- Be a life-long learner who is able to examine and self-reflect on knowledge and skills that may enhance, or limit, personal or professional identity formation
 - Demonstrate the characteristics of a pharmacy professional
 - Manage time wisely to maximize productivity and fulfill rotation obligations
 - Maintain situational awareness and the need for professionalism in all settings

PittPharmacy Outcome: Self-Aware

Methods of Learning

Ability outcomes will be evaluated based on the student's performance of various tasks throughout the rotation. The methods of learning will vary with the rotation site, but will include observations, activities, and discussions with patients, pharmacists and other health professionals. Self-study and reflection will also be included.

Textbooks and Other Learning Resources

Learning resources will vary with the rotation site. The following is a list of suggested resources to assist

the student in performing activities:

1. Dipiro JT, et al, editors. *Pharmacotherapy: A Pathophysiologic Approach*. McGraw-Hill, New York, NY.
2. Koda-Kimble MA, et al, editors. *Applied Therapeutics: The Clinical Use of Drugs*. Wolters Kluwer | Lippincott Williams & Wilkins, New York, NY.
3. Loscalzo et al, editors. *Harrison's Principles of Internal Medicine*. McGraw-Hill, New York, NY.
4. Lacy CL, editors. *Drug Information Handbook*. Lexi-Comp, Inc., Hudson, OH. (Pocket edition and PDA version also available.)
5. Many resources are available via University of Pittsburgh Health Sciences Library, including a variety of databases and full-text online journals, at <http://www.hsls.pitt.edu>.

Class Attendance Policy and Grade Implications

Please review the full Absence Request Policy on the Home Page of E*Value for full details.

1. Any absences by students of one day or less per rotation should be handled by the student and the preceptor. In these instances, it is the preceptor's decision and responsibility to specify and outline a plan for the make-up of the missed day.
2. Any absences in excess of one day per rotation will require the student to complete an "Absence Request" form (see E*Value site). If possible, this form should be submitted to the preceptor and Ms. Anna Schmotzer in the Office of Experiential Learning at least six weeks prior to the scheduled absence. In the event the absence is not scheduled (i.e., illness, emergency), the student must notify the preceptor as soon as the absence is going to occur, and the form should be submitted to the preceptor and Ms. Anna Schmotzer in the Office of Experiential Learning within three days of the student's return. It is the responsibility of the Director of Experiential Learning, working with the preceptor, to determine if the student can successfully complete the rotation and outline a plan for

the make-up of the missed days.

3. Days missed due to interviews and attending professional meetings (e.g., ASHP Midyear Meeting) are considered absences and the guidelines outlined previously should be followed. Students must discuss interview schedules and professional meetings six weeks before rotation start date. It is the preceptor's decision if the student time off can be granted and made-up. The guidelines outlined in item # 1 and # 2 must be followed.

4. If the student is attending a professional meeting during a scheduled APPE, by the Monday following the end of the rotation, the student must submit a one-page reflection to the Pitt Pharmacy Dashboard about their experience at the meeting.

5. Absences for family vacations, personal travel, or other non-rotation/non-school reasons are not excused absences. Repeated absences from a rotation will result in an unsatisfactory grade for the rotation.

Course Requirements and Grading

H/S/U

Honors/Satisfactory/Unsatisfactory

Course Requirements and Grading

Core requirements must be completed. If a core requirement cannot be completed due to a site-specific reason, the preceptor must provide an explanation in the student's evaluation. Assignments specific to the site may supersede or supplement core requirements at the discretion of the preceptor.

CORE REQUIREMENTS

HOSPITAL ROTATION:

- Maintain a log of 10 intravenous medications reviewed and/or prepared, describing proper aseptic technique, calculations, labeling, and administration.
- Prepare 1 adverse drug reaction and 1 medication error report or investigation
- Document on PITT Form 25 drug therapy/drug-related problems or patient-centered encounters/interventions
- Complete and present 1 formal case presentation and discuss at least 1 informal patient case
- Provide drug information responses, including proper references, to 1 formal and at least 3 informal drug information requests
- Attend 1 interdisciplinary/interprofessional meeting and provide written summary of what was discussed. May also complete the interprofessional colleague interview, discussing a patient you collaboratively care for
- Discuss with preceptor the workflow for verification of medication orders/prescriptions and assessment for appropriateness, including use of the PPCP.
- Discuss with preceptor the drug distribution and inventory management process, including drug shortages, expired medications, and hazardous substances.
- Discuss with preceptor the role of the pharmacist in medication education, medication safety, and quality improvement (e.g., ADE/ME, automation, formulary/protocol management,

antibiotic stewardship, medication reconciliation)

