Pre-Lab:
Mondays and Wednesdays: 10:30 am – 12 pm
Austin: PHR 3.106
San Antonio: McDermott 2.108 via WebEx

Labs:
Austin: Tuesdays and Thursdays 8 am – 12 pm or 1 pm – 5 pm. PHR 3.108
San Antonio: Tuesdays and Thursdays 8 am – 12 pm or 1 pm – 5 pm. McDermott 3.522

Instructor: Holli Temple, PharmD, BCPS, BCGP
Office: PHR 2.222E
Office Phone: 512-232-1214
E-mail: holli.temple@austin.utexas.edu
Office Hours: By appointment

Supporting Faculty: James P. Wilson, PharmD, PhD
Office: PHR 3.210A
Office Phone: 512-471-6978
E-mail: james.wilson@austin.utexas.edu
Office Hours: By appointment

W. Renee Acosta, RPh, MS
Office: PHR 5.112B
Office Phone: 512-471-5183
E-mail: renee.acosta@austin.utexas.edu
Office Hours: By appointment

San Antonio Coordinator: Kelly Reveles, PharmD, PhD, BCPS
Email: kdaniels46@utexas.edu

Austin Teaching Assistants:
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<th>Name</th>
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San Antonio Teaching Assistants:
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*Lab schedule and topics can be found at the end of this syllabus*

COURSE DESCRIPTION

Basic Intravenous Admixtures (PHM 183G) Pre-Lab and Laboratory applies theory, preparation, use, and route of administration of sterile products and incorporates mathematical calculations, clinical applications, federal regulations, and drug information skills.

Course Prerequisites: PHM388M – Pharmaceutics and PHM188P – Pharmaceutics Lab

Course Co-requisites: credit or registration for PHM183F – Lecture for Basic IV Admixtures

Course Objectives:

- Practice garbing, handwashing, hood cleaning
- Aseptically manipulate products and supplies related to IV preparation
- Accurately calculate doses, fluid volumes, infusion rates, and beyond use dates
- Interpret and accurately apply drug information and USP <797> regulations
- Resolve issues related to medication orders
- Prepare injectable medications for mock patients

Skills and Attitudes:

In addition to the course objectives, students will work on the following skills and attitudes that are essential for a successful pharmacy career:

- Attention to detail
- Time management in a high-stress environment
- Self-awareness and analysis
- Critical thinking
- Ability to learn from mistakes
Center for the Advancement of Pharmacy Education (CAPE) Outcomes:

- 4.1.2 Maintain motivation, attention, and interest (e.g., habits of mind) during learning and work-related activities. Develop skills and attitudes necessary for life-long learning.
- 4.1.5 Approach tasks with a desire to learn.
- 4.1.6 Demonstrate persistence, flexibility, and resilience in all situations, including adapting to different practice environments; engage in help seeking behavior when appropriate.
- 4.1.7 Strive for accuracy and precision by displaying a willingness to recognize, correct, and learn from errors.
- 4.1.8 Use constructive coping strategies to manage stress.
- 4.4.1 Demonstrate altruism, integrity, trustworthiness, flexibility, and respect in all interactions.
- 4.4.2 Display preparation, initiative, and accountability consistent with a commitment to excellence.

How to be successful in lab:

- Be prepared for lab. Review previous lab work, read over Canvas materials, and prepare additive profile ahead of time when given the opportunity.
- Work in an efficient and timely manner. Do not rush through lab, which increases the risk of making careless mistakes. Work efficiently in order to not lose focus, stamina, or major points on paperwork for graded preparations.
- Accept that you will make mistakes. Be prepared to handle those moments professionally and learn from your mistakes.
- Check your work. Double check your additive profile and think through your processes before entering the hood.
- Take advantage of your resources. Communicate with your instructors and TAs. Let them know if you are struggling and need additional supervision and/or practice.

### COURSE REQUIREMENTS

**Lecture Notes:** Course materials will be posted in Canvas at least 24 hours before each lecture or pre-lab session. It is the student’s responsibility to print out the notes if a hard copy is desired.

**Optional reference:**
Ochoa Pamella S. and Vega Jose A. *Concepts in Sterile Preparations and Aseptic Technique*, Burlington, Massachusetts; Jones and Bartlett Learning, 2015.
(Available in each region – ask your local coordinator where the reference is kept.)

