

NURS 330 Pharmacology in Nursing**Abilene Christian University****Fall 2013**

NURS 330

Tuesday: 8 to 11 am

3 credit hours

Classroom:

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ACU Mission

To educate students for Christian service and leadership throughout the world.

School of Nursing Mission

To inspire and educate students for excellence in professional practice in preparation for Christian leadership and service as registered nurses throughout the world.

Course Description

Pharmacology in Nursing introduces students to the nurse's role in safe medication administration and error prevention for the highest potential health outcomes. Contemporary issues in pharmacology will be integrated within an exploration of medication classes and nursing implications.

Prerequisite

NURS 250 and admission to the School of Nursing

Co-requisites

NURS 320, NURS 350, NURS 351, NURS 352

Course Purpose and Audience

Pharmacology in Nursing is intended for Level 1 junior nursing students after formal admission in the program. The information gained in this course provides the foundation for safe medication administration and error prevention in professional nursing practice.

Professional Behavior Expectations

Baccalaureate educated nurses are prepared to function within an interdisciplinary team to lead and serve diverse patients (individuals, families, groups, communities, populations) across the life span in a variety of settings along the continuum of care. Since nurses' assume the responsibility of the care of others, professional attitudes, behaviors, judgments and skills must be learned and applied in all communication and interactions to provide safe and quality practice. The faculty at the SON believe that the classroom, simulation labs, and clinical experiences all provide settings for professional learning. Students are asked to engage actively in all settings as preparation for professional expectations encountered in their careers. Active engagement assumes attention to the topics, activities, speakers, faculty, peers, and patients involved in any given setting. Distractions should be for emergencies only, and faculty notified if potential phone or other issues are anticipated.

Teaching Philosophy and Christian Perspective

Faculty are responsible to facilitate the learning of students in preparation for professional careers in nursing. The faculty are responsible for modeling Christian character, authenticity, service and leadership in nursing education and practice, and want to engage students by discussion in the faculty successes and failure of this responsibility. The faculty at the SON believe that nursing curriculum should reflect the current practice environment in compliance with evidence-based professional standards and rules of regulatory organizations. The curriculum integrates the mission of the university. Concepts will reflect the knowledge, judgment, behaviors, skills, attitudes, and values required of a professional nurse. The faculty believe that active participatory student-centered learning is required in baccalaureate generalist education to develop the professional competencies required of the graduate.

Faith is a background for this course. The faculty invite the students to bring resources in the semester discussion of faith in nursing practice and safe medication administration.

Course Content

This course provides the foundational understanding of medication administration, medication calculation, contemporary issues in pharmacology, role of the nurse in pharmacology research, nutrition and electrolytes, and an overview of drug classes with nursing implications – autonomic nervous system, neurologic/neuromuscular, anti-inflammatory, pain management, psychiatric, antibacterial, anti-infective, immunologic, antineoplastic, respiratory, cardiovascular, eye/ear/skin, endocrine, reproductive.

Student Goals

After successful completion of this course,

1. The student will understand the role of medication safety and error prevention for quality nursing practice, and safe patient outcomes.

2. The student will assume accountability for the safe administration of medications for quality professional practice.
3. The student will implement principles of medication dosage calculation for safe administration.
4. The student will explore contemporary issues in pharmacology.
5. The student will analyze medication classifications, and implement safe nursing implications of assessment, administration, and teaching for the highest patient outcomes.
6. The student will express a personal view of the Christian perspective of work, and the professional values needed for excellence in practice.

