朝陽科技大學 097學年度第1學期教學大綱
Organic Synthesis 有機合成化學

當期課號	1819	Course Number	1819
授課教師	周德璋	Instructor	CHOU,TEH CHANG
中文課名	有機合成化學	Course Name	Organic Synthesis
開課單位	應用化學系(四日)三A	Department	
修習別	選修	Required/Elective	Elective
學分數	3	Credits	3
課程目標	本課程的目標在於介紹有機合成化學的基本原理與現代有機合成技術給學生，使其能應用這些知識解決有機合成化學領域的問題。課程內容包含：有機化學基本反應、有機反應機構、有機反應原理、有機合成的設計與應用、合成實例的探討等。	Objectives	The course covers basic organic reactions, such as reductions, oxidations, alkylations, etc. Chemistry in protecting group, organometallics and enolates is also involved. The mechanism of the important reactions will be illustrated in detail.
教材	方俊民、何東英、徐希白、曾國輝 "有機化學(第二版)"藝軒圖書公司	Teaching Materials	
成績評量方式	4次120分鐘考試，每次佔25%	Grading	4 2-hour examinations, 25% each
教師網頁			
教學內容	1. 緒論 2. 有機反應型態 3. 官能基轉換 4. 立體化學（重溫） 5. 編制碳-碳單鍵 6. 編制碳-碳多重鍵 7. 編制環結構 8. 重排之合成應用 9. 有機合成：實例解說	Syllabus	1. Introductory Remarks Reasons for synthesis // What is the ideal synthesis // Basic background knowledge 2. Types of Organic Reactions Substitution reactions // Addition reactions // Addition reactions // Condensation reactions // Cyclization (ring closure) // Coupling reactions // Fragmentation // Isomerization // Skeletal-Rearrangement Reactions // Ring contraction and ring expansion // Oxidation and reduction // Pericyclic reactions 3. Functional Group Transformations Creation of carbon-heteroatom bonds // Protective groups 4. Stereochemistry (revisit) Optical isomers // asymmetric induction // selectivity 5. Formation of Carbon-Carbon Single Bonds Stabilized carbanions and related nucleophiles // organometallic reagents 6. Formation of Carbon-Carbon multiple Bonds 1,2-Elimination reactions // Wittig and related reactions // Fragmentation methods 7. Ring Formation Cycloaddtion // cyclization 8. Synthetic Application of Rearrangements 9. Organic Synthesis: Examples

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