

## Intravenous Admixture and Sterile Compounding (PHRA 1345 1A1)

### CREDIT

3 semester credit hours (3 hours lecture and lab)

### MODE OF INSTRUCTION

Online Lecture

Face to Face Lab



**LAMAR INSTITUTE  
OF TECHNOLOGY**

**ACPE Accredited CE Credits:** 40 Hours (4.0 CEUs) Total

**Universal Activity Number (UAN)**

**Home Study & Live Component** 0840-0000-23-002-B07-T (Technicians)



The Austin Community College Pharmacy Technician Program is accredited by the Accreditation Council for Pharmacy Education (ACPE) as a provider of continuing pharmacy education.

### PREREQUISITE/CO-REQUISITE:

Complete the TSI Assessment Tests with 343/Mathematics, 347/Reading, and 357/4/Writing

### COURSE DESCRIPTION

This course combines didactic coursework and hands-on training in sterile compounding and aseptic technique. The course is designed to educate and train pharmacists and technicians in current *USP <797>* standards, and includes instruction and training in the following areas or skills identified in *USP <797>* standards:

- Hand hygiene
- Garbing
- Cleaning and disinfection
- Calculations, measuring, and mixing
- Aseptic technique
- Achieving and maintaining sterility (and apyrogenicity if compounding with nonsterile components)
- Use of equipment
- Documentation of the compounding process (e.g., master formulation and compounding records)
- Principles of high-efficiency particulate air (HEPA)-filtered unidirectional airflow within the ISO Class 5 area
- Proper use of PECs
- Principles of movement of materials and personnel within the compounding area
- Hands-on training and competency assessments include: garbing, hand hygiene, hood cleaning, large and small volume parenteral preparations, controlled substances, pediatric preparations, parenteral nutrition (PN) compounding, and safe handling of hazardous CSPs

This is an ACPE accredited certificate program. This course meets the requirement for accredited training as defined by the Texas State Board of Pharmacy in TAC 291.133.

### COURSE OBJECTIVES

Upon completion of this course, the student will be able to:

- Employ the methods for learning that are best suited to individual learning needs.

- Identify the ethical and legal obligations of sterile compounding personnel, including training and assessment requirements, and the procedures for avoiding and reporting medication errors.
- Describe the pharmacy environment appropriate for sterile compounding as defined by USP Chapter *<797>*.
- Identify supply items used in sterile compounding, and describe appropriate technique to maintain the sterility of their critical sites.
- Translate pharmacy and medical terminology, abbreviations, and symbols that are used on the medication orders and CSP labels utilized in sterile compounding.
- Perform the calculations required for dosage determination and solution preparation.
- Demonstrate aseptic technique in garbing, hand washing, and hood cleaning utilizing technique defined in USP Chapter *<797>*.
- Perform sterile compounding procedures to prepare various vial-based or ampule-based large-volume and small-volume parenteral preparations.
- Prepare specialty admixtures such as narcotic preparations and pediatric CSPs.
- Display appropriate technique in the compounding of a TPN preparation.
- Identify the procedures for handling hazardous materials such as chemotherapy CSPs.
- Exhibit excellent aseptic technique during process validation and assessment of the sterile compounding procedures presented in the textbook.

## **Course Requirement**

Mandatory didactic coursework includes two multiple choice exams over reading, lectures, or other coursework. It may also include quizzes, assignments, reading or other activities as assigned by your instructor.

Mandatory experiential coursework includes two multiple choice exams over lab procedures and US *<797>* standards. Mandatory competencies included: garbing, hand hygiene, cleaning the PEC, and variety of CSP related skills.

Written exams must be passed with a score of *>75%*. Mandatory competency assessment must be passed with a score of *>90%*.

