Azusa Adult Education Center
Course Outline
(Updated August 2021)

TITLE: Pharmacy Technician

CAREER PATHWAY: Patient Care

INDUSTRY SECTOR: Health Science and Medical Technology

DEPARTMENT: Career Technical Education

SECTION NUMBERS: 4310.04

LENGTH OF COURSE: 18 Weeks

PREREQUISITES:
- Enrollment requires a U.S. High School Diploma, high school equivalency, or A.A. Degree
- Math skill level equivalent to 6th Grade
- At least 18 years of age
- Tuberculosis clearance
- Clearance of Criminal Conviction from the Dept. of Justice

AAEC Vision Statement
Azusa Adult Education Center will empower every student to pursue their personal, educational and career goals to transition into higher education or productive employment.

AAEC Mission Statement
We are committed, as a professional learning community, to continuous improvement in providing a diverse and high quality educational program where all students are provided the opportunity to develop and deepen their knowledge, skills and abilities required to:
- Actively participate in further educational pursuits
- Obtain or advance in a career
- Ethically participate in a multi-cultural civic society

1. COURSE DESCRIPTION:

This competency-based course is designed to prepare students to complete the pharmacy internship, earn a state Pharmacy Technician license, pass the Pharmacy Certification Exam and get successful employment in a pharmaceutical setting. The Pharmacy Technician is a hybrid program. This course includes classroom instruction with hands on training, online assignments, and a 120 externship hours in a retail or hospital pharmacy. Students must provide their own transportation to the externship pharmacy location.

This course covers: Drug and Dosages; Dosage Calculation; Ethics; Legal Codes and Regulations; Customer Service; Dispensing of all types of medication; Taking prescriptions over the phone and in-person; Record Keeping; Medical Terminology; and Anatomy.

This course prepares students to be qualified to apply and take the National Pharmacy Technician Certification Exam and the California Pharmacy Technician License. Exam fees are not included in the cost of the class. At the end of the program, Pharmacy Technician Students will receive a Pharmacy Technician Program Certificate of Completion and be ready to work immediately as a Pharmacy Technician.

2. COURSE GOALS:

- This course is designed around the competency-based model of instruction.

- The pharmacy technician program consists of theory and clinical preparation to include: medical terminology, anatomy and physiology, pharmaceutical settings, duties and responsibilities of a pharmacy technician, pharmaceutical terms, abbreviations and symbols, metric and apothecary systems, drug requirements, record-keeping, dispensing prescriptions, knowledge of manufacturing, packaging, and labeling of drug products.

- Students will be qualified to register with the California State Board of Pharmacy as a Pharmacy Technician.

- Students will perform community classroom activities while under the direct supervision of a pharmacist.

- The competencies in this course are aligned with the California High School Academic Content Standards and the California Career Technical Education Model Curriculum Standards.

- Scans Foundation Skills and competencies are embedded in class instruction.

3. STANDARDS

California Career Technical Education Model Curriculum Standards: Health Science and Medical Technology Industry Sector - Knowledge and Performance Anchor Standards

The State of California Career Technical Education (CTE) Model Curriculum Standards are designed to assist California districts and schools in developing high-quality curriculum and instruction to help ensure that students are career and college ready and to prepare them for future careers.

1.0 Academics - Analyze and apply appropriate academic standards required for successful industry sector pathway completion leading to postsecondary education and employment. Refer to the Health Science and Medical Technology academic alignment matrix for identification of standards.

2.0 Communications - Acquire and accurately use Health Science and Medical Technology sector terminology and protocols at the career and college readiness level for communicating effectively in oral, written, and multimedia formats.

3.0 Career Planning and Management - Integrate multiple sources of career information from diverse formats to make informed career decisions, solve problems, and manage personal career plans.

4.0 Technology - Use existing and emerging technology to investigate, research, and produce products and services, including new information, as required in the Health Science and Medical Technology sector workplace environment.