Topical Outline

Nurse's Perspective of Pharmacology

- a. Drug Action
- b. Nursing Process and Teaching
- c. Medication Safety and Administration
2. Medication Calculations
3. Contemporary Issues in Pharmacology
 - a. Approval Process
 - b. Cultural and Pharmacogenetic Considerations
 - c. Drug Interactions and Over-the Counter Drugs
 - d. Herbal Therapy
 - e. Geriatric and Pediatric Pharmacology
 - f. Administration in Community Settings
 - g. Nurses in Drug Research
4. Nutritional and Electrolyte Replacement
5. Medication Classes and Nursing Implications
 - a. Autonomic Nervous System, Neurologic, and Neuromuscular Agents
 - b. Anti-inflammatory, Pain Management, Psychiatric Agents

- c. Antibacterial, Anti-infective Agents
 - d. Immunologic and Antineoplastic Agents
 - e. Respiratory and Cardiovascular Agents
 - f. Gastrointestinal, Eye, Ear, and Skin Agents
 - g. Endocrine and Reproductive Agents
 - h. Emergency Agents
- 6. Scriptural perspectives
 - 7. Professional values

Texts and Online Learning Resources

Kee, J. L., Hayes, E. R. & McCuiston, L. E. (2012). *Pharmacology: A nursing process approach*. St. Louis: Elsevier Saunders.

Evolve (2012). *Student resources*. Retrieved at <http://evolve.elsevier.com/KeeHayes/pharmacology/>

Optional:

Course Activities

The student will be assigned weekly readings which are reinforced by quizzes, and practice exam questions. Class preparation of reading, audio podcasts and assignments will be required for active participation within the class time frame. Students will complete case studies, and choose concept maps, or other creative assignments in groups that will contribute to the final course grade.

Course Competencies

Cognitive Competency Statements	Measurement Instruments	Performance Indicators or Criteria
The student retains basic concepts of the nurse's perspectives of pharmacology, medication calculations and contemporary issues in pharmacology.	Quizzes, exams, class activities	Exam, quiz, and written assignment averages greater than or equal to 80/100.
The student applies an understanding of nutrition and electrolyte replacements, drug classes and evidence-based nursing implications to professional practice.	Quizzes, exams, class activities, Clinical trial presentation	Exam, quiz, and written assignment averages greater than or equal to 80/100.

Psychomotor Competency Statements		
The student identifies essential elements and practices of safe medication administration.	Quizzes, exams, class activities	Exam, quiz, and written assignment averages greater than or equal to 80/100.
The student recognizes essential behavior and responses to error prevention in medication administration.	Quizzes, exams, class activities	Score greater than or equal to 80/100
Affective Competency Statements		
The student expresses a personal view of Christian perspectives of work and excellence.	Class activities	Substantive participation and regular attendance to class
The student describes philosophies of the professional values of caring, altruism, human dignity, civility, respect, and excellence.	Class activities	Substantive participation and consistent class attendance.

Final Course Grading Scale

900 to 1000 points = A

800 to 899 points = B

700 to 799 points = C

600 to 699 points = D

Below 600 points = F

Graded Course Elements

4 Unit Exams (100 points each; 50 questions each)	400 points
1 Comprehensive Exam (100 points; 100 questions)	100 points
Hesi Pharmacology Exam	100 points
10 quizzes (10 points each)	100 points
10 in class activities (10 points each)	100 points
Clinical Trial Presentation	100 points
Evolve Practice Test Pharmacology	100 points

Total**1,000 points****Policies*****Attendance and Participation***

Attendance is expected and required. Absences will be excused for illness with a doctor's note, death in the family, school sanctioned trips, or other reasons approved by the faculty. See the university policy for school sanctioned absences. If a student accumulates more than 2 unexcused absences, an appointment with faculty is required for assistance to cover missed content. After the 3rd unexcused absence, the student is at risk for failure of the course. Three tardies greater than 10 minutes will count as one unexcused absence. Professional behaviors described in the previous section are expected. If a student is disrupting the atmosphere of the learning setting, the faculty may ask the student to leave the group, and make an individual appointment with the faculty to correct the issues.

