Pharmacy Technology

COURSE NUMBER: PHRA 1349
Institutional Pharmacy Practice

COURSE TIME/LOCATION:

FACULTY NAME:
OFFICE HOURS/LOCATION:
Phone:
Email:
Website:

Arranging conferences/appointments:
Contract the instructor directly via email or phone to set up a conference appointment during scheduled office hours.

Additional staff contact information
Students with questions about the course should contact their instructor. For other questions regarding the Pharmacy Technician Department (PHRA), students may contact the departmental administrative assistant at: 512-223-5941

Lecture
Complete online orientation on blackboard. Online power-point modules and student handouts, all distance learning coursework is to be completed using the BlackBoard online system.

Lab: Mandatory Weekends as Stated in Syllabus Schedule

Prerequisites: None

Required Texts: Pharmacy Practice for Technicians – Ballington and Anderson
Pharmacy Labs for Technicians - Sparks and McCartney

Course Description
CIP 510805 WECM Course Description- Exploration of the unique role and practice of pharmacy technicians in an institutional pharmacy with emphasis on daily pharmacy operation. Topics include hospital pharmacy organization, work flow and personnel, medical and pharmaceutical terminology, safety techniques, data entry, packaging and labeling operations, extemporaneous compounding, inpatient drug distribution systems, unit dose chart fills, quality assurance, drug storage, and inventory control.

End of Course Outcomes
CIP 510805 WECM End of Course Outcomes- Demonstrate a working knowledge of the health care institution and pharmacy department and the organizational and communication systems; utilize medical and pharmaceutical terminology; describe the importance of environmental safety standards, pharmacy safety, and personal safety and hygiene; specify routes of administration including mechanical, automatic, or robotic drug delivery systems; explain the importance of utilizing pharmacy resource materials; and outline the major functions of pharmacy supply and inventory control.
Learning Objectives