**Grading Criteria:**

<table>
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<tr>
<th>Category</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Attendance</td>
<td>10% – attendance for lecture and pre-lab</td>
</tr>
<tr>
<td>Participation</td>
<td>10% – problem boxes, homework, and lab attendance/punctuality</td>
</tr>
<tr>
<td>Midterm and pre-final</td>
<td>35% – total of 2 IV preparations (17.5% each)</td>
</tr>
<tr>
<td>GFS and Media Fill</td>
<td>10% – minus 1 point for each minute over 30 for media fill</td>
</tr>
<tr>
<td>Final preparation</td>
<td>35% – Must receive a 75 on this preparation to pass lab</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
</tr>
</tbody>
</table>
Grading Scale:

- 90% - 100% = A
- 80% - 89% = B
- 75% - 79% = C
- 70% - 74% = D
- Below 70% = F

NOTE: A passing grade of 75 is required on the final preparation. A student who does not pass the final preparation will receive an “F” in the course.

Gloved fingertip sampling (GFS) and media fill must be completed without contamination in order to pass IV lab. Students whose GFS and/or media fill is contaminated must repeat the GFS and/or media fill until they can do so without contamination. If necessary, a student will receive an “Incomplete” for the lab until GFS and/or media fill is successfully completed.

POLICIES & RESOURCES

LABORATORY POLICIES AND PROCEDURES FOR PHM 183G:
Please read and examine the following course rules and information. It is vital that you understand and follow course rules.

1. Class (lecture and pre-lab) will start on time. Lab will start on time. If you are late to your assigned lab time, remain in the hall outside the lab or meeting room until an instructor opens the door and asks you to come in.

2. Dress code: You must wear scrubs and closed toe shoes (no sandals, flip flops, or clogs) for lab. Athletic shoes are preferred. If a shirt is worn under your scrub top, it must be short sleeved and non-shedding (no cotton). You should wear your nametag when not wearing personal protective equipment (PPE), e.g., for group work.

   Jewelry that can be seen must not be worn. Do not wear watches, bracelets, rings, necklaces, earrings, or other facial piercings. Do not wear cosmetics, nail polish, or false fingernails. Nails must be trimmed to ¼ inch or less.

   You will not be allowed to participate in lab if you do not meet dress code.

   You must put up your PPE after lab.

3. Students must complete all daily laboratory work. Grades will be assessed for a mid-term compounded sterile preparation (CSP), GFS, media fill, a pre-final CSP, and the final CSP. In addition, problem boxes will be available during some lab periods. These boxes must be completed during the lab they are available. They will be graded and count toward the participation grade. All grades must be entered PRIOR to the final preparation.

4. If a student cannot attend a laboratory, the student must notify the instructor before the laboratory meets. Students who know ahead of time they cannot attend a laboratory may ask the instructor’s permission to change laboratory sections. Requests must be made in writing (paper or electronic) at least 24 hours prior to the start of the scheduled laboratory session. Notification must be made
and acknowledged prior to the beginning of the scheduled laboratory session or the absence will be considered unexcused.

5. For approved absences from laboratory sessions, the student will be asked to make-up the missed laboratory. Students who miss lab must make up all missed activities prior to moving on to the next lab’s materials.

6. Students with an unapproved absence for a laboratory session or final CSP will be given a zero for the grade of that session. If the missed lab session includes a graded preparation, the student will automatically move to the next attempt on the graded preparation scheduled for that session.

Graded preparations: To pass a graded preparation, students must score at least a 75. For students who score 75 points or higher on their first attempt, this grade will be entered into the grade book and no additional attempts are provided. Students who score less than 75 points on the mid-term and pre-final CSPs can remake preparations without penalty one time. One additional remake can be done with 10 points deducted. In total, the student has three attempts to make a passing grade. First attempt: student begins at 100 points. Second attempt: student begins at 100 points. Third attempt: student begins at 90 points. If a student fails to make a 75 or higher on the first or second attempt, the student must proceed to the second or third attempt respectively. The grade on the third attempt stands and will be entered into the grade book, whether the student scores 75 points or not.

To pass graded preparations, you must make no critical errors AND your non-critical error point deduction cannot exceed 25 points. If point deductions for time PLUS non-critical errors exceed 25 points, deductions are capped at minus 25 points, and you will receive a grade of 75 on the preparation before point deductions for second or third attempts are taken. If a critical error is made, the grade received is 100 minus point deductions for critical errors, non-critical errors, time, and penalty for second and/or third attempts as applicable.

7. Problem boxes, mid-term CSP, and pre-final CSP must be completed prior to the student being allowed to make the final CSP.

8. Safety Data Sheets (SDS) contain safety information provided by chemical manufacturers and/or suppliers. To find SDS on the drugs and chemicals used in IV lab, see http://guides.lib.utexas.edu/chemistry/safety and click on the SDS tab. SDS are also known as Material Safety Data Sheets (MSDS).

