

110學年度日間部 化學工程與材料科技系 國際學生產學合作專班 【春甲】 課程規劃表

第一學年					第二學年					第三學年				
科目	上學期(110-2)		下學期(111-1)		科目	上學期(111-2)		下學期(112-1)		科目	上學期(112-2)		下學期(113-1)	
	學分	時數	學分	時數		學分	時數	學分	時數		學分	時數	學分	時數
校必修					校必修					校必修				
華語閱讀與理解	1	2								台灣生活與法律	2	2		
華語寫作練習			1	2						台灣社會	2	2		
漢語拼音發音練習	1	2								台灣文化			2	2
華語聽力練習	1	2								台灣藝術			2	2
華語會話練習	1	2												
體育	2	2	2	2										
華人文學與文化(一)(二)	3	3	3	3										
華語輔導			0	5										
小計	9	13	6	12	小計	0	0	0	0	小計	4	4	4	4
院必修					院必修					院必修				
工程倫理			2	2						科技英文(一)(二)	2	2	2	2
英文(一)(二)	2	2	2	2										
小計	2	2	4	4	小計	0	0	0	0	小計	2	2	2	2
專業必修					專業必修					專業必修				
普通化學	3	3			專業實務實習(一)	9	9			有機化學與有機化學實驗	3	3		
化學實驗	3	3			專業實務實習(二)			9	9	高分子材料	2	2		
實用數學	3	3								半導體製程與技術	3	3		
材料科學概論	3	3								程式設計概論	3	3		
普通物理	3	3								儀器分析與儀器分析實驗			3	3
分析化學與分析化學實驗			2	3						材料分析			3	3
物理化學			3	3						無機化學			2	2
人工智慧概論與應用			3	3										
物理冶金			3	3										
小計	15	15	11	12	小計	9	9	9	9	小計	11	11	8	8
專業選修					專業選修					專業選修				
半導體材料產業概論			2	2	化妝品調製實驗	3	3			彩色濾光片製程技術	3	3		
觸媒化學			3	3	電子特用化學品	3	3			生技化妝品學	3	3		
創意智慧材料			3	3	物理化學與物化實驗(二)	3	3			電化學	3	3		
					無機奈米材料	3	3			固態化學			3	3
					質能平衡	3	3			複合材料			3	3
					微電腦應用與實習	2	2			基礎熱力學			3	3
					陶瓷材料			3	3					
					工廠管理			3	3					
					綠色材料概論			3	3					
					燃料電池概論			3	3					

第四學年				
科目	上學期(113-2)		下學期(114-1)	
	學分	時數	學分	時數
校必修				
小計	0	0	0	0
院必修				
小計	0	0	0	0
專業必修				
小計	0	0	0	0
專業實務實習(三)(四)	9	9	9	32
平面顯示器原理與製程實習	3	3		
表面技術	3	3		
太陽能電池材料	3	3		
奈米技術與材料			3	3
彩色濾光片製程技術			3	3
表面工程與AI輔助			3	3
人工智慧深度學習			3	3
圖控程式設計			3	3
Python程式應用			3	3
python與機器學習			3	3
光譜分析與實習			3	3
工程專業術語實習			3	3
生成式人工智慧與應用			3	3

注意事項：

1. 最低畢業學分：128學分；必修學分：96學分

選修學分：32學分（選修學分含跨系選修學分）

2. 學生應修習華語輔導課程(0學分5小時)，並於第一學年實施。

3. 本系允許跨系選修學分，為本系專業選修學分不得低於16學分。

4. 表列選修課程僅供參考，依實際狀況調整。

5. 校外實習課程：產業實務實習(一)(二)(三)(四)，一學分至多80小時。產業實務實習(一)、(二)實際實習時數每週32-36小時，產業實務實習(三)、(四)實際實習時數每週32-40小時

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半導體工程與材料系
系主任 龍明有



MUST Curriculum Planning for Undergraduate Students of Academic Year 2022-2025.
Department of Chemical and Materials Engineering

