Kingsborough Community College
The City University of New York
Department of Nursing

Nursing 1700 – Calculations for Medication Administration
Course Syllabus: Fall 2026

Professor T. Bellomo, RN, MSN Professor Shannon, RN, MSN, Course Coordinator	
Credit – Hours: 1 credit, 2 hours	
Pre-Requisites:	Passing score on the ACCUPLACER CUNY Assessment Test in Math **or** completion of developmental mathematics
Co-Requisite	NUR 1800 or equivalent

WELCOME

Welcome to NUR 1700! The NUR 1700 faculty is committed to serving students from all diverse backgrounds and viewpoints. The diversity of our KCC students is a resource, strength, and benefit. Therefore, it is expected that we maintain an atmosphere of mutual respect for diversity: gender identity, sexuality, disability, age, socioeconomic status, ethnicity, race, nationality, religion, and culture in class.

The nursing faculty is committed to your success and wellbeing. The nursing 1700 faculty is aware of the stress and volume of work ahead and we are here every step of the way to support and guide you. If you encounter any academic difficulties during this course, please contact me; I am here for you to offer support and learning/studying suggestions and resources. I encourage you to also lean on each other for support. Together we are better, please do not struggle alone.

COURSE DESCRIPTION

The course introduces beginning level students to acquire knowledge and develop proficiency for accurately computing medication dosages for various methods of administration to patients across the lifespan. Topics include systems of measurement, equivalents and conversions, selected abbreviations and computation of medication dosages. Content will be reinforced and tested in subsequent nursing courses. It is essential for students to engage in additional practice in order to develop proficiency. Provisions are available for additional time and tutorial assistance in the college laboratory. Classroom instruction will be held weekly throughout the semester.

COURSE STUDENT LEARNING OUTCOMES (SLOs)

The following course SLOs apply when applying techniques for accurately computing medication dosages for medications to be administered to infants, children and adults. The course SLOs will be achieved by the end of the semester.

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

NUR 1700– Final grades will be calculated as follows:

Exam # 1	10%
Exam # 2	25%
Exam # 3	25%
Final exam	40%

TOPICAL OUTLINE

Each unit incorporates the Categories of Client Needs: Pharmacological and Parenteral Therapies,

- Unit 1 – Basic Calculation Skills and Introduction to Medication administration
- Unit 2 – Systems of Measurement
- Unit 3 – Oral and Parenteral Medications
- Unit 4 – Infusions and Pediatric Dosages

ASSESSMENT MEASURES for COURSE SLOs

Students will perform satisfactorily in the classroom, as evidenced by achieving 83% or greater on written exams.

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 electronic 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. 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 in any course when he or she has been absent 15% of the number of contact hours a class meets during a semester. When a student is excessively absent, a grade of “W” or “WU” will be assigned as described in the college catalogue.

STUDENTS WITH DISABILITIES:

Access-Ability Services (AAS) serves as a liaison and resource to the KCC community regarding disability issues, promotes equal access to all KCC programs and activities, and makes every reasonable effort to provide appropriate accommodations and assistance to students with disabilities. Your instructor will make the accommodations you need once you provide documentation from the Access-Ability office (D-205). Please visit the AAS webpage for more information and instructions for applying for accommodations.

EXAM POLICY:
All course exams are administered electronically via the testing software platform, ExamSoft. The CUNY Policy on Academic Integrity is strictly enforced throughout the exam. Any suspected violation of this policy may result in removal from the course. It is your responsibility to familiarize yourself with the Nursing Department Exam Agreement. **It is your responsibility to familiarize yourself with the Nursing Department Exam Agreement located in the Nursing Student Handbook.**

Academic Integrity Policy – The City University of New York (cuny.edu) Revised Academic Integrity Policy that now includes the use of Artificial Intelligence. The policy outlines definitions and examples of academic dishonesty.