Academic Integrity

Violations of academic integrity and other forms of cheating, as defined in ACU's Academic Integrity Policy, involve the intention to deceive, mislead, or misrepresent, and therefore are a form of lying, and represent actions contrary to the behavioral norms that flow from the nature of God. Violations will be addressed as described in the policy. While the university enforces the policy, the most powerful motive for integrity and truthfulness comes from one's desire to imitate God's nature in our lives. Every member of the faculty, staff, and student body is responsible for protecting the integrity of learning, scholarship, and research. The full policy is available for review at the Provost's office web site <http://www.acu.edu/campusoffices/provost> and the following offices: provost, college deans, dean of campus life, director of student judicial affairs, director of residential life education, and academic departments.

The first instance of cheating in any course in the program will result in a 0 for the assignment. A second incident will result in an F in the course, and dismissal from the program.

Dress Code

Students are expected to conform to the dress code as outlined in the ACU Student Handbook. Students wearing inappropriate attire will be asked to leave class.

Special Needs

Abilene Christian University is dedicated to removing barriers and opening access for students with disabilities in compliance with ADA and Section 504 of the Rehabilitation Act. The Alpha Scholars Program facilitates disability accommodations in cooperation with instructors. In order to receive accommodations, you must be registered with Alpha Scholars Program, and you must complete a specific request for each class in which you need accommodations. If you have a documented disability and wish to discuss academic accommodations, please call our office directly at (325) 674-2667.

Assignments

Exams

The unit and comprehensive final exam will be given online with faculty proctors. Attendance is required at exams. The faculty must be notified before the exam if the student is not able to attend. Make-up exams are only given for excused absences (see attendance policy). **Students who score less than 80 on a unit exam will be assigned remedial work/testing at the discretion of the faculty. Students who score less than 400 points out of 500 after the four unit and comprehensive exams or less than 850 on the HESI Pharmacology exam will be assigned remedial work/ testing to be completed prior to the beginning of the next semester. The first score earned on each exam will be used in the calculation of the final course grade. The final course grade of B or higher is recommended for successful completion of the program.**

Class Activities

Students will work in groups of 3 or 4 on in class activities that will provide opportunities to prepare for course exams. Students will be assigned case studies, or will select a creative format (concept map, diagram, mnemonic, or role play) to demonstrate relationships and nursing application of content assigned for class time. The highest scores for 10 activities will contribute to the total course points. See Appendix A for rubric.

Appendix A

Rubric Component	2 points	1 points	.5 points	0
Identifies and summarizes all components of the problems/questions at issue.	Accurately identifies the problems/questions and provides a well-developed summary.	Accurately identifies the problems/questions and provides a brief summary.	Identifies the problem/questions and provides a poor summary or identifies an inappropriate problem/question.	Does not identify or summarize the problem/question accurately if at all.
Identifies and assesses the quality of supporting data/evidence with list of references	Provides a well-developed examination of the evidence and questions its accuracy, relevance, and completeness. Clearly distinguishes between fact and opinion with list of references	Examines evidence and questions the quality. Distinguishes between fact and opinion with list of references.	Merely repeats information provided. Does not justify position or distinguish between fact and opinion.	Does not identify or assess the quality of supporting evidence.
Identifies and	Accurately	Accurately	Does not explain	Does not identify

considers the influence of the context* on the issue	identifies and provides a well-developed explanation of contextual issues with a clear sense of scope.	identifies and provides an explanation of potential contextual issues.	contextual issues; provides inaccurate information; or merely provides a list.	or consider any contextual issues.
Demonstrates higher level thinking by interpreting critical points of issues discussed	Accurately identifies the critical points of issues and provides robust discussion of multiples ideas of the issues	Accurately identifies the critical issues and provides a brief explanation.	Does not explain, provides inaccurate information, or merely lists information.	
Identifies and evaluates conclusions, implications, and consequences	Accurately identifies conclusions, implications, and consequences with a well-developed explanation. Provides an objective reflection of own assertions. Total: 10	Accurately identifies conclusions, implications, and consequences with a brief evaluative summary. Total: 5	Does not explain, provides inaccurate information, or merely provides a list of ideas; or only discusses one area. Total: 2.5	Does not identify or evaluate any conclusions, implications or consequences. Total: 0

Quizzes

Online quizzes will given prior to class to test content preparation.