1 st year					2 nd year					3 rd year								
	Course	1 st semester		2 nd semester			Course	1 st semester		2 nd semester			Course	1 st semester		2 nd semester		
		Cr.	hr.	Cr.	hr.			Cr.	hr.	Cr.	hr.			Cr.	hr.	Cr.	hr.	
MUST Core Required Courses	Chinese Reading	1	2			MUST Core Required Courses					MUST Core Required Courses	Life and law in Taiwan	2	2				
	Chinese Writing			1	2								Taiwanese Society	2	2			
	Chinese Pinyin & Pronunciation Practice	1	2										Taiwanese culture			2	2	
	Chinese Listening	1	2										Taiwanese art			2	2	
	Chinese Daily Speaking	1	2															
	Physical Education	2	2	2	2													
	Chinese Literature and Culture (I)(II)	3	3	3	3													
	Chinese tutor			0	5													
	Subtotal	9	13	6	12		Subtotal	0	0	0	0		Subtotal	4	4	4	4	
School Professional Required Courses	Ethics for Engineers			1	1	School Professional Required Courses					School Professional Required Courses	Technical English(I)(II)	2	2	2	2		
	English (I) (II)	2	2	2	2													
	Subtotal	0	0	1	1			Subtotal	0	0		0	0		Subtotal	2	2	2
Department compulsory courses	General Chemistry	3	3			Department compulsory courses	Professional Practice (I)	9	9			Department compulsory courses	Organic Chemistry and/or Organic Chemistry Laboratory	3	3			
	Chemistry Lab	3	3				Professional Practice (II)			9	9			Polymer Materials	2	2		
	Applied Mathematics	3	3										Semiconductor Manufacturing Technology	3	3			
	Foundations of Materials Science and engineering	3	3										Applications and Practices of Computer Programming	3	3			
	University Physics	3	3										Instrumental Analysis and Experiment of Instrumental Analysis			3	3	
	Analytical chemistry experiment			2	3								Materials Analysis			3	3	
	Physical Chemistry			3	3								Inorganic Chemistry			2	2	
	Applications of Artificial Intelligence			3	3													
	Subtotal	15	15	11	12		Subtotal	9	9	9	9		Subtotal	11	11	8	8	
Department Elective Courses	Introduction to semiconductor materials industry			2	2	Department Elective Courses	Cosmetic Formulation Experiment	3	3			Department Elective Courses	Introduction to Cosmetic	3	3			
	Catalyst Chemistry			3	3								Biocosmetics	3	3			
	Creative smart materials			3	3								Electrochemistry	3	3			
													solid-state chemistry			3	3	
Department Elective Courses					Department Elective Courses	Inorganic Nanomaterials	3	3			Department Elective Courses	composite materials			3	3		
													thermosetastics			3	3	
Department Elective Courses					Department Elective Courses	Mass and Energy Balance	3	3			Department Elective Courses							
Department Elective Courses					Department Elective Courses	Microcomputer Applications and	2	2			Department Elective Courses							
Department Elective Courses					Department Elective Courses	Ceramic Materials			3	3	Department Elective Courses							
Department Elective Courses					Department Elective Courses	Factory Management			3	3	Department Elective Courses							
Department Elective Courses					Department Elective Courses	Introduction of Green Materials			3	3	Department Elective Courses							
Department Elective Courses					Department Elective Courses	Introduction to Fuel Cell			3	3	Department Elective Courses							

4 th year					
	Course	1 st SEMESTER		2 nd SEMESTER	
		Cr.	hr.	Cr.	hr.
MUST Core Required Courses					
	Subtotal	0	0	0	0
School Professional Required Courses					
	Subtotal	0	0	0	0
Department compulsory courses					
	Subtotal	0	0	0	0
Department Elective Courses	Professional Practice (III)(IV)	9	9	9	32
	Principles of Flat-Panel Displays and Practice	3	3		
	Surface Technology	3	3		
	Introduction to Solar Cell Materials	3	3		
	Nanotechnology and Materials			3	3
	Manufacturing Color Filter Processing Technology			3	3
	Surface Engineering and AI Assistance			3	3
	Artificial Intelligence-Deep Learning			3	3
	Labview Programming Design			3	3
	Python Program Application			3	3
	Introduction of Python and Machine Learning			3	3
	Spectroscopic Analysis and Implementation			3	3
	Engineering terminology			3	3
	Generative AI and Applications			3	3

Cr./hr.=Credit/hour

Remarks:

1. Minimum credits required for graduation: 128 credits including 96 compulsory credits, and at least 32 elective credits (including the interdepartmental).
2. Undergraduate students shall take 5-hour Chinese tutoring courses (0 credits) of the first academic year.
3. Inter-departmental elective credits are transferable. Professional elective course credits shall not be fewer than 16.
4. The elective courses listed in the tables are subject to adaptation when necessary.
5. The off-campus internship courses include: Industry Practice Internship (I), (II), (III), (IV), with a maximum of 80 hours of off-campus internship for one credit.
Industry Practice Internship (I) and (II): The actual internship hours range from 32 to 36 hours per week.
Industry Practice Internship (III) and (IV): The actual internship hours range from 32 to 40 hours per week.

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