5.0 Problem Solving and Critical Thinking - Conduct short, as well as more sustained, research to create alternative solutions to answer a question or solve a problem unique to the Health Science and Medical Technology sector using critical and creative thinking, logical reasoning, analysis, inquiry, and problem-solving techniques.

6.0 Health and Safety - Demonstrate health and safety procedures, regulations, and personal health practices and determine the meaning of symbols, key terms, and domain-specific words and phrases as related to the Health Science and Medical Technology sector workplace environment.

7.0 Responsibility and Flexibility - Initiate, and participate in, a range of collaborations demonstrating behaviors that reflect personal and professional responsibility, flexibility, and respect in the Health Science and Medical Technology sector workplace environment and community settings.

8.0 Ethics and Legal Responsibilities – Practice professional, ethical, and legal behavior, responding thoughtfully to diverse perspectives and resolving contradictions when possible, consistent with applicable laws, regulations, and organizational norms.

9.0 Leadership and Teamwork - Work with peers to promote divergent and creative perspectives, effective leadership, group dynamics, team and individual decision making, benefits of workforce diversity, and conflict resolution as practiced in the Cal-HOSA career technical student organization.

10.0 Technical Knowledge and Skills - Apply essential technical knowledge and skills common to all pathways in the Health Science and Medical Technology sector, following procedures when carrying out experiments or performing technical tasks.

11.0 Demonstration and Application - Demonstrate and apply the knowledge and skills contained in the Health Science and Medical Technology anchor standards, pathway standards, and performance indicators in classroom, laboratory, and workplace settings and through the Cal-HOSA career technical student organization.

Health Science and Medical Technology Pathway Standards

The State of California Standards for the Patient Care Pathway apply to occupations or functions involved in the prevention, treatment, and management of illness and the preservation of mental and physical well-being through the services offered by the medical and allied health professions. The standards specify the knowledge and skills needed by professional and technical personnel pursuing careers in this pathway.

B1.0 - Recognize the integrated systems approach to health care delivery services: prevention, diagnosis, pathology, and treatment

B2.0 - Understand the basic structure and function of the human body and relate normal function to common disorders.

B3.0 - Know how to apply mathematical computations used in health care delivery system.

B4.0 - Recognize and practice components of an intake assessment relevant to patient care.

B5.0 - Know the definition, spelling, pronunciation, and use of appropriate terminology in the health care setting.

B6.0 - Communicate procedures and goals to patients using various communication strategies to respond to questions and concerns.

B7.0 - Apply observation techniques to detect changes in the health status of patients.

B8.0 - Demonstrate the principles of body mechanics as they apply to the positioning, transferring, and transporting of patients.

B9.0 - Implement wellness strategies for the prevention of injury and disease behaviors that prevent injury and illness

B10.0 - Comply with protocols and preventative health practices necessary to maintain a safe

B11.0 - Comply with hazardous waste disposal policies and procedures, including documentation, to ensure that regulated waste is handled, packaged, stored, and disposed of in accordance with federal, state, and local regulations.

B12.0 - Adhere to the roles and responsibilities, within the scope of practice, that contribute to the design and implementation of treatment planning

B13.0 - Research factors that define cultural differences between and among different ethnic, racial, and cultural groups and special populations.

4. STUDENT LEARNING OUTCOMES:

At the end of the course, students will be able to meet the following specific Pharmacy Technician competencies:

Section A - Introduction
   Demonstrate understanding of course policies and procedures.
   - Describe class requirements.
   - Describe pharmacy technician duties and responsibilities.
   - Describe appropriate dress standards for classroom and clinical settings.
   - Review course standards and state requirements including how felony conviction or history of substance abuse could prohibit registration and/or employment as a pharmacy technician.
   - Describe professionalism in the health care setting.

Section B – Safety
   Describe safety and health standards in the workplace setting.
   - Describe Cal OSHA requirements in the workplace setting.
   - Review classroom and lab safety rules and regulations.
   - Describe health and safety procedures for the product and the dispenser.
   - Describe the role of a pharmacy technician in reporting and documentation.
   - Pass the safety test with 100% accuracy.