Research Presentation

Students will work in groups of 2 or 3 to present a clinical trial in Pharmacology research. Emphasis will be on the nursing implications of the presented findings. Sign up dates will be distributed the first day of class and topics will coincide with the class objectives.

Appendix C Clinical Trial Presentation					
	Beginning 5 points	Developing 10 points	Accomplished 15 points	Exemplary 20 points	Score
Organization	Difficult to understand because there	Difficult to follow because student jumps	Presentation follows logical sequence, an area	Presentation follows an interesting,	

	is no sequence.	to various topics	is omitted	logical sequence, all content areas covered	
Content	Group does not have grasp and cannot answer questions	Group is uncomfortable with information and answers easy questions	Groups are at ease with expected answers, but fails to elaborate	Groups demonstrate full knowledge by answering all questions with full elaboration	
Graphics	Groups use superfluous graphics or none at all	Groups occasionally use graphics that rarely supports context	Group graphics relate to text and presentation	Group graphics explain and reinforce screen text and presentation	
Eye Contact	Group reads report with no eye contact	Group occasionally uses eye contact, but reads most of report	Group maintains eye contact most of the time, but frequently turns to notes	Group maintains eye contact with audience seldom turning to notes	
Elocution	Group mumbles, pronounces terms incorrectly, and speaks too quietly to be heard throughout room	Groups' voices are low, pronounces words incorrectly, and audience has difficulty hearing presentation	Groups' voices are clear, pronounces most words correctly, most of the audience can hear the presentation	Groups' voices are clear, pronunciation is precise and accurate, all the audience can hear the content comfortably	
Total					

Evolve Practice Test Pharmacology

Student will complete all assignments to ensure content mastery. An average score of all assignments will contribute to the final grade.

Course Calendar

Date	Pre Class Preparation	In Class Assignment	Assignment Due Dates
Week 1	Course/Syllabus Orientation Kee, Hays, McCuiston, Chapters 6, 7, 8, 9 Read and Audio pod cast	Contemporary Issues in Pharmacology – Approval, Interactions, Over-the-counter, Abuse, Herbal Therapy Differentiate between chemical, generic, and brand names of drugs Describe potential unique responses to drugs based on social, cultural, and biologic influences. Discuss nursing implications related to patients’ use of OTC drugs Identify the physical, psychological assessment findings associated with the use of commonly abused central nervous system stimulants and depressants, cannabis, psychedelic agents, and inhalants.	
Week 2	Read and audio pod cast Chapters 1 -4	Nursing Issues in Pharmacology – Drug Actions, Administration Safety, Client Assessment, Client Teaching Define selected terms related to pharmaceutic, pharmacokinetic, and pharmacodynamic phases Discuss principles of culturally sensitive health teaching related to drug therapy Explore the rights of drug administration and analyze safety risks Identify best practices of medication administration Describe routes, sites, equipment, documentation and nursing roles in medication administration	Quiz 1 Class Assignment 1
Week 3	Read and Audio pod cast Chapter 5	Medication Calculation Convert measurement within the metric system, larger to smaller and smaller to larger units Apply conversion understanding to word calculation problems using medication labels for realism	Quiz 2 Assignment 2