## **Main Educational Objective for Pharmacy Technicians**

- Identify components of and factors affecting compatibility of CSPs
- Perform pharmaceutical calculations required in sterile compounding
- Demonstrate proficiency in garbing, hand hygiene, cleaning and disinfection of PEC, and various CSPs • Apply current *USP <797>* standards to didactic and experiential coursework

Online Weekly	Chapter Readings	Due Dates	Assignment Location
1 1/26/26	Syllabus Student documents		Handouts / Blackboard
2 2/2/26	Chapters 1 & 2	Sunday, 2/7	Chapter Assignments
3 2/9/26	Chapters 3 & 4	Sunday, 2/15	Chapter Assignments
4 2/16/26	Chapters 5 & 6	Sunday, 2/22	Chapter Assignments
5 2/23/26	Chapter 7	Sunday, 3/1	Chapter Assignments
6 3/2/26	Chapters 8 & 9	Sunday, 3/8	Chapter Assignments
7 3/9-13/26	SPRING BREAK	3/9 – 13	Enjoy!!!!
8 3/16/26	Midterm Exam Chaps. 1-9	Sunday, 3/22	Blackboard

<b>9</b> 3/23/26	<b>Chapter 10</b>	<b>Sunday, 3/29</b>	<b>Chapter Assignments</b>
<b>10</b> 3/30/26	<b>Chapter 11</b>	<b>Sunday, 4/5</b>	<b>Chapter Assignments</b>
<b>11</b> 4/6/26	<b>Chapter 12</b>	<b>Sunday, 4/12</b>	<b>Chapter Assignments</b>
<b>12</b> 4/13/26	<b>Chapter 13</b>	<b>Sunday, 4/19</b>	<b>Chapter Assignments</b>
<b>13</b> 4/20/26	<b>Chapter 14</b>	<b>Sunday, 4/26</b>	<b>Chapter Assignments</b>
<b>14</b> 4/27/26	<b>Chapter 15</b>	<b>Sunday, 5/3</b>	<b>Chapter Assignments</b>
<b>15</b> 5/4/26	<b>Chapter 16</b>	<b>Sunday, 5/10</b>	<b>Chapter Assignments</b>
<b>16</b> 5/11/26	<b>Final Exam</b>	<b>Sunday 5/13</b>	<b>Blackboard</b>

Weekly Lab	Lab	Due Dates	Assignment Location
1 1/26/26	Syllabus Student documents		Handouts / Blackboard
2 2/2/26	Lab 1: Using reference materials in Pharmacy Practice  Lab 2: Practicing Professionalism in the Pharmacy	Sunday 2/7/26	Handouts / Blackboard
3 2/9/26	Lab 4: Using a Pseudoephedrine Log Book  Lab 5: Validating DEA Numbers	Sunday 2/15/26	Handouts / Blackboard
4 2/16	Lab 8: Reviewing SIG Codes and creating Patient Instructions  Lab 17: Workflow in the Pharmacy	Sunday 2/22/26	Handouts / Blackboard
5 2/23	Lab 40: Aseptic Handwashing	Sunday 3/1/26	Handouts / Blackboard
6 3/2	Lab 41: Hood Cleaning	Sunday 3/8/26	Handouts / Blackboard
7 3/9-13/26	SPRING BREAK!!!		

<b>8</b> <b>3/16/26</b>	<b>Mid-Term Lab Exam (Weeks 1-6)</b>		
<b>9</b> <b>3/23/26</b>	<b>Lab 42: Preparing Large Volume Parenteral</b>	<b>Sunday 3/29/26</b>	<b>Handouts / Blackboard</b>
<b>10</b> <b>3/30/26</b>	<b>Lab 43: Preparing Small Volume Parenteral</b>	<b>Sunday 4/5/26</b>	<b>Handouts / Blackboard</b>
<b>11</b> <b>4/6/26</b>	<b>Lab 45: Using Ampules</b>	<b>Sunday 4/12/26</b>	<b>Handouts / Blackboard</b>
<b>12</b> <b>4/13/26</b>	<b>Lab 46: Control Substance Preparation</b>	<b>Sunday 4/19/26</b>	<b>Handouts / Blackboard</b>
<b>13</b> <b>4/20/26</b>	<b>Lab 47: Pediatric Preparation</b>	<b>Sunday 4/26/26</b>	<b>Handouts / Blackboard</b>
<b>14</b> <b>4/27/26</b>	<b>Lab 48: Parenteral Nutrition Preparation</b>	<b>Sunday 5/3/26</b>	<b>Handouts / Blackboard</b>
<b>15</b> <b>5/4/26</b>	<b>Lab 46: Compounding Chemotherapy Drugs</b>	<b>Sunday 5/10/26</b>	<b>Handouts / Blackboard</b>
<b>16</b> <b>5/11/26</b>	<b>Cumulative Lab Final Exam</b>		

