

Perris Union High School District Course of Study

A. COURSE INFORMATION		
Course Title: <div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;">Pharmacology & Dosage Calculations</div> <input checked="" type="checkbox"/> New <input type="checkbox"/> Revised	Subject Area: <input type="checkbox"/> Social Science <input type="checkbox"/> English <input type="checkbox"/> Mathematics <input type="checkbox"/> Laboratory Science <input type="checkbox"/> World Languages <input type="checkbox"/> Visual or Performing Arts <input type="checkbox"/> College Prep Elective <input type="checkbox"/> Other	Grade Level <input type="checkbox"/> MS <input type="checkbox"/> HS <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/> 8 <input checked="" type="checkbox"/> 9 <input checked="" type="checkbox"/> 10 <input checked="" type="checkbox"/> 11 <input checked="" type="checkbox"/> 12
If revised previous course name if changed <div style="border: 1px solid black; height: 20px; width: 100%;"></div>	Is this classified as a Career Technical Education course? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Transcript Course Code/Number: <div style="border: 1px solid black; height: 20px; width: 100%;"></div> (To be assigned by Educational Services)	Credential Required to teach this course: <div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;"> Designated Subjects Career Technical Education: Health Science and Medical Technology 4 </div> <p style="text-align: center; margin: 0;"><u>To be completed by Human Resources only.</u></p> <div style="display: flex; justify-content: space-between; align-items: center;"> <div style="border: 1px solid black; padding: 2px; width: 60%; text-align: center;"> </div> <div style="border: 1px solid black; padding: 2px; width: 30%; text-align: center;"> 03 / 18 / 2021 </div> </div> <div style="display: flex; justify-content: space-between; margin-top: 5px;"> Signature Date </div>	
Required for Graduation: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Meets "Honors" Requirements? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Meets UC/CSU Requirements? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Was this course <u>previously approved by UC</u> for PUHSD? <input type="checkbox"/> Yes <input type="checkbox"/> No (Will be verified by Ed Services)	Meets "AP" Requirements? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Submitted by: Dian Martin Site: Ed Services Date: March 12, 2021	Unit Value/Length of Course: <input checked="" type="checkbox"/> 0.5 (half year or semester equivalent) <input type="checkbox"/> 1.0 (one year equivalent) <input type="checkbox"/> 2.0 (two year equivalent) <input type="checkbox"/> Other:	
Approvals	Name/Signature	Date
Director of Curriculum & Instruction		3/23/2021
Asst. Superintendent of Educational Services		
Governing Board		

Prerequisite(s) (REQUIRED):

None

Corequisite(s) (REQUIRED):

None

Brief Course Description (REQUIRED):

This course provides nursing students with a methodical approach for calculating medication dosages, selecting and administering drugs, and monitoring the patient's response to drug therapy. Content includes general principles of pharmacology, legal, ethical, and safety aspects of medication administration and drug calculations. Drug information includes pharmacotherapeutics, pharmacodynamics, pharmacokinetics, contraindications and precautions, adverse side effects and drug interactions. Also includes patient variables (health status, life span/gender, diet, lifestyle/habits, environment, and culture in relationship to drug therapy).

B. COURSE CONTENT**Course Purpose (REQUIRED):**

What is the purpose of this course? Please provide a brief description of the goals and expected outcomes. Note: More specificity than a simple recitation of the State Standards is needed.

1. Utilize the nursing process and general pharmacological principles to plan the care for patients receiving drug therapy.
2. Verbalize correct administration of medications utilizing the 6 rights of medication administration.
3. Perform basic mathematical computations essential for calculating drug dosages.
4. Utilizing the prototype approach, evaluate drug properties including pharmacotherapeutics, pharmacodynamics, pharmacokinetics, contraindications and precautions, adverse effects of drugs used to prevent and treat pathological conditions.
5. Relate the interaction between physical properties of a drug and patient variables that influence drug therapy.
6. Determine key points for patient and family education for patients receiving drug therapy.
7. Identify federal and state legislative standards and policies regulating the development, preparation, and administration of drugs.
8. Compare and contrast the differences between chemical, generic, and trade names.