Date	Pre Class Preparation	In Class Assignment	Assignment Due Dates
Week 4	Read and Audio pod cast Chapters 15, 16, 17	Nutrition and Electrolytes Differentiate between water soluble and fat soluble vitamins Relate food sources and deficiency conditions associated with each vitamin Discuss classifications and uses of intravenous fluids and symptoms of fluid volume deficit and fluid volume overload Describe the assessments, interventions, and client teaching needed for fluid, potassium, sodium, calcium and magnesium imbalances Explain differences, routes, interventions needed and potential complications of enteral and parenteral nutrition	Exam 1 Quiz 3 Assignment 3
Week 5	Read and Audio pod cast Chapters 18, 19, 20, 21	Adrenergic Agonists and Blockers, Cholinergic Agonists and Blockers, Central Nervous System Stimulants and Depressants Prototypes: Epinephrine, Albuterol, Atenolol, Bethanechol, Atropine, Trihexyphenidyl HCL, Tolterodine Tartrate, Methylphenidate, Secobarbital Sodium Differentiate between selective and non selective adrenergic agonists Explain nursing interventions, teaching associated with adrenergic agonists, beta adrenergic blockers, cholinergic agonists, anticholinergics, reversible cholinesterase inhibitor, amphetamines, anorexiant, analeptics, doxapram, caffeine, sedative hypnotics, benzodiazepines, and barbiturates. Differentiate between anesthesia and local anesthetics.	Quiz 4 Assignment 4

Week 6	Read and Audio pod cast Chapters 22, 23, 24	Anticonvulsants, Neurological and Neuromuscular Medications Prototypes: Phenytoin, Carbidopa-Levodopa, Tacrine, Pyridostigmine Bromide, Carisoprodol, Contrast 2 classifications of seizures Summarize the pharmacokinetics, side effects, adverse reactions, therapeutic plasma levels, contraindications, and drug interactions of phenytoin (Dilantin) Describe uses for) hydrantoin, long acting barbiturates, succinimides, oxazolidones, benzodiazepines, iminostilbenes, valproate Apply the nursing process to anticonvulsants, anticholinergics, dopaminergics, and acetylcholinesterase inhibitors Differentiate medications used for neuromuscular disorders: Myasthenia Gravis, Multiple Sclerosis, and Muscle Spasms	Quiz 5 Assignment 5
Date	Pre Class Preparation	In Class Assignment	Assignment Due Dates
Week 7	Read and Audio pod cast Chapters 25, 26, 27, 28	Anti-inflammatory, Pain Management, Psychiatric Agents Prototypes: Aspirin, Ibuprofen, Celecoxib, Auranofin, Infliximab, Allopurinol, Acetaminophen, Morphine Sulfate, Nalbupone, Sumatriptan, Fluphenazine, Haloperidol and Haloperidol Decanoate, Risperidone, Lorazepam, Amitriptyline HCL, Fluoxetine, Lithium, Discuss nursing implications of the administration of NSAIDS, DMARDS, Nonopioid and Opioid analgesics, patient-controlled analgesia, antipsychotics, anxiolytics, antidepressants, monoamine oxidase inhibitors, and selective serotonin reuptake inhibitors	Exam II Quiz 6 Assignment 6

Week 8	Read and Audio pod cast Chapters 29 - 34	Antibacterial and Anti-infective Agents Prototypes: Amoxicillin, Dicloxacillin, Cefazolin, Cefactor, Azithromycin, Doxycycline, Gentamycin Sulfate, Sulfamethoxazole-Timethoprim /TMP-SMZ, Isoniazid, Fluconazole, Acyclovir Sodium, Chloroquine HCL, Nitrofurantoin, Discuss nursing implications for penicillins, cephalosporins, macrolides, tetracyclines, aminoglycosides, fluoroquinolones, sulfonamides, sulfamethoxazole, antitubercular, antifungal, and peptides, antivirals, antimalarials, anthelmintics, urinary antiseptics and urinary antiinfectives Explain mechanism of action and 3 general side effects associated with antibacterial drugs Discuss the nurses role in detecting ototoxicity and nephrotoxicity in the administration of aminoglycosides, and reasons for peak and trough concentration levels	Quiz 7 Assignment 7
Week 9	Read and Audio pod cast Chapters 35-39	Immunologic and Antineoplastic Agents Prototypes: Zidovudine, Efavirenz, Lopinavir/Ritonavir, Varicella, Cyclophosphamide, Fluorouracil, Doxorubicin, Vincristine, Imatinib Meslyate, Eriotinib, Rituximab, Describe 6 classifications of antiretroviral therapy, treatment for opportunistic infections, prevention of mother to child transmission of HIV, health care worker risk and post exposure treatment. Explain nursing implication in vaccines, and contrast differences in vaccine types Describe the nursing process including teaching related to anti cancer drugs Distinguish among different types of targeted therapies for cancer treatment with regard to indications, side effects, adverse reactions, routes, and nursing responsibilities	Quiz 8 Assignment 8

