明志科技大學四技部 113 學年度入學 化學工程系 課程總表
Ming Chi University of Technology「2024 SchoolYear」Department of Chemical Engineering

114/03/04校課程委員會議通過
114/02/21院課程委員會議通過
114/02/17系課程委員會議通過
Examination at School Curriculum Committee Meeting on March 4,2025
Examination at College Curriculum Committee Meeting on February 21,2025
Examination at Department Curriculum Committee Meeting on February 17,2025

	科目名稱 Course Name	一上 Grade 1 First Semester		一下 Grade 1 Second Semester		二上 Grade 2 First Semester		二下 Grade 2 Second Semester		三上 Grade 3 First Semester		三下 Grade 3 Second Semester		四上 Grade 4 First Semester		四下 Grade 4 Second Semeste		選課條件 Course Selection Conditions	每班人數 Number of Class		備註 Remarks
		學分 Credits	時數 Hours	學分 Credits	時數 Hours	學分 Credits	時數 Hours	學分 Credits	時數 Hours	學分 Credits	時數 Hours	學分 Credits	時數 Hours	學分 Credits	時數 Hours	學分 Credits	時數 Hours		上限 Upper Limit	下限 Lower Limit	
基礎課程開設22學分 Basic Course (22 Credits)	文學鑑賞與情意表達(Appreciation of Literature and Emotional Expression)	2	2																		
	永續發展與社會實踐 (Sustainable Development and Social Practice)	1	1																		
	生活與職場英文(English for Life and Business)	3	3	3	3																
	全民國防教育軍事訓練(All-out Defense Education Military Training)	0.5	2	0.5	2																
	體育(Physical Education)	1	2	1	2	1	2	1	2												
	藝文涵養與社會參與(Art Literacy and Social Participation)			2	2																
	歷史思維與多元文化領域(Historical Thinking and Multicultural Studies)							2	2												
	英語聽講(Aural-Oral English)					1	2	1	2												
	英文實務(一)~(二)(Practical English(I)-(II))													1	2	1	2				
	合 計Total	7.5	10	6.5	9	2	4	4	6	0	0	0	0	1	2	1	2				
核心課程(共2學分) Core Course (2 Credits)	大學之道(The Goal of University Education)	1	2																		
	設計思考(Design Thinking)			1	1																
	合 計Total	1	2	1	1																
校共同必修(共18學分) Common School Course (18 Credits)	多元學習前素養訓練(Reliminary Literacy Training for Multimodal Learning)									1	1										「工讀實務實習前素養訓練」、「專業研究實習前素養訓練」、「海外交換學習前素養訓練」課程三擇一修課"Choose one course to take from 'Pre-Work-study Practicum Training, 'Pre-Professional Research Practicum Training', or 'Pre-Overseas Exchange Learning Training
	多元學習模組(一)(Multimodal Learning Module I)											4	40								「工讀實務實習(一)」、「專業研究實習(一)」、「海外交換學習(一)」課程三擇一修課"Choose one course to take from 'Work-study Practicum (I)', 'Professional Research Practicum (I)', or 'Overseas Exchange Learning (I).
	多元學習模組(二)(Multimodal Learning Module II)											4	40								「工讀實務實習(二)」、「專業研究實習(二)」、「海外交換學習(二)」課程三擇一修課"Choose one course to take from 'Work-study Practicum (II)', 'Professional Research Practicum (II)', or 'Overseas Exchange Learning (II).
	多元學習模組(三)(Multimodal Learning Module III)											4	40								「工讀實務實習(三)」、「專業研究實習(三)」、「海外交換學習(三)」課程三擇一修課"Choose one course to take from 'Work-study Practicum (III)', 'Professional Research Practicum (III)', or 'Overseas Exchange Learning (III).
	多元學習模組(四)(Multimodal Learning Module IV)											5	40								「工讀實務實習(四)」、「專業研究實習(四)」、「海外交換學習(四)」課程三擇一修課"Choose one course to take from 'Work-study Practicum (IV)', 'Professional Research Practicum (IV)', or 'Overseas Exchange Learning (IV).
	合 計 Total	0	0	0	0	0	0	0	0	1	1	17	160	0	0	0	0				
核心必修課程62學分 Department Professional Compulsory (58 Credits)	普通化學實驗(General Chemistry Experiment)	1	3	1	3																
	微積分(Calculus)	3	3	3	3																
	普通物理(General Physics)	3	3																		
	普通化學(General Chemistry)	3	3	3	3																
	計算機程式設計(Computer Programming)	3	3																		
	質能平衡(Material and Energy Balance)			3	3																
	有機化學(一)(Organic ChemistryI)					3	3														
	物理化學(一)(Physical ChemistryI)					3	3														
	工程數學(一)(Engineering MathematicsI)					3	3														
	化工產業與人工智慧應用 (Chemical Engineering Industry and Artificial Intelligence Application)							1	2												演講式課程Lecture series
	有機化學實驗(Organic Chemistry Experiment)							2	3												
	單元操作與輸送現象(一) (Unit Operation and Transport Phenomena I)							3	3												
	單元操作與輸送現象(二) (Unit Operation and Transport Phenomena II)									3	3										
	物理化學實驗(Physical Chemistry Experiment)									2	3										
	化工熱力學(Chemical Engineering Thermodynamics)									3	3										
	儀器分析(Instrumental Analysis)									3	3										
	程序設計(Process Design)													3	3						
	工程倫理與實務講座(Engineering Ethics and Professional Topics)													1	2						演講式課程Lecture series
	實務專題(I)(II)(Special Topics in Practice, (I~II))													1	2	1	2				
	化學工程實習(I)(II)(Practice for Chemical Engineering, I~II)													2	4	2	4				