9. In the event of a needle stick or cut from an ampule that requires medical attention during the school day, the student health center is available for routine care for students who are injured or ill.

10. Lab MAY begin earlier than the official start time. In addition, labs MAY run longer than the official stop time. If the reason for the lab not ending on time is due to TA grading in the hood, then students may be allowed to complete their laboratory assignments until TA grading is completed. If the reason for lab not ending on time is due to the speed and efficiency of the student, then the student will be asked to stop working at the official end of lab. It is the expectation of faculty that ALL students will compete ALL assignments during the assigned laboratory time.
11. Final Compounded Sterile Preparation (CSP):
   a. Students should be outside of lab ready to go 15 minutes prior to their final start time.
   b. Students who are unsuccessful on their first attempt should plan to complete the second attempt during the same lab session at the first available time.
   c. Students who are unsuccessful on their second attempt will complete their third attempt during the next regularly scheduled lab time. The course coordinator will serve as a second grader on third attempts.
   d. A student must earn a 75 or higher to pass the final CSP.
   e. A student not passing the final CSP will receive an F for the course.
   f. The student has three attempts to pass the final CSP. The student will receive a 10 point deduction to their grade for each remake after the initial attempt (i.e., first attempt has no deduction, second attempt has a 10 point deduction, and third attempt has a 20 point deduction). These point deductions equate to one letter grade for each attempt. Point deductions for second and third attempts will be taken after the preparation has been graded such that the student can pass the preparation with a score of greater than 75 yet receive a posted score of less than 75 in the gradebook. For example, a student fails the final CSP on their first attempt. On the second attempt, the student scores 83 points. The student has passed the final CSP because they scored higher than 75 points; however, the student will receive a grade of 73 in the grade book (83 minus 10 points for the second attempt) for the final CSP.

Attendance: It is your responsibility to attend pre-lab and lab and conduct yourself in a manner respectful to both faculty and fellow students. If you miss pre-lab or lab for any reason, you will be held responsible for all material covered and announcements made in your absence.

Attendance will be taken at the beginning of each lecture and pre-lab session via sign-in sheet, roll call, or Canvas quiz. Lecture (PHM 183F) attendance is factored into grades for PHM 183G.

If you are absent from pre-lab, you are responsible for watching the pre-lab lecture PRIOR to attending your next scheduled lab. Pre-lab lectures will be recorded and videostreamed in Canvas. The lab coordinator may deny admission to any student who missed pre-lab and did not watch the video before attending lab.

Students who miss lab must make up all missed activities prior to moving on to the next lab’s materials.

Permission to Miss Class for Attendance at Professional Meetings: It is the student’s responsibility to ASK permission IN ADVANCE if they plan to attend a professional meeting, which would necessitate missing an exam. It is at the discretion of the instructor as to whether to grant permission and allow the student to make up any missed work.

Religious Holy Days: By UT Austin policy, you must notify the instructor of your pending absence at least fourteen days prior to the date of observance of a religious holy day. If you must miss a class, an examination, a work assignment, or a project in order to observe a religious holy day, you will be given an opportunity to complete the missed work within a reasonable time after the absence.

Cell/Smart Phones and Laptops:
- Cell phones should never be heard during pre-lab or lab. Out of respect to others in the class, including instructors, silence phones or turn them off prior to the beginning of class and lab.
- Cell phones should not be used during pre-lab or lab. Sending or reading text messages
• Sending or reading emails during pre-lab or lab is unacceptable.
• Laptops may be used during pre-lab for taking notes.
• Using your laptop for activities other than taking notes causes a disruption to the classroom environment to those around you.
• Penalties for misuse are at the discretion of the instructor.

Course Website and Communications: Accessible only to students registered in the course via Canvas at http://canvas.utexas.edu. UTEID and password are required. Canvas will contain copies of PowerPoint slide presentations, learning objectives, case studies, the course syllabus, and other course materials.

Messaging through Canvas is the official method for faculty to communicate with students in this course. Please keep your email address on UT DIRECT current at all times. Support for Canvas is provided by the ITS Help Desk. For helpdesk availability and support options, see https://it.utexas.edu. For student tutorials related to Canvas, see https://utexas.instructure.com/courses/633028/pages/student-tutorials.

Use of E-Mail for Official Correspondence to Students: E-mail is recognized as an official mode of university correspondence; therefore, you are responsible for reading your e-mail for university and course-related information and announcements. You are responsible to keep the university informed about changes to your e-mail address. You should check your e-mail regularly and frequently—I recommend daily—to stay current with university-related communications, some of which may be time-critical. Link to update your email address in UT DIRECT: https://registrar.utexas.edu/services.

