國立東華大學

教學計劃表 Syllabus

課程名稱(中文) Course Name in Chinese	無機化學(一)			學年/學期 Academic Year/Semester	112/1
課程名稱(英文) Course Name in English	Inorganic Chemistry(I)				
科目代碼 Course Code	CHEM30500	系級 Department & Year	學三	開課單位 Course-Offering Department	化學系
修別 Type	學程 Program	學分數/時間 Credit(s)/Hour(s)	3.0/3.0		
授課教師 Instructor	/劉鎮維				
先修課程 Prerequisite					

課程描述 Course Description

The inorganic chemistry course will focus on the structures and bonding of simple inorganic molecules, which require the backgrounds of quantum mechanics, and symmetry concepts.
The latter idea is critical to construct frontier molecular orbitals used to explain the bonding properties of molecules.

課程目標 Course Objectives

配合週期表，藉由原子結構、分子之鍵結與結構，探討無機化合物之特性及化學
反應之動力及反應機構

	系專業能力 Basic Learning Outcomes	課程目標與系專業能力相關性 Correlation between Course Objectives and Dept.'s Education Objectives
A	具備化學基礎知識	●
B	具備獨立思考及分析解決問題之能	●
C	具備化學專業知	●
D	具備執行化學實驗之能力	○
E	具備國際視野與外語能力	○

圖示說明Illustration ：● 高度相關 Highly correlated ○中度相關 Moderately correlated

授 課 進 度 表 Teaching Schedule & Content

週次Week	內容 Subject/Topics	備註Remarks
1	Introduction to Inorganic Chemistry: Inorg. Chem. 2021, 60, 18561-18566 (Sixty years of Inorganic Chemistry)	
2	Basic concepts: atoms	
3	Basic concepts: molecules	
4	Introduction to molecular symmetry	
5	No classes on 2023/10/09 and 2023/10/10	

6	Introduction to molecular symmetry	
7	Bonding in polyatomic molecules	
8	Bonding in polyatomic molecules	
9	期中考試週 Midterm Exam Mid-term examination on 2023/11/07 (50%)	
10	Structures and energetics of metallic and ionic solids	
11	Structures and energetics of metallic and ionic solids	
12	Acids, bases and ions in aqueous solution	
13	Acids, bases and ions in aqueous solution & non-aqueous media	
14	Reduction and oxidation	
15	Reduction and oxidation	
16	Hydrogen	
17	No class on 2024/01/01. Final examination on 2024/01/02 or 2024/01/08 (50%) 期末考試週 Final Exam	
18	Experimental technique (Ch. 4)	make-up classes for the first week of spring semester, 2024

教 學 策 略 Teaching Strategies

☑ 課堂講授 Lecture ☐ 分組討論Group Discussion ☐ 參觀實習 Field Trip

☐ 其他Miscellaneous:

教 學 創 新 自 評 Teaching Self-Evaluation

創新教學(Innovative Teaching)

☐ 問題導向學習(PBL) ☐ 團體合作學習(TBL) ☐ 解決導向學習(SBL)

☐ 翻轉教室 Flipped Classroom ☐ 磨課師 Moocs

社會責任(Social Responsibility)

☐ 在地實踐Community Practice ☐ 產學合作 Industy-Academia Cooperation

跨域合作(Transdisciplinary Projects)

☐ 跨界教學Transdisciplinary Teaching ☐ 跨院系教學Inter-collegiate Teaching

☐ 業師合授 Courses Co-taught with Industry Practitioners

其它 other: _____

學期成績計算及多元評量方式 Grading & Assessments									
配分項目 Items	配分比例 Percentage	多元評量方式 Assessments							
		測驗 會考	實作 觀察	口頭 發表	專題 研究	創作 展演	卷宗 評量	證照 檢定	其他
平時成績 General Performance	0%								
期中考成績 Midterm Exam	50%								
期末考成績 Final Exam	50%								
作業成績 Homework and/or Assignments	0%								
其他 Miscellaneous (_____)	0%								

評量方式補充說明
Grading & Assessments Supplemental instructions

教科書與參考書目（書名、作者、書局、代理商、說明）
Textbook & Other References (Title, Author, Publisher, Agents, Remarks, etc.)

Textbook: Inorganic Chemistry, 5th edition by Catherine E. Housecroft & Alan G. Sharpe

課程教材網址(含線上教學資訊,教師個人網址請列位於本校內之網址)
Teaching Aids & Teacher's Website(Including online teaching information. Personal website can be listed here.)

其他補充說明 (Supplemental instructions)