- Write a reflection about a health inequity you encountered or discovered on the rotation, discussing the real or potential impact on patients (depends on applicability to setting)
- Write a reflective essay about the rotation, including which curricular or co-curricular outcomes that the experience helped you work toward

If an ADVANCED HOSPITAL ROTATION, the student should complete the following requirements:

- o If preparing sterile products, maintain a log of intravenous medications reviewed and/or prepared, as directed above.
- o Prepare 1 adverse drug reaction and 1 medication error report or investigation.
- o If spending time with pharmacists for rounding or order verification, document on PITT Form drug therapy/drug-related problems or patient-centered encounters/interventions
- o Complete and present 1 formal and 1 informal topic discussion related to health-system practice or healthcare (eg. patient case, safety topic, regulatory topic, medication/drug utilization review, regulatory, marketing, innovation etc.)
- o Provide drug information responses, including proper references, to 1 formal request and at least 1 informal request. These responses can be related to medications/therapeutics, or to rotation-specific questions researched, such as innovations in practice, medication safety, leadership/management, efficiency of services/costs, or patient outcomes.
- o Compare and contrast the medication use process (procurement, dispensing, verification, distribution) and use of the PPCP at the rotation site to the site of your hospital/health-system internship via a written summary (max 3 pages)
- o Attend 1 interdisciplinary/interprofessional meeting and provide written summary of what was discussed. May also complete the interprofessional colleague interview, discussing a patient you collaboratively cared for.
- o Discuss with preceptor the role of the pharmacist in medication education, medication safety, and quality improvement (e.g., ADE/ME, automation, formulary/protocol management, antibiotic stewardship, medication reconciliation.)
- o Write a reflective essay about the rotation, including which curricular and/or co-curricular outcomes that the experience helped you work toward
- o Write a reflection on a health inequity you encountered or discovered on the rotation, discussing the real or potential impact on patients (depends on applicability to setting)

Optional Requirements (if site offers opportunity for the experience)

- Discuss with your preceptor clinical pharmacy services at the site. Include the responsibilities of each pharmacist involved in services other than dispensing.
- Discuss with your preceptor the different regulatory bodies with oversight of the institution and the responsibilities of the pharmacy in regard to institutional regulatory readiness.

Students can use the P4 Experiential Learning Activity Summary for APPE Rotations to track completion of assignments. Assignments should be posted to the Pitt Pharmacy Dashboard to document progression toward mastery of curricular outcomes. The Pitt Form Summary report is not required if the APPE is a pure elective experience.

COURSE GRADING

Students will be assessed using the Preceptor Evaluation of APPE Student form utilizing the Stages of Professional Mastery to assess their ability to function as a pharmacist. The School of Pharmacy

utilizes a mastery-based evaluation of student progress intended to be used across all 4 program years. Preceptors and students will evaluate performance, knowledge, skills and attitudes using the phrases “Awareness”, “Beginning Competence”, “Intermediate Competence” and “Proficient” for the desired outcomes as described on the evaluation form.

The Pitt Pharmacy PharmD Program curricular outcomes are the core of this student evaluation document and include “Entrustable Professional Activities,” or “EPAs,” which are descriptors of work that trainees should be able to perform, or be entrusted to perform, without direct supervision prior to entering practice or post-graduate training, in compliance with federal, state, and local laws and regulations.

A frank assessment of the student’s abilities is needed by the preceptor, with assessment based upon the skills and knowledge demonstrated during the rotation. The performance levels described above (A, BC, IC, P, N/A) should be used as the student is evaluated. The Global Score for each section should reflect the overall appraisal of student performance for that section, including abilities to meet levels of performance for EPAs.

Students will be required to perform a mid-point and final self-evaluation and the preceptors will collaborate to perform a mid-point (beginning of week 3) and final evaluation. The preceptors will provide feedback on student performance on an ongoing basis throughout the rotation. Formal feedback will be documented on the Preceptor Evaluation of APPE Student form and submitted electronically to the Office of Experiential Learning.

