# Course Syllabus

**Intravenous Admixture & Sterile Compounding**  
**PHRA 1345**

| **Semester with Course Reference Number (CRN)** | **Fall 2011**  
| **CRN 56685** |
|---|---|
| **Instructor contact information (phone number and email address)** | Ms Janet Pena, BBA, CPhT, PhTR  
Phone: 713-718-7665  
Email: janet.pena@hccs.edu |
| **Office Location and Hours** | Office: 304-3  
Monday 1:00 p.m. – 3:00 p.m.  
Friday 9:00 a.m. – 12:00 p.m.  
*or by appointment* |
| **Course Location/Times** | Texas Medical Center – John P. McGovern Campus  
2450 Holcombe Blvd, Suite 3  
Houston, TX 77021  
**LECTURE** Room 3-07  
Monday: 8:00 a.m. – 12 Noon  
**LAB** Room 3-17  
TWR: 7:30 a.m. – 10:10 a.m., 10:20 a.m. – 1:00 p.m., 1:30 p.m. – 4:30 p.m. |
| **Course Semester Credit Hours (SCH) (lecture, lab) If applicable** | Credit Hours 3.00  
Lecture Hours 4.00  
Laboratory Hours 8.00 |
| **Total Course Contact Hours** | 96 |
| **Course Length (number of weeks)** | 8 weeks |
| **Type of Instruction** | Lecture/Lab  
Web Enhanced |
<table>
<thead>
<tr>
<th>Course Description:</th>
<th>The process of compounding sterile preparations and aseptic technique within legal and regulatory guidelines specified by USP 797 standards.</th>
</tr>
</thead>
</table>
| Course Prerequisite(s) | PREREQUISITE(S):  
  - HPRS 1201 with a minimum grade of B or better Admission into the Pharmacy Technician Program and  
  - MATH 0308 with a minimum grade of C or better and  
  - GUST 0341 with a minimum grade of C or better and  
  - ENGL 0300 with a minimum grade of C or better and |
| Program Learning Outcomes | 1. Apply pharmaceutical and medical terminology and abbreviations used in processing medication orders and sterile product labels.  
  2. Demonstrate procedures and techniques consistent with USP 797 standards.  
  4. Demonstrate safe handling and preparation of hazardous drugs. |
| Course Student Learning Outcomes (SLO) | 1. Recognize pharmaceutical/medical terms, abbreviations, and symbols commonly used in sterile product compounding.  
  2. Demonstrate procedures and techniques relating to aseptic compounding and parenteral admixture operations.  
  3. Deduce the calculations required for the usual dosage determinations and solution preparations. |
| Learning Objectives | Recognize pharmaceutical/medical terms, abbreviations, and symbols commonly used in sterile product compounding.  
  1. Memorize and recall common medical and pharmaceutical vocabulary, abbreviation and symbols used in sterile product compounding.  
  2. Translate and transcribe sterile product medication orders and labels accurately.  
  Demonstrate procedures and techniques relating to aseptic compounding and parenteral admixture operations.  
  1. Manipulate needles, syringes, vials, ampules and other required sterile supplies correctly during sterile compounding following correct aseptic procedures.  
  2. Prepare sterile IVPB, SVP, LVP, TPN, syringes, and chemotherapy products following USP 797 sterile compounding guidelines.  
  3. Demonstrate and articulate the proper procedures for hand washing, environmental control cleaning and garbing required in the preparation of sterile products using correct aseptic technique.  
  Deduce the calculations required for the usual dosage determinations and solution preparations.  
  1. Calculate the correct quantity and volume of medication needed to compound various sterile products.  
  2. Calculate the powder volume, diluent volume and/or total volume of a reconstituted medication vial.  
  3. Calculate the infusion rate and frequency of various I.V. solutions. |
| SCANS | SCANS  
  Recognize pharmaceutical/medical terms, abbreviations, and symbols commonly used in sterile product compounding.  
  Foundation Skills - Basic - Reading  
  Foundation Skills - Basic - Mathematics  
  Foundation Skills - Basic - Listening  
  Demonstrate procedures and techniques relating to aseptic compounding |
and parenteral admixture operations.

