

4Basic Course Information

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| Semester: | Fall 2024 | Instructor Name: | J. Alicia Ortega, MSN, RN, FNP, OCN |
| Course Title & #: | NURS-100 Medication-Mathematics | Email: | alicia.ortega@imperial.edu |
| CRN #: | 10380 | Webpage (optional): | |
| Classroom: | 2131 | Office #: | 2119 |
| Class Dates: | 08/12/2024-10/04/2024 | Office Hours: | Tuesday 11:00-15:00 |
| Class Days: | Tuesday | Office Phone #: | 760-355-5736 |
| Class Times: | 0900-1105 | Emergency Contact: | TBA |
| Units: | 1 | Class Format: | In-Person |

Course Description

This course focuses on those components of safe medication calculation and administration. The emphasis is on accuracy of calculation and the critical thinking evolved in client safety. This is an intense class on med math calculations that are required of all nursing majors. Clinical application is integrated into the clinical nursing courses. (CSU)

Student Learning Outcomes

Upon completion of this class the student will be able to: Demonstrate understanding by passing a comprehensive final exam on dosage calculations at 78% or higher and overall grade for course of 78% or higher. (ILO2, ILO4) (ILO2, ILO4)

Course Objectives

Upon satisfactory completion of the course, students will be able to:

1. Calculate basic mathematic problems including addition, subtraction, multiplication & division of fractions & decimals.
2. Convert metric, apothecary and household measures accurately.
3. Solve dosage problems using dimensional analysis
4. Calculate adult & pediatric dosages
5. Calculate intravenous flow rates
6. Interpret drug orders and labels relevant to the safe administration of drugs,
7. Discuss the "Seven rights" of clients relative to administration of medications.
8. Describe the routes of administration, po, IM, IV

Textbooks & Other Resources or Links

Dosage Calc 360 4-year access. Sandra Luz Martinez de Castillo, Maryanne Werner-McCulloug. FA Davis2019, ISBN 9780803677135



Course Requirements and Instructional Methods

During the 2023 Spring Session, NURS100 is offered in person. Classroom work:

- Weekly modules and assignments open on Friday 1200am and are due on Thursday @1159pm
- The student is expected to attend and participate in class.
- Tests: There will be assessments covering the topics reviewed in the weekly modules. EXAMS will be taken in Dosage Calc 360 in classroom. THERE ARE NO MAKE-UP EXAMS; if a need is identified please communicate with your professor as soon possible. Assignments: There will be homework assignments from the required Dosage Calc 360 (FA Davis) online site. The assignments are not part of your grade; the assessments are part of your grade. These assignments will be outlined in Canvas. The assignment will cover the topics discussed in modules and on Dosage Calc 360. A student shall treat this course like a job. There will be:
 - Homework: Chapter assignments in Dosage Calc 360
 - Weekly assessments (10 points each)
 - 1 Midterm exam (100 points), 1 Final Exam (100 points).

Course Grading Based on Course Objectives

Course Grading Based on Course Objectives: This is a nursing course therefore the grading is per the nursing department grading scales.

A = 93-100%

B = 84-92%

C = 78-83%

F = Below 78%

Course Policies

ATTENDANCE • A student who fails to attend the first meeting of a class or does not complete the first mandatory activity will be dropped by the instructor as of the first official meeting of that class. Special circumstances can be contemplated as long as you reach out to your professor with anticipation or as soon as the need is identified. Should readmission be desired, the student's status will be the same as that of any other student who desires to add a class. It is the student's responsibility to drop or officially withdraw from the class. See General Catalog for details. • Regular attendance in all classes is expected of all students. A student whose continuous, unexcused absences exceed the number of hours the class is scheduled to meet per week may be dropped. For online courses, students who fail to complete required activities for two consecutive weeks may be considered to have excessive absences and may be dropped. • If a student leaves the class early, or after the break without notifying the instructor, this will constitute an absent equal to the number of hours absent that day. • Absences attributed to the representation of the college at officially approved events (conferences, contests, and field trips) will be counted as 'excused' absences. All exams are to be completed in-person only; fail to be present in class the score will not be accepted and the student must re-take the exam.

