

111學年度日間部 應用材料科技系 國際學生產學合作專班課程規劃表

第一學年(111)					第二學年(112)					第三學年(113)				
科目	上學期		下學期		科目	上學期		下學期		科目	上學期		下學期	
	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	體育	2	2	2	2	校必修					校必修	分類通識-台灣生活與法律	2	2
	漢語拼音發音練習	1	2									分類通識-台灣社會	2	2
	華語聽力練習	1	2									分類通識-台灣文化		2
	華語會話練習	1	2									分類通識-台灣藝術		2
	華語閱讀與理解	1	2											
	華語寫作練習	1	2											
	華語輔導	0	5											
	華人文學			3	3									
	華人文化			3	3									
	小計	7	17	8	8		0	0	0	0		小計	4	4
院必修	科技英文(一)(二)	2	2	2	2	院必修					院必修	科技英文(三)(四)	2	2
	工程倫理			2	2									
	小計	2	2	4	4		0	0	0	0		小計	2	2
	化學與化學實驗	2	3				0	0	0	0		物理冶金	3	3
	普通物理	3	3				9	9	9	9		有機化學與實驗	3	3
	人工智慧概論與應用	3	3									材料分析與實驗	3	3
專業必修	材料科學概論			3	3	專業必修					專業必修	基礎儀器分析	3	3
	分析化學與實驗			2	3							材料熱力學		3
	物理化學			3	3							材料工程實驗		3
												半導體製程技術與實驗		3
	小計	8	9	8	9		9	9	9	9		小計	12	12
	創意智慧材料	3	3						2	2		奈米材料	3	3
	化學安全工程	2	2						2	2		工程數學(二)	2	2
	微電腦應用及實習			2	2		2	2				高分子材料	2	2
	工程數學(一)			2	2		3	3				電子特用化學品	3	3
	半導體材料產業概論			2	2		3	3				光電材料與應用		3
專業選修	綠色材料概論			3	3	專業選修			3	3	專業選修	太陽能電池材料概論		3
									3	3		無機化學		3
									3	3				
									3	3				
									3	3				
									3	3				
									3	3				
									3	3				
									3	3				
									3	3				
									3	3				

第四學年(114)				
科目	上學期		下學期	
	學分	時數	學分	時數
校必修				
院必修				
專業必修				
專業選修				
小計	0	0	0	0
小計	0	0	0	0
產業實務實習(三)(四)	9	32	9	32
半導體材料機械性質	3	3		
工廠管理	3	3		
彩色濾光片製程技術	3	3		
奈米技術與材料			3	3
生物化學			3	3
表面工程與AI輔助			3	3
半導體元件	3	3		
工程專業術語實務	3	3		
人工智慧倫理、法律與社會	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與機器學習概論	3	3		
光譜分析	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：88學分
選修學分：40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)，並於第一學年上學期實施。
3. 本系允許跨系選修學分，為本系專業選修學分不得低於20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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應材系龍明有
系主任半導體學院張合
院長

MUST Curriculum Planning for Undergraduate Students of Academic Year 2022-2025,
Department of Applied Materials Science and Technology

1 st year(11)					2 nd year(12)					3 rd year(13)							
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	Physical Education	2	2	2	2	MUST Core Required Courses					MUST Core Required Courses	Life and Law in Taiwan	2	2			
	Chinese Writing & Pronunciation Practice	1	2									Taiwanese Society	2	2			
	Chinese Listening	1	2									Taiwanese culture			2	2	
	Chinese Daily Speaking	1	2									Taiwanese art			2	2	
	Chinese Reading	1	2														
	Chinese Writing	1	2														
	Chinese Tutor	0	5														
	Chinese Literature			3	3												
	Chinese Culture			3	3												
Subtotal	7	17	8	8	Subtotal	0	0	0	0	Subtotal	4	4	4	4			
School Professional Required Courses	Technical English(I)(II)	2	2	2	2	School Professional Required Courses					School Professional Required Courses	Technical English(III)(IV)	2	2	2	2	
	Ethics for Engineers			2	2												
Subtotal	2	2	4	4	Subtotal	0	0	0	0	Subtotal	2	2	2	2			
compulsory courses	Chemistry and Laboratory	2	3			compulsory courses	Professional Practice (I)(II)	9	9	9	9	compulsory courses	Physical Metallurgy	3	3		
	Physics	3	3								Organic Chemistry and Laboratory		3	3			
	Applications of Artificial Intelligence	3	3								Materials Analysis and Laboratory		3	3			
	Introduction to Materials Science			3	3						Basic Instrumental Analysis		3	3			
	Analytical chemistry experiment			2	3						Material Thermodynamics				3	3	
	University Physics			3	3						Material Engineering Laboratory				3	3	
											Semiconductor Manufacturing and Laboratory				3	3	
Subtotal	8	9	6	9	Subtotal	9	9	9	9	Subtotal	12	12	9	9			
Elective Courses	Creative Waste Materials	3	3			Elective Courses	Materials Recycling and Circular Economy			2	2	Elective Courses	New materials	3	3		
	Chemical Process Safety Design	2	2				Organic Electronics	2	2		Engineering Mathematics(II)		2	2			
	Computer applications			2	2		Ceramic Materials	3	3		Polymeric Materials		2	2			
	Engineering Mathematics(I)			2	2		Factory Management	3	3		Chemical Engineering Basics		3	3			
	Introduction to semiconductor materials industry			2	2		Introduction of Fuel Cells	3	3		Optoelectronic Material and Application				3	3	
	Introduction of Green Materials			3	3		Net-Zero Technologies and Green Manufacturing			3	3		Introduction to Solar Cell Materials			3	3
							Electronic Materials			3	3		Inorganic Chemistry			3	3
							Vacuum Technology			3	3						
							Polymer Chemistry			3	3						
							Micro-computer Applications	3	3								
							Robot Engineering Practice	3	3								
							App Programming	3	3								
							Practical Topics Introduction	3	3								
							Surface Engineering and AI Assistance	3	3								
							Phonetic Technology	3	3								
							Introduction of Flat Panel Displays	3	3								

4 th year(14)					
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
compulsory courses					
	Subtotal	0	0	0	0
Elective Courses	Professional Practice (I/II/IV)	9	32	9	32
	Mechanical Properties of Semiconductor Materials	3	3		
	Factory Management	3	3		
	Manufacturing Order Filter Processing Technology	3	3		
	Nanotechnology and Materials			3	3
	Biochemistry			3	3
	Surface Engineering and AI Assistance			3	3
	Semiconductor Devices	3	3		
	Engineering Technology	3	3		
	AI Ethics, Law, and Society	3	3		
	AI Practical Application/Case Study/Training	3	3		
	AI Case Programming Design	3	3		
	Project Program Application	3	3		
	Introduction of Finance and Marketing	3	3		
	Project Management	3	3		
	Entrepreneurial Skills and Applications	3	3		

Cr./hr. =Credit/hour

Remarks:

1. Minimum credits required for graduation: 128 credits including 88 compulsory credits, and at least 40 elective credits(including the interdepartmental elective credits).
2. Undergraduate students shall take 5-hour Chinese tutoring courses (0 credits) in the first semester of the first academic year.
3. Inter-departmental elective credits are transferable. Professional elective course credits shall not be fewer than 20.
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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