# Pharmacology

Subject: Career Development and Career and Technical Education
Grade: 11
Expectations: 42
Breakouts: 84

(a) Introduction.

1. Career and technical education instruction provides content aligned with challenging academic standards, +D2:D23industry-relevant technical knowledge, and college and career readiness skills for students to further their education and succeed in current and emerging professions.

3. The Pharmacology course is designed to study how natural and synthetic chemical agents such as d systems. Knowledge of the properties of therapeutic agents is vital in providing quality health care. growing body of information that continually demands greater amounts of time and education fro

4. Students are encouraged to participate in extended learning experiences such as career and techni and other leadership or extracurricular organizations.

5. Statements that contain the word "including" reference content that must be mastered, while thos "such as" are intended as possible illustrative examples.

(b) Knowledge and Skills Statements

(1) The student applies professional standards/employability skills as required by the healthcare syste expected to:

(A) apply appropriate verbal and non-verbal communication in a clear, concise, and effective

(i) apply appropriate verbal communication in a clear manner

(ii) apply appropriate verbal communication in a concise manner

(iii) apply appropriate verbal communication in a[n] effective manner

(iv) apply appropriate non-verbal communication in a clear manner

(v) apply appropriate non-verbal communication in a concise manner

(vi) apply appropriate non-verbal communication in a[n] effective manner

(B) apply appropriate adaptability skills such as problem solving and creative thinking;

(i) apply appropriate adaptability skills

(C)

(D) demonstrate teamwork;

(i) demonstrate teamwork

(E) create an occupation-specific resume; and

(i) create an occupation-specific resume

(F) identify and apply soft skills desired by employers.

(i) identify soft skills desired by employers

(ii) apply soft skills desired by employers

(2) The student explores the field and foundation of pharmacology. The student is expected to:

(A) differentiate between pharmacology subdivisions, including pharmacodynamics, pharmacokinetics, pharmaceutics, and pharmacotherapeutics;

(i) differentiate between pharmacology subdivisions, including pharmacodynamics

(ii) differentiate between pharmacology subdivisions, including pharmacokinetics

(iii) differentiate between pharmacology subdivisions, including pharmaceutics

(iv) differentiate between pharmacology subdivisions, including pharmacotherapeutics

(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;

(i) use common drug information materials

(C) list examples of primary, secondary, and tertiary drug information references;

(i) list examples of primary drug information references

(ii) list examples of secondary drug information references

(iii) list examples of tertiary drug information references

(D) research and describe the history of pharmacy and contributions of the field;

(i) research the history of pharmacy

(ii) research the contributions of the [pharmacy] field

(iii) describe the history of pharmacy

(iv) describe the contributions of the [pharmacy] field

(E) draw inferences based on data from promotional materials for products and services;

(i) draw inferences based on data from promotional materials for products

(ii) draw inferences based on data from promotional materials for services

(F) analyze the societal impact of medication costs; and

(i) analyze the societal impact of medication costs

(G)

(ii) evaluate the impact of scientific research on society, including the natural environment, including drug disposal

(3) The student identifies careers associated with pharmacology. The student is expected to:

(A) evaluate career pathways utilizing pharmacology;

(i) evaluate career pathways utilizing pharmacology

(B) define the role of the pharmacy team; and

(i) define the role of the pharmacy team

(C) research and describe emerging opportunities within the pharmacy profession.

(i) research emerging opportunities within the pharmacy profession

(ii) describe emerging opportunities within the pharmacy profession

(4) The student explains the ethical and legal responsibilities associated with pharmacology. The student is expected to:

(A) explain the causes, effects, and consequences associated with medical errors, including medication errors;

(i) explain the causes associated with medical errors, including medication errors

(ii) explain the effects associated with medical errors, including medication errors

(iii) explain the consequences associated with medical errors, including medication errors

(B) define legal terminology associated with medical errors such as negligence, product liability, contributory negligence, and regulatory law;

(i) define legal terminology associated with medical errors

(C) analyze the principles of medical ethics, including beneficence, autonomy, malefi, (udi)3.5ssiaons

(iii) analyze unfamiliar terms using the knowledge of prefixes

(D) interpret medical terminology to communicate with patients and caregivers.

(i) interpret medical terminology to communicate with patients

(ii) interpret medical terminology to communicate with caregivers

(6) The student demonstrates mathematical knowledge and skills to solve problems with systems of measurement used in the pharmacy. The student is expected to:

(A) calculate medication dosages using formulas, ratios, proportions, and alligations;

(i) calculate medication dosages using formulas

(ii) calculate medication dosages using ratios

(iii) calculate medication dosages using proportions

(D) explain the difference between therapeutic effects, side effects, and toxic effects;

(i) explain the difference between therapeutic effects, side effects, and toxic effects

(E) identify the mechanism of action of different drug classifications such as drug receptors, agonists, and antagonist relationships;

(i) identify the mechanism of action of different drug classifications

(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

(i) explain the dose response relationship concept

(G) explain drug safety practices such as monitoring expiration dates and drug disposal.

(i) explain drug safety practices

(8) The student demonstrates knowledge and use of appropriate equipment, instruments, and technology. The student is expected to:

(A) identify technology components used in the pharmacy workflow such as ordering, entering, filling, and dispensing;

(i) identify technology components used in the pharmacy workflow

(B) describe how technology applications improve efficiency in the pharmacy; and

(i) describe how technology applications improve efficiency in the pharmacy

(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.

(i) identify proper use of equipment used in a pharmacy setting

(ii) identify proper use of instruments used in a pharmacy setting

(iii) identify proper maintenance of equipment used in a pharmacy setting

(iv) identify proper maintenance of instruments used in a pharmacy setting

(v) demonstrate proper use of equipment used in a pharmacy setting

(vi) demonstrate proper use of instruments used in a pharmacy setting

(i) examine the consequences of unsafe practices

(D) demonstrate safe procedures in the administration of client care in a simulated or clinical setting.

(i) demonstrate safe procedures in the administration of client care in a simulated or clinical setting