- Describe the origins of pharmacy.
- Differentiate among the various kinds of pharmacies.
- Describe four stages of development of the pharmacy profession in the twentieth century.
- Enumerate the functions of the pharmacist.
- Discuss the educational curriculum for today’s pharmacy student.
- Discuss the main objectives of the American Society of Hospital Pharmacists (ASHP) model curriculum for pharmacy technician training.
- Explain the licensing requirements for pharmacists.
- Identify the duties and work environments of the pharmacy technician.
- Distinguish among laws, regulations, professional standards, and ethics.
- List and describe the major impacts on the profession of pharmacy by major pieces of statutory federal drug law in the twentieth century.
- Discuss the role of the Food and Drug Administration, the Drug Enforcement Administration, the Occupational Safety and Health Administration, the United States Pharmacopeial Convention, and the national and state boards of pharmacy.
- Enumerate the duties that may legally be performed by pharmacy technicians in most states.
- Discuss the importance of drug and professional standards.
- Define the term drug and distinguish between active and inert ingredients.
- Identify several scientific discoveries of medications that improved our quality and quantity of life.
- Categorize drugs by source as natural, synthetic, synthesized, or semisynthetic.
- Explain the uses of drugs as therapeutic, pharmacodynamic, diagnostic, prophylactic, and destructive agents.
- Explain the parts of the National Drug Code Number (NDC).
- Define and differentiate between the terms dosage form and route of administration.
- Enumerate and explain the properties of solid, semisolid, liquid, inhalation, and transdermal dosage forms.
- Differentiate among the various delayed-release dosage formulations.
- List the major routes of administration and the advantages and disadvantages associated with each route of administration.
- Discuss correct techniques for administration of injections.
- Describe four systems of measurement commonly used in pharmacy, and convert units from one system to another.
- Explain the meanings of the prefixes most commonly used in metric measurement.
- Convert from one metric unit to another (e.g., grams to milligrams).
- Convert Roman numerals to Arabic numerals.
- Convert time to 24 hour military time.
- Convert temperatures to and from the Fahrenheit and Celsius scales.
- Round decimals up and down.
- Perform basic operations with proportions, including identifying equivalent ratios and finding an unknown quantity in a proportion.
- Convert percentages to and from fractions, ratios, and decimals.
- Perform fundamental dosage calculations and conversions.
- Solve problems involving powder solutions and dilutions.
- Use the alligation method to prepare solutions.
- Calculate the specific gravity of a liquid.
- Define the term compounding, describe common situations in which compounding is required, and identify examples of nonsterile compounding.
- Review and follow good compounding practices in the pharmacy.
- Distinguish terminology, such as manufactured product vs. compounded preparation.
- Describe the classifications and functions of a hospital and the role of the director Identify quality standards for nonsterile compounding contained in USP Chapter 795, including product selection and beyond-use or expiration dating.
• Distinguish the components and purpose of a master control record from a compounding log.
• Understand and calculate common mathematical problems that occur in a compounding pharmacy.
• Identify and describe the equipment used for the weighing, measuring, and compounding of pharmaceuticals.
• Explain the proper technique for weighing pharmaceutical ingredients, measuring liquid volumes, and compounding nonsterile preparations.
• Define the term *percentage of error* and understand how the concept relates to accuracy in the compounding pharmacy.
• Explain the common methods used for communication and blending of pharmaceutical ingredients.
• Discuss the techniques by which solutions, suspensions, ointments, creams, powders, suppositories, and capsules are prepared.
• Identify the steps that are necessary in the compounding process.
• Identify references with a specialty focus on compounding.
• Describe the classifications and functions of a hospital and the role of the director of pharmacy.
• Identify services that are unique to a hospital pharmacy in contrast to a community pharmacy.
• Contrast a medication order with a unit dose profile.
• Identify the advantages of a unit dose drug distribution system.
• Explain the proper procedure for repackaging of medications.
• Identify the process of medication dispensing and filling in a hospital pharmacy.
• Discuss the advantages of an automated floor stock system for medication, including narcotics.
• Describe specialty services, such as intravenous admixtures and total parenteral nutrition.
• Describe a medication administration record (MAR).
• Identify the roles of major hospital committees.
• Describe the role of the institutional review board (IRB) in approving investigational drug studies.
• Describe the role of the pharmacy technician in investigational drug studies.
• Explain the major role and standards of the Joint Commission.
• Discuss the role of automation and inventory control in the hospital.
• Explain the role of pathogenic organisms in causing disease.
• Distinguish among bacteria, viruses, fungi, and protozoa.
• Discuss the advantages and disadvantages of various forms of sterilization.
• Identify sources and prevention of common causes of contamination.
• Discuss the importance of the Centers for Disease Control and Prevention (CDC) guidelines on preventing the transmission of infectious disease within the hospital.
• Contrast hand washing and hand hygiene practices when in a sterile work environment.
• Discuss the importance of vaccinations for healthcare workers.
• Contrast a manufactured sterile product with expiration dating vs. a compounded sterile preparation (CSP) with beyond-use dating according to USP Chapter 797 guidelines.
• Identify procedures to minimize airborne contamination with CSPs.
• Apply contamination risk level designations and appropriate beyond-use dating for CSPs.
• Identify the role of the infection control committee.
• List common universal precautions to protect hospital employees.
• Identify two common methods of delivering IV preparations.
• Describe common characteristics of intravenous solutions including, solubility, osmolality, and pH.
• Identify common vehicles for intravenous solutions.
• Identify the difference between large volume and small volume Parenteral solutions.
• Discuss the preparation of TPN, frozen products, and closed system transfer devices (CSTDs). Differentiate expiration dating and beyond-use dating.
• Identify the role and function of equipment used in IV preparation and administration, including catheters, controllers, syringes, needles, IV sets, and filters.
• Identify the components of an intravenous administration set.
• Calculate intravenous flow rates.
• Discuss the importance of quality assurance.
• Understand the extent of medical and medication errors and their effects on patient health and safety.
• Identify specific categories of medication errors.
• List examples of medication errors commonly seen in pharmacy practice settings.
• Apply a systematic evaluation to search for medication error potential to a pharmacy practice model.
• Define strategies, including use of automation, for preventing medication errors.
• Identify the common systems available for reporting medication errors.
• Explain the role of the pharmacy technician as a member of the customer care team in a pharmacy.
• State the primary rule of retail merchandising.
• Identify and discuss desirable personal characteristics of a pharmacy technician.
• Identify the importance of verbal and nonverbal communication skills.
• Provide guidelines for proper use of the telephone in a pharmacy.
• Identify and resolve linguistic and cultural differences in working with a customer.
• Identify and resolve problems related to mental and physical disabilities in working with a customer.
• Define discrimination and harassment, and explain the proper procedures for dealing with these issues.
• Identify examples of professionalism in the pharmacy.
• Explain the importance of managing change and being a team player in the pharmacy.
• Explain the appropriate responses to rude behavior on the part of others in a workplace situation.
• Define the role of pharmacy personnel in emergency situations in the community.
• Identify and discuss the important areas of the regulations of the Health Insurance Portability and Accountability Act (HIPAA).
• Discuss the importance of protecting patient privacy in the pharmacy.
• Define and differentiate the terms licensure, certification, and registration.
• Define ethics and discuss characteristics of ethical behavior.
• Identify ethical dilemmas that may occur in pharmacy practice.