SECTION C – Communication

Describe telephone etiquette, communication styles, ethics, and confidentiality.

- Describe telephone etiquette between technician and client, health care personnel and outside agencies.
- Describe confidentiality and legal issues pertaining to clients.
- Describe the Health Insurance Portability and Accountability Act (HIPAA) of 1966.
- Demonstrate via role playing a client and technical situational procedure.
- Describe interdepartmental communication.
- Describe and demonstrate non-verbal communication.

SECTION D – Pharmacology

Demonstrate an understanding of medication and drug sources, abbreviations, actions and physician orders.

- List and define medical terminology related to pharmacology.
- Describe the various uses of drugs and their sources.
- Describe prescription and its written components.
- Describe basic drug actions and reactions.
- List and define drug abbreviations.
- Demonstrate an understanding of written physician's orders and translate to "every-day language."
- Describe delivery systems.
- List and describe chemical symbols.
- Describe therapeutic classifications.
- Describe differences between prescribed and "over-the-counter" drugs.
- Describe the role of the Food and Drug Administration (FDA).

SECTION E – Measurement and Conversion

Demonstrate various mathematical procedures required for prescription dosages.

- Demonstrate ability to add, subtract, multiply, and divide fractions, decimals, percents, and ratios.
- List and interpret metric and apothecary notations.
- Demonstrate knowledge of metric and household equivalents.
- Demonstrate ratio and proportion as they relate to pharmacy products.
- Describe documentation and reporting of errors.

SECTION F – Drugs

Demonstrate and describe drugs, dosages, routes of administration, forms and storage requirements.

- Recognize and describe various drug classifications.
- Describe various routes of drug administration.
- Demonstrate the set-up for dosage calculation, via ratio-proportion for a drug.
- Calculate pediatric dosages per kilogram of body weight.
- Explain extemporaneous compounding.

- Set up and solve calculations for percent solutions.
- Explain the use of mill equivalent (Meq) and units (U) in dosage calculations.
- Describe and demonstrate dosage calculation using the delegation method.
- Describe technician's role with client when explaining drug dosages.

SECTION G – Medication Distribution
Demonstrate knowledge of medication distribution, record-keeping functions and prescription dispensing.
- Recognize and demonstrate centralized vs. decentralized medication distribution.
- Recognize and calculate unit dose systems.
- Demonstrate preparation of admixtures in PVC bags, glass containers, and plastic containers.
- Calculate I.V. infusion rates.
- Describe large volume and intravenous (I.V.) small volume (IVPB).
- Demonstrate aseptic and safety techniques utilized in preparing intravenous solutions and chemotherapeutic agents.
- Demonstrate procedure for reconstituting a powdered vial and breaking an ampoule.
- Explain parts of laminar flow hood and its function.
- Demonstrate syringe functions, usage and safety.
- Demonstrate understanding of robotics in pharmacy drug distribution locale.
- Type a prescription label with 100% accuracy.
- Demonstrate ability to prepare, package, and label various drug products with 100% accuracy.

SECTION H – Drug Products
Demonstrate knowledge of manufacturing, packaging, and labeling.
- Describe procedures for manufacturing drug products.
- Demonstrate techniques related to effective packaging of drug products.
- Demonstrate complete product: manufacturing, packaging, and labeling of a variety of drugs.
- Describe the pharmacy technician's role with the pharmaceutical industry.

SECTION I – Employability Skills
Demonstrate the ability to prepare for and keep employment as a pharmacy technician.
- Describe opportunities in community and clinical based locations.
- Describe various sites to obtain employment information e.g. internet, newspaper, employment office.
- Describe application and résumé requirements.
- Prepare résumé.
- Complete a sample application form.
- Describe grooming for an interview.
- Describe and demonstrate interview techniques for employment.

- Describe resigning from a position including time element and letter format.

