KINGSBOROUGH COMMUNITY COLLEGE
of
THE CITY UNIVERSITY OF NEW YORK

Department of Nursing

2009-2010

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. The online/ hybrid version requires access to Microsoft office programs: word and power point. These programs can be accessed at home, or on campus in the library and/or MAC 224 computer labs.

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 –
Complete participation in class is possible only when students are able to focus attention on the class, therefore entering class after it has begun is disrespectful to Faculty and classmates. Talking out of turn or exhibiting other disruptive behaviors is not tolerated and students will be asked to leave the classroom or lab. All pagers, wireless phones, electronic games, radios, tape or CD players or other devices that generate sound must be turned off when any member of the academic community enters a classroom. Cellular devices are allowed to be on in the classroom only if the owner is using the caller ID, voice messages or a vibrating battery or universal clip mechanism. NO TEXTING IS ALLOWED AT ANY TIME DURING CLASS AND/OR LABS. Members of the academic community must exit the classroom to make or receive calls.

A student is deemed excessively absent when absent 15% of the number of contact hours a class meets during a semester.
A student is deemed excessively absent when he or she has been absent 15**%. Absence from more than ONE class constitutes excessive absence in Nursing 17**. When a student is excessively absent, a grade of "WU" will be assigned as described in the college catalog. The online/hybrid version requires weekly logons to Blackboard. These logons will be used to determine attendance.

Fatigue can certainly impair a health care worker's ability to provide safe, professional nursing care. Thus KCC 's Nursing Department states : All students need to carefully assess his/her level of fatigue, school requirements in terms of lecture, on-campus labs and clinical experiences and own work schedules. This assessment should carefully consider the potential impact of excessive employment on his/her ability to provide safe, professional nursing care. Each student has an ethical responsibility to ensure that fatigue does not negatively impact student nurse responsibilities.

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

A+ 97 - 100%	A 93 - 96%	A- 90 - 92
B+ 87 - 89%	B 83 - 86%	B- 80 - 82
C+ 78 - 79%	C 75 - 77%	C- 70 - 74
D+ 66 - 69%	D 60 - 65%	
F 59% and below		

INC -Incomplete (counts as an F unless work is completed within six months)
WU -Withdrew Unofficially (counts as failure)
W -Withdrew without penalty

Grades for Nursing 17 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.

Effective Fall 2009 Criteria for retention in the Nursing Program mandates that students:

1. Earn a minimum of a "C" grade in every required Nursing and co-requisite course. **Students who achieve a C- grade in a required nursing course may apply to repeat the course one time only in the semester immediately following, subject to space availability. The online "Intent to Return to Nursing Course" form"** must be completed and include a plan for success that demonstrates significant changes in how they will approach the course when repeated. Only one required nursing course may be repeated.

2. Students who enter Nursing 18 **MUST** complete the Nursing Program within four years from the date of entry into this course. Any student who has not attended required nursing courses for two or more consecutive semesters cannot be readmitted into the Nursing Program unless qualifying examinations have been passed in the required nursing courses previously successfully completed. Qualifying examinations may be taken only once.

   (Required nursing courses: nursing 17, 18, 19, 20, 21, 22, 23, 24.

   Co-requisite courses: biology 12, biology 51, English 24, psychology 32, sociology 31)

(1993; revised 2003; revised 2008; revised 2009)

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