Textbook

Pharmacy Labs for Technicians – Sparks and McCartney (ISBN 978-0-76383-484-5)

EVC, RGC Book Store

Grading

Lecture = 50% of grade
Exam #1 30%
Exam #2 30%
Written Reports 10%
Quizzes (4) 20%
Blackboard Assignments 10%

Laboratory = 50% of grade
Lab Assignments 20%
Training Lab Quizzes 25%
Order Highlighting Assignments 15%
Midterm Lab Exam 20%
Final Lab Exam 20%

A passing grade (75% or better) is required in both lecture and lab components of the course in order to receive a passing grade for this course.

A minimum passing grade of 75% is required in order to receive a passing grade for the course.
A: 90 – 100%  B: 80 – 89%  C: 75 – 79%  D: 60 – 74%  F: 59% and below
Incomplete
To receive an "I," a student must have a passing average (75% or better) and have completed at least 80% of the course work. The student will NOT be permitted to register for PHRA 2266 (Pharmacy Practicum) until the course has been completed.

An instructor may award a grade of “I” (Incomplete) if a student was unable to complete all of the objectives for the passing grade in a course. An incomplete grade cannot be carried beyond the established date in the following semester. The completion date is determined by the instructor but may not be later than the final deadline for withdrawal in the subsequent semester.

Withdrawal
Before considering withdrawal, please contact the instructor.

It is the responsibility of each student to ensure that his or her name is removed from the roll should he or she decide to withdraw from the class. The instructor does, however, reserve the right to drop a student should he or she feel it is necessary. If a student decides to withdraw, he or she should also verify that the withdrawal is submitted before the Final Withdrawal Date. The student is also strongly encouraged to retain their copy of the withdrawal form for their records. Students who enroll for the third or subsequent time in a course taken since Fall, 2002, may be charged a higher tuition rate, for that course. State law permits students to withdraw from no more than six courses during their entire undergraduate career at Texas public colleges or universities. With certain exceptions, all course withdrawals automatically count towards this limit. Details regarding this policy can be found in the ACC college catalog.

Promotion, Failure, and/or Dismissal from the Department
A minimum grade of "C" (75%) is required in both lecture and laboratory components of all pharmacy technician courses. If a student fails either component of a combined lecture/lab course, the final grade posted will be that of the failed portion of the course.

Any student may be withdrawn from the program due to excessive absences and/or consistently failing to meet class assignments, for disruptive conduct during lecture or lab, or for displaying conduct detrimental to the ethics of a Pharmacy Technician.

The student may utilize the approved Student Grievance Procedure of Austin Community College as detailed in the ACC Student Handbook in the disposition of a grievance or complaint without fear of recrimination or retaliation as a result of filing a grievance.

The Pharmacy Technician faculty and staff understand that learning in group-situations can be beneficial. Some assignments will involve group participation; however, each student is expected to demonstrate his/her own competency by doing his/her own work. Any student caught cheating on examinations or other assignments will be subject to disciplinary action, including academic penalty and possible withdrawal from the program.