Final APPE grade assignment is on a satisfactory / honors/ unsatisfactory basis. Grades will be based on student pharmacy practice skills, knowledge and attitude. Skills will be assessed through direct observation of patient care activities at the practice site.

Each student is expected to:

1. Successfully complete each APPE at a minimum level of “Satisfactory Performance” as determined by preceptor and experiential learning faculty assessments.
2. Demonstrate progressive skills and knowledge reflecting entrustable professional activities and Pitt Pharmacy curriculum outcomes at the minimum level of “Reactive Supervision/Intermediate Competence” by the end of the P4 year.
 - A student earning performance levels consistently at “Awareness” and “Beginning Competence” level in any core APPE will complete a Performance Improvement Plan with Experiential Learning faculty, with monitoring of performance in subsequent APPEs to document student improvement.
 - A student earning performance levels consistently at “Awareness” levels in any core APPE will complete a Performance Improvement Plan with the Experiential Learning faculty and may be required to repeat the APPE, with monitoring of performance in subsequent APPEs to document student improvement.

SATISFACTORY/HONORS/UNSATISFACTORY GRADING:

The course will be graded using “Honors”, “Satisfactory” or “Unsatisfactory” grades.

A grade of “Honors” may be recommended by a preceptor, providing specific information supporting such a grade when completing the on-line evaluation form. Honors will be awarded to those students who exhibit exceptional skills, mastery of all ability outcomes, perform additional activities

beyond those required, and complete rotation assignments as required.

- Students earning any “NO” score on any of the professionalism measures are not eligible for an “Honors” grade for the rotation.
- Students who do not complete required dashboard postings and/or evaluations by the assigned deadline are not eligible for an “Honors” grade for the rotation.

A grade of “Unsatisfactory,” requiring repeat of the APPE rotation, will be awarded to any students who earn such grade with actions including:

- Violation of University of Pittsburgh and/or School of Pharmacy Code of Conduct, Oath of a Pharmacist, or Code of Ethics in any setting
- Inability to complete requirements, evaluations, assignments, dashboard work, and any other course requirements by assigned deadlines.
- Poor quality of work, including failure to meet site expectations
- Fabricated, falsified, or plagiarized work for any submitted assignments or documentation
- More than one unexcused absence from any on-site activity. Repeated absences from a rotation will result in an unsatisfactory grade for that rotation and require a repeat of the rotation experience.
- A pattern of tardiness and/or unprofessional behavior conduct
- Recommendation by preceptor for student removal from site due to unprofessional conduct including HIPPA or other institutional policy violations or any unprofessional behavior including a pattern of tardiness

PROFESSIONAL BEHAVIOR AND ATTITUDES SCALE RATINGS

- Students receiving multiple “NO” responses (i.e., more than three [3]) on the final evaluation) earn final grades of “Unsatisfactory” for that APPE and will be required to repeat the entire 5-week experience pending APPE availability. This may necessitate APPE completion after the Spring Term, delaying completion of the professional program and graduation dates. Students will also be required to participate in Performance Improvement Plans to address and improve their behaviors, with monitoring in subsequent APPEs.
- Students earning ANY “NO” score on professionalism measures are not eligible for an “Honors” grade for the rotation.

Academic Improvement Outreach Statement

Fourth Professional (P4) Year:

The P4 year consists of three terms, starting in the summer term immediately following the P3 year.

1. A student who earns a “U” grade on an APPE rotation must repeat the same type of rotation in an off-block or in a block after the last scheduled rotation for the P4 year.
2. A student who fails to earn a passing grade in the repeated rotation, or earns a “U” grade in any subsequent rotation, will be dismissed from the program.

Course remediation regarding performance on APPEs will only be available if in compliance with experiential learning policies and after discussion with the Course Coordinator and preceptors.

Equity, Diversity, and Inclusion Statement

The University of Pittsburgh does not tolerate any form of discrimination, harassment, or retaliation based on disability, race, color, religion, national origin, ancestry, genetic information, marital status, familial status, sex, age, sexual orientation, veteran status or gender identity or other factors as stated in the University's Title IX policy. The University is committed to taking prompt action to end a hostile environment that interferes with the University's mission. For more information about policies, procedures, and practices, visit the Civil Rights & Title IX Compliance web page.