Course Outline (REQUIRED)

Detailed description of topics covered. All historical knowledge is expected to be empirically based, give examples. Show examples of how the text is incorporated into the topics covered.

Writing Assignments (REQUIRED)

Give examples of the writing assignments and the use of critical analysis within the writing assignments.

1. Students will utilize their verbal, non-verbal, interpersonal, and communication technology skills to complete a comprehensive written case study from their experience using any drug not presented as a prototype in their text. This can be a past patient, a friend or relative, or even themselves. Use the text, the internet or the library as a resource for the case study. Be sure to be thorough and creative in your description of the scenario (sample will be given by instructor). Turn in the written case study to the instructor 2 weeks prior to your scheduled oral presentation. List your references using APA format.

INSTRUCTIONAL MATERIALS (REQUIRED)**Textbook #1**

Title: *Pharmacology for Nurses: A pathophysiological approach (6th ed.)*

Edition:

Author: Adam, Holland & Urban (2019)

ISBN: 0135218330

Publisher: Pearson

Publication Date:

Usage:

Primary Text

Read in entirety or near

Textbook #2

Title:

Edition:

Author:

ISBN:

Publisher:

Publication Date:

Usage:

Primary Text

Read in entirety or near

Supplemental Instructional Materials *Please include online, and open source resources if any.*

Estimated costs for classroom materials and supplies (REQUIRED). *Please describe in detail.*

If more space is needed than what is provided, please attach backup as applicable.

Cost for class set of textbooks: 40 qty @ \$95.58

Description of Additional Costs:

Additional costs: \$

Total cost per class set of instructional materials:	\$3,823.20
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Key Assignments (REQUIRED):

Please provide a detailed description of the Key Assignments including tests, and quizzes, which should incorporate not only short answers but essay questions also. How do assignments incorporate topics? Include all major assessments that students will be required to complete

1. Students will utilize their verbal, non-verbal, interpersonal, and communication technology skills to complete a comprehensive written case study from their experience using any drug not presented as a prototype in their text. This can be a past patient, a friend or relative, or even themselves. Use the text, the internet or the library as a resource for the case study. Be sure to be thorough and creative in your description of the scenario (sample will be given by instructor). Turn in the written case study to the instructor 2 weeks prior to your scheduled oral presentation. List your references using APA format.
2. Students will use the basic math functions of adding, subtracting, multiplying and dividing whole numbers, decimals, and fractions to calculate medication dosages for assigned case studies on the selected disease process.

Instructional Methods and/or Strategies (REQUIRED):

Please list specific instructional methods that will be used.

- **Method:** Lecture
Integration: Lecture will be employed to describe the concepts of nursing care related to general pharmacology principles necessary to plan the care for patient drug therapy.
- **Method:** Discussion
Integration: Class discussion will be used to analyze and evaluate core patient variables in the delivery of safe patient care of drug therapy patients.
- **Method:** Activity
Integration: Group activities will be employed to involve students in assessing situations most likely to occur in a drug therapy situation.
- **Method:** Visiting Lecturers
Integration: Guest speakers will utilize narrative stories of safe medication administration
- **Method:** Role Playing/Simulation
Integration: Simulation will be integrated to assess how students apply theoretical principles to the practice setting.

Assessment Methods and/or Tools (REQUIRED):

Please list different methods of assessments that will be used:

- **Method:** Homework
Integration: Written Nursing care plan utilizing the five steps of the nursing process and general pharmacology principles (pharmacodynamics and pharmacokinetics) to plan the care of patients receiving drug therapy for various disease processes.
- **Method:** Exams/Tests
Integration: Written multiple choice exams utilizing incorporating pharmacological principles, core drug

knowledge, dosage calculations, and nursing responsibilities for patients receiving pharmacological therapies (as they pertain to the given disease process or wellness maintenance).