Exams
The Pharmacy Technician Program at Austin Community College has adopted a uniform testing policy. **There will be no retests.** If a student misses one exam for a documented medical or family emergency, the grade of the final exam will be averaged in the place of the missed exam grade. If any other exams are missed or if an exam is missed for any other reason, a grade of "0" will be given.

If use of a calculator is permitted on an exam, students are only permitted to use a silent, hand-held, non-programmable calculator without a fraction key. Calculators must only be battery or solar powered. Students using cell phones and other calculators are considered cheating. No notes are allowed on exams.
**Testing Center Policy**
Under certain circumstances, an instructor may have students take an examination in a testing center. Students using the Academic Testing Center must govern themselves according to the Student Guide for Use of ACC Testing Centers and should read the entire guide before going to take the exam. To request an exam, one must have:

- ACC Photo ID
- Course Abbreviation (e.g., ENGL)
- Course Number (e.g., 1301)
- Course Synonym (e.g., 10123)
- Course Section (e.g., 005)
- Instructor's Name

Do NOT bring cell phones to the Testing Center. Having your cell phone in the testing room, regardless of whether it is on or off, will revoke your testing privileges for the remainder of the semester. ACC Testing Center policies can be found at [http://www.austincc.edu/testctr/](http://www.austincc.edu/testctr/)

**Assignments**

**Assignment Submission Guidelines**
**It is the student's responsibility to turn in work on time.** Check the syllabus/course schedule for the due date for all assignments. Assignments should be submitted via the digital dropbox in Blackboard unless otherwise indicated. Assignments must be formatted in a Microsoft Word Document (*.doc), all other assignments will be returned and are subject to late penalties. All assignments are due at the beginning of class, or no later than 11 pm on the due date for Blackboard assignments.

Completing and Saving Assignments: Open the assignment by double clicking on the folder in the assignments section in Blackboard. Complete the assignment, save it to your computer (disc, Zip drive, etc) with the following name: your last name followed by the assignment number. For instance, if I wished to save the first assignment the name I would save it as will be: velasquez1 If you do not understand how to name your assignments, please contact me right away. I file your assignments by your last name and the assignment number, so it is important that you follow this instruction to get proper credit for your assignments.

To submit assignments in the digital dropbox in Blackboard: Open Blackboard, click on Tools, click on Digital Dropbox, click on Send File, go to Name and write in your last name & assignment number, click Browse, select the file from your computer, disc, Zip drive, etc., click Submit. You have submitted your assignment.

**Late Work**
As a general rule, it is best to submit assignments ahead of the deadline as to avoid last-minute problems. Late assignments will be subject to a 10-point penalty if submitted after the posted deadline and then a reduction of 10-points per day thereafter. Assignments will not be accepted if submitted 4 or more days after the posted deadline. THIS INCLUDES WEEKENDS.

**Statement on Scholastic Dishonesty**
A student attending ACC assumes responsibility for conduct compatible with the mission of the college as an educational institution. Students have the responsibility to submit coursework that is the result of their own thought, research, or self-expression. Students must follow all instructions given by faculty or designated college representatives when taking examinations, placement assessments, tests, quizzes, and evaluations. Actions constituting scholastic dishonesty include, but are not limited to, plagiarism, cheating, fabrication, collusion, and falsifying documents. Penalties for scholastic dishonesty will depend upon the nature of the violation and may range from lowering a grade on one assignment to an “F” in the course and/or expulsion from the college. See the Student Standards of Conduct and Disciplinary Process and other policies at [http://www.austincc.edu/current/needtoknow](http://www.austincc.edu/current/needtoknow)
Course Requirements and Attendance Policy

Attendance

*Attendance is required.* Students will sign-in at every class meeting. Your signature constitutes your presence. The student is required to notify an instructor if an absence is anticipated. A student who is five (5) minutes late is considered **tardy**. Three (3) tardies constitute one absence. It is the student’s responsibility to keep track of his/her attendance record and for all assignments, materials, examinations, etc., missed. Students who miss more than three class sessions, with exception to documented medical or family emergencies may be dropped from the course. **Students who miss more than three class sessions will receive a one letter grade reduction to their overall grade for each class session missed.**

Attendance/Class Participation
Regular and punctual class and laboratory attendance is expected of all students. If attendance or compliance with other course policies is unsatisfactory, the instructor may withdraw students from the class.

