

Course Detailed Description – Procedures of the Course Plan Committee /Faculty of Pharmacy	QF02/0408–2.10E
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Department	Pharmacy
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<b>Course Name</b>	<b>Pharmaceutical Calculations</b>	<b>Course No.</b>	٢٠١٢٢٣
Prerequisite	<b>Pharmaceutics-1</b>	Credit Hours	1
Number & date of course plan approval		Brief Description	See form QF02/0409

<b>Course Objectives</b>	Utilize the ability to organize and document pharmaceutical calculations in a clear and accurate manner to solve patient care problems in Drug Delivery, Pharmacotherapy, Pharmaceutical Care Skills courses and into pharmacy practice.
<b>Intended Learning Outcomes</b>	<p>The student will be able to:</p> <ol style="list-style-type: none"> <li>1. Perform conversions of measurement within the metric system and between the metric, household and apothecary systems.</li> <li>2. Solve problems involving the following: ratio &amp; proportion, fractions and conversion of ratios to percentages</li> <li>3. Perform dosage calculations including the following: calculating number of doses, dispensing quantities, ingredient quantities, paediatric formulas body surface area and day supply calculations</li> <li>4. Calculate concentrations of mixtures (weight/weight, weight/volume, volume/weight and volume/volume) and dilutions of stock solutions</li> <li>5. Solve problems related to alligations – combining two varying strengths of drugs to achieve the prescribed strength ordered</li> <li>6. Calculate correct flow rates for drops/min or ml/hour for infusion of IV medications</li> </ol>
<b>Course Topics</b>	<ol style="list-style-type: none"> <li>1. This course teaches pharmaceutical calculations that are involved in prescriptions. Starting with international systems of units, roman numerals and Latin abbreviations.</li> <li>2. It teaches concepts on prescription interpretation and calculations of doses based on patient parameters.</li> <li>3. It explains calculations involved in concentration expressions. Also calculations involved in dilution, concentration, reducing and enlarging formulas.</li> <li>4. It explains calculations involved in HLB systems.</li> </ol>



<b>Text Books</b>	Pharmaceutical calculations, by: M. J. Stocklosa and H. C. Ansel, 13 <sup>th</sup> edition, 2010.			
<b>References</b>	<ol style="list-style-type: none"> <li>1. British Pharmacopeia, 2010.</li> <li>2. Remington's:- The science and practice of Pharmacy, 21<sup>st</sup> ed, 2006.</li> <li>3. Martindal Extra Pharmacopeia, 2009.</li> </ol>			
<b>Grade Determination</b>	1 <sup>st</sup> Exam = 25% 2 <sup>nd</sup> Exam = 25% Final Exam = 50%	Practical Course Grade Determination	Course Work = 50% (Reports, Term Papers, Quizes) Final Exam = 50%	
<b>Course Outline</b>				
<b>Week</b>	<b>Hours</b>	<b>Subjects</b>	<b>Chapters in Textbook</b>	<b>Notes</b>
1	1	Roman Numerals	Experiment 1	
2	1	International Systems of Units; Metric system, common systems, conversion	Experiment 2	
3	1	Percentage, Ratio Strength Other Expressions of Concentration	Experiment 3	
4	1	Percentage, Ratio Strength Other Expressions of Concentration. (continued).	Experiment 4	
5	1	Interpretation of prescription medication orders; Definition, components of typical R <sub>x</sub> , abbreviations and symbols commonly used in R <sub>x</sub> .	Experiment 5	
6	1	Calculation of doses; General considerations; Patient Parameters	Experiment 6	
7	1	Dilution, Concentration, and Allegation	Experiment 7	
8	1	Dilution, Concentration, and Allegation. (continued)	Experiment 8	
9	1	Reducing and enlarging formulas; percentage and ratio strength calculations	Experiment 9	
10	1	HLB Calculations	Experiment 10	

Approved by Dept. Chair		Date of Approval	
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**Extra Information:** (Updated every semester and filled by course instructor)



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<b>Course Instructor</b>	MSc. May Al-Majawleh
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