	反應工程(Chemical Reaction Engineering)													3	3						
	合 計 Total	13	15	10	12	9	9	6	8	11	12	0	0	10	14	3	6				
模組選修課程6學分 Elective modules (6 Credits)	有機化學(二) (Organic Chemistry II)							3	3												應用化學模組Applied Chemistry module
	物理化學(二) (Physical Chemistry II)							3	3												應用化學模組Applied Chemistry module
	工程數學(二) (Engineering Mathematics II)							3	3												化工製程模組Chemical Engineering Processes module
	單元操作與輸送現象(三) (Unit Operation and Transport Phenomena III)													3	3						化工製程模組Chemical Engineering Processes module
	合 計 Total	0	0	0	0	0	0	9	9	0	0	0	0	3	3	0	0				
專業選修課程(至少30學分) Professional Elective (Requires at least 34 Credits)	材料科學導論(Introduction to Material Science)			3	3																榮譽學分學程選修Honors credit program elective
	分析化學暨實驗(Analytical Chemistry and Experiment)			3	4																榮譽學分學程選修Honors credit program elective
	高分子化學(Polymer Chemistry)					3	3														榮譽學分學程選修Honors credit program elective
	生物化學(Biochemisty)					3	3														榮譽學分學程選修Honors credit program elective
	分子生物學(Molecular Biology)					3	3														
	化學技術實習(Chemical Technology in Practice)					2	4														
	化工實務專題一 (Special Topics in Practice of Chemical Engineering I)					1	2														
	能源工程概論 (Introduction to Energy Engineering)					3	3														
	能源材料與製程導論 (Introduction to Energy Materials and Processes)					3	3														
	高分子實驗(Polymer Experiment)							2	3												
	高分子加工暨實驗(Polymer Processing and Experiment)							3	4												榮譽學分學程選修Honors credit program elective
	合成化學(Synthetic Chemistry)							3	3												榮譽學分學程選修Honors credit program elective
	化工實務專題二 (Special Topics in Practice of Chemical Engineering II)							1	2												
	電池製程技術(Battery Process Technology)							3	3												
	公用設施(Utility Installations)									3	3										榮譽學分學程選修Honors credit program elective
	電化學(Electrochemistry)									3	3										榮譽學分學程選修Honors credit program elective
	合成化學實驗(Synthetic Chemistry Experiment)									2	3										
	化工實務專題三 (Special Topics in Practice of Chemical Engineering III)									1	2										
	電池組裝與分析實作(Battery Assembly and Analysis Practice)									3	3										
	電池材料與分析實作(Battery Materials and Analysis Practice)									3	3										
	綠色化學技術叢論(Green Chemistry Technology Forum)											3	3								遠距教學Distance learning
	化工基礎概念解析 (Fundamental Conception Analysis of Chemical Engineering)											3	3								遠距教學Distance learning
	生物科技與生質能源產業 (Industrial Biotechnology and Bioenergy)											3	3								遠距教學Distance learning
	儀器分析實驗(Instrumental Analysis Experiment)													2	3						
	化工產業之機電實務講座(Lectures on Electro-Mechanical Engineering Practice for Chemical Industry)													3	3						演講式課程,榮譽學分學程選修Lecture series,Honors credit program elective
	化工裝置設計(Equipment Design in Chemical Engineering)													3	3						榮譽學分學程選修Honors credit program elective
	奈米觸媒技術與應用(Nanocatalytic Technology and Application)													3	3						
	數值分析(Numerical Analysis)													3	3						榮譽學分學程選修Honors credit program elective
	生化工程(Biochemical Engineering)													3	3						
	化工程序與安全(Chemical Processing and Safety)													3	3						
	程序控制與實驗(Process Control and Experiment)													3	3						榮譽學分學程選修 Honors credit program elective
	電池檢測與分析技術(Battery Testing and Analysis Technology)													3	3						
	生物技術暨實驗(Biotechnology and Practice)															3	3				
	奈米材料與技術(Nanomaterial and Technology)															3	3				榮譽學分學程選修 Honors credit program elective
	計算機化工應用(Computer Application in Chemical Engeering)															3	3				榮譽學分學程選修 Honors credit program elective
	電路板與半導體製作(Fabrication of Semiconductor and PCB)															3	3				榮譽學分學程選修 Honors credit program elective
	化工製圖實務講座(Professional Topics in Chemical Cartography)															3	3				演講式課程,榮譽學分學程選修Lecture series,Honors credit program elective
	綠色化學技術暨實驗 (Green Chemistry Technology and Experiment)															3	3				
	產業技術及問題解析 (Problem Solving and Technical Communication)															3	3				
	計算化學(Computational Chemistry)															3	3				
	鋰電池產業實務專題講座(Lecture on Lithium Battery Industry Practice)															3	3				
	合 計 Total	0	0	6	7	18	21	12	15	15	17	9	9	26	27	27	27				
院專業選修 Professional Elective	基石專題 (Cornerston project)			1	3																
	奈米光觸媒的綠色環境應用(Green application of nano-photocatalysis)							3	3												
	頂石專題 (Capstone Project)									1	3										
	合 計Total	0	0	1	3	0	0	3	3	1	3	0	0	0	0	0	0				