Dress Code
The student will be expected to attend class clean and neatly dressed. **The dress code for the institutional pharmacy lab are scrubs.** Medical scrubs are available at relatively low cost from Wal-Mart or any uniform or medical supply store. During lab, students are required to wear close-toed shoes at all times. If you show up to lab in flip-flops or any open-toed footwear you will be asked to leave and you will be considered absent for that lab.

Cell Phones and iPods
Students must turn off or mute all cell phones during lab and class time. No iPods or other MP3 type devices are allowed in class. No text messaging is allowed in class.

Email Addresses
Students are expected to have and maintain a current email address. It is the students responsibility to update their contact information, including email address in Blackboard. Students are required to check their email at least twice a week throughout the semester.

Food and Beverages
Other than sealable bottles of water, food and beverage items are prohibited in the classroom and laboratory.

Chain of Communication
Any student who has a complaint involving the course or anything related to the course should first attempt to resolve the matter directly with the instructor. If the student is unable to resolve the complaint with the instructor, the student must contact the department chair in writing in an attempt to resolve the matter.

Safety Statement
Austin Community College is committed to providing a safe and healthy environment for study and work. You are expected to learn and comply with ACC environmental, health and safety procedures and agree to follow ACC safety policies. Additional information on these can be found at [http://www.austincc.edu/ehs](http://www.austincc.edu/ehs). Because some health and safety circumstances are beyond our control, we ask that you become familiar with the Emergency Procedures poster and Campus Safety Plan map in each classroom. Additional information about emergency procedures and how to sign up for ACC Emergency Alerts to be notified in the event of a serious emergency can be found at [http://www.austincc.edu/emergency/](http://www.austincc.edu/emergency/).

Please note, you are expected to conduct yourself professionally with respect and courtesy to all. Anyone who thoughtlessly or intentionally jeopardizes the health or safety of another individual will be dismissed from the day’s activity, may be withdrawn from the class, and/or barred from attending future activities.
Mid-Semester Meeting
Each student will meet privately with their instructor and department chair at the midpoint of the semester to review their progress and complete mandatory paperwork. This is an opportunity for the student and instructor to determine the students standing in the course and to set a path for success for the remainder of the semester.

Free Tutoring
Free tutoring in math, science, English and related courses is available on each ACC campus. Visit the learning lab website for more information. http://www.austincc.edu/tutor

Student And Instructional Services
ACC strives to provide exemplary support to its students and offers a broad variety of opportunities and services. Information on these services and support systems is available at: http://www.austincc.edu/s4/
Links to many student services and other information can be found at: http://www.austincc.edu/current/
ACC Learning Labs provide free tutoring services to all ACC students currently enrolled in the course to be tutored. The tutor schedule for each Learning Lab may be found at: http://www.austincc.edu/tutor/students/tutoring.php For help setting up your ACCeID, ACC Gmail, or ACC Blackboard, see a Learning Lab Technician at any ACC Learning Lab.

Petition
All students who wish to register for pharmacy courses must first fill out an online petition for the course. Petitions are available at the pharmacy program home page.

Student Rights and Responsibilities
Students at the college have the rights accorded by the U.S. Constitution to freedom of speech, peaceful assembly, petition, and association. These rights carry with them the responsibility to accord the same rights to others in the college community and not to interfere with or disrupt the educational process. Opportunity for students to examine and question pertinent data and assumptions of a given discipline, guided by the evidence of scholarly research, is appropriate in a learning environment. This concept is accompanied by an equally demanding concept of responsibility on the part of the student. As willing partners in learning, students must comply with college rules and procedures.

