



Headway Education
進佳教育

網址: www.headway.edu.hk

教育局註冊編號: 534463, 534471

2015-16 Tutorial Courses

F.4-F.6 Chemistry

The SuperChemistry Series

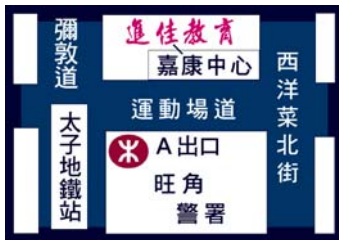


—— 頂尖名師

—— 課程系列

查詢報名熱線：

2789 2069



校址：九龍西洋菜北街155號
嘉康中心3樓

(太子地鐵站A出口，旺角警署側，
大廈入口位於運動場道)

F.4 - F.6 Chemistry 課程

20154-16

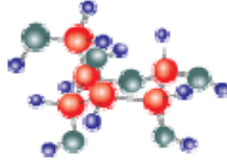
Content 目錄

	Page
化學名師 R. Kwok 簡介	2
課程特色	2
Course Contents 課程內容	
1. F.4 DSE Chemistry 新高中化學	3
2. F.5 DSE Chemistry 新高中化學	5
3. F.6 Chemistry - DSE 文憑試密集備戰課程	9
Timetable 課程時間表	11

化學名師 *A. Kivok* 簡介

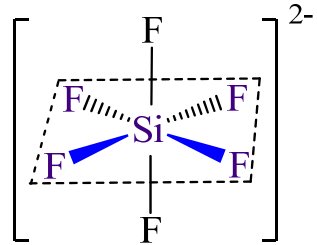
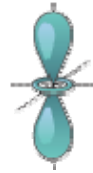
學歷：

- 香港大學理學士
- 香港大學專業教育文憑



經驗：

- 歷任著名中學物理、化學科主任
- 豐富教授名校會考及高考班經驗，教學表現出色
- 豐富任教補習社經驗，精彩教法備受學生讚賞
- 歷任考評局評卷員，具豐富會考、高考閱卷及擬卷經驗，徹底掌握考試出題趨勢



課程特色

- ◆ 反填鴨式教學法，著重思考發問
- ◆ 以科學探究精神研究化學
- ◆ 著重建立清晰和強勁的化學理論基礎
- ◆ 著重培養學生的解難和應變能力
- ◆ 著重 STSE Connections
- ◆ 精闢練習鞏固和強化學生的學術能力
- ◆ 歷屆試題剖析，傳授答題取分技巧
- ◆ 大量不同類型題目練習，建立強勁奪星基礎
- ◆ 課程完全針對 HKDSE 香港中學文憑考試

F.4 DSE Chemistry

適合修讀 Chemistry 或 Combined Science 的同學報讀

課程內容

I. Microscopic world

In-depth treatment of

1. Atomic structure
2. The Periodic Table
3. Metallic bonding
4. Structures and properties of metals
5. Ionic and covalent bond
6. Structures and properties of giant ionic substances
7. Structures and properties of simple molecular substances
8. Structures and properties of giant covalent substances
9. Comparison of structures and properties of important types of substances
10. Exam training

II. Acids and bases

1. Chemistry of acids and alkalis
 - ◆ common acids and alkalis in daily life and in the laboratory
 - ◆ characteristics and chemical reactions of acids
 - ◆ acidic properties and hydrogen ions
 - ◆ role of water in exhibiting properties of acid
 - ◆ basicity of acid
 - ◆ characteristics and chemical reactions of alkalis including ammonia
 - ◆ alkaline properties and hydroxide ions
 - ◆ corrosive nature of concentrated acids and concentrated alkalis
2. More about ionic equations
3. Indicators and the pH Scale
4. Strength of acids and alkalis
5. Salts and neutralization
6. Exam training

(續)F.4 DSE Chemistry 課程內容

III. Metals

- 1. Occurrence and extraction of metals**
- 2. Reactivity of metals**
- 3. Displacement reactions and their interpretations**
- 4. Prediction of reactions involving metals**
- 5. Corrosion of metals and their protection**
- 6. Chemistry of the rusting of iron**
- 7. Methods used to prevent rusting of iron**
- 8. Socioeconomic implications of rusting of iron**
- 9. Corrosion resistance of aluminium**
- 10. Anodisation**
- 11. Exam training**

