KINGSBOROUGH COMMUNITY COLLEGE
of
THE CITY UNIVERSITY OF NEW YORK

Department of Nursing

2008/2009

NUR 17 CALCULATIONS FOR MEDICATION ADMINISTRATION — Course Syllabus
Prerequisite: Passing CUNY math assessment examination — 1 cr., 1hr.

Beginning level students acquire knowledge and develop proficiency in computing medication dosages. Oral, injectable and intravenous medications to be administered to infants, children and adults are discussed.

Catalogue Description:
How to compute the proper dosage for oral, injectable and intravenous medication to be administered to infants, children and adults.

Course Overview:
This course provides opportunities for the beginning student to acquire knowledge and develop proficiency in computing medication dosages. It introduces students to techniques for accurately computing medication dosages which will be reinforced and tested in subsequent nursing courses. Topics include systems of measurement, equivalents and conversions, selected abbreviations, and computation of medication dosages.

Classwork for the typical week consists of 2 contact hours per week for 6 weeks.

It is essential for students to engage in additional practice, especially in arithmetic skills, in order to develop proficiency. Provisions are made for additional practice in media and computer laboratories. Tutorial assistance will be available based on individual need and request.

Course Objectives:
1 Identify units of measurement in the household, apothecary and metric systems.
2 Calculate desired dosages from available strengths within and between different systems of measurement.
3 Explain abbreviations, symbols and numbers used in medication orders.
4 Accurately interpret medication orders.
5 Calculate the flow rate of intravenous fluids and IVPB medications.

Teaching Strategies:
Lecture/Discussion/Blackboard
Problem Solving
Group Work
Multimedia

Topical Outline:
Unit I - Units of measurement; Interpretation of medication orders
Unit II - Systems of measurement for dosage calculations
Unit III - Common medication preparations
Unit IV - Specialized medication problems

Course Requirements:

1. Textbook -**Required:**

Olsen J., Giangrasso A., Shrimptom D.,Dillion, Patricia (2008) Medical Dosage Calculations, 9th ed., Pearson Prentice Hall: Upper Saddle River.

2. Attendance –
A student is deemed excessively absent when he or she has been absent 15% (i.e., more than one class) of the number of contact hours a class meets during the semester. When a student is excessively absent, a grade of "WU" will be assigned as described in the college catalog.

3. Evaluation –
Grades will be calculated according to college policy as follows:

A+ 98-100	B+ 88-89	C+ 78-79	D+ 68-69
A 95-97	B 85-87	C 75-77	D 65-67
A- 90-94	B- 80-84	C- 70-74	D- 60-64
			F ≤ ***59*** and below

W Withdraw without penalty
Wu Unofficial withdrawal, e.g. -excessive absence (counts as a failure)
Inc Term's work incomplete. Counts as an "F" grade unless work is completed within six months.

Grades will be determined as described below:
Quizzes - 60%
Final Examination - 40%

Students who do not take a test on the scheduled date are required to take a makeup test at a time selected by instructor. All makeup tests must be arranged prior to the next scheduled examination. Students who fail to take the makeup test will receive a zero grade for the test. There are three quizzes and a final examination.

All students must use the "Test Taking Strategies Program" located in M220 within the first two weeks of course.

4. Medication Calculation Policy

Medication knowledge and skills regarding dosage calculations will be integrated and tested in every subsequent nursing course.

CRITERIA FOR RETENTION IN THE NURSING PROGRAM

Effective Fall 2008

Criteria for retention in the Nursing Program mandates that students:

1. Receive no grades below a C in any of the co-requisite courses;
2. Earn a minimum a "C" grade in every required Nursing course with a clinical component;
3. **Students who fail a clinical nursing course achieving a grade of not less than "C-" may apply to repeat the course one time only in the semester immediately following the failure. Repeating the course is subject to space availability.**
4. *Students must submit an **"Intent to Return to Nursing Courses Form"** outlining what they thought caused them to be unsuccessful and include a plan for success that demonstrates significant changes in how they will approach the course when repeated.*
5. A second earned grade of less than a "C" in any nursing course with a clinical component will result in dismissal from the Nursing program.