Foundation Skills - Thinking - Decision Making
Foundation Skills - Thinking - Problem Solving
Foundation Skills - Thinking - Knowing How to Learn
Foundation Skills - Thinking - Reasoning

**Deduce the calculations required for the usual dosage determinations and solution preparations.**

Foundation Skills - Basic - Reading
Foundation Skills - Basic - Mathematics
Foundation Skills - Thinking - Problem Solving
Foundation Skills - Thinking - Knowing How to Learn

<table>
<thead>
<tr>
<th>Instructional Methods</th>
<th>Face to Face</th>
<th>Other</th>
<th>Web-enhanced (49% or less)</th>
<th>Lab</th>
</tr>
</thead>
</table>

| Student Assignments | Recognize pharmaceutical/medical terms, abbreviations, and symbols commonly used in sterile product compounding. Discussions
Various assigned readings from textbooks, peer-rev Lab assignments and online assignments related to transcribing sterile preparation orders. | Demonstrates procedures and techniques relating to aseptic compounding and parenteral admixture operations. Various assigned readings from textbooks, peer-rev Discussions Papers Presentations Portfolios Prepare a portfolio demonstrating understanding of all materials covered in lecture and lab including handouts and materials provided online by instructor and researched by student. Multiple homework assignments for practice from lab manual and lab practice of hands-on skills twice weekly to reinforce didactic learning. **Deduce the calculations required for the usual dosage determinations and solution preparations.** Various assigned readings from textbooks, peer-rev Discussions Lecture, and Lab reinforce homework and online assignments and review daily calculations and tasks Pharmacy Technicians will be required to perform in a sterile pharmacy environment. |

| Student Assessment(s) | Recognize pharmaceutical/medical terms, abbreviations, and symbols commonly used in sterile product compounding. In-class discussions Laboratory skills transcribing sterile preparation orders from physicians orders into IV preparations. **Demonstrate procedures and techniques relating to aseptic compounding and parenteral admixture operations.** In-class discussions Laboratory skills demonstrating mastery of USP 797 approved technique in manipulations with sterile equipment and supplies, aseptic techniques in all aspects of sterile compounding such as hand washing, hood cleaning, preparation of ampules, liquid and powder vials, large and small volume preparations and chemotherapy preparations. **Deduce the calculations required for the usual dosage determinations and solution preparations.** In-class discussions |
### Instructor's Requirements

- Assignments have been developed that will enhance your learning. To better understand a topic, you will be given assignments on key information that you will need to remember for your success in your career as an educator. Please check the course calendar for specific assignment.

- The lecture exam/test/quiz/assignment format will consist of short answer and/or essay, multiple choice, and/or T/F type questions. The final examination will be comprehensive over all materials covered in the textbooks/ assignments/lecture plus all skills demonstrated in lab. Assignments, quizzes, exams and tests may be either paper format or computer based.

- Any assignment and/or lecture exam that is computer based will be administered and submitted for grading using Blackboard (LMS). Students will only be allowed access to Blackboard or other Learning Management System (LMS) in order to take their exams if they are physically present at Coleman College on the scheduled day and times as indicated on the class assignment schedule. In addition, students will need their unique assigned login I.D. and password to log on to Blackboard (LMS) to complete assignments and exams. **Any student, who does not have their I.D. and password to log-on to Blackboard (LMS) to take an exam, will not be allowed to take the exam and will receive a grade of zero.**

- All quizzes, exams and the course final exam must be taken at the schedule time and scheduled day. You must complete the quiz, exams and the final exam within the class time allocated for the assessment. Students who arrive late will not have additional time in which to complete. If you arrive after any student has completed the quiz, exam or the final exam and left the room, you **WILL NOT** be allowed to take the quiz, exam or final exam and will be given a grade of zero “0”.

- The only exceptions to the above policy are hospitalization or a physician’s statement prohibiting the student from taking the final exam. If a student misses the final exam due to an exception, the make-up for the final exam exception will be at the discretion of the instructor and must be taken within thirty (30) days after the end of the semester. Not being properly prepared will not be considered an exception.

- Students are expected to complete all reading assignments before the beginning of the class period in which the reading is due. Additional readings/homework not listed on the course schedule may also be assigned.

- **Students are required to complete and turn in all homework assigned by the instructor.** Students will be given homework/participation points for completing and turning in the assignments. Most assignments will have a key posted on Blackboard (LMS) after the assignment due date has closed. It is the student’s responsibility to check their returned homework/assignments against the posted key to determine if they had completed the assignment correctly and have mastered the content.

- For assignments submitted in person, the assignments are due at the
BEGINNING of the class period. For assignments submitted via blackboard, the assignments are due by the posted DUE DATE & TIME. Online assignments are not accepted if they are not submitted according to the specific posted assignment directions or in the format listed in the PHRA 1345 syllabus.

- Students are required to adhere to the following guidelines for submitting assignments. Assignments not submitted as outlined in the syllabus or on the assignment schedule will receive a reduction in points.