Students with Disabilities
Each ACC campus offers support services for students with documented disabilities. Students with disabilities who need classroom, academic or other accommodations must request them through the Office for Students with Disabilities (OSD). Students are encouraged to request accommodations when they register for courses or at least three weeks before the start of the semester, otherwise the provision of accommodations may be delayed.

Students who have received approval for accommodations from OSD for this course must provide the instructor with the ‘Notice of Approved Accommodations’ from OSD before accommodations will be provided. Arrangements for academic accommodations can only be made after the instructor receives the ‘Notice of Approved Accommodations’ from the student.

Students with approved accommodations are encouraged to submit the ‘Notice of Approved Accommodations’ to the instructor at the beginning of the semester because a reasonable amount of time may be needed to prepare and arrange for the accommodations.

Additional information about the Office for Students with Disabilities is available at http://www.austincc.edu/support/osd/

Students with disabilities who believe that they may need accommodations in this class are encouraged to contact the Office of Students with Disabilities at (512)223-5159, Room #2136 as soon as possible to better ensure that such accommodations are implemented in a timely fashion.
**Use of ACC email**

All College e-mail communication to students will be sent solely to the student’s ACCmail account, with the expectation that such communications will be read in a timely fashion. ACC will send important information and will notify you of any college related emergencies using this account. Students should only expect to receive email communication from their instructor using this account. Likewise, students should use their ACCmail account when communicating with instructors and staff. Instructions for activating an ACCmail account can be found at [http://www.austincc.edu/accmail/index.php](http://www.austincc.edu/accmail/index.php).

**Award: Pharmacy Technician - Certificate**

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<tr>
<th>Program Level Student Learning Outcomes:</th>
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<tr>
<td><strong>1.</strong> Define the process for obtaining and maintaining technician certification and registration, and list the benefits of involvement in pharmacy professional organizations. Includes the following ASHP objectives:</td>
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<tr>
<td>11. Assist the pharmacist in monitoring the practice site and/or service area for compliance with federal, state, and local laws; regulations; and professional standards.</td>
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<td>20. Understand the principles for managing change.</td>
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<td>22. Appreciate the benefits of active involvement in local, state, and national technician and other pharmacy organizations.</td>
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<tr>
<td>23. Appreciate the value of obtaining technician certification.</td>
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<tr>
<td>24. Understand the importance of and resources for staying current with changes in pharmacy practice.</td>
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<tr>
<td><strong>2.</strong> Demonstrate the pharmacy technician duties that are performed in the community pharmacy setting. Includes the following ASHP objectives:</td>
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<tr>
<td>2. Receive and screen prescriptions/medication orders for completeness and authenticity.</td>
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<td>7. Assist the pharmacist in the identification of patients who desire/require counseling to optimize the use of medications, equipment, and devices.</td>
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<tr>
<td>8. Initiate, verify, assist in the adjudication of, and collect payment and/or initiate billing for pharmacy services and goods.</td>
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<tr>
<td><strong>3.</strong> Demonstrate the pharmacy technician duties that are performed in the institutional pharmacy setting. Includes the following ASHP objectives:</td>
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<td>3. Prepare medications for distribution.</td>
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<td>4. Verify the measurements, for distribution.</td>
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<td>9. Purchase pharmaceuticals, devices, and supplies according to an established purchasing program.</td>
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<td>10. Control the inventory of medications, equipment, and supplies according to an established plan.</td>
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<td><strong>4.</strong> Describe the legal, ethical, and communication responsibilities related to serving a diverse patient and customer population. Includes the following ASHP objectives:</td>
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<td>16. Take personal responsibility for assisting the pharmacist in improving direct patient care.</td>
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<tr>
<td>21. Appreciate the need to adapt direct patient care to meet the needs of diversity.</td>
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<tr>
<td>29. Maintain confidentiality of patient and proprietary business information.</td>
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<tr>
<td><strong>5.</strong> Manage issues related to conflict resolution, communication, teamwork, and time management. Includes the following ASHP objectives:</td>
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<td>19. Resolve conflicts through negotiation.</td>
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<td>25. Communicate clearly when speaking and or in writing.</td>
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<tr>
<td>27. Efficiently solve problems commonly encountered in one’s own work.</td>
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<tr>
<td>31. Efficiently manage one’s work whether performed alone or as part of a team.</td>
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<tr>
<td>32. Function effectively as a member of the health care team.</td>
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### SCANS Competencies

