



## 教學計劃表 Syllabus

課程名稱(中文) Course Name in Chinese	高分子材料科學			學年/學期 Academic Year/Semester	114/2
課程名稱(英文) Course Name in English	Polymeric Materials Science				
科目代碼 Course Code	MS__54000	系級 Department & Year	碩士	開課單位 Course-Offering Department	材料科學與工程學系
修別 Type	選修 Elective	學分數/時間 Credit(s)/Hour(s)		3.0/3.0	
授課教師 Instructor	/陳素華				
先修課程 Prerequisite					
課程描述 Course Description					
高分子形態、相變化、溶液、機械性質、物化性鑑定、高分子之應用。 有機高分子合成方法、反應機制、反應條件、加工方法					
課程目標 Course Objectives					
讓學生在修習此一課程後，能對高分子材料科學有深入的了解，以利研究工作的進行					
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	具備材料科學所需的進階物理、化學及數學的知識。Acquire required advanced physical, chemical, and mathematic knowledge for materials science and engineering.				●
B	具備材料科學的進階專業知識，並能應用於解決工程上之問題。Acquire required advanced professional knowledge for materials science and engineering, applicable in solving engineering problems.				●
C	具備獨立研究之能力。Equipped with capabilities of independent research.				○
D	具備專業道德及責任感，與良好的溝通及團隊合作的能力。Acquire professional morality and responsibility, and capability of quality communication and team cooperation.				
E	具備進階的英文能力，應用於學習與交流。Acquire English capability used for learning and interaction.				○
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	ntroduction to Polymer Science				
2	Polymer Structure (morphology)				
3	Molecular Weight of Polymers				
4	Testing and Spectrometric Characterization of Polymers				
5	Rheology and Physical Tests				
6	Naturally Occurring Polymer				

7	Step-Reaction Polymerization or Polycondensation Reaction	
8	Ionic Chain-Reaction and Complex Coordinative Polymerization (Addition Polymerization)	
9	期中考試週 Midterm Exam	
10	Copolymerization	
11	Free Radical Polymerization	
12	Mesophase state	
13	Mechanical Behavior of Polymers	
14	Polymer Surfaces and Interfaces	
15	Muticomponent Polymeric Materials	
16	Modern Polymer Topic-I	
17	Modern Polymer Topic-II	
18	期末考試週 Final Exam	

### 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 Industry-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:

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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(含出缺席) General Performance (Attendance Record)		✓							
期中考成績 Midterm Exam	50%	✓							
期末考成績 Final Exam	50%	✓							
作業成績 Homework and/or Assignments									
其他 Miscellaneous (_____)									
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.)									
1. C. N. Satterfield, Heterogeneous Catalysis In Industrial Practice, 2nd ed. 2. G. Strobl, the Physics of Polymers , Springer									
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.)									
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其他補充說明 (Supplemental instructions)									