5. INSTRUCTIONAL STRATEGIES:

The use of whole language in teaching English through auditory, visual, and kinesthetic modalities is utilized at all levels. The object of a learning experience is not to see how many learning strategies can be incorporated but to determine which ones are best for students and the content being explored. The following is a list of instructional strategies that are encouraged:

Instructional Strategies to Incorporate CASAS Competencies and Language Skills:

Graphic Organizers, Semantic Maps, and Word Webs - This strategy appeals to both hemispheres of the brain. Create mind maps for teaching main idea and details, sequence of events, cause and effect, compare and contrast, and many other comprehension skills.

K-W-L Charts - These language charts start with the question, "What do you know about the topic?" Following this discussion, students are asked, "What do you still want to know about the topic?" Once the unit of study has been completed, the language charts are used again and students answer the third question, "What did you learn about the topic?"

Laboratory Practice - Laboratory practices are accepted methods to carry out activities or operations in a laboratory. These practices help ensure safety and they have a positive influence on the quality of the result or product.

Lecture and Discussion – The Lecture-Discussion model uses what students already know by building on their existing background. It presents information in a systematic way. And it uses teacher questioning to involve students actively in the learning process.

Manipulatives, Experiments, Labs, and Models - Having students read and follow the directions for an experiment or for building a model is a way to integrate literacy across the curriculum.

Metaphors, Analogies, and Similes - One of the highest level thinking strategies is the use of metaphors. When a student can find ways to compare two or more dissimilar things, they are really using their brains. For example, when teaching main idea and supporting details, I compare it to a table and legs.

Mnemonic Devices - Every content area contains acronyms and acrostics, shortened ways of helping students retain content. While these may not foster higher levels of thought, they go a long way toward increasing the amount of content students can remember.

Project-Based and Problem-Based Learning - Take 10 or 15 objectives and incorporate them into a real-life project or give them a relevant problem to solve. These objectives will be mastered so much easier if students encounter them within the context of real life.

Reciprocal Teaching and Cooperative Learning - Having students sometimes work in pairs or teams to accomplish curricular objectives is a good way to ensure that they are career and "life" ready since the ability to work together is a major workplace and community competency.

Structured Notetaking - The students draw a vertical line about two inches from the left side of the paper, log main ideas and key words to the left and details to the right of the line, and write a brief summary of the lesson at the bottom of the page. Structured notetaking is not simply a way to record facts; it also leads to deeper student engagement and reflection.

Technology - The use of technology is another workplace competency that every student should acquire prior to graduation. It is essential since so much literacy today involves computer literacy.

Visuals - At least 50% of students who walk into any classroom today will be predominantly visual learners. Comprehension is facilitated when students have visuals (pictures, captions, bold and subheadings, charts, and graphs) to assist them.

Work Study and Apprenticeships - Work study refers to apprenticeships, internships, and externships. In other words, it is on-the-job training.

Writing and Journals – Use writing-to-learn strategies at the beginning, middle, or end of class to help students inquire, clarify, or reflect on the content. The student thinks for a minute or so, then writes for about five minutes. Students write reflections, summaries, quick writes, take notes, observations, etc. to solidify their thinking and demonstrate their command of language.

Instructional Strategies to Incorporate SCANS Competencies:

Start each class with an agenda on the board.
  ➢ Information: organizing
  ➢ Resources: allocating time
  ➢ Interpersonal: negotiating

Put students in teams and assign teams classroom maintenance jobs.
  ➢ Interpersonal: working in teams, taking individual responsibility
  ➢ Personal Qualities: demonstrating sociability
  ➢ Systems: developing system to improve performance

Conclude every lesson by calling attention to the workplace relevance of the lesson and the classroom activities.
  ➢ Systems: monitoring performance

Teach students how to organize their classroom materials.
- ➢ Interpersonal: teaching others
- ➢ Systems: monitoring performance

Monitor students' progress with checklists and weekly tests.
- ➢ Interpersonal: organizing and maintaining information
- ➢ Systems: monitoring/correcting performance

Pay attention to classroom incidents and conflicts. Develop lessons that teach students how to deal with these issues appropriately.
- ➢ Interpersonal: working in teams, negotiating
- ➢ Thinking skills: solving problems, making decisions
- ➢ Personal qualities: demonstrating sociability

