

明志科技大學四技部114學年度入學 機械工程系精密機械組 課程總表

115/7/7 校課程委員會審議通過

115/5/28 院課程委員會審議通過

115/5/13 系課程委員會審議通過

必修	共同 (41學分)	基礎課程 22學分	科目名稱	一上		一下		二上		二下		三上		三下		四上		四下		每班人數		備註	
				學分	時數	學分	時數	學分	時數	學分	時數	學分	時數	學分	時數	學分	時數	學分	時數	上限	下限		
基礎課程 22學分		全民國防教育軍事訓練(一)(二)(All-out Defense Education Military Training)	0.5	2	0.5	2																	
		體育(一)~(四)(Physical Education)	1	2	1	2	1	2	1	2													
		永續發展與社會實踐(Sustainable Development and Social Practice)	1	1																			
		文學鑑賞與情意表達(Appreciation of Literature and Emotional Expression)	2	2																			
		藝文涵養與社會參與(Art Literacy and Social Participation)			2	2																	
		生活與職場英文(一)(二)(English for Life and Business)	3	3	3	3																	
		英語聽講(一)(二)(Aural-Oral English)					1	2	1	2													
		英文實務(一)(二)(Practical English)													1	2	1	2					
		歷史思維與多元文化領域(Historical Thinking and Multicultural Studies)					2	2														「憲政與法治」、「歷史思辨」、「國際關係」課程三擇一修課	
		合 計	7.5	10	6.5	9	4	6	2	4	0	0	0	0	1	2	1	2				22	
	(核心2課學程分)		大學之道(The Goal of University Education)	1	2																		
		設計思考(Design Thinking)			1	1																	
		合 計	1	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0					
校共17同學課分程)		多元學習前素養訓練模組(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。	
		多元學習模組(一)~(四)(Multimodal Learning Module)											16	160								「工讀實務實習」、「專業研究實習」、「海外交換學習」課程三擇一修課。	
		合 計	0	0	0	0	0	0	0	0	1	1	16	160	0	0	0	0					
專業 (48學分)	院專13業學必必修35學分		實習前技術訓練(Hands-on Courses Prior to Curricular Practical Training)									1	2										
			普通物理(一)(General Physics I)	3	3																		
			微積分(一)(二)(Calculus I & II)	3	3	3	3																
			工程數學(一)(Engineering Mathematics I)					3	3														
		合 計	6	6	3	3	3	3	0	0	1	2	0	0	0	0	0	0				13	
	系專業必修35學分		計算機程式與實習(Computer Programming and Practice)	3	3																		
			電腦輔助機械製圖(Computer-Aided Mechanical Drawing)	3	3																		
			靜力學(Statics)			2	2																
			動力學(Dynamics)					3	3														
			工程熱力學(一)(Engineering Thermodynamics I)					3	3														
			材料力學與實驗(Mechanics of Materials with Laboratory)					3	4														
			材料科學與工程實驗(Materials Science and Engineering Laboratory)							3	4												
			機構學(Mechanism of Machinery)							3	3												
			自動控制(一)(Automatic Control I)									3	3										
			流體力學(Fluid Mechanics)									3	3										
			專題製作(一)(二)(Special Project I, II)																				
			機械元件設計(一)(Design of Machine Elements I)													3	3		1	3			
			工程倫理與專業實務講座(Lectures in Engineering Ethics and Practice)													1	2						
		合 計	6	6	2	2	9	10	6	7	6	6	0	0	5	8	1	3				35	
共至少 (8應學修分畢)	通識選修		一、開課清冊請參考「通識課程彙總表」。 二、通識五類型課程「語言與全球化、人文藝術、社會研究與未來趨勢、自然科學與環境永續、自主學習」 任選四類型各修畢2學分且合計至少8學分。																				
		專業 (應修畢至少51學分)		數控工具機與實務(Practice in CNC Machine)			3	3															模組(Module) A
	普通物理與實驗(General Physics with Laboratory)				3	4															模組(Module) A		
	普通化學(General Chemistry)				2	2															模組(Module) A		
	電機學與實驗(Electric Machinery with Laboratory)						3	4													模組(Module) A		
	電腦輔助設計(一)(Computer-Aided Design I)						3	3													模組(Module) A、模組(Module) D		
	電腦輔助設計(二)(Computer-Aided Design II)								3	3											模組(Module) A、模組(Module) D		
	模具設計與製造(Design and Manufacture of Mould)										3	3									模組(Module) A、模組(Module) B		
	製造學(Manufacturing Principles)										3	3									模組(Module) A、模組(Module) B		
	精密加工(Precision Machining)										3	3									模組(Module) A、B、D		
	熱流工程實務(Thermal-fluid Engineering Practice)														3	3					模組(Module) A		
	人工智慧概論(Introduction to Artificial Intelligence)				2	2															模組(Module) B		
	Python程式語言與應用(Programming and Application of Python Language)						3	3													模組(Module) B		
	3D列印實務與應用(3D Printing Practice and Application)						3	3													模組(Module) B、模組(Module) D		
	切削原理(Principle of Metal Cutting)								3	3											模組(Module) B		
	MATLAB軟體應用(Applications of MATLAB)								3	3											模組(Module) B		
	機電整合與實驗(Mechatronics with Laboratory)													3	3						模組(Module) B		
	半導體製程(Semiconductor Process)												3	3							模組(Module) B、C、遠距課程distance		
	智慧快速模具設計與製造(Design and Manufacturing of Intelligent Rapid Tooling)														3	3					模組(Module) B、模組(Module) D		
	塑膠模具設計與模流分析(Design and Flow Analysis of Plastic Mould)																3	3			模組(Module) B		
	表面處理技術(Surface Treatment Technology)																	3	3			模組(Module) B	
	機械工程概論(Introduction to Mechanical Engineering)		2	2																		模組(Module) C	
	機械加工實務(Practical Training of Machining)		3	3																		模組(Module) C	
	專題初探(Special Project Exploring)				2	2																模組(Module) C	
	專題實務(Special Project Practice)						1	1														模組(Module) C	
	工程熱力學(二)(Engineering Thermodynamics II)								3	3												模組(Module) C	
	中等材料力學(Intermediate Mechanics of Materials)								3	3												模組(Module) C	
	工程數學(二)(Engineering Mathematics II)								3	3												模組(Module) C	
	電子學(Electronics)								2	2												模組(Module) C	
	產品設計概論與實習(Basic Product Design Introduction and Practice)								3	3												模組(Module) C、模組(Module) D	
	專題設計(一)(Special Project Design I)								1	1												模組(Module) C	
	專題設計(二)(Special Project Design II)										1	1										模組(Module) C	
	熱傳學(Heat Transfer)														3	3						模組(Module) C	
	振動分析與實驗(Vibration Analysis with Laboratory)														3	3						模組(Module) C	
	機構設計(Mechanism Design)														3	3						模組(Module) C	
	化工產業之機電實務講座(Lectures on electro-mechanical engineering practice for chemical industry)														3	3						模組(Module) C、化工系開設Offered by	
	機械元件設計(二)(Design of Machine Elements II)																3	3				模組(Module) C	
	精密量測與實習(Precision Measurement and Practice)		3	3																		模組(Module) D	
	機械材料(Mechanical Engineering Materials)								3	3												模組(Module) D	
	電腦輔助工程分析(Computer-Aided Engineering)														3	3						模組(Module) D	
	海外移地教學(Short-term Study Abroad)										2	2											
	電動車機電整合工程師實務(Practice of Electric Vehicle Mechatronics Integration)																	3	3				
	合 計	8	8	12	13	13	14	27	27	12	12	3	3	24	24	12	12				111		

