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

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

Professor T. Bellomo, RN, MSN Professor Sarah Walsh, 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! My name is Professor Mary Shannon, and it is truly my privilege to be your professor.

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.

KCC Nursing Department
Exam Agreement

1. Students are required to arrive at least 15 minutes prior to scheduled exam time.

2. All students, including NUR 2000 students, are required to wear the KCC clinical uniform for all examinations, **including approved shoes. Unless granted permission from the nursing department**, no shirts may be worn under or over the uniform, and arms must be visible. Failure to comply with this requirement will result in the student being prohibited from sitting for the examination. A makeup exam will be scheduled on the next designated makeup exam date.
3. All students should have their hair tied back so that their ears are visible. Only medically prescribed hearing devices or devices required for an AAS accommodation are acceptable. Medical documentation needs to be provided at the beginning of the semester to the instructor.
4. The wearing of jewelry of any kind is strictly prohibited during the examination. This includes, but is not limited to earrings, necklaces, bracelets, smart rings, all types of watches and any other item or any other item the faculty proctors deem unacceptable. Failure to comply with this requirement will result in the student being prohibited from sitting for the examination. A makeup exam will be scheduled on the next makeup exam date.
5. All eyeglasses are subject to inspection.
6. Any student who arrives **15 minutes later than the posted exam time** will not be permitted to take the exam that day. A makeup exam will be scheduled on the next makeup exam date. There will be no exceptions to this policy. **Students will be allowed only one make up exam/semester.**
7. Students are required to line up outside of assigned classroom and will be seated at the discretion of the faculty.

8. All personal items (cell phones, smart watches, earbuds/pods, backpacks, purses, pens, highlighters, pencils, food and drinks etc.) must be placed in the classroom, at a location designated by the proctor before taking assigned seat.
9. Cell phones are to be turned off (not on vibrate) and placed with all personal items in the area designated by the proctor. At no time shall a student have their cell phone on their person once seated for the exam.
10. Students should remove all hats, scarves, sweatshirts, hoodies, prior to the beginning of the exam (The only exceptions are religious head coverings).
11. Prior to the start of the exam, students will be given a pencil and one sheet of paper, if required.
    a. Additional paper can be requested from the proctor as needed.
    b. Students must write their name on the paper.
    c. **No information may be written on the paper before the exam begins.**
    d. All paper will be collected by the proctor at the conclusion of the exam.
    e. Returned paper must be intact and may not have any torn portions.
    f. The paper will not be shared between students.
12. Students are prohibited from talking once the exam starts until the proctor states the exam is over and the students have exited the testing room.

13. Students are not permitted to discuss/record/write down the exam questions in any context on their own or with each other during or after the exam.
14. If the student has any questions once the exam begins, they are required to raise their hand and a proctor will come to them.
15. Questions related to medical terminology are not allowed.
16. Once the student completes the exam, they are to raise their hand after the green check mark is visible on their computer screen. A proctor will come over to them to confirm their exam is uploaded.
17. After exam upload confirmation has occurred, the student will sign out of ExamSoft.
18. Once signed out of ExamSoft, the computer will not be used by the student for any reason. (Assignments, internet searching, personal use etc.).
19. Students will remain silent while they are waiting for the examination to be over.
20. **If a student does not comply with the exam rules, they will be dismissed from the exam, receive a grade of zero for the exam, be reported to the Academic Dishonesty office and have their final course grade withheld until a final resolution of their situation has occurred.**

I have read the above and agree to comply with the KCC Nursing Department Academic Integrity policy. I understand that I am not permitted to talk about/discuss/write down or repeat any questions or answers from this exam.

By going forward I Agree to the terms outlined here!

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

As per CUNY policy, in the event that an otherwise in-person class is scheduled to be delivered remotely, please be aware that is necessary to have a camera in working order and on to ensure student participation and the best possible experience. Failure to turn on the camera will result in an absence for the day. https://www.cuny.edu/wp-content/uploads/sites/4/page-assets/academics/faculty-affairs/Camera-Use-Guidance-for-Online-and-Hybrid-Courses_FINAL-JUNE-20-2024.pdf

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

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RETENTION CRITERIA
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 inclusive of BIO 1200, BIO 5100, ENG 2400, and PSY 3200.
2. **Students who achieve a "C-" grade in required clinical nursing courses may apply to repeat the course one time only in the semester immediately following, subject to space availability. The**

minimum grade for clinical courses that are repeated is a "B." The "Intent to Return to Nursing Course" form can be found on the KCC Website Nursing Department page under "Forms". This must be completed and include a plan of success that demonstrates significant changes in how they will approach the course when repeated. Only one required nursing course may be repeated. A grade of less than a "C" in a second nursing course will cause the student to be dismissed from the program.

3. **Students must achieve a grade of "B" in order to pass NUR 1700. Students in NUR 1700 who achieve a failing grade of no less than "C" may repeat the course one time only after submitting an "Intent to Return Form."**
4. Students who enter Nursing 1700 and Nursing 1800 **MUST** complete the Nursing Program within four years from the date of entry into this course. 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 the required nursing courses previously successfully completed. Qualifying examinations may be repeated only once.
5. If a student receives a grade of less than **C-** or, in the case of a repeated nursing course, a grade of less than **B**, the student may submit an **Appeal of the Retention Criteria** form. This form is available on the KCC website. Only one appeal is permitted during a student's time in the KCC Nursing Program. Additional information regarding the appeal process can be found in the **Nursing Student Handbook** or obtained from the course instructor.
6. Students in the clinical component can only withdraw once and must be passing to do so.

REPEATING A NURSING COURSE

If you receive less than a passing grade in a clinical nursing course, you will be eligible to repeat the course **only one time.** The procedure that will follow will vary depending on several outcomes such as:

- Final course grade.
- If you have taken the course before.
- If you have appealed a grade before.

1. If you have received a **C- in a clinical nursing course (NUR 1800, 2100, 1900,2000, 2200, 2300)** ***and it is the first time you have taken this course,*** then complete an **Intent to Return Form** and submit as per the directions on the form.
2. If you are in a non-clinical nursing course, such as **NUR 1700, and receive a grade of less than a B,** then complete an **Intent to Return Form** and submit as per the directions on the form.
3. If you have received **less than a C-** in a clinical nursing course and it is **the first time** you have taken this course, then you must submit an **Appeal of the Retention Criteria Form** and submit as per the directions on the form.
4. If you currently failed a nursing course and you have already failed a prior nursing course, **you will be dismissed from the nursing program.** You are eligible to submit the **Appeal of the Retention Criteria Form** and follow the directions on the form**. You are permitted to do this only if you have never appealed a grade before.**
5. If you are **repeating a nursing course and receive a grade of less than a B, you will be dismissed from the nursing program.** If you have never appealed the retention criteria before, you are eligible to appeal your grade. Submit an **Appeal of the Retention Criteria Form** and submit as per the directions on the form.
6. ***You are only allowed one appeal while you are enrolled in KCC's Nursing Program.***

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

- 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)