臺灣大學高中生進階課程 課程資訊	
課程名稱	普通化學丙
開課學期	114-2
授課對象	
授課教師	鄭原忠/彭旭明
學分	3
上課時間	每週星期二、四 (17:30~19:15)
上課地點	化學系館 210 教室
課程簡介影片	
★修課先備知識或條件要求	高一基礎化學成績達 80 分以上以及高二選修化學 I、II 成績達 80 分以上；或由高中端認定具備上述程度的學生。
入學後學分認抵說明	本課程學分、上課時數及授課內容與臺大普通化學丙相同，入學本校後，課程抵免由學生就讀學系依權責認定。
備註	

課程大綱	
為確保您我的權利，請尊重智慧財產權及不得非法影印	
課程概述	This General Chemistry course will cover fundamental chemical principles broadly applicable in Chemistry, Biochemistry, Medical Science, Materials Science, and various fields of Engineering. In one semester, we will focus on a general introduction to chemical principles including stoichiometry, basic quantum mechanical principles with an emphasis on electronic structures of atoms and chemical bonding, chemical kinetics, equilibrium phenomena, and laws of thermodynamics.
課程目標	The goal is to straightforwardly introduce notions that advance beyond High-school Chemistry and to provide the foundations for a systematic understanding of the various disciplines in Chemistry for serious-minded students.
課程要求	Students are expected to attend classes regularly, participate actively, and complete all assignments and examinations. A high-school-level understanding of chemistry and mathematics is expected. This course emphasizes the development of analytical thinking, problem-solving, and basic laboratory skills, as well as the ability to connect chemical principles with everyday phenomena and modern technology. Academic integrity is required at all times. All submitted work must represent the student's own or the group's original effort.
預期每週課後學習時數	6 hours/week
指定閱讀	*Chemistry: An Atoms First Approach* by Steven S. Zumdahl, Susan A. Zumdahl.

	3rd Edition
參考書目	
評量方式（僅供參考）	

No	項目	百分比	說明
1.	期中考 1	30	
2.	期中考 2	30	
3.	期末考	30	
4.	平時成績	10	

課程進度

週次	日期	授課教師	單元主題
第 1 週	2/24, 2/26	鄭原忠/彭旭明	• Significant Figures and Calculations • Atoms & Molecules • Chemical Reactions & Stoichiometry
第 2 週	3/3, 3/5	鄭原忠/彭旭明	• Quantum theory, Wave-particle Duality • Uncertainty principle, Time-independent Schrodinger Equation
第 3 週	3/10, 3/12	鄭原忠/彭旭明	• Particle in a Box, Quantum Harmonic Oscillator • Hydrogen atom
第 4 週	3/17, 3/19	鄭原忠/彭旭明	• Atomic Electronic Structure • Periodic Properties
第 5 週	3/24, 3/26	鄭原忠/彭旭明	• Basic Concepts of Bonding (Classical Theory) • Naming Simple Compounds
第 6 週	3/31, 4/2	鄭原忠/彭旭明	• Chemical Bonding • Molecular Geometry & Properties
第 7 週	4/7, 4/9	鄭原忠/彭旭明	• Organic Molecules
第 8 週	4/14, 4/16	鄭原忠/彭旭明	• Chemistry of Life
第 9 週	4/21, 4/23	鄭原忠/彭旭明	• Transition Metals and Coordination Chemistry
第 10 週	4/28, 4/30	鄭原忠/彭旭明	• Gases, Kinetic Theory of Gases • Real gases • Intermolecular Interactions • The Liquid State
第 11 週	5/5, 5/7	鄭原忠/彭旭明	• Bonding in the Solid State • Basic Semiconductor Physics
第 12 週	5/12, 5/14	鄭原忠/彭旭明	• Chemical Kinetics
第 13 週	5/19, 5/21	鄭原忠/彭	• Chemical Equilibrium

		旭明	• Acids and Bases • Solubility and Complex Ion Equilibrium
第 14 週	5/26, 5/28	鄭原忠/彭旭明	• Thermochemistry • Energy, Enthalpy
第 15 週	6/2, 6/4	鄭原忠/彭旭明	• Spontaneity, Entropy • Free Energy and Chemical Equilibria
第 16 週	6/9, 6/11	鄭原忠/彭旭明	• Electrochemistry and Energy Science