

## Enquiry for Course Details

<b>CHEM3999 Directed studies in chemistry (6 credits)</b>		Academic Year	2023
Offering Department	Chemistry	Quota	---
Course Co-ordinator	Prof D L Phillips, Chemistry < phillips@hku.hk >		
Teachers Involved	(Various teachers in the Department, Chemistry)		
Course Objectives	This course is designed for third year students who would like to take an early experience on research. It offers students an opportunity to carry out small scale chemical projects by themselves.		
Course Contents & Topics	Students interested in taking this course should contact their prospective supervisors in May to determine the contents and the nature of their project in the coming academic year. Prior approval from both the prospective supervisor and the course coordinator is required.		
Course Learning Outcomes	On successful completion of this course, students should be able to:		
	CLO 1	understand the terminology and nomenclature associated with the small scale chemical project they worked on in the course	
	CLO 2	demonstrate knowledge and understanding of basic concepts involved in their chemical project	
	CLO 3	understand the relationships of the their particular chemical project to the wider area of chemistry	
Pre-requisites (and Co-requisites and Impermissible combinations)	Pass in at least 24 credits of advanced level disciplinary core/elective chemistry courses (CHEM3XXX or CHEM4XXX) in the Chemistry Major including a pass in CHEM2341 or CHEM2441 or CHEM2442 or CHEM2541. This capstone course is for Chemistry Major/ Chemistry Major (Intensive) students only. This course is designed for third year students who would like to take an early experience on research. The earliest that a student is allowed to take this capstone course is their year 3 study.		
Course Status with Related Major/Minor /Professional Core	2023 Major in Chemistry ( Disciplinary Elective ) 2023 Major in Chemistry (Intensive) ( Disciplinary Elective ) 2023 Minor in Chemistry ( Disciplinary Elective ) 2022 Major in Chemistry ( Disciplinary Elective ) 2022 Major in Chemistry (Intensive) ( Disciplinary Elective ) 2022 Minor in Chemistry ( Disciplinary Elective ) 2021 Major in Chemistry ( Disciplinary Elective ) 2021 Major in Chemistry (Intensive) ( Disciplinary Elective ) 2021 Minor in Chemistry ( Disciplinary Elective ) 2020 Major in Chemistry ( Disciplinary Elective ) 2020 Major in Chemistry (Intensive) ( Disciplinary Elective ) 2020 Minor in Chemistry ( Disciplinary Elective ) 2019 Major in Chemistry ( Disciplinary Elective ) 2019 Major in Chemistry (Intensive) ( Disciplinary Elective ) 2019 Minor in Chemistry ( Disciplinary Elective )		
Course to PLO Mapping	2023 Major in Chemistry < PLO 1,2,3,4,5,6 > 2023 Major in Chemistry (Intensive) < PLO 1,2,3,4,5,6 > 2022 Major in Chemistry < PLO 1,2,3,4,5,6 > 2022 Major in Chemistry (Intensive) < PLO 1,2,3,4,5,6 > 2021 Major in Chemistry < PLO 1,2,3,4,5,6 > 2021 Major in Chemistry (Intensive) < PLO 1,2,3,4,5,6 > 2020 Major in Chemistry < PLO 1,2,3,4,5,6 > 2020 Major in Chemistry (Intensive) < PLO 1,2,3,4,5,6 > 2019 Major in Chemistry < PLO 1,2,3,4,5,6 > 2019 Major in Chemistry (Intensive) < PLO 1,2,3,4,5,6 >		
Offer in 2023 - 2024	Y	1st sem	2nd sem
		Examination	No Exam
Offer in 2024 - 2025	Y		
Course Grade	A+ to F		
Grade Descriptors	A	Show an extensive comprehension of the subject. Demonstrate very able analytical and critical thought with presence of some originality. Illuminating utilization and critical analysis / evaluation of information acquired from a wide range of high quality sources. Critical employment of data and results to synthesize appropriate and illuminating conclusions. Demonstrate integration of a wide range of appropriate theories, principles, data and methods. Employ very effective organizational and presentational skills. [Work of A+ should demonstrate substantial additional work beyond that is required in wider areas relevant to the topic.]	
	B	Show a substantial comprehension of the subject. Demonstrate able analytical and critical thinking with use of relevant information from sources. Demonstrate ability to compose meaningful comparisons between different secondary interpretations. Correct utilization of data and results to form appropriate conclusions. Compose general integration of theories, principles, data and methods. Perform effective organizational and presentational skills.	
	C	Show a general but incomplete comprehension of the subject. Presence of some analytical and critical thinking with use of relevant information from sources. Demonstrate ability to compose comparisons between different interpretations. Mainly correct but some incorrect utilization of data and results to form appropriate conclusions. Demonstrate some partial integration of theories, principles, data and methods. Perform moderately effective organizational and presentational skills.	
	D	Show a partial but limited comprehension, with knowledge of some relevant information, of the subject. Presence of some coherent and logical thinking, but with limited analytical and critical abilities. Show utilization and reference of several sources, but mostly via summary instead of by analysis and comparison. Limited ability to employ data and results to form appropriate conclusions. Demonstrate limited integration of theories, principles, data and methods. Perform limited or marginally effective organizational and presentational skills.	
	Fail	Show little or no comprehension of the subject. Evidence of little or lack of analytical and critical abilities, logical and coherent thinking. Limited employment of secondary sources and no critical comparison of them. Incorrectly utilize data and results and/or unable to form appropriate conclusions. Demonstrate little or no integration of theories, principles, data and methods. Organization and presentational skills are of very limited use or ineffective.	
Course Type	Project-based course		

Course Teaching & Learning Activities	<b>Activities</b>	<b>Details</b>	<b>No. of Hours</b>	
	Reading / Self study	discussion & meetings to be arranged by the student and the supervisor	120	
Assessment Methods and Weighting	<b>Methods</b>	<b>Details</b>	<b>Weighting in final course grade (%)</b>	<b>Assessment Methods to CLO Mapping</b>
	Dissertation	Written report	30	CLO 1,2,3
	Oral presentation		20	CLO 1,2,3
	Research report	Research (experimental and/or computational study in a research group)	50	CLO 1,2,3
Required/recommended reading and online materials	Recommended reading material will be assigned depending on the project.			
Course Website	NIL			
Additional Course Information	Exceptional academic strength of the students is required for taking this course. The course may involve Laboratory component as Course Teaching & Learning Activities.			