CLASSROOM ETIQUETTE

- Electronic Devices: Cell phones and electronic devices must be turned off and put away during class, including online class, unless otherwise directed by the instructor. Electronic watches that can access internet are not allowed in class during examinations.



- Food is prohibited in all classrooms/online classroom. Drinks and Water bottles with lids/caps are the only exception.
- Disruptive Students: Students who interfere or disrupt a class may be dismissed from class and meet with the Campus Disciplinary Officer before returning to continue with coursework. Disciplinary procedures will be followed as outlined in the General Catalog.
- Children in the classroom: Due to college rules and state laws, only students enrolled in the class may attend; children are not allowed in the classroom, including online/zoom classes. Please keep background noise low or mute when attending online zoom classes. **ACADEMIC HONESTY** Academic honesty in the advancement of knowledge requires that all students and instructors respect the integrity of one another’s work and recognize the important of acknowledging and safeguarding intellectual property. There are many different forms of academic dishonesty. The following kinds of honesty violations and their definitions are not meant to be exhaustive. Rather, they are intended to serve as examples of unacceptable academic conduct.
- Plagiarism is taking and presenting writings or ideas of others, without citing the source. You should understand the concept of plagiarism and keep it in mind when taking exams and preparing written materials. If you do not understand how to “cite a source” correctly, you must ask for help.

Other Course Information

CIVILITY

Civility is treating others and ourselves with respect, dignity and care. Civility is evident when we are sensitive to the impact that our communications, and behaviors have on others, and when we acknowledge each other’s self-worth and unique contributions to the community as a whole. Incivility includes any and all forms of disrespect, behavior misconduct or disregard for instruction, the instructor or a fellow student. Students are expected to adhere to the standards of Student Conduct and the regulations adopted by the college. behavior misconduct. Students will treat faculty and other students with respect. Students are expected to promote self-accountability for their actions and foster respectful and professional conduct in all academic interactions. Students should report any form of harassment, disrespect or threatening action. Violations are subject to student disciplinary actions, including but not limited to the removal, suspension or expulsion of a student. Education Code Section 76034, IVC Code of Student Conduct.

IVC Student Resources

IVC wants you to be successful in all aspects of your education. For help, resources, services, and an explanation of policies, visit <http://www.imperial.edu/studentresources> or click the heart icon in Canvas. • Disabled Student Programs and Services (DSP&S) office is in Building 2100, telephone 760-355-6313. • Student Health Center. A Student Health Nurse is available on campus. Make appointment online or contact 760-355-6128

Anticipated Class Schedule/Calendar

| Date or Week | Activity, Assignment, and/or Topic | Pages/ Due Dates/Tests |
|------------------------------|---|------------------------|
| Week 1 August 13, 2024 | OBJECTIVES: 1. Read & Understand the Syllabus 2. Enroll and learn the Dosage Calc 360 online 3. Know more about your fellow classmates 4. Learn and understand Safety in Medication Administration 5. Learn and understand Systems of Measurements | |