## INSTRUCTOR CONTACT INFORMATION

Instructor: Dr. Coya Garrett, DHA, M.Ed., BSW, LCDC-I, CPhT-T  
Email: [cagarrett@lit.edu](mailto:cagarrett@lit.edu)  
Office Phone: 409-247-4868  
Office Location: WAHTC – Room 329  
Office Hours: By appt in Starfish

## REQUIRED TEXTBOOK AND MATERIALS

- Sterile Compounding and Aseptic Technique: Concepts, Training, and Assessment for Pharmacy Technician- Text with Student Resources DVD (optional).  
ISBN 978-0-76384-083-9
- Any other materials required will be discussed by the Instructor throughout the course.

## Assessment Requirements for Continuing Education Credit

### Submission of Required Paperwork:

Student Registration Form  
Documentation of Training Hours Form  
Online Evaluation of CPE Activity

**Midterm Exam** - A score of 75% (or higher) is required to receive a passing grade

**Midterm Lab Exam** - A score of 75% (or higher) is required to receive a passing grade

**Final Exam** - A score of 75% (or higher) is required to receive a passing grade

**Final Lab Exam** - A score of 75% (or higher) is required to receive a passing grade

**Competency Assessments (9)** – 90% (or higher) compliance to basic aseptic technique principals

**Homework Assignments/Quizzes/Etc.** A score of 75% (or higher) is required to receive a passing grade

## COURSE EVALUATION

Final grades will be calculated according to the following criteria:

1. Midterm/Final Exam 35%
2. Exams 20%
3. Homework 20%
4. Lab 25%

## GRADE SCALE

- 90-100 A
- 80-89 B
- 70-79 C
- 60-69 D
- 0-59 F

## ATTENDANCE POLICY

Student “attendance” in online courses will be defined as active participation in the course as described in the individual course syllabus. Online courses will, at a minimum have weekly mechanisms for student participation, which can be documented by any or all of the following methods: student tracking records in Blackboard; submission/completion of assignments; and communication with the instructor. Students who fail to maintain active participation in an online course as defined in the course syllabus will be processed in accordance with the College’s current attendance policy.

## **Drop Policy**

If you wish to drop a course, the student is responsible for initiating and dropping the course. If you stop logging-in to the course and do not complete the course drop process, then you will earn an “F” grade for the course.

## **TECHNICAL REQUIREMENTS**

The latest technical requirements, including hardware, compatible browsers, operating systems, etc. can be online at <https://lit.edu/online-learning/online-learning-minimum-computer-requirements>. A functional broadband internet connection, such as DSL, cable, or WiFi is necessary to maximize the use of online technology and resources.

## **DISABILITIES STATEMENT**

The Americans with Disabilities Act of 1990 and Section 504 of the Rehabilitation Act of 1973 are federal anti-discrimination statutes that provide comprehensive civil rights for persons with disabilities. LIT provides reasonable accommodations as defined in the Rehabilitation Act of 1973, Section 504 and the Americans with Disabilities Act of 1990, to students with a diagnosed disability. The Special Populations Office is located in the Eagles’ Nest Room 129 and helps foster a supportive and inclusive educational environment by maintaining partnerships with faculty and staff, as well as promoting awareness among all members of the Lamar Institute of Technology community. If you believe you have a disability requiring an accommodation, please contact the Special Populations Coordinator at (409)-951-5708 or email [specialpopulations@lit.edu](mailto:specialpopulations@lit.edu). You may also visit the online resource at [Special Populations - Lamar Institute of Technology \(lit.edu\)](#).

## **STUDENT CODE OF CONDUCT STATEMENT**

It is the responsibility of all registered Lamar Institute of Technology students to access, read, understand and abide by all published policies, regulations, and procedures listed in the *LIT Catalog and Student Handbook*. The *LIT Catalog and Student Handbook* may be accessed at [www.lit.edu](http://www.lit.edu). Please note that the online version of the *LIT Catalog and Student Handbook* supersedes all other versions of the same document.

