國立中興大學教學大綱(Syllabus)-研究所

系務會議通過修訂日期：2010/1/13
updated:2010/08/20

課程名稱 (course name)	(中)　高分子科學　(系課程代碼)				
	(Eng.) Polymer Science				
開課系所班級 (dept. & year)	材料科學與工程學系碩士班一年級	**學分 (credits)**	3	**授課教師 (teacher)**	林江珍教授
課程類別 (course type)	□必修(Mandatory) ☑選修(Elective)	**授課語言 (language)**	中文	**開課學期 (semester)**	上學期
課程目標 (course objectives)	（中）基本高分子化學知識及工業應用介紹				
	(Eng.) (1) Fundamental organic reactions, synthesis, derivatives, and their basic properties (2) Monomer sources from petrochemical intermediate conversions (3) Polymer synthesis and modification (4) Structure/property relationship (5) Biopolymers (6) Literature trends and examples (7) Literature reports				
課程簡述 (course description)	(中) 高分子化學結構式--寫法、意義，合成來源、性能及工業應用。其課程內容包括基本有機化學、高分子反應，合成、衍生物；基本化學與物理性質。尤其重視高分子化學結構式所表達之意義與性能與應用之關聯性與基礎原理。				
	(Eng.) Polymer chemical structures—drawing, meaning, synthesis, function, property and industrial applications. Further knowledge on polymerization method and applications will be covered.				

先修課程(prerequisites)

課程名稱 (course name)	與課程銜接的重要概念、原理與技能 (relation to the current course)

教學模式 (teaching methodology) 【請勾選】	講授 (teaching)	討論/報告 (discussion & report)	實驗/參訪 (exp./fab visit)	遠距/網路教學 (remote/web teaching)
	v	v		

授課內容（週次、單元名稱與內容、習作/考試進度、備註）
(course content and homework/tests schedule)

週次 (week)	單元名稱與內容 (subject and content)	習作/考試進度 (homework and tests)	備註 (remark)
01	Fundamental organic reactions, synthesis, derivatives, and their basic properties		
02	Fundamental organic reactions, synthesis, derivatives, and their basic properties		
03	Fundamental organic reactions, synthesis, derivatives, and their basic properties		
04	Monomer sources from petrochemical intermediate conversions		
05	Monomer sources from petrochemical intermediate conversions	Homework 1 and Tests 1	
06	Monomer sources from petrochemical intermediate conversions		
07	Polymer synthesis and modification		
08	Polymer synthesis and modification	Homework 2 and Tests 2	
09	Polymer synthesis and modification	Mid-term exam	
10	Structure/property relationship		
11	Structure/property relationship		
12	Structure/property relationship		
13	Biopolymers	Homework 3 and Tests 3	
14	Biopolymers		
15	Biopolymers		
16	Biopolymers	Homework 4 and Tests 4	
17	Literature trends and examples		
18	Literature trends and examples	Final exam	

學習評量方式
(evaluation)

期中及期末考，各佔 30 %；各章節作業 20 %；小考 20 %

教科書&參考書目（書名、作者、書局、代理商、說明）
(textbook& other references)

Provided powerpoint files and recent literature publications
課程教材（教師個人網址請列在本校內之網址。） (teaching aids & teacher's website)
http://www.mse.nchu.edu.tw/wb_main_co3.asp
課程輔導時間 (office hours)

與學系教育目標之關聯性(材料系)
(relation to educational objective of materials engineering department)

1. 提供材料性質、製程與應用及跨領域知識與訓練
   To provide interdisciplinary know-how and training on materials properties, processing, and applications
2. 培育具獨立思考、創新與實作能力之材料科技人才
   To train materials technology students for independent thinking, innovation, and practical skills
3. 培養團隊合作精神與溝通協調整合能力
   To cultivate the spirit of teamwork and the capacity of integrated cooperation
4. 建立多元價值與國際觀
   To inculcate multifarious values and cosmopolitan worldview
5. 強化綠色材料科技教育
   To implement educational programs in eco-materials technology

與學系教育核心能力之關聯性(材料系)
(relation to educational core abilities for materials engineering department)

(A) 特定材料之專業知識
Specialized knowledge in Materials science and Engineering
(B) 策劃及執行專題研究之能力
Ability to plan and execute a research project
(C) 撰寫專業論文之能力
Ability to write journal articles
(D) 創新思考及獨立解決問題之能力
Ability to do innovative thinking and independent problem solving
(E) 跨領域協調整合之能力
Ability to work in an interdisciplinary setting
(F) 國際觀及綠色材料意識
A fine international scope and general concept of eco-material
(G) 領導、管理及規劃之能力
Ability in leadership, management, and organization
(H) 終身自我學習成長之能力
Ability for life-long learning
(I) 學術專業倫理
Professional ethics in Science and Engineering

課程內涵達成學系【核心能力】比對資料(研究所)

授課進度與內容	核心能力								
	A	B	C	D	E	F	G	H	I
	特定材料之專業知識	策劃及執行專題研究之能力	撰寫專業論文之能力	創新思考及獨立解決問題之能力	跨領域協調整合之能力	國際觀及綠色材料意識	領導、管理及規劃之能力	終身自我學習成長之能力	學術專業倫理
請勾選關聯性☑	☑	☑	☑	☐	☐	☑	☐	☐	☐
Fundamental organic reactions, synthesis, derivatives, and their basic properties	1	1	1	0	0	1	0	0	0
Fundamental organic reactions, synthesis, derivatives, and their basic properties	1	1	1	0	0	1	0	0	0
Fundamental organic reactions, synthesis, derivatives, and their basic properties	1	1	1	0	0	1	0	0	0
Monomer sources from petrochemical intermediate conversions	1	1	1	0	0	1	0	0	0
Monomer sources from petrochemical intermediate conversions	1	1	0	0	1	1	1	0	0
Monomer sources from petrochemical intermediate conversions	1	1	0	0	1	1	1	0	0
Polymer synthesis and modification	1	1	0	0	1	1	1	0	0
Polymer synthesis and modification	1	1	0	0	1	1	1	0	0
Polymer synthesis and modification	1	1	0	0	1	1	1	0	0
Structure/property relationship	1	1	0	0	1	1	1	0	0
Structure/property relationship	1	1	0	0	1	1	1	0	0
Structure/property relationship	1	1	0	0	1	1	1	0	0
Biopolymers	1	1	0	0	1	1	1	0	0
Biopolymers	1	1	0	0	1	1	1	0	0
Biopolymers	1	1	0	0	1	1	1	0	0
Biopolymers	1	1	0	0	1	1	1	0	0
Literature trends and examples	1	1	0	0	1	1	1	0	0
Literature trends and examples	1	1	0	0	1	1	1	0	0
總計(%)	100	100	0	0	100	100	100	0	0

註：
1. 所有必修課均須填寫此表。
2. 矩陣中請填入關聯性； 1 表示相關，0 表示無相關。