

## نموذج وصف المقرر

1.	اسم المساق				
	صيدلة فيزيائية ٢ ( نظري وعلمي)				
2.	رمز المساق				
	Phind24_2210-				
3.	السنة الدراسية/ الفصل الدراسي				
	السنة الثانية / الفصل الثاني				
4.	تاريخ اعداد الوصف				
	٢٠٢٥/١/١٥				
5.	استمارات الحضور المتوفرة				
	قائمة تواقيع الطلبة عند الحضور				
6.	عدد الساعات والوحدات الدراسية				
	٣ ساعات نظري و ٢ ساعة عملي / ٤ وحدات				
7.	اسماء التدريسيين المسؤولين عن الكورس الدراسي مع الايميل الرسمي				
	الجزء النظري: دكتور علي عبد الحكيم حامد Email: <a href="mailto:alialazzo@uomosul.edu.iq">alialazzo@uomosul.edu.iq</a> الجزء العملي : دكتورة امنة مظفر النعمة Email: <a href="mailto:amnah.mudhafar@uomosul.edu.iq">amnah.mudhafar@uomosul.edu.iq</a> دكتورة رشا خالد شاكر Email: <a href="mailto:rasha.kh@uomosul.edu.iq">rasha.kh@uomosul.edu.iq</a>				
8.	اهداف الكورس				
	<ul style="list-style-type: none"><li>تعلم المبادئ الفيزيائية التي توجه الشكل الصيدلاني.</li><li>فهم أساس الذوبان والحركية وإيصال الدواء.</li></ul>				
9.	إستراتيجيات التعلم والفهم				
	<ul style="list-style-type: none"><li>حاضرة</li><li>ندوات</li><li>العمل في المنزل</li><li>العروض المعملية العملية والعمل الجماعي في المختبر</li></ul>				
10.	بنية المقرر				
	الاسبوع	الساعات	مخرجات التعلم	اسماء المواضيع	طرق التعلم
	1	3+2	Define saturated solution, solubility, and unsaturated solution. Describe and give examples of polar, nonpolar, and semipolar solvents.	Solubility and distribution phenomena, solvent-solute interactions, solubility of gases in liquids,	Theoretical lectures. Laboratory experiments
					Paper-based exams

Paper-based exams	Theoretical lectures.  Laboratory experiments	Solubility of liquids liquids, solubility of ionic solids in liquids,	Define complete and partial miscibility. Understand the factors controlling the solubility of weak electrolytes.	3+2	2
Paper-based exams	Theoretical lectures.  Laboratory experiments	distribution of sol between solvents.	Describe what a distribution coefficient and partition coefficient are and their importance in pharmaceutical systems.	3+2	3
Paper-based exams	Theoretical lectures.  Laboratory experiments	Chemical kinetics stability, rate and order reactions,	Define reaction rate, reaction order, and molecularity. Understand and apply apparent zero-order kinetics to the practice of pharmacy. Calculate half-life and shelf life of pharmaceutical products and drugs.	3+2	4
Paper-based exams	Theoretical lectures.  Laboratory experiments.	Influence of temperature other factors on reactions	Describe the influence of temperature, ionic strength, solvent, pH, and dielectric constant on reaction rates.	3+2	5
Paper-based exams	Theoretical lectures.  Laboratory experiments	Decomposition of medic agents and accelerated stability analysis.	Calculate the increase in rate constant as a function of temperature. Describe the factors that influence solid-state chemical kinetics.	3+2	6
Paper-based exams	Theoretical lectures.  Laboratory experiments	Interfacial phenomena	Differentiate among different types of interfaces and describe relevant examples in the pharmaceutical sciences. Understand the terms surface tension and interfacial tension and their application in pharmaceutical sciences.	3+2	7
<b>Mid-term exam</b>					8
Paper-based exams	Theoretical lectures.  Laboratory experiments.	Electric properties interfaces, spread coefficient	Calculate surface and interface tensions, surface free energy, its changes, work of cohesion and adhesion,	3+2	9

			and spreading coefficient for different types of interfaces.		
Paper-based exams	Theoretical lectures.  Laboratory experiments	Adsorption at liquid interfaces, surface-active agents	Understand the mechanisms of adsorption on liquid and solid interfaces. Classify surface-active agents and appreciate their applications in pharmacy.	3+2	10
Paper-based exams	Theoretical lectures.  Laboratory experiments	Colloids, dispersed systems and its pharmaceutical application, types of colloidal systems	Differentiate between different types of colloidal systems and their main characteristics.	3+2	11
Paper-based exams	Theoretical lectures.  Laboratory experiments	kinetic properties, diffusion, zeta potential, solubilization of colloidal systems	Appreciate the major kinetic properties of colloids. Understand the main electrical properties of colloids and their application for the stability, sensitization, and protective action of colloids.	3+2	12
Paper-based exams	Theoretical lectures.  Laboratory experiments	Rheology, Newtonian and non-newtonian systems,	Define rheology, provide examples of fluid pharmaceutical products exhibiting various rheologic behaviors, and describe the application of rheology in the pharmaceutical sciences and practice of pharmacy. Differentiate flow properties and corresponding rheograms between Newtonian and non-Newtonian materials.	3+2	13
Paper-based exams	Theoretical lectures.  Laboratory experiments	Thixotropy, determination of thixotropy.	Understand and calculate the effects of temperature on viscosity and recognize similarities between viscous flow and diffusion relative to temperature. Recognize and identify specific rheologic behaviors with their corresponding rheograms.	3+2	14

Students' seminars					15

11. التقييم	
الامتحانات التحصيلية وتوزيع الدرجات من 100	
<ul style="list-style-type: none"> <li>• 20 درجة تقييم نظري.</li> <li>(اختبار منتصف الفصل الورقي + اختبار قصير + حضور + ندوة)</li> <li>• 20 درجة تقييم عملي (حضور + اختبار + تدريب)</li> <li>• 60 درجة الامتحان النهائي النظري الورقي</li> </ul>	
المجموع 100 م	
12. المصادر التعليمية	
1- Alfred Martin et al, Physical Pharmacy, 6th edition, 2010. Laboratory Manual for Practical Physical pharmacy adopted by department.	الكتب المنهجية
1- <b>Physicochemical Principles of Pharmacy</b> by Alexander Taylor Florence and David Attwood. 2- <b>Fast track: Physical Pharmacy</b> by Alexander Taylor Florence and David Attwood.	المصادر الرئيسية