Nursing students who enter Nursing 17 and Nursing 18 for the first time **MUST** complete the Nursing Program within four years from the date of entry into the core nursing courses. Any student who has not attended nursing courses for two or more consecutive semesters cannot be readmitted into the Nursing Program unless qualifying examinations have been passed in sequential order in the courses previously completed. In accordance with the retention criteria of the Nursing Department, qualifying examinations may be repeated only once.

1993; revised 2003; revised 2008)

NUR 17 Unit I - Units of measurement; interpretation of medication orders

Learner Objectives	Lecture/Discussion	Related Learner Experience (Required Readings)
After completion of Unit I, the student will:		
1. Describe course requirements.	1.1 Course Orientation A. Overview	Syllabus
2. Identify basic arithmetic skills.	2.1 Review arithmetic skills for medication dosage calculations	Handouts pgs.2-18
3. Identify parts-of a medication order.	3.1 Medication administration process	pgs. 19-24
	3.2 Medication orders/medication administration record (MAR)	pgs. 25-36
	3.3 Routes and frequency of medication administration.	pgs. 24
	3.4 Abbreviations	pg. 25
4. Interpret drug labels.	4.1 Review of drug labels: generic/trade names drug strengths expiration dates reconstitution	pgs. 37-53
5. Solve calculation problems using dimensional analysis	5.1 Identify relationship between equivalents and dimensional analysis in problem solving.	54-70
	5.2 Conversion from one unit of measurement to another	87-102

NUR17 Unit II – Systems of measurement for dosage calculation

Learner Objectives	Lecture/Discussion	Related Learner Experiences (Required Readings)
After completion of Unit II, the student will:		
1. Identify units of measurement in the apothecary, household, and metric systems	1.1 Review of equivalents and symbols in apothecary, household and metric systems	pgs. 72-86
	1.2 Identify systems of weights and measurement including equivalents between systems	
2. Convert from one system of measurement to another	2.1 Problem solving and conversions between systems using dimensional analysis	pgs. 87-102

NUR17 Unit III -Common Medication Preparations

Learner Objectives	Lecture/Discussion	Related Learner Experiences (Required Readings)
After completion of Unit III, the student will:		
1. Calculate dosages for oral medications in tablet, capsule, caplet and liquid form.	1.1 Review of drug labels.	pgs. 104-09;124-30
	1.2 Multi-step conversions with drug label interpretation using dimensional analysis.	110-116
2. Identify the various types and parts of syringes.	2.1 Review of common types of syringes: pre-packages cartridges tuberculin and insulin syringes.	138-170
3. Determine the amount of solution in different syringes.	3.1 Evaluate MD orders and preparing medications using syringes.	192-204
4. Solve calculation problem R/T preparation of medications for injection from drug supplied in liquid and powdered form.	4.1 Review parenteral medications supplied as liquids in vials and ampules.	192-204;197-203;204-12
	4.2 Calculation of problems involving preparation of medications in liquids and powder form.	
	4.3 Evaluate of MD orders for parenteral medications.	

NUR 17 Unit IV – Specialized Medication Problems

Learner Objectives	Lecture/Discussion	Related Learner Experiences (Required Readings)
1. Describe the basic concepts and standard equipment utilized in the delivery of intravenous (IV) and enteral solution.	1.1 Introduction to concepts and equipment utilized with enteral solutions.	pgs. 217; 218-241
2. Calculate the flow rate of IV and enteral solutions.	2.1 Problem solving R/T IV therapy; calculating flow rates using dimensional analysis.	
3. Describe intravenous piggyback (IVPB) medication administration	3.1 Introduction to concepts and equipment utilized with Intravenous Piggyback infusions	pgs. 243-250;253-61
4. Calculate the flow rate of intravenous solutions based on the amount of drug per minute/per hour	4.1 Problem solving R/T calculating flow rate for intravenous medications using dimensional analysis.	
5. Calculate pediatric dosage based on body weight	5.1 Review drug labels R/T MD orders in pediatrics. 5.2 Problem solving R/T pediatric dosages.	pgs. 262-67; 269-81

Comprehensive Self-Tests pgs. 284-293

Rev June 2008