- **Method:** Quizzes

Integration: Utilizing nursing responsibilities to promote safety when administering pharmacological therapies while ensuring that the pharmacological principles of pharmacodynamics and pharmacokinetics are maintained.

- **Method:** Oral Presentation

Integration: Assigned presentations that include case studies while incorporating pharmacological properties and the nursing responsibilities when evaluating adverse effects in treating pathological conditions.

- **Method:** Simulation

Integration: Utilizing the Lasater Clinical Judgment tool and the five steps of the Nursing Process, participate in simulation using case studies to demonstrate the principles of pharmacodynamics and pharmacokinetics as they apply to the plan of care for patients receiving pharmacological processes, which includes family and patient education, and calculation of accurate medical dosages

COURSE PACING GUIDE AND OBJECTIVES (REQUIRED)

1st Semester	Objective	CTE Standard(s)	Chapter(s)	Reference
	<ol style="list-style-type: none"> 1. Principles and Process of Nursing Management in Drug Therapy 2. Nursing Management in Drug Therapy <ol style="list-style-type: none"> a. Development, Safeguards, and Delivery Options of Medications b. Drug Nomenclature c. Sources of Drug Information d. Safeguards in Drug Development and Delivery e. Legislation for Drug Safety and Efficacy f. Clinical Trials g. Legislation Regarding controlled substances h. Safeguards That Protect the Unborn i. Impact of Legal and Institutional controls on Implementation of Drug therapy j. Patient Education as a Safeguard in Drug Therapy 3. Drug Preparations and Administration <ol style="list-style-type: none"> a. Drug Calculations 4. Core Drug Knowledge <ol style="list-style-type: none"> a. Pharmacotherapeutics b. Pharmacokinetics 	<p>Implement use of the metric system, orders of magnitude, and the pH scale in preparation of reagents, analysis of data, and graphing.</p> <p>A6.1 Apply knowledge of symbols, algebra, and statistics to graphical data presentation. A6.2 Prepare solutions based on both percent and weight composition to demonstrate proficiency in use of mechanical and digital</p>		