I. SCANS Competencies

In 1990, the U.S. Department of Labor established the Secretary’s Commission on Achieving Necessary Skills (SCANS) to examine the demands of the workplace and whether our nation’s students are capable of meeting those demands. The Commission determined that today’s jobs generally require competencies in the following areas:

A. Resources: Identifies, organizes, plans and allocates resources  
B. Interpersonal: Works with others  
C. Information: Acquires and uses information  
D. Systems: Understands complex interrelationships  
E. Technology: Works with a variety of technologies

The Texas Higher Education Coordinating Board requires that all degree plans in institutions of higher education incorporate these competencies and identify to the student how these competencies are achieved in course objectives.

This course, “Course Title”, incorporates the SCANS competencies in the following ways:

A. Resources  
B. Interpersonal  
C. Information

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<tbody>
<tr>
<td>33.</td>
<td>Balance obligations to one’s self, relationships, and work in a way that minimizes stress.</td>
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</table>
| 6. | **Demonstrate proper technique in the operation of pharmacy equipment, supplies, and processes.**  
Includes the following ASHP objectives:  
5. Distribute medications.  
6. Assist the pharmacist in the administration of immunizations.  
12. Maintain pharmacy equipment and facilities.  
13. Assist the pharmacist in preparing, storing, and distributing investigational medication products. |
| 7. | **Utilize appropriate procedures to assist the pharmacist in medication management and medication error prevention.**  
Includes the following ASHP objectives:  
1. Assist the pharmacist in collecting, organizing, and evaluating information for direct patient care, medication use review, and departmental management.  
14. Assist the pharmacist in the monitoring of medication therapy.  
15. Participate in the pharmacy department’s process for preventing medication misadventures.  
34. Understand the use and side effects of prescription and nonprescription medications used to treat common disease states. |
| 8. | **Demonstrate effective application of pharmacy knowledge and skill in the pharmacy practicum externship.**  
Includes the following ASHP objectives:  
17. Display ethical conduct in all job-related activities.  
18. Maintain an image appropriate for the profession of pharmacy.  
26. Maximize work efficiency through the use of technology.  
28. Display a caring attitude toward patients in all aspects of job responsibilities.  
35. Assist the pharmacist in assuring the quality of all pharmaceutical services. |
D. Systems
E. Technology
F. Basic Skills
G. Thinking Skills
H. Personal Qualities
<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
<th>Reading Assignment</th>
<th>Assignment Due in Blackboard</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td><strong>The Profession of Pharmacy</strong></td>
<td>Chapter 1</td>
<td>Assignment #1 due</td>
</tr>
<tr>
<td>2</td>
<td>Pharmacy Law, regulations, and Standards</td>
<td>Chapter 2</td>
<td>Assignment #2 due</td>
</tr>
<tr>
<td>3</td>
<td>Pharmacology in Practice</td>
<td>Chapter 3</td>
<td>Assignment #3 due</td>
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<tr>
<td></td>
<td>***Lab Session #2: Lab: # 14 – Filling a Twenty-four Hour Medication Cart Due: Lab Review: Filling a Twenty-four Hour Medication Cart, pg. 170 Cart Fill Form, pg. 171 Complete pages 170 - 171, and have ready for grading</td>
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<td>4</td>
<td>Calculations Handout **Posted on Blackboard – print off and begin working problems Quiz #1: Chapters 1, 2, &amp; 3 Refer to Chapter 5 as needed ***Posted on Blackboard, available on:</td>
<td></td>
<td>Assignment #4 due</td>
</tr>
<tr>
<td>5</td>
<td>Dosage Forms and Routes of Administration</td>
<td>Chapter 4: pp 95-96, pp 104-108</td>
