

eDynamic Learning Course Title: Pharmacology 1a/1b
State: TX
State Course Title: Pharmacology
State Course Code: 127.428
State Standards: Career and Technical Education
Date of Standards: 2021

TEKS	Course Title (a or b), if applicable, e.g. Game Design 1a	Unit Name(s)	Lesson(s) Numbers
(b) Introduction.			
(1) Career and technical education instruction provides content aligned with challenging academic standards, industry-relevant technical knowledge, and college and career readiness skills for students to further their education and succeed in current and emerging professions.	Pharmacology1B: Analysis and Effects	Unit 1: Medications That Affect the Endocrine System	Activity 1
(2) The Health Science Career Cluster focuses on planning, managing, and providing therapeutic services, diagnostic services, health informatics, support services, and biotechnology research and development.	Pharmacology1B: Analysis and Effects	Unit 4: Medications Used to Treat Cancer	Activity 1
(3) The Pharmacology course is designed to study how natural and synthetic chemical agents such as drugs affect biological systems. Knowledge of the properties of therapeutic agents is vital in providing quality health care. It is an ever-changing, growing body of information that continually demands greater amounts of time and education from healthcare workers.	Pharmacology1A: introduction	Unit 1: Principles of Pharmacology	Lesson 1
(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other leadership or extracurricular organizations.			
(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.	Pharmacology1B: Analysis and Effects	Unit 3: Anti-Infective Medications	Activity 1
(c) Knowledge and skills.			
(1) The student applies professional standards/employability skills as required by the healthcare system.			
(A) apply appropriate verbal and non-verbal communication in a clear, concise, and effective manner;	Pharmacology1B: Analysis and Effects	Unit 8: Legal and Ethical Issues in Pharmacology	Activity 4
(B) apply appropriate adaptability skills such as problem solving and creative thinking;	Pharmacology1B: Analysis and Effects	Unit 1: Medications That Affect the Endocrine System	Activity 2
(C) create and evaluate a career plan using methods such as educational pathways, career goals, and individual aptitudes;	Pharmacology1B: Analysis and Effects	Unit 7: Careers in Pharmacy	Activity 1
(D) demonstrate teamwork;	Pharmacology1B: Analysis and Effects	Unit 8: Legal and Ethical Issues in Pharmacology	Activity 4
(E) create an occupation-specific resume; and	Pharmacology1B: Analysis and Effects	Unit 7: Careers in Pharmacy	Activity 2
(F) identify and apply soft skills desired by employers.	Pharmacology1B: Analysis and Effects	Unit 7: Careers in Pharmacy	Lessons 1-4
(2) The student explores the field and foundation of pharmacology.			
(A) differentiate between pharmacology subdivisions, including pharmacodynamics, pharmacokinetics, pharmaceuticals, and pharmacotherapeutics;	Pharmacology1A: introduction	Unit 1: Principles of Pharmacology	Lesson 1

(B) use common drug information materials such as accredited scientific journals, institutions of higher learning, current events, news reports, published journal articles, textbooks, and marketing materials;	Pharmacology1B: Analysis and Effects	Unit 4: Medications Used to Treat Cancer	Activity 3
(C) list examples of primary, secondary, and tertiary drug information references;	Pharmacology1B: Analysis and Effects	Unit 3: Anti-Infective Medications	Activity 2
(D) research and describe the history of pharmacy and contributions of the field;	Pharmacology1B: Analysis and Effects	Unit 7: Careers in Pharmacy	Lessons 1-4
(E) draw inferences based on data from promotional materials for products and services;	Pharmacology1B: Analysis and Effects	Unit 8: Legal and Ethical Issues in Pharmacology	Activity 2
(F) analyze the societal impact of medication costs; and	Pharmacology1B: Analysis and Effects	Unit 7: Careers in Pharmacy	Lessons 1-4
(G) evaluate the impact of scientific research on society, including drug development and the natural environment, including drug disposal.	Pharmacology1B: Analysis and Effects	Unit 7: Careers in Pharmacy	Lessons 1-4
(3) The student identifies careers associated with pharmacology.			
(A) evaluate career pathways utilizing pharmacology;	Pharmacology1B: Analysis and Effects	Unit 7: Careers in Pharmacy	Activity 1
(B) define the role of the pharmacy team; and	Pharmacology1B: Analysis and Effects	Unit 7: Careers in Pharmacy	Lesson 4
(C) research and describe emerging opportunities within the pharmacy profession.	Pharmacology1B: Analysis and Effects	Unit 7: Careers in Pharmacy	Lesson 5
(4) The student explains the ethical and legal responsibilities associated with pharmacology.			
(A) explain the causes, effects, and consequences associated with medical errors, including medication errors;	Pharmacology1A: introduction	Unit 1: Principles of Pharmacology	Lesson 3
(B) define legal terminology associated with medical errors such as negligence, product liability, contributory negligence, and regulatory law;	Pharmacology1B: Analysis and Effects	Unit 8: Legal and Ethical Issues in Pharmacology	Lessons 1-4
(C) analyze the principles of medical ethics, including beneficence, autonomy, maleficence, and justice; and	Pharmacology1B: Analysis and Effects	Unit 8: Legal and Ethical Issues in Pharmacology	Lesson 2
(D) evaluate professional liability.	Pharmacology1B: Analysis and Effects	Unit 8: Legal and Ethical Issues in Pharmacology	Lessons 1, 2
(5) The student uses medical terminology to communicate effectively with other healthcare professionals, patients, and caregivers.			
(A) use the appropriate medical terminology to identify different classes of drugs;	Pharmacology1B: Analysis and Effects	Unit 6: Immunologic Medications, Medications for Weight Loss, and Nutritional Supplements	Activity 3
(B) communicate using medical terminology associated with pharmacology;	Pharmacology1B: Analysis and Effects	Unit 5: medications for the Eyes, Ears, and Skin	Lessons 3, 5
(C) analyze unfamiliar terms using the knowledge of word roots, suffixes, and prefixes; and	Pharmacology1A: introduction	Unit 1: Principles of Pharmacology	Lesson 2
(D) interpret medical terminology to communicate with patients and caregivers.	Pharmacology1B: Analysis and Effects	Unit 5: medications for the Eyes, Ears, and Skin	Lesson 3
(6) The student demonstrates mathematical knowledge and skills to solve problems with systems of measurement used in the pharmacy.			