	<ul style="list-style-type: none"> <ul style="list-style-type: none"> <ul style="list-style-type: none"> i. Absorption ii. Distribution iii. Metabolism iv. Excretion c. Pharmacodynamics d. Contraindications/Precautions e. Adverse Effects f. Drug Interactions <ul style="list-style-type: none"> i. Drug-drug ii. Drug-food iii. Drug-lab tests 5. Core Patient Variables <ul style="list-style-type: none"> a. Health Status b. Life Span. <ul style="list-style-type: none"> i. Children ii. Pregnant or breast-feeding women iii. Older adults c. Lifestyle, Diet, and Habits d. Environment <ul style="list-style-type: none"> i. Influences on drug therapy e. Cultural Considerations in Drug Therapy 6. Nursing Responsibilities for Patients Receiving Peripheral Nervous System Drugs <ul style="list-style-type: none"> a. Drugs Affecting Adrenergic Function b. Drugs Affecting Cholinergic Function 7. Nursing Responsibilities for patients Receiving Central Nervous System Drugs <ul style="list-style-type: none"> a. Drugs Producing Anesthesia b. Neuromuscular Blocking Agents c. Anxiolytics, Sedatives, and Hypnotics d. Drugs for Treating Mood disorders e. Drugs for Treating Thought Disorders f. Drugs for Treating Seizure Disorders 	<p>microbalances.</p> <p>A6.3 Calculate and prepare solutions of various molarity; calculate and prepare buffers of various pH; and prepare serial dilutions.</p> <p>A8.1 Follow written protocols and oral directions to perform a variety of laboratory and technical tasks.</p> <p>A8.2 Recognize laboratory safety hazards using safe practices to avoid accidents.</p> <p>A8.3 Locate and use Material Safety Data Sheets (MSDS).</p> <p>A8.4 Outline the appropriate responses to a laboratory accident including identification of location and use of emergency equipment.</p> <p>A8.5 Practice laboratory and personal safety including the location and use of emergency equipment (personal protective equipment, no food or drink, no</p>		
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	<ul style="list-style-type: none"> g. Drugs Affecting Muscle Spasm and Spasticity h. Drugs for Treating Parkinson’s Disease and other movement disorders i. CNS Stimulants <p>8. Nursing Responsibilities for Patients Receiving Drugs Used to control Pain and Inflammation</p> <ul style="list-style-type: none"> a. Opioid Analgesics b. Salicylates c. Prostaglandin Synthetase Inhibitors (NSAIDS) d. Para-aminophenol Derivatives e. Disease Modifying Antirheumatic Drugs (DMARDS) f. Antigout Agents <p>9. Nursing Responsibilities for Patients Receiving Cardiovascular and Renal System Drugs</p> <ul style="list-style-type: none"> a. Drugs for Treating Congestive Heart Failure (CHF) b. Drugs used to Treat Angina c. Drugs Affecting Cardiac Output and Rhythm d. Drugs Affecting Blood Pressure e. Diuretics <p>10. Nursing Responsibilities for Patients Receiving Blood and Immune System Drugs</p> <ul style="list-style-type: none"> a. Drugs Affecting Coagulation b. Drugs Modifying Biologic Response c. Drugs Affecting Lipid Levels <p>11. Nursing Responsibilities for Patients Receiving Respiratory system Drugs</p> <ul style="list-style-type: none"> a. Drugs Affecting the Upper Respiratory System b. Drugs Affecting the Lower Respiratory System 	<p>open-toe shoes).</p> <p>Know how to apply mathematical computations used in the healthcare delivery system.</p> <p>B3.1 Apply mathematical computations related to health care procedures (metric and household, conversions and measurements).</p> <p>B3.2 Analyze diagrams, charts, graphs, and tables to interpret health care results.</p> <p>B3.3 Record time using the 24-hour clock.</p>		
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	<p>12. Nursing Responsibilities for Patients Receiving Gastrointestinal System Drugs</p> <ul style="list-style-type: none"> a. Drugs Affecting the Upper GI Tract b. Drugs Affecting the Lower GI Tract <p>13. Nursing Responsibilities for Patients Receiving Endocrine System Drugs</p> <ul style="list-style-type: none"> a. Drugs Affecting Pituitary Function b. Drugs Affecting Thyroid Function c. Drugs Affecting Parathyroid Function d. Corticosteroids and Their Antagonists e. Drugs Affecting Blood Glucose Levels f. Men's Health and Sexuality g. Women's Health and Sexuality h. Uterine Motility <p>14. Nursing Responsibilities for Patients Receiving Antineoplastic Drugs</p> <ul style="list-style-type: none"> a. Cell Cycle-Specific Drugs b. Cell Cycle-Nonspecific Drugs <p>15. Nursing Responsibilities for Patients Receiving Antimicrobial Agents</p> <ul style="list-style-type: none"> a. Principles of Antimicrobial Therapy b. Antibiotics Affecting the Bacterial Cell Wall c. Antibiotics Affecting Protein Synthesis d. Miscellaneous Antibiotics e. Drugs for Treating Urinary Tract Infections f. Drugs for Treating Mycobacterial Infections g. Drugs for Treating Viral and Fungal Disease h. Drugs for Treating HIV and AIDS 			
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	i. Drugs for Treating Parasites			

C. HONORS COURSES ONLY

Indicate how much this honors course is different from the standard course.

Not Applicable

D. BACKGROUND INFORMATION

Context for course (optional)

Not Applicable

History of Course Development (optional)

Not Applicable