

明志科技大學四技部114學年度入學 機械工程系光機電組 課程總表

115/01/06 校課程委員會審議通過
114/12/29 院課程委員會審議通過
114/11/19 系課程委員會審議通過

	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	
共同 (41 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													
	合計	7.5	10	6.5	9	4	6	2	4	0	0	0	0	1	2	1	2		22	
必修 (核心 2 課學 程分 22 學分)	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	0		
必修 (校 共17 同學 課分 程) 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									
	多元學習模組(一)~(四)(Multimodal Learning Module)											16	160							
	合計	0	0	0	0	0	0	0	0	1	1	16	160	0	0	0	0			
專業 (48 學分)	實習前技術訓練(Hands-on Courses Prior to Curricular Practical Training)																			
	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	
	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													
	材料力學與實驗(Mechanics of Materials with Laboratory)					3	4													
專業 (48 學分)	材料科學與工程實驗(Materials Science and Engineering Laboratory)																			
	工程熱力學(一)(Engineering Thermodynamics I)									3	3									
	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)											1	3	1	3					
	機械元件設計(一)(Design of Machine Elements I)											3	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	6	7	12	13	3	3	0	0	5	8	1	3		35	
共至 同少 ~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)	普通化學(General Chemistry)	2	2																	模組(Module) A
	普通物理與實驗(General Physics with Laboratory)			3	4														模組(Module) A	
	電機學與實驗(Electric Machinery with Laboratory)			3	4														模組(Module) A	
	電子學與實驗(Electronics with Laboratory)					3	4												模組(Module) A	
	單晶片原理與應用(Single Chip Principle and Applications)							3	3										模組(Module) A	
	光電材料(Electrical and Optical Materials)								3	3									模組(Module) A	
	機電整合與實驗(Mechatronics with Laboratory)									3	3								模組(Module) A	
	生醫光電概論(Introduction to Biophotonics)										3	3							模組(Module) A、遠距課程distance	
	基本感測實務(Sensor Practice)											3	3						模組(Module) A	
	微系統製程與實驗(Micro System Process and Laboratory)												3	3					模組(Module) A	
	機械加工實務(Practical Training of Machining)	3	3																模組(Module) B	
	人工智慧概論(Introduction to Artificial Intelligence)			2	2														模組(Module) B	
	Python程式語言與應用(Computer Programming and Applications)					3	3												模組(Module) B	
	MATLAB軟體應用(Applications of MATLAB)							3	3										模組(Module) B	
	自動控制(二)(Automatic Control II)									3	3								模組(Module) B	
	電動機控制(Electrical Motor Control)										3	3							模組(Module) B	
	機構設計(Mechanism Design)											3	3						模組(Module) B	
	自動化光學檢測(Automated Optical Inspection)												3	3					模組(Module) B	
	無人載具技術與應用(Technology and Applications of Unmanned Vehicle)													3	3				模組(Module) B	
專業 (應 修畢 至少 51 學分)	進階電腦輔助機械製圖(Advanced Computer-Aided Mechanical Drawing)			3	3														模組(Module) C	
	電腦輔助設計(一)(Computer-Aided Design I)					3	3												模組(Module) C	
	精密量測與實習(Precision Measurement and Practice)					3	3												模組(Module) C	
	3D列印實務與應用(3D Printing Practice and Application)					3	3												模組(Module) C	
	模具設計與製造(Design and Manufacture of Mould)									3	3								模組(Module) C	
	製造學(Manufacturing Principles)										3	3							模組(Module) C	
	半導體製程(Semiconductor Process)											3	3						模組(Module) C、遠距課程distance	
	電腦輔助工程分析(Computer-Aided Engineering)												3	3					模組(Module) C	
	塑膠模具設計與模流分析(Design and Flow Analysis of Plastic Mould)													3	3				模組(Module) C	
	專題初探(Special Project Exploring)			2	2														模組(Module) D	
	專題實務(Special Project Practice)					1	1												模組(Module) D	
	工程數學(二)(Engineering Mathematics II)									3	3								模組(Module) D	
	專題設計(一)(Special Project Design I)									1	1								模組(Module) D	
	專題設計(二)(Special Project Design II)											1	1						模組(Module) D	
	氣壓學與實習(Pneumatic System and Practice)												3	3					模組(Module) D	
	新能源工程導論(Introduction to New Energy Engineering)													3	3				模組(Module) D	
	熱傳學(Heat Transfer)													3	3				模組(Module) D	
	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) D、化工系開設Offered by	
	工程光學與實驗(Engineering Optics and Laboratory)															3	3		模組(Module) D	
	光電子學與實驗(Optoelectronics with Laboratory)																3	3	模組(Module) D	
	合計	5	5	13	15	16	17	13	13	13	6	6	27	27	15	15			108	

1 畢業最少應修 148 學分。

2 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。

3 必修體育(三)、體育(四)，於大二至大四，採興趣選項教學。

4 學生應修畢一個跨領域學程或是第二專長學程，始得畢業。

5 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

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。

6 系專業選修分為光機電核心課程模組(模組A)、無人載具跨領域學分學程(模組B)、精密製造專業選修、最多6學分，按計為專業選修與分

7 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」。
1 Students must obtain at least 148 credits before graduating.

- 1 Students must obtain at least 148 credits before graduating.
- 2 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.
- 3 The elective courses "Physical Education III" and "Physical Education IV" are offered based on students' interests from sophomore to senior.

4 Students must complete either an interdisciplinary program or a second-specialization program as one of the graduation requirements.

5 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.

6 The department's elective courses are divided into the following modules: Opto-Mechatronics Core Course Module (Module A), Unmanned Vehicle Interdisciplinary Credit Program (Module B), Precision Manufacturing Courses Module (Module C), and Opto-Mechatronics Elective Course Module (Module D). Among these, at least 6 courses must be taken from the Opto-Mechatronics Core Course Module (Module A), while the other modules can be chosen freely. A maximum of 6 credits from the professional electives of

7 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 Mechatronics Elective Course Module (Module B)." Among these, at least 6 courses must be taken from the Opto-Mechatronics Core Course Module (Module A), while the other modules can be chosen freely. A maximum of 6 credits from the professional elective other classes within the Mechanical Engineering Department can be counted as professional elective credits.