- 畢業最少應修 148 學分。
- 每學期選課上限為 27 學分，大一至大二選課下限為 16 學分，大三、四選課下限為 9 學分。
- 必修體育(三)、體育(四)，於大二至大四，採興趣選項教學。
- 學生應修畢一個跨領域學程或是第二專長學程，始得畢業。學生依〈學生修讀雙主修辦法〉或〈學生選讀輔修科系組辦法〉修畢雙主修或輔系者，得免修畢第二專長學分學程或跨領域學分學程。
- 最低畢業學分認定：修畢第二專長學分學程/跨領域學分學程者：最低畢業學分結構調整為共同必修 41 學分，通識選修至少 8 學分(五類型，任選四類各 2 學分)，院專業必修 13 學分，系專業必修 35 學分，專業選修任選至少 51 學分，合計 148 學分；已修畢之第二專長學分學程/跨領域學分學程外系學分，採計為系專業選修學分。
- 系專業選修分為精密機械核心課程模組(模組A)、智慧製造跨領域學分學程(模組B)、機械設計課程模組(模組C)、3D 列印課程模組(模組D)。其中精密機械核心課程模組(模組A)至少需修習 6 門課程，其他模組任選。修習機械系其他兩班之專業選修，最多 6 學分，採計為專業選修學分。
- 依大學部學則規定畢業應通過系專業能力畢業門檻，詳細請見「機械工程系專業能力畢業門檻及輔導要點」。
- Students must obtain at least 148 credits before graduating.
- For each semester, courses taken may not exceed 27 credits. Freshmen (1st year) and sophomores (2nd year) must take courses with at least 16 credits. Juniors (3rd year) and seniors (4th year) must take courses with at least 9 credits.
- The elective courses "Physical Education III" and "Physical Education IV" are offered based on students' interests from sophomore to senior.
- Students must complete either an interdisciplinary program or a second-specialization program as one of the graduation requirements. Students who complete their double major or minor programs based on the "Regulations Governing the Pursuit of Double Majors for Students" or the "Regulations Governing Students' Selection of Minor Subjects and Courses" are waived from the requirement of completing a second major credit program or an interdisciplinary credit program.
- Minimum Graduation Credits Requirement: For students who have completed the second major credit program/interdisciplinary credit program, the minimum graduation credit structure is adjusted as follows: 41 credits from common compulsory courses, at least 8 credits from general education elective courses (from five categories, selecting any four categories, 2 credits each), 13 credits from college compulsory courses, 35 credits from department compulsory courses, and at least 51 credits from department elective courses, making 148 credits in total. Credits obtained from the interdisciplinary or the second-specialization program will be counted as credits from department elective courses.
- The department's elective courses are divided into the following modules: Precision Machinery Core Courses Module (Module A), Smart Manufacturing Interdisciplinary Credit Program (Module B), Mechanical Design Courses Module (Module C), and 3D Printing Courses Module (Module D). Among these, at least 6 courses must be taken from the Precision Machinery Core Courses Module (Module A), while the other modules can be chosen freely. A maximum of 6 credits from the professional electives of other classes within the Mechanical Engineering Department can be counted as professional elective credits.
- According to "Academic Regulations for Undergraduate Studies," students must pass the department's professional competency threshold. For details, please refer to "Graduation Requirements for Professional Ability and Guidelines for Students in Department of Mechanical Engineering."