RESP 1110 - Pharmacology (version 201003L)

Course Title	Course Development	Learning Support
Pharmacology	Standard	No

Course Description

Introduces the physiologic and pharmacological basis of pulmonary and cardiac medications. Focuses on the preparation and calculation of dosages and mixtures and general principles of pharmacology as they relate to the body systems. Topics include: drug preparation, dosage calculation, mixture preparation, pharmacology principles, delivery systems, respiratory drugs, and cardiopulmonary system related drugs.

Pre-requisites

Pre-requisites Prerequisites are Program Admission, BIOL 2114, BIOL 2114L and completion of either MATH 1101 or MATH 1111.

Program Admission
BIOL 2114 - Anatomy and Physiology II (201003L)
BIOL 2114L - Anatomy and Physiology Lab II (201003L)
MATH 1101 - Mathematical Modeling (201003L)
MATH 1111 - College Algebra (201003L)

Regstr. Co-requisites

Regstr. Co-requisites: None

True Co-requisites

True Co-requisites: None

Course Length

	Lecture Contact Time	Regular Lab Type	Reg. Lab Contact Time	Other Lab Type	Oth. Lab Contact Time	Total Contact Hrs
Contact Hours Per Week	**2 hrs**	**Lab**	**2 hrs**	**N/A**	**0 hrs**	**4 hrs**
Contact Min/Hrs Per Semester	**1500 min**		**1500 min**		**0 min**	**60 hrs**

	Lecture Credit Hours	Lab Credit Hours	Total Credit hours	WLU
Semester Credit Hours	**2**	**1**	**3**	**105**

Competencies & Outcomes

Order	Description

1 **Drug Preparation**

Order	Description	Learning Domain	Level of Learning
1	List appropriate aerosol drug dose and frequency of administration for aerosolized medications.	Cognitive	Knowledge

2 **Dosage Calculation**

Order	Description	Learning Domain	Level of Learning
1	Calculate dosages from prepared strength liquids, tablets, and capsules.	Cognitive	Application

2	Calculate drug dosages from percentage strength solutions.	Cognitive	Application
3	Solve percentage and solution problems involving drug dosages.	Cognitive	Application
4	Calculate dosage from prepared strength liquids, tablets, and capsules. Calculate drug dosages from percentage strength solutions. Solve percentage and solution problems involving drug dosages.	Cognitive	Application

3 **Mixture Preparation**

Order	Description	Learning Domain	Level of Learning
1	Determine medication combinations for aerosol drug administration.	Cognitive	Application

4 **Pharmacology Principles**

Order	Description	Learning Domain	Level of Learning
1	Define fundamental terms used in pharmacology.	Cognitive	Knowledge
2	Define fundamental terms used to describe medical aerosols.	Cognitive	Knowledge
3	Explain the pharmaceutical phase of drug action.	Cognitive	Comprehension
4	Contrast various routes of drug administration.	Cognitive	Analysis
5	Outline the pharmacokinetic phase of drug administration.	Cognitive	Analysis
6	Summarize the pharmacodynamic phase of drug administration.	Cognitive	Comprehension
7	Describe appropriate elements found in a drug prescription.	Cognitive	Knowledge
8	Translate common medical abbreviations used in pharmacology.	Cognitive	Knowledge

5 **Delivery Systems**

Order	Description	Learning Domain	Level of Learning
1	Discuss the use of various aerosol generating devices.	Cognitive	Comprehension
2	Explain factors associated with aerosol penetration, deposition, retention, and clearance.	Cognitive	Comprehension

6 **Respiratory Drugs**

Order	Description	Learning Domain	Level of Learning
1	Describe the basic organization of the central and peripheral nervous systems.	Cognitive	Knowledge
2	Define terms related to drugs affecting the autonomic nervous system.	Cognitive	Knowledge
3	Contrast muscarinic and nicotinic effects on the nervous system.	Cognitive	Analysis
4	Explain parasympathetic neural transmitter action including the effects of parasympathemimetics.	Cognitive	Comprehension
5	Explain sympathetic neural transmitter action including the effects of sympathemimetics.	Cognitive	Comprehension

6	Contrast the effects of alpha and beta adrenergic receptors.	Cognitive	Analysis
7	Explain autonomic control in the lung.	Cognitive	Comprehension
8	Overview the history and development of adrenergic bronchodilators.	Cognitive	Knowledge
9	Describe the structure activity relations of the catecholamines and catecholamine derivatives.	Cognitive	Knowledge
10	List the generic name, trade name, receptor site stimulated, administration method, strength, and dosage of beta adrenergic bronchodilators.	Cognitive	Knowledge
11	Discuss the adverse side effects associated with adrenergic bronchodilators.	Cognitive	Comprehension
12	Describe parasympatholytic and xanthine bronchodilator mode of action, indications, administration method, dosage, and side effects.	Cognitive	Knowledge
13	Describe antiasthma agents use including mode of action, dosage, side effects, hazards, and precautions.	Cognitive	Knowledge
14	Describe corticosteroid use including mode of action, dosage, side effects, hazards, and precautions.	Cognitive	Knowledge

7 **Cardiopulmonary System Related Drugs**

Order	Description	Learning Domain	Level of Learning
1	Explain mucus-controlling, surface-active, and cold and cough agent mode of action, dosage, and clinical use including complications and hazards.	Cognitive	Comprehension
2	Summarize the use of antiinfection agents in respiratory care.	Cognitive	Comprehension
3	Describe skeletal muscle relaxant use in respiratory care including mode of action, side effects, and hazards.	Cognitive	Knowledge
4	Describe central nervous system depressant and respiratory stimulant use in respiratory care including mode of action, side effects, and hazards.	Cognitive	Knowledge
5	Explain cardiovascular and diuretic agent use as applicable to patients receiving respiratory care.	Cognitive	Comprehension