- All submitted assignments (in-person or via Blackboard (LMS) must adhere to the following guidelines:

  1. **HEADING:** All homework must include a heading (upper right corner of paper) in the following format:

     | Student Name |
     | PHRA 1345 |
     | Date Due |
     | Assignment Name |

     LECTURE

  2. **DO NOT** write out question & answer when answering multiple choice, T/F, or matching type questions. Only submit the question # and corresponding answer letter. Write out a response if the question is a short answer type question requiring a 1 to 2 word answer. For example:

     1. A
     2. B
     3. D

     1. IVPB
     2. IM
     3. TPN

  3. All homework submissions for essay questions & other writing assignments MUST be typed or computer generated. **HANDWRITTEN** essay/writing assignments **WILL NOT** be accepted.

  4. All on-line assignments must be submitted via Blackboard (LMS) in a MS word or html file. **DO NOT SUBMIT** online assignments in any...
Than MS word or html. The assignment file name should be in the following format: last name, first initial_assignment name. For example the file name for Bob Johnson’s IV admixture assignment would be: johnsonb_IVadmixture

5. Any assignment that does not adhere to the above formatting guidelines will be subject to a deduction in points or a “zero” for the assignment.

- Students, who are absent, late, leave early, choose not to participate, work problems, turn-in assignments or who are not otherwise properly prepared for class will not receive participation credit for that particular Lecture/lab day.

LATE ASSIGNMENTS WILL NOT BE ACCEPTED

- The student will be expected to fully participate in and attend all lab periods. In addition, it is expected that the student arrive to lab on time, preferably 15 minutes earlier to allow student time to prepare for skills practice as most instructional demonstrations occur within the first 10 minutes of the lab period.

- During the laboratory sessions, the student will be required to demonstrate proper aseptic technique in all areas covered as taught in this course. Students must pass (100% competent) all lab skills that pertain to sterile products training. Students must also demonstrate an overall competency in sterile products preparation.

- Students will be required to wear clean, pressed scrubs to each lab. Any student who fails to wear clean, pressed scrubs to any lab will not be allowed to participate and no makeup for the missed lab will be provided. Note: The Pharmacy Technician Program does not provide scrubs.

- Students will be expected to perform lab skills in a quick, efficient, and effective manner for tests. Therefore, any student having difficulty in lab has the option of scheduling lab tutoring for extra practice.

- Students must attend their regular lab times in order to participate in lab tutoring. Lab tutoring is not a substitute for attending a scheduled lab period. Students who do not attend their scheduled lab period will not be allowed to request lab tutoring. Check with instructor to schedule lab tutoring.

<table>
<thead>
<tr>
<th>Program/Discipline Requirements: If applicable</th>
<th>As your Instructor, it is my responsibility to:</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>1. Provide the grading scale and detailed grading formula explaining how student grades are to be derived</td>
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<tr>
<td></td>
<td>2. Facilitate an effective learning environment through class activities, discussions, and lectures</td>
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<td></td>
<td>3. Description of any special projects or assignments</td>
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<td></td>
<td>4. Inform students of policies such as attendance, withdrawal, tardiness and make up</td>
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<tr>
<td></td>
<td>5. Provide the course outline and class calendar which will include a description</td>
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</tbody>
</table>
To be successful in this class, it is the student's responsibility to:
1. Come to class regularly. You cannot learn if you are not present.
2. While in class, be PRESENT. It's not enough just to be in the room.
   Consciously attend to what is going on. Take part in exercises and discussions.
3. Come to class prepared. The majority of what you learn takes place OUTSIDE OF CLASS.
   The information covered in class is only preparation for the learning you do in between sessions.
4. LISTEN! You were given two ears and one mouth. See how much you can learn from the ideas of others.
5. CONCENTRATE. Concentration is a SKILL. You are capable of doing it. You do it all the time. Find out what distracts you, and control it. Find out what helps you concentrate, and use it.
6. Develop INTERNAL MOTIVATION. Self-motivation is the key to success in any area of life.
   Studying and being present in class is no exception. The key to self motivation is finding how each subject applies to you and your own world. Only YOU can self-motivate!
7. ALWAYS COME TO CLASS PREPARED! Unprepared, you cannot take advantage of what is happening in class, or add to learning experience. TAKE NOTES!
8. Ask QUESTIONS. Questions are a major link to real learning. Ask questions in class to clarify your understanding. The only bad question is the one that goes unasked. Your brain does not like unanswered questions. If you really ASK, your brain will look for answers.