備註

1. 本系學生於畢業前至少須取得應用化學模組之選修課程6學分或化工製程模組之選修課程6學分。
2. 修畢第二專長學分學程者：最低畢業學分結構調整為共同必修42學分，通識選修至少8學分(五類型，任選四類各2學分)，專業必修62學分，模組選修6學分，專業選修30學分，合計148學分；已修畢之第二專長學分學程外系學分，採計為系專業選修學分。
3. 修畢跨領域學分學程者：最低畢業學分結構調整為共同必修42學分，通識選修至少8學分(五類型，任選四類各2學分)，專業必修62學分，模組選修6學分，專業選修30學分，合計148學分；已修畢之跨領域學分學程外系學分，採計為系專業選修學分。
4. 已申請環境資源學院實務菁英班者，須符合菁英班各項畢業學分要求且修畢菁英班之化工或材料或環安衛專業選修至少30學分。
5. 必修體育(三)、體育(四)，於大二至大四，採興趣選項教學。

Catalog Remarks

1.Students of this department must take at least 6 credits of elective courses in either the Applied Chemistry module or the Chemical Engineering Processes module before graduation.
2.Students who have completed a second-specialization credit program: The minimum graduation credit structure is adjusted as follows: 42 credits from common required courses, at least 8 credits from elective General Education courses (choose four categories from the given five categories; 2 credits for each category), and 62 credits from major required,,6 credits for module electives, 30 credits from elective courses, totaling 148 credits in all. Completed second-specialization credit program credits earned from other departments are calculated as the Department's major elective credits.
3.Students who have completed an interdisciplinary credit program: The minimum graduation credit structure is adjusted as follows: 42 credits from common required courses, at least 8 credits from elective General Education courses (choose four categories from the given five categories; 2 credits for each category), and 62 credits from major required,6 credits for module electives, 30 credits from elective courses, totaling 148 credits in all.The completed interdisciplinary credit program credits earned from other departments must be calculated as the Department's major elective credits.
4.Students who have applied for Interdisciplinary Practical Elite Program, College of Environment and Resources must complete at least 8 credits from elective courses for Materials Engineering/Chemical Engineering/Safety, Health and Environmental Engineering.
5.Students are required to take Physical Education (III) and Physical Education (IV). PE courses can be selected based on students' interest in their second to fourth years.