		Describe nursing implications for the administration of biologic response modifiers	
Week 10	Read and Audio pod cast Chapters, 40,41,47,48	Respiratory and Gastrointestinal Agents Prototypes: Diphenhydramine, Dextromethorphan, Montelukast, Promethazine HCL, Diphenoxylate, Atropine, Bisacodyl, Psyllium, Aluminum Hydroxide, Ranitidine, Lansoprazole, Sucralfate, Discuss nursing implications with the administration of antihistamines, decongestants, antitussives, expectorant drug groups, leukotriene antagonists, glucocorticoids, cromolyn, mucolytics, antiemetics, emetics, antidiarrheals, laxatives, antiulcer drugs, tranquilizers, antacids, histamine 2 blockers, proton pump inhibitors, pepsin inhibitors, and prostaglandin analogue antiulcer medications.	Quiz 9 Assignment 9
Date	Pre Class Preparation	In Class Assignment	Assignment Due Dates
Week 11	Read and Audio pod cast Chapters 42-46	Cardiovascular Agents Prototypes: Digoxin, Nitroglycerin, Acebutolol HCL, Hydrochlorothiazide, Furosemide, Triamterene, Metoprolol, Prazosin HCL, Losartan Potassium, Heparin, Warfarin, Clopidogrel Bisulfate, Alteplase, Atorvastatin, Isoxsuprine HCL Discuss nursing implications for the administration cardiac glycosides, antianginal drugs, antidysrhythmics, diuretics, beta blockers, centrally acting and peripherally acting alpha blockers, alpha and beta blockers, direct acting vasodilators, angiotensin antagonists, anticoagulants, antiplatelets, thrombolytics, antihyperlipidemics, peripheral vasodilators	Exam III Quiz 10 Assignment 10
Week 12	Read and Audio Pod Cast Chapters 49-52	Drugs for Eye, Ear, Dermatologic Disorders, Endocrine, and Antidiabetics Prototypes: Pilocarpine, Mefenide Acetate, Corticotropin, Repository Corticotropin, Corticotropin-Zinc Hydroxide, Levothyroxine Sodium, Calcitrol, Insulins, Glipizide, Metformin,	Make up Quiz 11 Assignment 11

		Discuss nursing implications for medications of the eye, ear, skin, hormone replacement for pituitary, thyroid, parathyroid, and adrenal glands and insulins.	
Week 13	Read and Audio podcast Chapters 11-14, 59	Pediatric, Geriatric Pharmacology, Administration in Community Settings, Role of the Nurse in Research, Emergency Drugs Prototypes: Lidocaine, Mannitol, Naloxone HCL, Dopamine HCL, Nitroprusside Sodium, Describe indications for emergency drugs, how to administer each, and potential adverse effects Apply principles of pharmacokinetics and pharmacodynamics to pediatric and geriatric medication administration safety. Describe common elements of patient teaching and nursing implications needed medication administration in community settings Describe the role of nursing in the clinical drug trials	Quiz 12 Assignment 12
Week 14		Comprehensive Review	Exam IV
Week 15		Comprehensive Review	Pharmacology Hesi
Week 16		Comprehensive Final – 100 questions	