EVALUATION
A grade of "B" is required as the passing grade for this course, NUR 17.
Final letter grades will be calculated according to college and departmental policy as follows:

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

W	Withdrew without penalty
WU	Unofficial withdrawal (counts as failure)
INC	Doing passing work, but missing an assignment or an examination; changes to a "FIN" if work is not made up by the 10th week of the next 12-week session
FIN	Failure as a result of an Incomplete

Teaching Strategies	
• Lecture/Discussion/Blackboard • Problem solving • Group Work	• Case Studies • Multimedia

REQUIRED TEXTBOOK
Olsen J., Giangrasso, A., Shrimpton D. (2022). Medical Dosage Calculations: A Dimensional Analysis Approach; Updated 11th Ed. Pearson/Prentice hall: Upper Saddle River: ISBN-13: 978-0-13-687712-7

All students are expected to have read and to adhere to the policies pertaining to the following, as outlined in the department's Nursing Student Handbook:	
• Attendance • Malpractice insurance, health clearance, and CPR training • Evaluation and grading • Clinical competencies • College laboratory practice requirements • Clinical Agency experience requirements (including appropriate dress)	• Netiquette • Specific dress requirements for each clinical course • Drug calculation policy • Mandatory skills review • Criteria for retention in the nursing program • Civility

Unit 1 – Units of Measurement; Interpretation of Medication Orders
Learner Objectives

Unit 1 – Units of Measurement; Interpretation of Medication Orders
• Upon completion of Unit I, the student will – Describe course requirements – Identify basic arithmetic skills – Identify the parts of a medication order – Interpret drug labels – Solve calculation problems using dimensional analysis.
Content/Lecture Discussion/Required Reading (textbook unless otherwise specified)
• Course Orientation and Overview (Syllabus) • Review arithmetic skills for medication dosage calculations (Handouts, pp. 2 – 24) • Medication administration process (pp. 29 – 46) • Medication orders/medication administration record (MAR) (pp. 46 – 53) • Routes and frequency of medication administration (pp. 43-46) • Abbreviations (pp. 38-39) • Review of drug labels (pp. 53-63) – Generic/trade names – Drug strengths – Expiration dates – Reconstitution • Identify relationship between equivalents and dimensional analysis in problem solving (pp. 77-95) • Conversion from one unit of measurement to another (pp. 117-130)

Unit 2 – Systems of Measurement for Dosage Calculations

Learner Objectives

- Upon completion of Unit II, the student will
  - Identify units of measurement in the apothecary, household and metric systems
  - Convert from one system of measurement to another
  - Identify the parts of a medication order
  - Interpret drug labels
  - Solve calculation problems using dimensional analysis.

Content/Lecture Discussion/Required Reading (textbook unless otherwise specified)

- Review of equivalents, household and metric systems (pp. 98 – 116)
- Identify systems of weights and measurement including equivalents between systems
- Problem solving and conversions between systems using dimensional analysis (pp. 117 – 130)

Unit 3 – Common Medication Preparations

Learner Objectives

- Upon completion of Unit III, the student will
  - Calculate dosages for oral medications in tablet, capsule, caplet and liquid form
  - Identify the various types and parts of syringes
  - Determine the amount of solution in different types of syringes
  - Interpret drug labels
  - Solve calculation problem related to preparation of medications for injection from drug supplied in liquid and powdered form.

Content/Lecture Discussion/Required Reading (textbook unless otherwise specified)

- Review of drug labels (pp. 133 – 137; 156 – 174)
- Multi-step conversions with drug label interpretation using dimensional analysis (pp. 143 – 148)
- Review of common types of syringes: pre-packages, cartridges, tuberculin, and insulin syringes (pp. 175 – 213)
- Evaluate MD orders and preparing medications using syringes (pp. 237 – 259)
- Review parenteral medications supplied as liquids in vials and ampoules (pp. 238 – 244, 245 – 252, 253 – 276)
- Calculation of problems involving preparation of medications in liquid and powdered form
- Evaluation of MD orders for parenteral medications.

Unit 4 – Specialized Medication Problems

Learner Objectives

- Upon completion of Unit IV, the student will
  - Describe the basic concepts and standard equipment utilized in the delivery of intravenous (IV) and enteral solutions
  - Describe intravenous piggyback (IVPB) medication administration
  - Calculate the flow rate of intravenous solutions based on the amount of drug per minute/per hour
  - Calculate pediatric dosage based on body weight
  - Solve calculation problem related to preparation of medications for injection from drug supplied in liquid and powdered form.

Content/Lecture Discussion/Required Reading (textbook unless otherwise specified)

- Introduction to concepts and equipment utilized with enteral solutions (pp. 278-303)
- Problem solving related to therapy; calculating flow rates using dimensional analysis
- Introduction to concepts and equipment utilized with intravenous piggyback infusions (pp. 305-309)
- Problem solving related to calculating flow rate for intravenous medications using dimensional analysis (pp. 309-333, 334-359)
- Review drug orders related to MD orders in pediatrics
- Problem solving related to pediatric dosages.

Comprehensive Self-Tests (pp. 360-372)