| Date or Week | Activity, Assignment, and/or Topic | Pages/ Due Dates/Tests |
|---|---|-------------------------------|
| | <p>6. List the commonly used units of measure in the metric system.</p> <p>7. Express metric weights and volumes using correct notation rules.</p> <p>8. Convert metric weights and volumes within the system.</p> <p>9. Recognize dosages: -Measured in units. -Measured as percentages. -Using ratio strengths. - Measured in milliequivalents. -In household measures. -In the apothecary measures</p> <p>ASSIGNMENTS: 1. Purchase the textbook: 2. This is the e-book and online activities that you will be using. I have put the Instructions in the Modules on how to register 3. Read & Understand the Syllabus 4. Read & Understand the Getting Started Module and Course Policies 5. Read & Understand Week 1 Modules M1-M2. 6. 1st Week Attendance 7. Read and complete Assignments due on Dosage Calculation 360 - M1 Safety in Medication Administration -M2 Systems of Measurements</p> | <p>Dosage Calc 360 Online</p> |
| <p>Week 2 August 20</p> <p>Last day to drop with a W: August 25</p> | <p>OBJECTIVES: ASSIGNMENTS:</p> <ol style="list-style-type: none"> 1. Review the study guide for Week 2 2. Review the PowerPoints for M3 Dimensional Analysis 3. Review and complete the Exercises on M3. 4. Review the PowerPoints for Syringes and Needles | <p>Dosage Calc 360 Online</p> |
| <p>Week 3 August 26</p> | <p>OBJECTIVES:</p> <ol style="list-style-type: none"> 1. Prepare solutions from powdered drugs using directions printed on vial labels, prepare solutions from powdered drugs using drug literature or inserts. 2. Determine the expiration date and time for reconstituted drugs. 3. Calculate dosages for reconstituted drugs, oral medications in solid and liquid form and medications measured in milliequivalents 4. Calculate dosages based on weight. <p>ASSIGNMENTS:</p> <ol style="list-style-type: none"> 1. Read Calculating Parenteral Medication Dosages, Preparing Powdered Parenteral Medications, Needles and Syringes | <p>Dosage Calc 360 Online</p> |

| Date or Week | Activity, Assignment, and/or Topic | Pages/ Due Dates/Tests |
|------------------------|--|------------------------|
| | 2. Review power points in Week 4 3. Complete Assignment Week 4 4. Review and complete the exercised in Dosage Calculation 360 5. Calculate average parenteral | |
| Week 4 September 3 | Mid Term Exam | In Person |
| Week 5 September 10 | <p>OBJECTIVES:</p> <ol style="list-style-type: none"> 1. Differentiate between primary, secondary, peripheral, and central IV lines. 2. Explain the function of IV drip chambers, roller and slide clamps, and on-line and indwelling injection ports. Differentiate between volumetric pumps, syringe pumps, and PCAs. 3. Identify the abbreviations used for IV fluid orders. 4. Identify the calibrations in gtt/mL (drops/mL) on IV administration sets. 5. Calculate flow rates using dimensional analysis. 6. Flow rates to infuse ordered dosages. 7. Heparin dosages. 8. mL/hr flow rates for an Electronic Infusion Device (EID) or IV pump. 9. Learn and understand calculations of intravenous medications 10. Learn and understand administration of direct intravenous medications 11. Learn and understand titration <p>ASSIGNMENTS:</p> <ol style="list-style-type: none"> 1. Review the study PowerPoints for Week 6. 2. Review the PowerPoints Calculating for IV Medications and Infusions, Administering Direct IV Medications, Titration 3. Review and complete the Exercises in Dosage Calc 360 | Dosage Calc 360 Online |
| Week 6 September 17 | <p>OBJECTIVES:</p> <ol style="list-style-type: none"> 1. List the steps in preparing and administering IV medications from a solution bag. 2. Explain why a flush is included in IV medication administration. 3. Calculate flow rates for the administration of pediatric IV medications. | Dosage Calc 360 Online |

| Date or Week | Activity, Assignment, and/or Topic | Pages/ Due Dates/Tests |
|------------------------|--|------------------------|
| | 4. Use normal daily and hourly dosage ranges to calculate and assess dosages ordered. 5. Dosages and flow rates based on kg body weight ASSIGNMENTS: 1. Review the PowerPoints for Verifying Safe Dose, titration 2. Review and complete the Exercises in Dosage Calc 360 | |
| Week 7 September 24 | OBJECTIVES: 1. Explain how suspensions are measured and administered. 2. Calculate pediatric oral dosages. 3. List the precautions of IM and subcutaneous injection in infants and children. 4. Calculate pediatric IM and subcutaneous dosages. ASSIGNMENTS: 1. Calculating Intake and Output, Special Populations 2. Review and complete the Exercises in Dosage Calc 360 | Dosage Calc 360 Online |
| Week 8 October 1 | Final Exam | In Person |

*****Subject to change without prior notice*****