(A) calculate medication dosages using formulas, ratios, proportions, and allegations;	Pharmacology1A: introduction	Unit 2: Medication Math	Lesson 1
(B) convert a measurement expressed in one standard unit within a system to a measurement expressed in another unit within the same system;	Pharmacology1A: introduction	Unit 2: Medication Math	Lessons 1-3
(C) convert a measurement expressed in one system to a unit of the same measurement in a different system, including metric, apothecary, avoirdupois, and household systems; and	Pharmacology1A: introduction	Unit 2: Medication Math	Lessons 2, 3
(D) evaluate statistical data and its limitations such as patient compliance, study design, and controls.	Pharmacology1B: Analysis and Effects	Unit 8: Legal and Ethical Issues in Pharmacology	Lessons 1-4
(7) The student evaluates pharmaceutical agents, their dosage form, and routes of administration.			
(A) analyze the availability of different dosage forms such as solid, liquid, patch, and IV solution;	Pharmacology1A: introduction	Unit 1: Principles of Pharmacology	Lesson 2
(B) give examples of the brand or generic names of drugs such as the top 200 drugs in each dosage form and routes of drug administration;	Pharmacology1A: introduction	Unit 1: Principles of Pharmacology	Lesson 3
(C) define medical terminology associated with drug dosage forms;	Pharmacology1B: Analysis and Effects	Unit 4: Medications Used to Treat Cancer	Activity 2
(D) explain the difference between therapeutic effects, side effects, and toxic effects;	Pharmacology1A: introduction	Unit 1: Principles of Pharmacology	Lesson 1
(E) identify the mechanism of action of different drug classifications such as drug receptors, agonists, and antagonist relationships;	Pharmacology1A: introduction	Unit 1: Principles of Pharmacology	Lesson 1
(F) explain the dose response relationship concept such as the difference between oral and IV administration of drugs and explain the relationship between drug dosage, drug response, and time; and	Pharmacology1A: introduction	Unit 1: Principles of Pharmacology	Lesson 2
(G) explain drug safety practices such as monitoring expiration dates and drug disposal.	Pharmacology1B: Analysis and Effects	Unit 8: Legal and Ethical Issues in Pharmacology	Lessons 1-4
(8) The student demonstrates knowledge and use of appropriate equipment, instruments, and technology.			
(A) identify technology components used in the pharmacy workflow such as ordering, entering, filling, and dispensing;	Pharmacology1A: introduction	Unit 4: Medications that Affect the Peripheral Nervous System	Activity 1
(B) describe how technology applications improve efficiency in the pharmacy; and	Pharmacology1A: introduction	Unit 4: Medications that Affect the Peripheral Nervous System	Activity 1
(C) identify and demonstrate proper use and maintenance of equipment and instruments used in a pharmacy setting such as IV drop sets, scales, glucose supplies, dispensing units or cabinets, and other laboratory supplies.	Pharmacology1B: Analysis and Effects	Unit 8: Legal and Ethical Issues in Pharmacology	Lessons 1-4
(9) The student practices safe protocols in preventing personal and client illness or injury.			
(A) employ safety standards such as workplace standards;	Pharmacology1B: Analysis and Effects	Unit 8: Legal and Ethical Issues in Pharmacology	Lessons 1-4
(B) interpret and apply pharmacy standards according to the strictest local, state, or federal regulations to enhance safety;	Pharmacology1B: Analysis and Effects	Unit 7: Careers in Pharmacy	Lesson 3
(C) examine the consequences of unsafe practices; and	Pharmacology1B: Analysis and Effects	Unit 8: Legal and Ethical Issues in Pharmacology	Lesson 3
(D) demonstrate safe procedures in the administration of client care in a simulated or clinical setting.	Pharmacology1B: Analysis and Effects	Unit 8: Legal and Ethical Issues in Pharmacology	Lessons 1-4