IV. The Mole Concept and chemical calculations

- 1. Reacting masses**
- 2. The Mole Concept, Avogadro's constant and molar mass**
- 3. Quantitative relationship of the reactants and the products in a reaction**
- 4. Percentage by mass of an element in a compound**
- 5. Empirical formulae and molecular formulae determination**
- 6. Various types of chemical calculations**
- 7. Exam training**

V. Volumetric Analysis I

- 1. Molarity**
- 2. Volumetric analysis involving acids and alkalis**
 - ♦ standard solutions**
 - ♦ acid-alkali titrations**
- 3. Exam training**

VI. Fossil fuels and carbon compounds

- 1. Hydrocarbons from fossil fuels**
- 2. Homologous series, structural formulae and naming of carbon compounds**
- 3. Chemistry of alkanes and alkenes**
- 4. Addition polymers**
- 5. Exam training**

F.5 DSE Chemistry

課程內容

課程包括核心部份和延展部份，最強內容編制，奪星必選！

以下核心課程適合修讀 Chemistry 或 Combined Science 的同學報讀

- I. **Fossil fuels and carbon compounds (II)**
 1. **Chemistry of Alkanes and alkenes**
 2. **Addition Polymerization**
 3. **Applications of addition polymers**
 4. **Introducing functional groups**
 5. **IUPAC nomenclature of compounds containing functional groups**
 6. **Alkanols, alkanolic acids and esters**
 7. **Addition polymers and condensation polymers**
 8. **Exam training**

- II. **Redox reactions, chemical cells and electrolysis**
 1. **Redox reactions**
 - ◆ **Theories of oxidation and reduction**
 - ◆ **Oxidation numbers**
 - ◆ **Common oxidising and reducing agents**
 - ◆ **Balancing equations for redox reactions**
 - ◆ **Predicting redox reactions**
 2. **Chemical cells**
 - ◆ **Redox occurring at the electrodes and electron flow in the external circuit**
 - ◆ **Chemical cells**
 - ◆ **Half equations and overall cell equations**
 - ◆ **Zinc-carbon cell**
 - ◆ **Chemical cells with inert electrodes**
 - ◆ **Fuel cells**

(續)F.5 DSE Chemistry 課程內容

3. **Chemical cells in daily life**
 - ◆ **Primary cells and secondary cells**
 - ◆ **Uses of chemical cells in relation to their characteristics**
4. **Electrolysis**
 - ◆ **Electrolysis as exemplified by the electrolysis of**
 - i. **dilute sulphuric acid**
 - ii. **sodium chloride solutions of different concentrations**
 - iii. **copper(II) sulphate solution**
 - ◆ **Anodic and cathodic reactions**
 - ◆ **Preferential discharge of ions in relation to the electrochemical series, concentration of ions and nature of electrodes**
 - ◆ **Industrial applications of electrolysis:**
 - i. **purification of copper**
 - ii. **electroplating**
5. **Importance of redox reactions in modern ways of living**
6. **Exam training**

III. **Chemical reactions and energy**

1. **Energy changes in chemical reactions**
 - ◆ **conservation of energy**
 - ◆ **endothermic and exothermic reactions and their relationship to the breaking and forming of bonds**
2. **Standard enthalpy change of neutralisation, solution, formation and combustion**
3. **Hess's law**
 - ◆ **enthalpy level diagrams**
 - ◆ **application of Hess law**
 - ◆ **calculations involving enthalpy changes of reactions**
4. **Exam training**

(續)F.5 DSE Chemistry 課程內容

IV. Rate of reaction

1. Rate of chemical reaction
 - ◆ methods of following the progress of a chemical reaction
 - ◆ instantaneous and average rate
2. Factors affecting rate of reaction
3. Molar volume of gases
 - ◆ calculations involving molar volume of gases
4. Exam training