As faculty, we ask that everyone in the class strive to help ensure that other members of this class can learn in a supportive and respectful environment. If there are instances of the aforementioned issues, please contact the Title IX Coordinator, by calling 412-648-7860, or e-mailing titleixcoordinator@pitt.edu. Reports can also be filed online. You may also choose to report this to a faculty/staff member; they are required to communicate this to the University's Office of Diversity and Inclusion. If you wish to maintain complete confidentiality, you may also contact the University Counseling Center (412-648-7930).

Inclusivity Statement

To proactively prevent structural discrimination in the classroom, it is the responsibility of instructors to select and include materials that are inclusive, accessible, equitable, and diverse along all axes of minoritized experience. This includes using language and examples in our lectures and case studies that combat and redress stereotypes as well as establishing and supporting a class climate that fosters belonging for all students. It is the responsibility of all members of this course to contribute to a respectful, welcoming, and inclusive environment for every member of the classroom community. Any suggestions about other ways to further increase inclusion and access in this course are welcome.

Wellness Statement

The Doctor of Pharmacy professional program can be exciting and challenging for students. Taking time to maintain your well-being and seek appropriate support can help you achieve your goals and lead a fulfilling life. It can be helpful to remember that we all benefit from assistance and guidance at times, and there are many resources available to support your well-being while you are at Pitt. You are encouraged to visit Thrive@Pitt to learn more about well-being and the many campus resources available to help you thrive.

If you or anyone you know experiences overwhelming academic stress, persistent difficult feelings and/or challenging life events, you are strongly encouraged to seek support. In addition to reaching out to friends and loved ones, consider connecting with a faculty member you trust for assistance connecting to helpful resources.

The University Counseling Center is also here for you. You can call 412-648-7930 at any time to connect with a clinician. If you or someone you know is feeling suicidal, please call the University Counseling Center at any time at 412-648-7930. You can also contact Resolve Crisis Network at 888-796-8226. If the situation is life threatening, call Pitt Police at 412-624-2121 or dial 911.

Course Remediation Statement

After final grades have been assigned, this course will utilize processes as detailed in the PharmD Program Course Remediation Policy.

Student Disability Statement

If you have a disability for which you are or may be requesting an accommodation, you are encouraged to contact your instructor and Disability Resources and Services, 140 William Pitt Union, 412-648-7890, drsrecep@pitt.edu, or 412-228-5347 for P3 ASL users, as early as possible in the term. DRS will verify your disability and determine reasonable accommodations for this course.

Academic Integrity Statement

Students enrolled in the pharmacy program are also considered to be members of the pharmacy profession and must adhere to the same professional, ethical, and legal standards. It is a violation of the School's code of conduct policy for a student to engage in any act of academic misconduct, such as cheating, plagiarism, deceitful practice, unauthorized collaboration, harassment, or breach of confidentiality. It is also considered to be a violation of the code of conduct policy for a student to tolerate any of the aforementioned acts by other students. Cell phones and audible alarms must be silenced during class.

Use of Generative AI

Since writing, analytical, and critical thinking skills are part of the learning outcomes of our program, all writing assignments must be prepared by each individual student unless specified as group work. Academic integrity is vital to our Pitt Pharmacy community and for fair evaluation of your work. All work completed and/or submitted must be your own, completed in accordance with the Pitt Pharmacy Code of Conduct and the university's Guidelines on Academic Integrity. You may not engage in unauthorized collaboration or use of generative AI applications (such as ChatGPT, Grammarly or others) at any time.

In some courses, faculty may use or authorize use of generative AI tools. You will be informed as to when, where, and how these tools are permitted to be used, along with guidance for attribution. Any unauthorized use outside of this permission constitutes a violation of Pitt Pharmacy Code of Conduct and also the University of Pittsburgh Guidelines on Academic Integrity.

Audio-Video Recording Statement

To ensure the free and open discussion of ideas, students may NOT record classroom lectures, discussions, and/or activities without the advance written permission of the instructor, and any such recording properly approved in advance can be used solely for the student's own private study.

Copyright Statement

These materials may be protected by copyright. United States copyright law, 17 USC section 101, et seq., in addition to University policy and procedures, prohibit unauthorized duplication or retransmission of course materials. See Library of Congress Copyright Office and the University Copyright Policy.