<td>Assignment #4 due</td>
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<tr>
<td></td>
<td>***Lab Session #3: Lab: #16 – Filling and Recording Narcotic Floor Stock Lab: #18 – Charging and Refilling a Crash Cart Due: Order Highlighting – 1, 2, 3</td>
<td></td>
<td>Assignment #4 due</td>
</tr>
<tr>
<td></td>
<td>Lab Review: Filling and Recording Narcotic Floor Stock, pgs. 186, 187</td>
<td></td>
<td>Assignment #4 due</td>
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<tr>
<td></td>
<td>Lab Review: Charging and Refilling a Crash Cart, pgs. 201, 202</td>
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<td>Assignment #4 due</td>
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<td>Complete lab reviews, and have ready for grading</td>
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<td>Assignment #4 due</td>
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<td>6</td>
<td>Pharmaceutical Measurements and Calculations</td>
<td>Chapter 5</td>
<td>Assignment #5 due</td>
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<td>7</td>
<td>Nonsterile Pharmaceutical Compounding</td>
<td>Chapter 8: pp234-235; pp 252-257; pp 260-262</td>
<td>Assignment #6 due</td>
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<td>***Lab Session #4: Lab: #22 – Creating Suspensions from Tablets Lab: #24 – Preparing Creams, Ointments, Gels, and Pastes Due: Writing Assignment 1</td>
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<td>Assignment #6 due</td>
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<tr>
<td>Week</td>
<td>Events</td>
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<td>8</td>
<td><strong>Quiz #2</strong> <em><strong>Posted on Blackboard, available on:</strong></em> <strong>Chapters 4, 5, &amp; 8</strong>&lt;br&gt;Review for Mid-Term Exam <strong>Chapters 1, 2, 3, 4, 5, &amp; 8</strong>&lt;br&gt;Review for Mid-Term Lab Exam Training Labs weeks 1-8&lt;br&gt;<strong>Mid-term: Chapters 1, 2, 3, 4, 5, &amp; 8 ------ TBA: EASTVIEW TESTING CENTER</strong>*</td>
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<td>9</td>
<td>Hospital Pharmacy Practice <strong>Chapter 9</strong>&lt;br&gt;<strong><strong>Lab Session 5, on</strong></strong> <strong>Lab: #17 – Preparing Oral Syringes</strong> <strong>Lab Review: Preparing Oral Syringes, pg. 196</strong>&lt;br&gt;Due: Order Highlighting 4 <strong>Ch. 11 pp. 318-324; 332-333; pp 337-347</strong>&lt;br&gt;Review for Quiz#3 <strong>Assignment #9 due</strong></td>
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<td>10</td>
<td>Infection Control <strong>Chapter 10</strong>&lt;br&gt;***Lab Session #6: ***&lt;br&gt;Due: Writing Assignment 2 <strong>Assignment #10 due</strong></td>
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<td>11</td>
<td>Preparing and Handling Sterile Products and Hazardous Drugs <strong>Chapter 12</strong>&lt;br&gt;Review for Quiz#3 <strong>Assignment #11 due</strong></td>
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</table>
| 12   | **Quiz #3: Chapters 9, 10, & 11 Posted on Blackboard, available on*** ***Lab Session #6: ***<br>***Lab Session #6: ***<br>Due: Order Highlighting 5 **Completion of all assigned labs**
| 13   | Medication Safety **Chapter 13**<br>***Lab Session #7: ***<br>Due: Order Highlighting 6 **Completion of all assigned labs**
| 14   | Human Relations and Communication **Chapter 14**<br>***Lab Session #7: ***<br>Due: Order Highlighting 6 **Completion of all assigned labs**
| 15   | Future in Pharmacy Practice **Ch. 14 pp 426-431a**<br>***Lab Session #7: ***<br>Due: Order Highlighting 6 **Completion of all assigned labs**
| 16   | Final Lecture Exam **Comprehensive Exam**<br>Final Lab Exam **All Training labs Weeks 1-15**<br>Comprehensive Final: Eastview Campus, TBA **This calendar is a tentative means to gauge the progression of the course. It is subject to change and will adjust as necessary. Unless otherwise noted or stated, all assignments must be submitted through the Digital Dropbox in Blackboard by 11 PM on the due date.**