## **STARFISH**

LIT utilizes an early alert system called Starfish. Throughout the semester, you may receive emails from Starfish regarding your course grades, attendance, or academic performance. Faculty members record student attendance, raise flags and kudos to express concern or give praise, and you can make an appointment with faculty and staff all through the Starfish home page. You can also login to Blackboard or MyLIT and click on the Starfish link to view academic alerts and detailed information. It is the responsibility of the student to pay attention to these emails and information in Starfish and consider taking the recommended actions. Starfish is used to help you be a successful student at LIT.

## **ADDITIONAL COURSE POLICIES/INFORMATION**

- Students must provide their textbooks, writing instruments, and other necessary supplies for classes.
- Students must respect one another and all the faculty.
- Internet Usage – Students are expected to use proper net etiquette while participating in course emails, assignment submissions, and online discussions.

- No cheating of any kind will be tolerated. Students caught cheating or helping someone to cheat can and will be removed from the class for the semester. Cheating can result in expulsion from LIT.
- All exams will be taken on the scheduled dates. If a test is missed due to an emergency situation, the student will have one week to make it up; otherwise a grade of “0” will be assigned. The instructor MUST be contacted to receive prior approval to take the exam late.
- All assignments are due when stated with no exceptions unless proper documentation is provided.
- Students are expected to follow the Lamar Institute of Technology Code of Conduct and Disciplinary Policy.
- The instructor will respond to e-mail and voice mail communication within 24 hours Monday through Friday. Assignment grades will be published within 1 week.

# SCAT Student Instructions

Effective January 1, 2013, all ACPE accredited continuing education is awarded and tracked by the National Association of Boards of Pharmacy. This system, called *CPE Monitor*, will be a repository where CPE providers will enter identification data provided by CE attendees. ACPE will authenticate the identity of the CE attendee, and validate the CPE activity information. ACPE will electronically forward CE information to NABP who will upload the information into individual E-profiles. Pharmacists, technicians, and state boards of pharmacy will then access this information electronically via a secure password. The only way that you will be able to access proof of your CE credits will be through the *CPE Monitor* system. You MUST create your NABP ePID and eProfile and provide that information, along with your date of birth (month/day) to the CPE administrator in order to be awarded CE credit for this course.

***To earn ACPE Accredited CE in Sterile Compounding and Aseptic Technique (i.e. IV Certification) you must complete the following:***

**1. If you haven't already done so, create your NABP ePID number.**

Go to the NABP website at <https://nabp.pharmacy/programs/cpe-monitor/>

- Click on "Log In To CPE Monitor"
- Click on "Individual" or "Business" customers
- Click on "Create Login"

The statement of CE credit for this course will be provided via the CPE Monitor system. In order to receive proof of CE credit for the SCAT course, your students will need to provide us with their NABP ePID and their date of birth on the student information form. If you have any questions about creating the NABP ePID and e-Profile, please contact NABP customer service at 847-391-4406, or at [nabp.pharmacy/help/](mailto:nabp.pharmacy/help/).

**2. Fill out the Online Student Registration Form.** Obtain the Online Student Registration Form and/or link from your instructor. You MUST fill the online form out completely. Also, please use proper grammar and punctuation. Your entry will be utilized to process your completion documentation. All fields are required for the CPE office to register you for your course and to also process your completion documents. You will not receive your ACPE CPE credits unless you have provided your NABP ePID number, and your date of birth. Upon completion of this online form, you will receive an email from Google Forms. Please retain this email for the duration of the course. If you need to make any additions/changes to your record, please use the link. Do not complete multiple forms to make changes.

**3. Courses must be paid in full prior to the first day of the course. Please follow the directions provided by your instructor to register and pay for the course.** See the ACC policy on reimbursement for withdrawal or for courses canceled due to low enrollment on the course announcement, located at <http://www.austincc.edu>

**4. Purchase the textbook.** Check with your instructor to see if the textbook is available from your campus bookstore. If not, please order the book from the Paradigm website at:

<https://www.paradigmeducation.com/product/sterile-compounding-and-aseptic-technique-second-edition>.

Be sure to order a new textbook with Cirrus online (not a used copy), it is the only way that you will be able to access online resources and training videos that are a required component of this course. The textbook for this course is REQUIRED.

**Textbook:** *Sterile Compounding and Aseptic Technique, 2nd edition*, by Lisa McCartney & Brenda Jensen - Text with online resources via Cirrus

**5. Track your coursework on the Documentation of Training Hours Form.** Your instructor will provide you with the Documentation of Training Hours Form. Fill out the identifying information at the top of the form. As you progress through the course, fill in the number of minutes that you spend working on each chapter.