Pharmacy Technician Program ID Badges:
Students are required to purchase a Coleman College Picture ID badge at orientation prior to the beginning of classes. The cost of these ID badges is approximately $15.00. The Coleman Picture ID badges are a part of the Pharmacy Technician Program dress code and are required for entry into Suite #3 at the McGovern Campus. These ID badges MUST be worn to all classes and lab sessions. STUDENTS who DO NOT wear their approved ID badge MAY NOT BE ALLOWED ACCESS into the McGovern Suite #3 and will miss class and points for that class/lab period. Student ID badges must be worn in the designed manner, the photo MUST NOT be covered-up and the photo MUST be facing outward, so that it is visible at all times. Stickers and other decorations are not allowed on the ID badge. ID Badges must be returned on the last day of classes, as they are the property of Coleman College. (If a student is part-time the badges will be returned to them during the first day of orientation for the new semester.)

McGovern Building Access Card – Students will be issued a card that allows them access to the 2450 John P. McGovern Campus, Entrance #81 and the garden area doors ONLY. This building access card MUST be scanned by EACH student whenever entering the building for security purposes and by order of the fire marshall. You must present your Coleman student ID badge to the Police office at the front desk along with your McGovern access card for entry into the building, otherwise you may be
*denied access into the building.* If you scan your card and attempt to enter the building at other entrances you will be denied access and it will set off a silent alarm to alert the TMC security officers, who will call the Pharmacy Program. If this continues to occur, your ID badge will be confiscated.

**Pharmacy Program Lab Dress Codes:**

PHRA 1345
Pharmacy approved surgical scrubs (Ceil color). Approved Coleman College ID Badge. **No makeup.** No Jewelry (including: earrings, rings, watches, bracelets, body piercings, etc). Fingernails must be clean, manicured, and ½ cm or shorter. Nail polish and fake/solar nails are not allowed. Shoes (tennis or other) must be approved and fit into shoe covers. All hair must be pulled away from face and fit into approved surgical caps. Persons with facial hair with be required to wear beard covers.

Students who fail to comply with the printed dress code may be dismissed from class, lab and/or may be subject to a reduction in course, lab grade

<table>
<thead>
<tr>
<th>HCC Grading Scale</th>
<th>Final Grade Point Distribution:</th>
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<tbody>
<tr>
<td><strong>Lecture</strong></td>
<td></td>
</tr>
<tr>
<td>3 major exams----------------------------------------- 45%</td>
<td></td>
</tr>
<tr>
<td>“Pass” or “Fail”</td>
<td></td>
</tr>
<tr>
<td>Lecture &amp; Lab Attendance/Lecture Participation--------10%</td>
<td></td>
</tr>
<tr>
<td><strong>LAB</strong></td>
<td></td>
</tr>
<tr>
<td>LAB TEST (USP, Chapter &lt;797&gt;)--------------------------10%</td>
<td></td>
</tr>
<tr>
<td>Quizzes -------------------------------------------------15%</td>
<td></td>
</tr>
<tr>
<td>Final Exam ---------------------------------------------20%</td>
<td></td>
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<tr>
<td>TOTAL -----------------------------------------------100%</td>
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</tbody>
</table>

**Grading System:**

**CLASSROOM**

- **A** = 100 – 90%
- **B** = 89 – 80%
- **C** = 79 – 70%
- **F** = 69 - 0%

**LAB**

- “Pass” or “Fail”

**No D’s will be given in this class**

No Extra Credit is offered in this class.
Regarding students who either never attended or stop attending class (without withdrawing themselves), the following processes must be observed:

**Assign the new final grade of “FX” to students who stopped attending class:**
The Department of Education now requires that we make a distinction between an “earned” grade of “F” (i.e. for poor performance) and a grade of “F” due to a lack of attendance. To make that distinction, we have created a new grade, “FX” for failure due to lack of attendance. Starting in the fall, a field requiring the last date of educational activity will also be required if a grade of FX is assigned. Faculty will not be allowed the option of submitting a grade change form changing the grade of FX (or F) to W, if the student stopped attending class.

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**EGLS3 -- Evaluation for Greater Learning Student Survey System**

At Houston Community College, professors believe that thoughtful student feedback is necessary to improve teaching and learning. During a designated time, you will be asked to answer a short online survey of research-based questions related to instruction. The anonymous results of the survey will be made available to your professors and division chairs for continual improvement of instruction. Look for the survey as part of the Houston Community College Student System online near the end of the term.