Canvas Communications: Please make sure to set your Canvas settings such that you receive emails and announcement notifications in a timely manner. The student is responsible for accessing and reading any announcement that is posted in Canvas.

To edit your Canvas settings, click on “Account” on the left-hand column of the screen. Then, select “Notifications”. You can select how often you receive notifications from the course via Canvas. I recommend setting Announcements, Conversations, et al to be sent to you right away so that you receive emails immediately. You can choose how often you want to receive notifications from Canvas—either right away, daily, weekly or never. Regardless of your personal settings, you are responsible for any course changes or communications that are posted in Canvas. In addition, if you click on “Settings” in the left-hand column, you may link your settings to additional email accounts, Facebook, Twitter, etc.

Redistribution of Class Recordings: Our classroom is equipped with a lecture recording system. These recordings are made available by the University of Texas, and are intended solely for the purpose of review by students currently enrolled in this class. Students utilizing class recordings should be careful to not compromise the privacy of either themselves or other users (https://registrar.utexas.edu/students/records/ferpa). Additional distribution of University- or student-generated recordings (regardless of format) is prohibited without the written and signed permission of the presenter and all students identifiable on the recording.

Please remember that this service is offered to supplement (not replace) lecture attendance. An issue might arise that could prevent material from being made available in a timely fashion or at all. Although every effort will be taken to keep the system running, the College does not guarantee the availability of these recordings. Attending class is the only way to insure your viewing of the professor's presentation.
**University of Texas Honor Code:** The core values of The University of Texas at Austin are learning, discovery, freedom, leadership, individual opportunity, and responsibility. Each member of the university is expected to uphold these values through integrity, honesty, trust, fairness, and respect toward peers and community.

**College of Pharmacy Honor Code:** Students are also expected to uphold the University of Texas at Austin College of Pharmacy Honor Code, which may be located for your review at [https://pharmacy.utexas.edu/students/programs-of-study/pharm-d-program/pharm-d-student-handbook/codes-of-conduct-and-professionalism/#honorcode](https://pharmacy.utexas.edu/students/programs-of-study/pharm-d-program/pharm-d-student-handbook/codes-of-conduct-and-professionalism/#honorcode).

**Scholastic Dishonesty:** Students are expected to work independently on graded preparations, problem boxes, and math quizzes. Any student engaging in academic dishonesty will be given an appropriate penalty, including possible failure of the course. Any case of academic dishonesty will be reported to the Dean’s Office of the College of Pharmacy and to the University Dean of Students, as per University regulations.

Students who violate University rules on scholastic dishonesty are subject to disciplinary penalties, including the possibility of failure in the course and/or dismissal from the University. Since such dishonesty harms the individual, all students, and the integrity of the University, policies on scholastic dishonesty will be strictly enforced. For further information, visit the Student Conduct and Academic Integrity website at: [http://deanofstudents.utexas.edu/conduct/](http://deanofstudents.utexas.edu/conduct/).

Common examples of scholastic dishonesty include, but are not limited to, the following:

1. Looking at and copying answers from another student’s exam or quiz paper.
2. The use of crib notes or crib sheets.
3. Writing information for testing purposes on concealed paper, desks, skin, clothing or other material.
4. Stealing copies of the exam.
5. Changing answers after the exam period is completed.
6. Use of programmable calculators or computers for concealing information.
7. Talking to another student during an exam or quiz.
8. Any other act that gives a student an unfair advantage on an exam or quiz as compared with classmates.

NOTE: It is considered scholastic dishonesty to discuss a graded preparation with other students in your lab section or another lab section. Each graded preparation has an honor code clause that you will be asked to read and sign. Violation of this policy will result in a zero on the preparation that was discussed.

**Emergency Evacuation:** Occupants of buildings on the UT Austin campus are required to evacuate and assemble outside when a fire alarm is activated or an announcement is made. Please be aware of the following policies regarding evacuation: Familiarize yourself with all exit doors of the classroom and the building. Remember that the nearest exit door may not be the one you used when you entered the building.

If you require assistance to evacuate, inform me in writing during the first week of class. In the event of an evacuation, follow my instructions or those of class instructors. Do not re-enter a building unless you are given instructions by the Austin Fire Department, the UT Austin Police Department, or the Fire Prevention Services office.
Qualified Students with Disabilities: The University of Texas at Austin provides, upon request, appropriate academic adjustments for qualified students with disabilities. All University rules concerning accommodations must be followed, including the student arranging for special accommodations at least two weeks prior to the examination. In the absence of such prearrangement, the student will be expected to take the exam with the rest of the class at the regularly scheduled exam time. Students with disabilities may request appropriate academic accommodations from the Division of Diversity and Community Engagement, Services for Students with Disabilities, 512-471-6259 (voice), 512-410-6644 (video phone), or http://ddce.utexas.edu/disability/about/.

