

## Enquiry for Course Details

<b>CHEM4145 Medicinal chemistry (6 credits)</b>		Academic Year	2020						
Offering Department	Chemistry	Quota	70						
Course Co-ordinator	Dr Y Li, Chemistry < yingli0e@hku.hk >								
Teachers Involved	(Dr X Li, 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"> <li>- Drug discovery, design, and development: lead discovery, pharmacophore, structure-activity relationships (SAR), computer-aided drug design, combinatorial chemistry and high-throughput drug screening</li> <li>- Drug-receptor interactions</li> <li>- Proteins (and enzymes) and nucleic acids as drug targets</li> <li>- Metals in medicine</li> <li>- DNA-Drug interactions</li> <li>- Drug metabolism and prodrugs and drug delivery</li> </ul>								
Course Learning Outcomes	On successful completion of this course, students should be able to: <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%;">CLO 1</td> <td>demonstrate knowledge of drug discovery, design and development</td> </tr> <tr> <td>CLO 2</td> <td>understand drug-biomolecule interactions where appropriate</td> </tr> <tr> <td>CLO 3</td> <td>gain appropriate knowledge of drug metabolism and drug delivery</td> </tr> </table>			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
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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	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 ) 2016 Major in Biochemistry ( Disciplinary Elective ) 2016 Major in Chemistry ( Disciplinary Elective ) 2016 Major in Chemistry (Intensive) ( Disciplinary Elective ) 2016 Minor in Chemistry ( Disciplinary Elective )								
Course to PLO Mapping	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 > 2016 Major in Biochemistry < PLO 1,2,3,4,5 > 2016 Major in Chemistry < PLO 2,3,4 > 2016 Major in Chemistry (Intensive) < PLO 2,3,4 >								
Offer in 2020 - 2021	Y	2nd sem	Examination May						
Offer in 2021 - 2022	Y								
Course Grade	A+ to F								

Grade Descriptors	<table border="1"> <tr> <td data-bbox="617 155 706 331">A</td> <td data-bbox="706 155 1448 331">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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Course Teaching & Learning Activities	<table border="1"> <thead> <tr> <th data-bbox="617 1161 966 1192">Activities</th> <th data-bbox="966 1161 1263 1192">Details</th> <th data-bbox="1263 1161 1448 1192">No. of Hours</th> </tr> </thead> <tbody> <tr> <td data-bbox="617 1192 966 1224">Lectures</td> <td data-bbox="966 1192 1263 1224"></td> <td data-bbox="1263 1192 1448 1224">36</td> </tr> <tr> <td data-bbox="617 1224 966 1255">Tutorials</td> <td data-bbox="966 1224 1263 1255">or discussion</td> <td data-bbox="1263 1224 1448 1255">12</td> </tr> <tr> <td data-bbox="617 1255 966 1312">Reading / Self study</td> <td data-bbox="966 1255 1263 1312"></td> <td data-bbox="1263 1255 1448 1312">100</td> </tr> </tbody> </table>	Activities	Details	No. of Hours	Lectures		36	Tutorials	or discussion	12	Reading / Self study		100								
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Assessment Methods and Weighting	<table border="1"> <thead> <tr> <th data-bbox="617 1323 738 1354">Methods</th> <th data-bbox="738 1323 1047 1354">Details</th> <th data-bbox="1047 1323 1226 1354">Weighting in final course grade (%)</th> <th data-bbox="1226 1323 1448 1354">Assessment Methods to CLO Mapping</th> </tr> </thead> <tbody> <tr> <td data-bbox="617 1354 738 1386">Assignments</td> <td data-bbox="738 1354 1047 1386"></td> <td data-bbox="1047 1354 1226 1386">10</td> <td data-bbox="1226 1354 1448 1386">CLO 1,2,3</td> </tr> <tr> <td data-bbox="617 1386 738 1417">Examination</td> <td data-bbox="738 1386 1047 1417"></td> <td data-bbox="1047 1386 1226 1417">60</td> <td data-bbox="1226 1386 1448 1417">CLO 1,2,3</td> </tr> <tr> <td data-bbox="617 1417 738 1449">Presentation</td> <td data-bbox="738 1417 1047 1449">(two presentations)</td> <td data-bbox="1047 1417 1226 1449">20</td> <td data-bbox="1226 1417 1448 1449"></td> </tr> <tr> <td data-bbox="617 1449 738 1533">Test</td> <td data-bbox="738 1449 1047 1533">midterm</td> <td data-bbox="1047 1449 1226 1533">10</td> <td data-bbox="1226 1449 1448 1533"></td> </tr> </tbody> </table>	Methods	Details	Weighting in final course grade (%)	Assessment Methods to CLO Mapping	Assignments		10	CLO 1,2,3	Examination		60	CLO 1,2,3	Presentation	(two presentations)	20		Test	midterm	10	
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Required/recommended reading and online materials	<p>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</p>																				
Course Website	NIL																				
Additional Course Information	This course is also offered to RPg students, and the course code for RPg students is CHEM6113.																				

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