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**Instructor Grading Criteria**

PLEASE NOTE: PHRA 1345 Requires 100% competency in Lab section in order to pass this component and receive the "pass" grade required to be averaged with the lecture component grade required to receive a passing grade in this course. If a student does NOT receive a "passing" grade in lab or a "70% grade in lecture of PHRA 1345 then the student will FAIL then entire course and be required to return to complete both components of this course again.

**PHRA 1345 Grading Criteria**

PHRA 1345 is divided into two (2) separate sections Section 1) lecture and Section 2) lab. The grade from each of these sections (lecture and lab) will be calculated separately. Section 1) lecture grade will be based on the traditional grading scale where the student must maintain a minimum average of 70% to pass the lecture portion. Section 2) lab skills are based on the student being graded on a “pass” or “fail” basis. The final grade for the PHRA 1345 course will be the final grade received in lecture as long as ALL SKILLS tests are “passed” in Section 2) lab. (If a student receives any “fail” in the lab portion, the grades will NOT be added to lecture.) All other non-skills based lab grades (attendance/participation, quizzes, homework, etc) will be graded on a traditional grading scale and those grades will be factored into the student’s final course grade at a value of 10%.

Any student who does not maintain the minimum average in Section 1) lecture (70%) or the minimum grade in Section 2) lab (“pass”) will receive a failing grade for the entire course and will be required to take the entire course over, not just the failed section. (NOTE: All sterile products lab skills competencies must be completed with 100% accuracy to receive a “pass” grade for EACH skill.)

**LAB GRADING:**
The PHRA 1345 lab will consist of sterile product preparation. The student’s competency on sterile product labs will be determined by achieving 100% on lab
skills tests.
Sterile products lab skill competencies will not be graded on a point system. Competency in sterile products preparation and aseptic technique is determined by the instructor’s evaluation of the student’s performance. Process validation checklists will be used as a tool in the evaluation of each student’s competency in specific aseptic techniques and sterile product preparations. These process validation checklists will be given to the student prior to evaluation.

**The student will be required to pass each evaluation with 100% competency or the student will not receive a passing lab grade & must retake the entire course.**

The student will also be required to demonstrate an overall competency in aseptic technique and sterile product preparation. Final student lab evaluations will be a combination of the process validation checklist and overall competency in sterile products preparation.

*The student must realize that passing each process validation checklist and attending lab does not guarantee that the student will receive a passing grade. Again, the student must demonstrate overall competency in preparing sterile products.*

NOTE: Student’s competency will be determined by the instructor’s professional knowledge and evaluation.

<table>
<thead>
<tr>
<th>Instructional Materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;Texas State Board of Pharmacy Laws &amp; Regulations&quot;, LexisNexus, most current edition</td>
</tr>
<tr>
<td>&quot;Pharmacy Calculations for the Pharmacy Technician&quot;, Barbara E. Lacher, LWW Pharmacy Technician Education Series, 2008</td>
</tr>
<tr>
<td>&quot;Pharmacy Practice for Technicians&quot;, Durgin, Jane &amp; Hanan, Zachary, Delmar Cengage, 2009</td>
</tr>
<tr>
<td>&quot;Generic-Brand Comparison Handbook&quot;, Publisher: Mylan/UDL Laboratories</td>
</tr>
<tr>
<td>&quot;Pharmacy Education Resources National Intravenous Training Manual&quot;, Parks, Wilroy, Garcia, Publisher: Pharmacy Education Resources Inc., 2010</td>
</tr>
<tr>
<td>Basic non-programmable Calculator - no cell phones, PDA’s, etc. allowed</td>
</tr>
<tr>
<td>SCANTRON #882-ES answer sheets for Final Exam</td>
</tr>
<tr>
<td>#2 Lead Pencil for SCANTRON Form</td>
</tr>
<tr>
<td>&quot;Clean pressed (Ceil colored) surgical scrubs for lab participation</td>
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<tr>
<td>Active HCCS e-mail address</td>
</tr>
</tbody>
</table>

NOTE: Students WILL be REQUIRED to bring all necessary materials/supplies (such as pens/pencils, calculators, handouts, books, etc.) with them to all lecture and lab periods. Students without the necessary materials/supplies will not be allowed to participate in that particular lab session. Students will receive a "0" on any missed lab assignment/lab/quiz/test and will not be allowed to make up the missed item due to not being properly prepared with the necessary materials/supplies.

**HCC Policy Statement:**

Access Student Services Policies on their Web site:  [http://hccs.edu/student-rights](http://hccs.edu/student-rights)

Distance Education and/or Continuing Education Policies

| Access CE Policies on their Web site: | http://hccs.edu/CE-student-guidelines |