

Enquiry for Course Details

CHEM4145 Medicinal chemistry (6 credits)		Academic Year	2021
Offering Department	Chemistry	Quota	40
Course Co-ordinator	Dr Y Li, Chemistry < yingli0e@hku.hk >		
Teachers Involved	(Dr P H Toy, Chemistry) (Dr Y Li, Chemistry) (Prof X C Li, Chemistry)		
Course Objectives	This course covers the chemical principles of drug design and drug action and uses as an introduction to research in areas of bioorganic chemistry, bioinorganic chemistry, medicinal chemistry, pharmaceutical chemistry, and biotechnology.		
Course Contents & Topics	<ul style="list-style-type: none"> - Drug discovery, design, and development: lead discovery, pharmacophore, structure-activity relationships (SAR), computer-aided drug design, combinatorial chemistry and high-throughput drug screening - Drug-receptor interactions - Proteins (and enzymes) and nucleic acids as drug targets - Metals in medicine - DNA-Drug interactions - Drug metabolism and prodrugs and drug delivery 		
Course Learning Outcomes	On successful completion of this course, students should be able to:		
	CLO 1	demonstrate knowledge of drug discovery, design and development	
	CLO 2	understand drug-biomolecule interactions where appropriate	
	CLO 3	gain appropriate knowledge of drug metabolism and drug delivery	
Pre-requisites (and Co-requisites and Impermissible combinations)	Pass in CHEM3441 or CHEM3442; and Not for students who have passed in BPHM3133, or already enrolled in this course.		
Course Status with Related Major/Minor /Professional Core	2021 Major in Biochemistry (Disciplinary Elective) 2021 Major in Chemistry (Disciplinary Elective) 2021 Major in Chemistry (Intensive) (Disciplinary Elective) 2021 Minor in Chemistry (Disciplinary Elective) 2020 Major in Biochemistry (Disciplinary Elective) 2020 Major in Chemistry (Disciplinary Elective) 2020 Major in Chemistry (Intensive) (Disciplinary Elective) 2020 Minor in Chemistry (Disciplinary Elective) 2019 Major in Biochemistry (Disciplinary Elective) 2019 Major in Chemistry (Disciplinary Elective) 2019 Major in Chemistry (Intensive) (Disciplinary Elective) 2019 Minor in Chemistry (Disciplinary Elective) 2018 Major in Biochemistry (Disciplinary Elective) 2018 Major in Chemistry (Disciplinary Elective) 2018 Major in Chemistry (Intensive) (Disciplinary Elective) 2018 Minor in Chemistry (Disciplinary Elective) 2017 Major in Biochemistry (Disciplinary Elective) 2017 Major in Chemistry (Disciplinary Elective) 2017 Major in Chemistry (Intensive) (Disciplinary Elective) 2017 Minor in Chemistry (Disciplinary Elective)		
Course to PLO Mapping	2021 Major in Biochemistry < PLO 1,2,3,4,5 > 2021 Major in Chemistry < PLO 2,3,4 > 2021 Major in Chemistry (Intensive) < PLO 2,3,4 > 2020 Major in Biochemistry < PLO 1,2,3,4,5 > 2020 Major in Chemistry < PLO 2,3,4 > 2020 Major in Chemistry (Intensive) < PLO 2,3,4 > 2019 Major in Biochemistry < PLO 1,2,3,4,5 > 2019 Major in Chemistry < PLO 2,3,4 > 2019 Major in Chemistry (Intensive) < PLO 2,3,4 > 2018 Major in Biochemistry < PLO 1,2,3,4,5 > 2018 Major in Chemistry < PLO 2,3,4 > 2018 Major in Chemistry (Intensive) < PLO 2,3,4 > 2017 Major in Biochemistry < PLO 1,2,3,4,5 > 2017 Major in Chemistry < PLO 2,3,4 > 2017 Major in Chemistry (Intensive) < PLO 2,3,4 >		
Offer in 2021 - 2022	Y	2nd sem	Examination May
Offer in 2022 - 2023	Y		
Course Grade	A+ to F		

Grade Descriptors	<table border="1"> <tr> <td data-bbox="397 80 491 237">A</td> <td data-bbox="491 80 1495 237">Demonstrate thorough knowledge and understanding of essential facts, concepts, principles, and theories relating to the basic foundation knowledge of medicinal chemistry, especially those related to drug discovery, design and development; drug targets; drug lead optimization; structure activity relationship; pharmacokinetics; drug delivery and its relevance to toxicity. Show strong ability to apply and integrate knowledge and theory relating to the basic foundation knowledge of medicinal chemistry. Show strong ability to analyze novel problems and critical use of data and experimental results to draw appropriate and insightful conclusions relating to the basic principles and knowledge of medicinal chemistry. 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Required/recommended reading and online materials	An Introduction to Medicinal Chemistry (3/e), G.L. Patrick, Oxford University Press, 2005 Medicinal Chemistry- An Introduction, G. Thomas, John Wiley, 2000 D. Wang, S.J. Lippard (2004) Nat. Rev. Drug Dis., Cellular processing of platinum anticancer drugs, 4, 307-320																				
Course Website	NIL																				
Additional Course Information	This course is also offered to RPg students, and the course code for RPg students is CHEM6113.																				