以下延展部份適合修讀 Chemistry 的同學報讀

V. Microscopic world II (Extension)

1. Bond polarity
 - ◆ Concept of electronegativity
 - ◆ Polar and non-polar molecules
 - ◆ Non-polar nature of molecules such as BF_3 and CH_4
2. Intermolecular forces, structure and properties of molecular compounds
 - ◆ van der Waals' forces
 - ◆ Hydrogen bonding
 - ◆ van der Waals' forces in non-polar and polar covalent substances
 - ◆ Factors affecting the strength of van der Waals' forces
 - ◆ Hydrogen bonding
 - ◆ Effect of hydrogen bonding on properties of substances
 - ◆ Structures and properties of molecular crystals
3. Simple molecular substances with non-octet structures
4. Shapes of simple molecules - the VSEPR theory
5. Exam training

VI Chemical equilibrium (Extension)

1. Dynamic equilibrium
2. Equilibrium constant
3. The effect of changes in concentration and temperature on chemical equilibria
4. Exam training

(續)F.5 DSE Chemistry 課程內容

VII. Chemistry of carbon compounds (Extension)

1. Introduction to selected homologous series
2. Isomerism
 - ♦ structural isomerism
 - ♦ geometrical isomerism
 - ♦ enantiomerism
3. Chemistry of various functional groups
 - ♦ alkanes
 - ♦ alkenes
 - ♦ haloalkanes
 - ♦ alcohols
 - ♦ aldehydes
 - ♦ ketones
 - ♦ carboxylic acids
 - ♦ esters
 - ♦ amides
4. Inter-conversions of carbon compounds
5. Important organic substances
 - ♦ acetylsalicylic acid (aspirin)
 - ♦ soaps and soapless detergents
 - ♦ nylon and polyesters
 - ♦ carbohydrates, lipids and proteins
6. Exam training

VIII. Patterns in the chemical world (Extension)

1. Periodic variation in physical properties of the elements from Li to Ar
2. Bonding, stoichiometric composition and acid-base properties of the oxides of elements from Na to Cl
3. General properties of transition metals
4. Exam training

F.6 DSE Chemistry 密集備戰課程

課程內容

Plan A 核心課程適合修讀 Chemistry 或 Combined Science 的同學報讀

Plan B 延展課程只適合修讀 Chemistry 的同學報讀

Plan A (核心課程)

適合修讀 Chemistry 或 Combined Science 的同學報讀

I. Intensive revision of core topics 密集重溫核心課程

- a. Planet earth
- b. Microscopic world I
- c. Metals
- d. Acids and bases
- e. Mole Concept and Chemical Calculations
- f. Fossil fuels and carbon compounds
- g. Microscopic world II
- h. Redox reactions, chemical cells and electrolysis
- i. Chemical reactions and energy

Plan B (延展課程)

II. Patterns in the Chemical World (Extension 延展課程)

- a. Periodic variation in physical properties of the elements from Li to Ar
- b. Bonding, stoichiometric composition and acid-base properties of the oxides of elements from Na to Cl
- c. General properties of transition metals

III. Electives 自選課程 (Extention 延展課程)

- a. **Industrial Chemistry**
- b. **Materials Chemistry**
- c. **Analytical Chemistry**

以上 3 個自選課程只須選修兩個

IV. Intensive revision of extension topics 密集重溫延展課程

- a. **Rate of Reaction**
- b. **Chemical Equilibrium**
- c. **Chemistry of carbon compounds (II)**

Plus 大量歷屆試題操練和答題要訣 and Mock Examination and Final Tips

最強考試訓練，奪星首選！

日期、時間及學費：

請參閱有關級別時間表及學費單張

特別優惠喜訊：二人同行，首四堂半費！

- 細則：
1. 凡本校舊生或新生，若介紹一位新生同時報讀同一課程，兩人之首四堂學費即可獲原學費半價優惠。
 2. 此優惠不可與其他優惠同時使用

(註：半價以原學費計算)

查詢/報名熱線：2789 2069

進佳教育 — 學生為本，享負盛名！