Behavior Concerns Advice Line (BCAL): If you are worried about someone who is acting differently, you may use the Behavior Concerns Advice Line to discuss by phone your concerns about another individual’s behavior. This service is provided through a partnership among the Office of the Dean of Students, the Counseling and Mental Health Center (CMHC), the Employee Assistance Program (EAP), and The University of Texas Police Department (UTPD). Call 512-232-5050 or visit http://besafe.utexas.edu/behavior-concerns-advice-line.

Campus Carry: Students should familiarize themselves with the information provided by the University regarding the implementation of “Campus Carry” legislation. You will find an information sheet specifically for students (as well as sheets for parents, visitors, faculty, and staff) at https://campuscarry.utexas.edu/information.
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| July 15   | Lecture: Course Information - Introduction to Basic Intravenous Admixtures  
Pre-Lab for Lab 1                                                                                                    |
| July 17   | Lecture: Sterile Product Containers and IV Therapy  
Pre-Lab for Lab 2                                                                                                      |
| July 22   | Lecture: Introduction to References – must bring laptop  
Pre-Lab for Lab 3  
Math Quiz in Pre-Lab at 11:30 am                                                                                         |
| July 23   | **Interim assignment: reference quiz due at 2359**                                                                                   |
| July 24   | Lecture: Laminar Air Flow System/Isolators and Techniques  
*Dr. Wilson*  
Pre-Lab for Lab 4                                                                                                      |
| July 29   | Lecture: Routes and Dosage Forms of Parenteral Therapy  
Pre-Lab for Lab 5                                                                                                      |
| July 31   | **Exam 1 at 9 am**  
10:15 am Lecture and Pre-Lab: USP <800> Handling Hazardous Drugs  
*Dr. Wilson*                                                                                                              |
| August 5  | Lecture and Pre-Lab: USP <797>                                                                                                      |
| August 6  | **Interim assignment: USP <797> quiz due at 2359**                                                                                     |
| August 7  | Lecture and Pre-Lab: Total Parenteral Nutrition  
Erin Tharby, P4 Pharmacist Intern on Academic Rotation                                                                         |
| August 12 | Sterile Compounding for Pediatric Patients  
Dr. Latiolais  
Exam 2 in Pre-Lab at 11 am  
Included on Exam 2 are the following pre-recorded lectures from Fall 2018: Medication Errors and TSBP Update |
| August 14 | **Course Evaluations, Exam Review, and Letter Distribution**  
Letters are required for internships during the P4 year in which sterile compounding is involved. |
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<th>Lab</th>
<th>Date</th>
<th>Topics</th>
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<tbody>
<tr>
<td>1</td>
<td>July 16</td>
<td>Introduction, orientation to lab, procedures and policies, garbing, hand-washing, sterile gloves, Gloved Fingertip Sampling hood-cleaning, use of syringes and needles</td>
</tr>
<tr>
<td>2</td>
<td>July 18</td>
<td>Syringe/needle assembly, needle insertion into vial, withdraw fluid from vial, troubleshoot bubbles and inject into large volume IV fluid; ampules and filter needles; prepare compounded sterile preparations (CSP) based on orders</td>
</tr>
<tr>
<td>3</td>
<td>July 23</td>
<td>Fractional saline, powder reconstitution, dose and rate calculations, ampules and filter needles, group work</td>
</tr>
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</table>
| 4   | July 25 | Powder reconstitution, use of references, USP <797> application, assorted products, group work  
**Homework due before lab starts: Additive Profile Practice** |
| 5   | July 30 | Use of references, USP <797> application, assorted products, group work  
**Mock graded preparation** |
| 6   | August 1 | Hazardous drugs, media fill, isolator, environmental testing  
**Homework due before lab starts: Fluorouracil Additive Profile**  
**Graded preparation (Media Fill)** |
| 7   | August 6 | Complex infusion rates, compatibility and stability, assorted products, group work  
**Graded preparation (Mid-Term)** |
| 8   | August 8 | Complex infusion rates, compatibility and stability, mEq and mMol, assorted products  
**Graded preparation (Pre-Final)** |
| 9   | August 13 | **Graded preparation (Final)** |
| 10  | August 15 | Final preparation retesting, if necessary |