Model appropriate workplace behavior: arrive on time, come with an organized plan, dress appropriately, and maintain a positive attitude.
- ➢ Personal qualities: taking responsibility, managing self
- ➢ Systems: understanding systems

Encourage students to use, fix, or make minor adjustments in equipment, such as hole punch, pencil sharpener, overhead projector, etc.
- ➢ Technology: maintaining & troubleshooting equipment and applying technology to task

Designate student trainers, tutors or experts who can train new students and assist classmates as needed.
- ➢ Interpersonal: teaching others
- ➢ Systems: improving or designing systems

Encourage self and peer revision whenever possible. Teach the appropriate language to make revisions.
- ➢ Systems: monitoring/correcting performance Interpersonal: taking individual responsibility
- ➢ Personal qualities: assessing/managing self

6. INSTRUCTIONAL MATERIALS:

Instructors teach from the adopted textbooks, workbooks and printed materials. Teacher prepared, student centered materials such as downloadable worksheets, realia, visuals and supplementary texts may also be used to reinforce lessons related to course content.

- • Anderson, R. & Bollington, D. (2012). *Pharmacy for Technicians* (6th ed.). Boulder, CO: Paradigm Publishers

- Asperheim, M. & Favaro, J. (2013). *Introduction to Pharmacology* (12th ed.). St. Louis, MO: Elsevier Publishers

- Zents, L. (2012), *Math for Pharmacy Technicians* (12th ed.). Burlington, MA: Jones & Bartlett Learning

7. RESOURCES

Foundation Standards
http://www.cde.ca.gov/ci/ct/sf/documents/ctestandards.pdf

http://www.cde.ca.gov/be/st/ss/documents/ctestandards.doc

California State Board of Pharmacy
1625 N. Market Blvd, Suite N219, Sacramento, CA 95834
Phone (916) 574-7900   www.pharmacy.ca.gov

Pharmacy Technician Certification Board
2215 Constitution Avenue, NW Washington, DC 20037-2985
Phone (800) 363-8012   www.ptcb.org

American Society of Health-System Pharmacists (ASHP)
7272 Wisconsin Avenue, Bethesda, MD 20814   www.ashp.org

National Pharmacy Technician Association (NPTA)
P.O. Box 683148, Houston, TX 77268
Phone: 888-247-8700   www.pharmacytechnician.org

American Association of Pharmacy Technicians (AAPT)
P.O. Box 1447, Greensboro, NC 27402
Phone (877) 368-4771   www.pharmacytechnician.org

8. EVALUATION:

Students study under a competency-based system and are graded as competency requirements are satisfactorily completed. Each course's competencies and grading expectations are explained in the course syllabus shared with students at the beginning of each term. Attendance and a work ethics are also taken into consideration.

SECTION A – Introduction
Pass all assignments and exams on introduction with a minimum score of 80% or higher.

SECTION B – Safety

Pass the safety test with 100% accuracy.

SECTION C – Communication

Pass all assignments and exams on communication with a minimum score of 80% or higher.

SECTION D – Pharmacology

Pass all assignments and exams on pharmacology with a minimum score of 80% or higher.

SECTION E – Measurement and Conversion

Pass all assignments and exams on measurement and conversion with a minimum score of 80% or higher.

SECTION F – Drugs

Pass all assignments and exams on drugs with a minimum score of 80% or higher.

SECTION G – Medication Distribution

Pass all assignments and exams on medication distribution with a minimum score of 80% or higher.

SECTION H – Drug Products

Pass all assignments and exams on drug products with a minimum score of 80% or higher.

SECTION I – Employability Skills

Pass all assignments and exams on employability skills with a minimum score of 80% or higher.

9. REPETITION OF COURSE:

This course cannot be repeated once a student receives a Certificate of Completion.

10. STATEMENT OF CIVIL RIGHTS:

All educational and vocational opportunities are offered without regard to race, color, national origin, gender, or physical disability.