**Course Description Form**

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| * Course Name: Pharmaceutical Calculation | | | | | | | | |
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| * Course Code: 109 PPhc | | | | | | | | |
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| * Semester / Year: 2nd 2023-2024 | | | | | | | | |
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| * Description Preparation Date: 2024 | | | | | | | | |
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| * Available Attendance Forms: 2024 | | | | | | | | |
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| * Number of Credit Hours (Total) / Number of Units (Total) 4 | | | | | | | | |
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| * Course administrator's name (mention all, if more than one name) | | | | | | | | |
| Name: Assistant prof. Dr. Fatima Jalal Jawad & Assistant prof. Dr Khalid Khadim Abid  Email: drfatimajalal@copharm.uobaghdad.edu.iq  Zainabthabit@ copharm.uobaghdad.edu.iq | | | | | | | | |
| * Course Objectives | | | | | | | | |
| **Course Objectives** | | | | | | **The student will be able to:**  **1.Differentiate between the various kinds of doses.**  **2. Describe the primary routes of drug/dose, administration and, for each, the dosage**  **Forms utilized.**  **3. Perform calculations of doses involving household measures.**  **4. Perform calculations pertaining to the quantity of a dose, the dosage regimen, and the supply**  **of medication required for the prescribed period......**  **5. Describe factors to consider in determining doses for pediatric and elderly patients.**  **6. Calculate doses based on factors of age, body weight, and body surface area.**  **7. Utilize dosing tables and nomograms in calculations.**  **8. Calculate doses for single and combination chemotherapy regimens.**  **9.Differentiate between the terms isosmotic, isotonic, hypertonic, and hypotonic.**  **10. Apply physical chemical principles in the calculation of isotonic solutions.**  **11. Perform the calculations required to prepare isotonic compounded prescriptions.**  **Calculate the milliequivalent weight from an atomic or formula weight.**  **12. Convert between milligrams and milliequivalents.**  **13. Calculate problems involving milliequivalents.**  **14. Calculate problems involving millimoles and milliosmoles.**  **15. Perform calculations for altering product strength by dilution, concentration, or fortification.**  **16. Perform calculations for the preparation and use of stock solutions.**  **17. Apply alligation medial and alligation alternate in problem-solving** | | |
| * Teaching and Learning Strategies | | | | | | | | |
| **Strategy** | | Lectures and Presentation, Discussions, Laboratory experiments  And Inverted classrooms with learning strategies:  1. Tuning in …can be used to determine students’ current knowledge and skills.  2. Finding out … encourage investigation and independent learning.  3- Sorting out … encourage the analysis.  4- Developing values … allow students to identify,  5- Speaking out … provide opportunities for students to develop the  6-Reflecting … allow students to identify, discuss and consider the changes in their understandings. | | | | | | |
| * Course Structure | | | | | | | | |
| **Week** | **Hours** | | **Required Learning Outcomes** | **Unit or subject name** | | | **Learning method** | **Evaluation method** |
| 1  2  3  4  5  6  7  8  9  10  11  12  13  14  15  16  17  18  19  20 | 1  3  4  5  6  7  8  9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24  25  26  27  28  29  30  31  32  33  34  35  36  37  38  40  41 | | * Dose Definitions * Routes of Drug/Dose Administration and Dosage Forms   Calculations of Dose  Based on 1. Age  2. weight  3. BSA   * Special   Dosing Considerations  in Cancer Chemotherapy   * Special   Clinical Considerations of Tonicity   * Physical/   Chemical Considerations  in the  Preparation of  Isotonic Solutions   * Electrolyte * Solutions: Milliequivalents, Millimoles, and Milliosmoles. * Clinical Considerations of Water and Electrolyte   Balance.   * Special Considerations of Altering Product Strength in Pharmaceutical   Compounding   * Relationship Between Strength and Total Quantity * Dilution and Concentration of Liquids * Strengthening of a Pharmaceutical Product * Stock Solutions * Dilution of Alcohol * Dilution of Acids | Dose  Dose parameters  Isotonic solution  Electrolytes  solutions  Altering Product Strength, Use of Stock Solutions, and  Problem-Solving by  Alligation | | | - Lectures  -White board  -Data show  -Power point  -Explanatory diagrams | -Written exams  - Oral exams  -Laboratory reports |
| * Course Evaluation | | | | | | | | |
| Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports .... etc | | | | | | | | |
| * Learning and Teaching Resources | | | | | | | | |
| Required textbooks (curricular books, if any) | | | | | Pharmaceutical calculation 3rd edition by Ansel | | | |
| Main references (sources) | | | | | Pharmaceutical calculation 3rd edition by Ansel | | | |
| Recommended books and references (scientific journals, reports...) | | | | | * *Pharmaceutical Calculations : A Conceptual Approach*. 2019. Cham: Springer. | | | |
| Electronic References, Websites | | | | | <https://www.nps.org.au/assets/e1522a550c298d28-18d3eafe5ce1-Extemporaneously-compounded-medicines_40-119.pdf>  <http://repo.upertis.ac.id/1819/1/FASTtrack%20>  Pharmaceutical%20Compounding%20and%20Dispensing.pdf | | | |