***Didactic Education:***

- This portion is to be completed by the student.
- Record the number of minutes that you spend reading each chapter, the number of minutes that you spend answering the homework questions, completing quizzes, or studying for exams.
- Add all the chapter minutes in each column separately in the noted boxes (see below). Add column #1 and #2 to determine the total number of minutes spent for your didactic education. Determine the number of hours you spent by taking the total minutes and divide the number 60.  
*NOTE: The amount of time spent on the didactic education portion of this course should total a minimum of 12 hours.*

Example:

Total Minutes Column #1:		Total Minutes Column #2:	
<b>Total Minutes - Lecture, Reading, Homework, &amp; Videos (Add columns #1 &amp; #2):</b>			min.
<b>Total number of HOURS - Lecture, Reading, Homework, &amp; Videos (# mins/60)</b> Documentation of Lecture, Reading, Homework, & Videos must total ≥ 12 hours			<b>Hours</b>

***Dedicated Testing Times:***

- This portion is prefilled.

***Experiential Training & Competency Assessment:***

- This portion is to be completed by the instructor.
- Please refer to your instructor for expectations and instructions.
- You will be required to meet or exceed expectations for all competency assessments.

The Sterile Compounding and Aseptic Technique Course requires a minimum of 12 hours of didactic coursework, eight (8) hours of dedicated testing time, and a minimum of 20 hours of hands-on training for a total of 40 hours. Your Documentation of Training Hours Form should reflect a minimum of 40 hours of total training for the course. Your instructor must validate all of your training hours by signing off on your form and submitting it to the CPE provider at the end of the course. It is your responsibility to track your didactic hours and to submit your Documentation of Training Hours Form to your instructor for further completion at the end of the course. Submission of the Documentation of Training Hours Form is a requirement.

**6. Complete the Didactic Portion of the Course.** Complete all chapters of the textbook, including any reading, quizzes, or homework assigned by your instructor. Your instructor may assign additional readings, PowerPoint lecture materials, or other coursework to be completed on Blackboard or via another delivery method. In addition, you will be required to watch the training videos on the Cirrus online platform or as directed by your instructor. Refer to the course schedule provided by your instructor for course due dates.

**7. Pass two (2) exams over didactic content and two (2) exams over lab content with a score of 75% or higher.** The four exams cover information from your textbook, including the

procedural labs from each chapter. Information will also be gleaned from laboratory activities and training, as well as directly from USP<797>.

- 8. Complete the required hands-on training in a pharmacy cleanroom, segregated compounding area (SCA), or IV lab.** Your instructor will provide you with additional information regarding the mandatory training sessions.
- 9. Complete nine Competency Assessments.** The competency assessment for each of the nine procedural labs must be completed under direct observation of your instructor, with 90% or higher compliance to basic aseptic technique principles as defined in *USP<797>*.
- 10. Return the Documentation of Training Hours Form to your instructor.** The Documentation of Training Hours Form must be completed and returned to your instructor upon completion of the course. You must have tracked and determined that you have met the minimum of 12 hours of didactic training.
- 11. Complete the Online Evaluation of CPE Activity.** Your instructor will provide you with the link for the Online Evaluation of CPE Activity; you must complete this online form. You will not receive your ACPE CPE credits otherwise.

Upon successful completion of this course, outlined in the steps above, your instructor will submit your exams, Competency Assessments, and Documentation of Training Hours Form to the CPE provider - Austin Community College, Pharmacy Technician Program for review. If all paperwork is complete and in order, the student will receive the following:

- A nationally recognized certificate in *Sterile Compounding and Aseptic Technique* from the Austin Community College – Pharmacy Technician Program – Provider of CPE ACPE accredited continuing education. The certificate will be emailed, within 30 days of receipt of final paperwork from the instructor. Completion documents will be sent to the student's email address that was provided on the Online Student Registration Form.
- ACPE accredited continuing education units (CEUs) will be uploaded into CPE Monitor within 60 days of receipt of the final paperwork. ACPE credit will only be uploaded into CPE monitor if you provide your NABP ePID number and date of birth (month/day) on your Online Student Registration Form.